

New risks and trends in the safety and health of women at work

European Risk Observatory
Literature review

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Table of contents

List of figures and tables:	6
Abbreviations	10
Country codes	13
Executive summary	15
Method	15
What this report adds to the knowledge	17
Differences between Member States	19
Trends in female employment and how they impact on OSH	20
Occupational segregation	22
Informal work	25
Female migrant workers	27
Accidents at work	28
Exposures, health problems and occupational diseases	30
Combined exposures	40
Disability and rehabilitation	42
Conclusions for policy, research and prevention	44
Gender mainstreaming and OSH — examples of successful implementation	51
1 Introduction	55
1.1 Why look at women and OSH?	55
1.2 Women, work and risks	55
1.3 Overview of women at work within the EU	56
1.4 Women as workers	58
1.5 Women and the research process	58
1.6 ‘New’ risks and trends	60
1.7 Women and non-traditional jobs	60
1.8 Limitations	61
1.9 Method	61
2 Gender and employment in the EU	63
2.1 Introduction	63
2.2 Data sources	63
2.3 Statistical data related to gender and employment in the EU	64
2.4 Employment rates	66
2.5 Gender segregation by sector	83
2.6 Employment status	97
2.7 Women’s level of education	116
2.8 Retirement	118
2.9 Wages and wage structure	119
2.10 Discussion	126
3 Assessing the relationship between gender, occupational status and working conditions	133

3.1	Introduction	133
3.2	Job content	133
3.3	Skill match	136
3.4	Customer service and ‘people’ work.....	136
3.5	Work intensity	137
3.6	Job autonomy and working-time autonomy.....	139
3.7	Exposure to material and physical hazards.....	142
3.8	Exposure to ergonomic hazards.....	151
3.9	Work and computers.....	156
3.10	Discussion	158
4	Exposure to violence, intimidation and discrimination at the workplace	165
4.1	Overview	165
4.2	Violence, harassment and female workers.....	166
4.3	Harassment	171
4.4	Women in male-dominated professions	173
4.5	Discrimination (sex, age, nationality, ethnic background, disability, sexual orientation).....	174
4.6	Health effects of violence at work, bullying and harassment.....	176
4.7	Discussion	177
4.8	What can be done.....	178
4.9	Recommendations.....	179
5	Gender aspects of health and safety at work statistics	181
5.1	Accidents at work data, 1998–2006	181
5.2	Accidents at work in a service economy.....	192
5.3	Causes and circumstances of accidents at work	194
5.4	Illnesses and complaints associated with working	199
5.5	Safety and health risks for women in emerging occupations	211
5.6	Discussion	212
6	Exposures, risks and health problems.....	217
6.1	Introduction	217
6.2	Exposures and their effects	218
6.3	Assessing rehabilitation and disability issues — a gender OSH perspective	240
7	Women, work and choices	257
7.1	Women engaged in informal work in Europe.....	257
7.2	Discussion	267
7.3	Recommendations.....	270
7.4	Migrant women in Europe and their occupational safety and health.....	272
7.5	An ‘emerging’ female profession — domestic work	287
8	Policies and programmes related to women at work.....	303
8.1	Finland	303
8.2	Austria.....	312
8.3	Spain.....	317

8.4	Overall discussion.....	322
9	A summary of trends and issues	325
10	Conclusions for research, policy and prevention.....	327
10.1	Research	328
10.2	Policy	329
10.3	Prevention.....	330
	References	333
	Annex I: other references	373
	Other sources	375
	Annex II: References for mini case studies	377

List of figures and tables:

Figure 1: Main employment sectors of women, EU-27, 2000–2007. Women employed, aged 15 years and over (thousands)	23
Figure 2: Main employment sectors of women, EU-27, 2008–2012, NACE Rev. 2. Women employed, 15 years and over (thousands).....	23
Figure 3: Female employment in EU-27 by economic sector, ages 15–24, in 2000 and 2007	24
Figure 4: Female employment in EU-27 by economic sector, ages 50–64, in 2000 and 2007	24
Figure 5: Standardised incidence rate of accidents at work by economic activity, severity and sex (per 100,000 workers), EU-15, 1995–2006.....	29
Figure 6: The vicious cycle in research on women and occupational health	59
Figure 7: Women’s employment as a percentage of total employment in 1990, 1995, 2000, 2005 and 2010	64
Figure 8: Female employment rates (%) for Member States, women aged 15–64, annual averages, 2000, 2008 and 2012	67
Figure 10: Employment rate of women aged 25–49, annual averages (%).....	72
Figure 11: Employment rate of women aged 50–64, annual averages, 1995–2011 (%).....	73
Figure 12: Female activity rate by age groups in the EU-15 and the EU-27, 2000–2011 (%).....	74
Figure 14: Countries with increasing female activity rate, 1997–2011 (%).....	76
Figure 15: Countries with decreasing female activity 1997-2011 (%).....	79
Figure 16: Projection of the age structure — health and social service — blue-collar workers, Austrian Labour Inspection campaign on age management at work (% of workers in the age group of the total working population).....	77
Figure 17: Maternal employment rates (those aged 25–54 years, %) by age of youngest child	78
Figure 18: Figure 18: Main reasons for women in different age groups not seeking employment in the EU-27, 2011 (%)	78
Figure 19: Main reasons by gender for not seeking employment in the EU-27, 2011 (%)	79
Figure 21: Female unemployment rates (%) in the EU-27, 2000–2012.....	82
Figure 22: Unemployment rates (%), annual average, EU-27, by gender and age in 2000, 2009 and 2011	82
Figure 23: Female employment, EU-27, by sector, ages 15–64 years, in 2008 and 2011(thousands)	83
Figure 24: Main employment sectors of women, EU-27, 2000–2007, NACE Rev. 1.1. Women employed, 15 years and over (thousands).....	86
Figure 25: Main employment sectors of women, EU-27, 2008–2012, NACE Rev. 2. Women employed, 15 years and over (thousands).....	87
Figure 26: Main employment sectors of the working population, EU-27, 2000–2007, NACE Rev. 1.1. All employed, 15 years and over (thousands).....	87
Figure 27: Main employment sectors of the working population, EU-27, 2008–2012, NACE Rev. 2, all employed, 15 years and over (thousands)	88
Figure 28: Female employment in EU-27 by economic sector, ages 15–24, in 2000 and 2007 (thousands)	88
Figure 29: Female employment in EU-27 by economic sector, ages 25–49	89
Figure 30: Female employment in EU-27 by economic sector, ages 50–64	89
Figure 33: Underemployed part-time workers by gender and age, percentage of total employment (EU-27).....	100

Figure 34: Main reasons for part-time work among women, EU-15, 2004, by age.....	102
Figure 35: Main reason for part-time work among women, NMS-10, 2004, by age	102
Figure 36: Main reasons for part-time work among men, EU-15, 2004, by age	103
Figure 37: Main reason for part-time work among men, NMS-10, 2004, by age	103
Figure 38: Employment status by age and gender: percentage of workers (not self-employed) with different types of employment contracts and weekly working hours, EU-15, 2005, men ...	108
Figure 39: Employment status by age and gender: percentage of workers (not self-employed) with different types of employment contracts and weekly working hours, EU-15, 2005, women.....	108
Figure 40: Employment status by age and gender: percentage of workers (not self-employed) with different types of employment contracts and weekly working hours, NMS-10, 2005, women.....	109
Figure 41: Fixed-term employment by Member State and gender, 2011	111
Figure 42: Main reason for fixed-term employment by age and gender, EU-27 (%)	111
Figure 43: Persons with tertiary education attainment () aged 30–34 by gender, 2011 (%).....	116
Figure 44: Employment rate of women aged 20–64 by educational level for EU-15, 2012 (%)	118
Figure 45: Average exit age (years) from the labour force of men and women in Europe, 2001–2010	119
Figure 46: Job content and skills match, workers reporting, EWCS 2005	134
Figure 48: Work organisational factors, EWCS 2005, by gender and in female-dominated sectors (%).....	138
Figure 49: Women in the manufacturing or other sector(s) reporting a specific health problem to a certain risk factor, EU-27, EWCS 2005 (%).....	146
Figure 50: Ergonomic hazards that may contribute to musculoskeletal disorders, by gender and in sectors where women predominate, EWCS 2005, percentage of workers	152
Figure 52: Self-reported exposure to MSDs risk factors in the healthcare sector, EWCS 2005.....	154
Figure 55: NEXT project percentage of nurses who often (at least once a week) encounter violence from patients or their relatives or harassment by their superiors.....	169
Figure 56: Self-reported discrimination at work, threats, violence and harassment, by gender, 2010 (%).....	170
Figure 58: Self-reported discrimination at work, threats, violence and harassment, industry and services, 2010 (%)	171
Figure 59: Accidents at work in the past 12 months, by age group and gender	181
Figure 60: Ratio of incidence rates (per 100,000 employed) of accidents at work with more than 3 days' absence (severe accidents) suffered by women in relation to men, standardised for sectoral structure	182
Figure 61: Standardised incidence rates (per 100,000 employed) of accidents at work with more than 3 days' absence for women and men by sector in the EU-15	183
Figure 62: Number of accidents at work with more than 3 days' absence for women and men (thousands) by sector in the EU-15	187
Figure 63: Change in standardised incidence rates (per 100,000 employed) of accidents at work with more than 3 days' absence, standardised for sectoral structure.....	192
Figure 65: Percentage distribution of accidents at work with more than 3 days' absence for women and men by material agent of deviation leading to accidents in the EU (22 countries included*) in 2005	196

Figure 67: Persons reporting one or more work-related health problems in the past 12 months, by gender and economic activity sector (%)	201
Figure 70: Percentage of women in the manufacturing sector reporting a specific health problem or exposed to a certain risk factor, EU-27, EWCS 2005.....	204
Figure 72: EU prevalence percentages of disability by gender	240
Table 1: Examples of potential exposures to dangerous substances for female workers	36
Table 2: Combined risks — a major issue for women at work	41
Table 3: Examples of hazards and risks found in female-dominated occupations	41
Table 4: How employment trends and combined exposures may impact on women’s OSH	45
Table 5: Women and health at work — examples of gender-sensitive studies and policies included in this report	52
Table 6: Percentage of contribution to employment creation, 2000–2008.....	65
Table 7: Women’s employment (%) by sector: agriculture, services and industry.....	83
Table 8: Female employment in agriculture, industry and services in 2008 and 2011 (thousands).....	85
Table 9: Women’s percentage share of each ISCO major occupational group and of all employment, by country, EU-15, 2000.....	91
Table 10: Women’s percentage share of each ISCO major occupational group and of all employment, by country, EU-15/EU-27, 2012, quarter three.....	92
Table 11: Occupational segregation of women’s and men’s employment in the EU-15, 2000.....	95
Table 12: Occupational segregation of women’s and men’s employment in the EU-15, 2005.....	96
Table 13: Occupational segregation of women’s and men’s employment in the EU-27, 2005.....	96
Table 14: Occupational segregation of women’s and men’s employment in the EU-27, 2012, quarter 3.....	97
Table 15: Part-time employment by gender and number of children, % workers aged 20–49, 2012 .	104
Table 16: Average gross wage and involvement in household tasks for young high-skilled workers*, by gender, 2005 (€).....	106
Table 17: Percentage of temporary workers aged 15–64 by gender and country	109
Table 18: Percentage of women and men employed in fixed-term jobs by sector of activity in the EU-25, 2000 and 2005.....	112
Table 19: Division of women and men employed involuntarily in fixed-term jobs by sector of activity in the EU-25, 2005 (% of women and men employed fixed-term involuntarily)..	113
Table 20: Gender pay gap unadjusted (%) in selected sectors in which women work, 2011	123
Table 21: People at risk of poverty and social exclusion (%), by age, 2011	125
Table 22: Working atypical hours: Share of persons working atypical hours* in EU-27, employed persons aged 15–64	141
Table 23: Typical exposure levels of musicians	144
Table 24: Examples of potential exposures to dangerous substances for female workers	147
Table 25: Violence, intimidation and discrimination in the workplace in the EU-15 in 2000	166
Table 26: Ratio of incidence rates (per 100,000 employed) of accidents at work with more than 3 days’ absence, comparing women with men by sector and country	184
Table 27: Incidence rates (per 100,000 employed) of accidents at work with more than 3 days’ absence comparing women with men by sector and country, EU-15.....	189
Table 28: Incidence rates of non-fatal accidents, by 100,000 workers, by gender, EU-27.....	193

Table 29: Incidence rates (per 100,000 employed) of accidents at work with more than 3 days' absence for women and men by type of deviation leading to accidents in the EU (22 countries included*) in 2005.....	195
Table 30: Incidence rates (per 100,000 employed) of accidents at work with more than 3 days' absence for women and men by material agent of deviation leading to accidents in the EU (22 countries included*) in 2005	197
Table 31: Persons reporting their most serious work-related health problem in the past 12 months, type of problem, percentage of all, EU-27 (without France)	200
Table 32: Proportion of persons reporting one or more work-related health problems in the past 12 months, by gender, age and occupation, EU-26 (EU-27 without France) (%)	202
Table 33: Examples of hazards and risks found in female-dominated occupations	218
Table 34: Qualitative summary of the potentially adverse effects of occupational exposure on the female and male reproductive system	220
Table 35: Ambient risk factors (chemical, fluids) at least half of the time by gender and employment status across EU-27, EWCS 2005	224
Table 36: Ambient risk factors (e.g. smoke, fumes) at least half of the time by gender and employment status across EU-27, EWCS 2005	226
Table 37: Estimated annual average number of deaths attributable to occupational exposure to hazardous substances	229
Table 38: Proportion of exposed jobs by economic sector (GISCOP).....	228
Table 39: Public expenditure on supported employment and rehabilitation (in € million).....	247
Table 40: Characteristics of informal work for women	266
Table 41: Top 10 principal sectors of employment of nationals and foreign citizens aged 25–54 by gender, EU-27 (% of total corresponding population).....	277
Table 42: Median wages of people with tertiary education, immigrants compared with native born, by origin of education and gender.....	279
Table 43: Domestic workers as a percentage of total employment and women's share of total domestic employment	292
Table 44: Abuses suffered by domestic workers in the United Kingdom.....	293
Table 45: Laws and/or collective agreements relating to domestic workers in Europe	297

Abbreviations

BLS	Bureau of Labor Statistics, US
BMASK	Bundesministerium für Arbeit, Soziales und Konsumentenschutz
CEE	central and eastern Europe
CHD	coronary heart disease
CIS	Commonwealth of Independent States
COMPAS	Centre on Migration, Policy and Society
CVD	cardiovascular disease
DOL	Department of Labor
EC	European Commission
EDC	endocrine-disrupting compound
ELFS	European Labour Force Survey
ERC	employment rehabilitation centre
ESAW	European Statistics on Accidents at Work
ETUC	European Trade Union Confederation
ETUI-REHS	European Trade Union Institute for Research, Education and Health and Safety
EU	European Union
EU-12	European Union Member States having adopted the single currency: BE, DE, EL, ES, FR, IE, IT, LU, NL, AU, PT, FI
EU-15	European Union, 15 Member States before 1 May 2004: EU-12 plus DK, SE and UK
EU-25	European Union, 25 Member States after 1 May 2004: BE, CZ, DK, DE, EE, EL, ES, FR, IE, IT, CY, LV, LT, LU, HU, MT, NL, AT, PL, PT, SI, SK, FI, SE, UK
EU-27	European Union, 27 Member States: BE, BG, CZ, DK, DE, EE, EL, ES, FR, IE, IT, CY, LV, LT, LU, HU, MT, NL, AT, PL, PT, RO, SI, SK, FI, SE, UK
EU-28	European Union, 28 Member States: BE, BG, CZ, DK, DE, EE, EL, ES, FR, IE, IT, CY, LV, LT, LU, HU, HR, MT, NL, AT, PL, PT, RO, SI, SK, FI, SE, UK
EU-LFS	European Labour Force Survey
EU-OSHA	European Agency for Safety and Health at Work

Eurofound	European Foundation for the Improvement of Living and Working Conditions
Eurostat	European statistics — the Statistical Office of the European Communities
EWCS	European Working Conditions Survey
FIOH	Finnish Institution of Occupational Health
FRA	Fundamental Rights Agency
GDP	gross domestic product
Horeca	Hotel, restaurant and catering
HSE	Health and Safety Executive
IARC	International Agency for Research on Cancer
IHD	ischaemic heart disease
ILO	International Labour Organisation
INSHT	Instituto Nacional de Seguridad e Higiene en el Trabajo
IOM	International Organisation for Migration
IRENE	International Restructuring Education Network Europe
ISCED	International Standard Classification of Education
ISCO	International Standard Classification of Occupations
LSHPD	longstanding health problem or disability
MSD	musculoskeletal disorder
NACE	Statistical Classification of Economic Activities in the European Community
NGO	non-governmental organisation
NHS	National Health Service, United Kingdom
NIOSH	National Institute for Occupational Safety and Health
NMS	New Member State
NOCCA	Nordic Occupational Cancer Study
OECD	Organisation for Economic Cooperation and Development
OSH	Occupational Safety and Health
PAH	polycyclic aromatic hydrocarbon

PICUM	Platform for International Cooperation on Undocumented Migrants
PMS	premenstrual syndrome
PPE	personal protective equipment
RSI	repetitive strain injury
SMEs	small and medium-sized enterprises
SSE	Statistics on the Structure of Earning
UGT	Unión General de Trabajadores

Country codes

Two-letter code	Country
BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
IE	Ireland
EL	Greece
ES	Spain
FR	France
HR	Croatia
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom

Executive summary

In 2009 and 2010, the Agency commissioned an update to its previous research on gender issues at work (EU-OSHA, 2003a), which found that inequality both within and outside the workplace can have an effect on the health and safety of women at work. This report provides that update and the first figures on the effects of the recent economic downturn on women at work. It aims to fulfil the task outlined by the European strategy on health and safety at work (EC, 2002) for EU-OSHA's European Risk Observatory: 'examining the specific challenges in terms of health and safety posed by the more extensive integration of women in the labour market'.

Gender inequalities in the workplace and work–life balance issues have become increasingly important as the employment rates of women have continued to grow in all Member States. Although in 2009 58.6 % of the European workforce (EU-27) was female and women filled 59 % of all newly created jobs, the extent to which women contribute economically still seems to be underestimated. At its start, women were affected less than men by the recent economic crisis, as the first jobs to be lost were mostly in the male-dominated construction and manufacturing industries. However, between 2008 and 2012, European gender differences in employment fell by an average of 7.6 to 6.3 percentage points, mainly because male employment rates fell more than those of women, which have returned to the 2007 level. A modern organisation of work, a knowledge economy, competitiveness and more and better jobs are central to the post-2010 Lisbon Strategy and the EU's 2020 Strategy. Women are essential to the workforce in terms of providing an active and sustainable source of labour, and in June 2010 the European Council set a new, ambitious target aiming to raise the employment rate for women and men aged 20–64 to 75 % by 2020, partly through the greater participation of young people, older workers and low-skilled workers and the better integration of legal migrants. However, although employment rates for women are rising, much remains to be done, especially for older and younger women, to reach this goal and at the same time ensure decent work for all.

The issue of occupational safety and health (OSH) for women who work in the European Union (EU) is central to an understanding of the working environment. Previous research has shown that women's OSH has to be improved. Research from the European Commission illustrates that, even by 1995, women accounted for close to or above half of all cases of work-associated ill health, including allergies (45 %), infectious illnesses (61 %), neurological complaints (55 %) and hepatic and dermatological complaints (48 %). The situation has not improved. Further, for 'women's jobs', such as those in the health and social services, retail and hospitality sectors, there is a stagnation in accident rates in some countries; women are more likely to be bullied and harassed, subjected to sexual harassment and have to use poorly fitting personal protective equipment that is not usually sized for a smaller frame.

The aims of this review are to:

- Provide a statistical overview of the trends in employment and integration of women in the labour market, and explore how they impact on their occupational safety and health.
- Identify and highlight the main issues and trends in employment characteristics, working conditions, hazard exposure and work-related accidents and health problems for women at work and explore more in-depth selected issues not addressed thoroughly before, such as combined exposures, informal work and the rehabilitation of women into work.
- Identify emerging issues for OSH research and the prevention of occupational diseases and accidents affecting women at work.

This focus on OSH benefits not only women but also men who work, and thus reinforces the considerable potential to be gained by improved workplaces.

A summary of the findings and trends and a more detailed list of suggestions is included in every chapter of this report and in the conclusions.

Method

The literature review involved accessing and interpreting information and data from structured databases and peer-reviewed journals, including EU statistical databases, peer-reviewed research

and reports. Moreover, the use of 'grey' literature ⁽¹⁾ facilitated the assessment of reports and research output, which, while not covered during regular searches of electronic databases, may allow a broader, more comprehensive assessment of the various topics under discussion. Data from outside the EU were included to supplement the information, particularly for topics where few data are available from the EU.

The review also draws on EU-OSHA research conducted since 2004 that is relevant to women at work. Information on transport, education, waste management, healthcare, cleaners and other service workers has been integrated here, as well as research findings on vulnerable groups such as young and migrant workers and the results of the European Risk Observatory's studies on combined and emerging risks.

The preliminary results were also discussed at a workshop in Brussels on 9 December 2010, which involved stakeholders from 10 Member States. The outcomes of the workshop are available from: <http://osha.europa.eu/en/seminars/seminar-on-women-at-work-raising-the-profile-of-women-and-occupational-safety-and-health-osh>

Key conclusions of previous EU-OSHA research

- Continuous efforts are needed to improve the working conditions of both women and men.
- Gender differences in employment conditions have a major impact on gender differences in work-related health outcomes. Research and interventions must take account of the real jobs that men and women do and differences in exposure and working conditions.
- We can improve research and monitoring by systematically including the gender dimension in data collection, adjusting for hours worked (as women generally work fewer hours than men) and basing exposure assessment on the real work carried out. Epidemiological methods should be assessed for any gender bias. Indicators in monitoring systems, such as national accident reporting and surveys, should effectively cover occupational risks to women.
- Work-related risks to women's safety and health have been underestimated and neglected compared to men's, regarding both research and prevention. This imbalance should be addressed in research, awareness-raising and prevention activities.
- Taking a gender-neutral approach in policy and legislation has contributed to less attention and fewer resources being directed towards work-related risks to women and their prevention. European safety and health directives do not cover (predominantly female) domestic workers. Women working informally, for example wives or partners of men in family farming businesses, may not always be covered by legislation. Gender impact assessments should be carried out on existing and future OSH directives, standard setting and compensation arrangements.
- Based on current knowledge of prevention and mainstreaming gender into OSH, existing directives could be implemented in a more gender-sensitive way, despite the need for gender impact assessments and attention to gaps in knowledge.
- Gender-sensitive interventions should take a participatory approach, involving the workers concerned, and based on an examination of actual work situations.
- Improving women's occupational safety and health cannot be viewed separately from wider discrimination issues at work and in society. Employment equality actions should include OSH.
- Activities to mainstream occupational safety and health into other policy areas, such as public health or corporate social responsibility initiatives, should include a gender element.
- Women are under-represented in the decision-making concerning occupational health and safety at all levels. They should be more directly involved and women's views, experiences, knowledge and skills should be reflected in formulating and implementing OSH strategies.

⁽¹⁾ Grey literature is authoritative primary scientific report literature in the public domain, often produced in-house for government research laboratories, university departments or large research organisations, yet often not included by major bibliographical commercial database producers.

- There are successful examples of including or targeting gender in research approaches, interventions, consultation and decision-making, tools and actions. Existing experiences and resources should be shared.
- While the general trends in women's working conditions and situation are similar across the Member States and candidate countries, there are also country differences within these general trends. Individual countries should examine their particular circumstances regarding gender and OSH, in order to plan appropriate actions.
- Taking a holistic approach to OSH, including the work–life interface, broader issues in work organisation and employment would improve occupational risk prevention, benefiting both women and men.
- Women are not a homogeneous group and not all women work in traditionally 'female' jobs. The same applies to men. A holistic approach needs to take account of diversity. Actions to improve work–life balance must take account of both women's and men's working schedules and be designed to be attractive to both.

What this report adds to the knowledge

- Women continue to be active in the workforce, as shown by their increasing employment rates. However, workers with non-standard employment contracts, such as part-time employment or non-permanent contracts, accounted for most of the recent rises in employment figures, and there has also been an increase in multiple employment. The financial downturn may have an impact on employment perspectives, particularly of younger women.
- Occupational segregation, or the concentration of female activity in a few sectors, seems to be increasing rather than declining over time. The move to service sectors particularly affects women, who work in the growing sectors of healthcare, education, public administration, Horeca (hotel, restaurant and catering) and retail, as well as in financial and other customer services. Consequently, if it is to be effective, OSH policy should enhance its activities in these sectors.
- However, current perceptions of vertical and horizontal segregation should be revised: when data are assessed at the micro level, they show that jobs done by men may be more segregated than those done by women. According to the latest European figures (EC, 2010a), men are now more likely to work in male-dominated jobs than are women in female-dominated ones, meaning that women, despite being concentrated in some professions, are more likely to work across occupations and jobs than men. Interestingly, according to the *European Working Conditions Survey (EWCS)*, only the occupational categories 'unskilled workers' and 'professionals' (with female workers accounting for the majority of the life science, health and teaching professions) are gender balanced, with a recent increase in employment in elementary occupations. This may have an impact on labour inspection policy as, increasingly, both genders should be considered when conducting inspections, allocating resources and designing OSH strategies.
- Informal work is increasing among women, which raises OSH concerns, as these types of jobs are more likely to be unstable, unprotected and precarious.
- The jobs that women do are strongly dependent on their age and origin, rather than on their educational attainment. While younger women work preferentially in hospitality and retail, older women tend to work in healthcare and education. In sectors where an increasing proportion of workers are ageing, such as healthcare, specific policies should be developed to address the health and safety risks of these workers and enhance their work ability and well-being.
- The jobs women do and the choices they make still depend largely on their family commitments. This is also true for older women. Inversely, the practices impact on the choices they are given. As this report demonstrates, many women are involuntarily in temporary jobs, on multiple and short-term contracts, and this has a high impact on their OSH.

- Women are more likely than men to suffer from multiple discrimination at the workplace. This may relate to gender, age, ethnic background, disability and sexual orientation, while migrant women also face discrimination based on their origin or class. Some particularly vulnerable groups are identified in this report: young women, women with care obligations in countries where resources are limited, migrant women engaging in informal work, such as cleaning and home care, women in multiple jobs and very young mothers. The situation of older women is also very variable depending on the country.
- At first glance, male workers often seem to be more exposed to specific risks than their female counterparts. However, a more in-depth look at the data reveals that women may have a higher level of exposure and are particularly affected by multiple exposures, as could be demonstrated for the Horeca, healthcare and cleaning sectors, as well as in the traditional sectors of agriculture, manufacturing and transport.
- There is now more information about the types of accidents and health problems that women face at work, which are increasingly recognised to be directly linked to the differences in the type of work they do. Women are more exposed to slips, trips and falls and accidents linked to violence. The differences in occupational accidents may warrant different monitoring and action; for example, the different modes of travelling and different family obligations may have an impact on their commuting accidents pattern, and this should be explored. The concept of a commuting accident may have to be revised to, for example, take into account accidents occurring when taking children to school before going to work, which, according to some studies, remains largely a female duty.
- Women are increasingly affected by musculoskeletal disorders (MSDs) and stress. This puts into question the misconception that women's work is less physically and mentally demanding. The combination of work organisational and physical risks, the links between women's paid and unpaid work, including combined risk exposures and less free time, and the difficulties in finding a stable job, and their impact on the health and safety of women should be further explored.
- Violence and harassment are a particular issue in service sectors, and discrimination at work is increasing. Additionally, new forms of harassment, such as cyber-harassment, are an emerging issue in some sectors, for example in education. Reporting and support procedures are still lacking, and female workers in personal services and working at clients' premises are particularly vulnerable. Additionally, reports on violence vary considerably between Member States; this may be linked to a lack of awareness.
- According to EU figures, atypical working hours are increasing in the EU, while at the same time the gender gap seems to be closing slightly. This may affect women more because of their family and household responsibilities, as described above. If working time patterns are more irregular, this may diminish their ability to reconcile work and private life. As an example, in the restaurant sector, 28.6 % of workers report long working days, only half (50.5 %) have fixed starting and finishing times, almost a third work shifts (29.9 %) and the mean working hours are among the highest of any sector. Accordingly, fewer workers in this sector report caring for children, which is also consistent with the younger age of workers in hospitality. The conditions may have an influence on their reproductive health as well as on their long-term health status and ability to work.
- There has been hardly any change in the overall gender pay gap since 2003, and women continue to receive lower wages (on average 16 % less than men), which is also the case in jobs with a majority of female workers. This confirms previous EU-OSHA-reported findings. A true assessment of the risks women incur at work and a modified perception of the values attached to women's work may indirectly help narrow this gap, if the contribution of women's work is valued as much as men's.
- Recently, rising female employment in technical occupations and among professionals, with higher employment rates in the accession countries, may have been compensated in regard to overall figures by a rise in elementary, low-paid professions. Both trends should be assessed separately for their impact on the OSH of women.

- This review shows that, although the number of women managers has increased slightly since 2003, women remain under-represented in management positions and in the decision-making processes within companies. Women still have difficulties in attaining senior positions within organisations because of the 'glass ceiling effect'. In addition, women still mainly manage women. This also limits their opportunities to influence and shape their working conditions and actively contribute to workplace risk prevention at a decision-making level.
- Also, there is concrete evidence that limited career advancement prospects of women may have a direct impact on their health and safety at work, as the combination of doing the same job for a prolonged time and the characteristics of many female jobs, being repetitive and monotonous, may contribute to health and safety risks, such as stress and MSDs. On the other hand, a North American study has demonstrated that the greater involvement of women in management in agricultural enterprises as a result of structural changes may result in higher exposures and health risks to them, because they are handling pesticides and performing tasks previously done by men.
- Women are less often unionised and have difficulties in electing representatives. They also have less access to OSH preventive services. Consequently, they may be overlooked in workplace risk assessments and when workers are consulted about their working conditions and the best OSH prevention measures to be taken at their workplaces, because they often work part time and in temporary jobs.
- The OSH situation of women in major employment sectors has been further investigated by EU-OSHA since 2004 and reinforces the recommendation for integrated efforts in all policy fields to mainstream OSH and equality into policy action. To the previously mentioned fields of social policy and welfare, public health, employment and equality, and education and training should be added transport and energy policies, technology development initiatives, green jobs, waste management and other policies on environmental protection, among others.

Differences between Member States

There are major differences between the EU Member States with regard to the employment situation of women and the jobs they do, and how this impacts on their health and safety.

- In the eastern Member States and the Baltic countries, women are more equally spread across occupations (more technical jobs and among professionals), the rise in employment has benefited them more, as they moved into better jobs, but the use of part-time contracts is very limited and their work–life balance is poor.
- In contrast to the EU-15, in the newer Member States, up to 2007, although men and women benefited equally from employment growth, newly created positions for women were focused on well-paid jobs.
- According to the EWCS 2010, across most of the eastern European and the Baltic countries women account for more than 30 % of managers on average. For example, in Estonia 41 % of managers are women. The highest proportions are in highly skilled clerical positions.
- Among the 10 newer Member States that were the first to add to the EU-15, in 2005, in all age groups, more than 50 % of women worked under permanent contracts. Far more women than in the EU-15 were permanently employed for more than 35 hours per week. In 2011, however, the proportion of female workers on temporary contracts was highest in Spain (27 %), but was also relatively high in Cyprus, Poland, Portugal, the Netherlands and Slovenia, while it was lower but increasing in some of the other eastern European countries, and lowest in the Baltic countries. Moreover, in Cyprus, Sweden and Finland, a higher proportion of women than of men were on fixed-term contracts.
- In the southern European countries, a high proportion of older women are still outside the labour market, and a lack of accommodation of work–life balance requirements (working time arrangements, child and elderly care facilities) puts a high strain on working women.
- In some highly developed countries, such as Austria and Germany, the traditional conceptions of motherhood and care responsibilities mean that childcare and other facilities are also

lacking, and newly created female jobs are mostly part time and precarious, and concentrated in some sectors and activities. This has a direct impact on the employment choices and the health and safety of the female workers.

- Some of the eastern and Baltic countries have seen a fall in employment among some groups of female workers.
- The situation of migrant women and women in informal jobs is also very variable across countries and depends on the active policies in place to address informal work, for example in personal services.

Some countries have put in place policies to address some of these issues and to mainstream gender equality and gender-sensitive action into OSH and related fields, and have achieved good results. Some initiatives are described in this report, and EU-OSHA is currently conducting an in-depth review of a selection of good practice examples.

Trends in female employment and how they impact on OSH

The dramatic increase in the labour force participation rates of women from 1995 to 2010 was accompanied by many social, economic and demographic changes in the status of women. Some of these changes and their impact are outlined below.

The gender aspect of work remains of interest within the EU. This is displayed through the Lisbon Strategy, which proposed the achievement of a female employment rate of over 60 % by 2010. This review shows that, across the EU, this was close to being achieved, as in 2008 the female employment rate was 59.1 %. The growth in employment was almost three times as high for women than men over this time. Thus, the gap between male and female employment rates narrowed. But employment gains were spread very unevenly across age groups: 39.1 % were aged 25 to 54 and 19 % were 55 to 64 years old. Young women aged 15 to 24 years accounted for only 0.3 % and women older than 65 accounted for 0.6 %.

However, although the reported trends are positive, it should be kept in mind that the economic crisis hit Europe in 2008 and forced the EU into recession. The employment rate for women, which increased continuously from 53.7 % in 2002 to 59.1 % in 2008, dropped for the first time in 2009, to 58.6 %. In 2011, 64.3 % (down from 65.9 % in 2008) of the EU's working-age population was employed (56.7 % of women aged 15–64 (down from a high of 58.9 % in 2008) and 70.1 % of men aged 15–64 (down from 72.8 % in 2008)).

By 2010, 16 out of 27 countries achieved the targeted female employment rate of over 60 %, down from 20 out of 27 in 2008, as a result of the economic crisis. Job losses among women occurred in retail salespersons, blue-collar workers in textiles/clothing manufacture and in agriculture.

Employment rates of older women vary considerably between the Member States. In 2011, the highest employment rate for older women was in northern European countries, at more than 55 %, and the lowest was in southern European countries, where it was below 35 % in all cases.

Moreover, overall unemployment rates for women and men have converged. However, this measure does not necessarily cover all aspects of the changing economic conditions for women, as female workers are more likely than men to leave the labour market entirely, especially young women, who may experience difficulties in re-entering the labour market.

Very young mothers with small children are a particularly vulnerable group with regard to their entry into the labour market: their activity rates are much lower than those of mothers over 25 years old. Specific measures are needed to assess the employment and potential working conditions of these very young mothers and address some of their specific needs in OSH policy and prevention, and related policies, because they belong to a group at particular risk of poverty. Their vulnerability and difficulty in accessing the labour market may make them more prone to accept worse working conditions.

Employment rates of older women vary considerably between the Member States. In 2011, the highest employment rate for older women was in northern European countries at more than 55 %, and the lowest was in southern European countries, with all below 35 %.

The data also highlight that, while women occupied 59 % of the newly created jobs, these gains were concentrated in the lowest pay group and in the second highest pay group out of five occupational categories. However, as mentioned, in the newer Member States the situation is different: men and women benefited equally from employment growth in terms of newly created positions, but women's employment growth was focused on well-paid jobs.



Courtesy of Austrian Labour Inspection

Very young mothers with small children are a particularly vulnerable group. Specific measures are needed to assess their OSH situation and develop targeted policies and prevention.

Within these newly created jobs, women are more likely to work in part-time roles. Part-time employment continues to be important for women, as it remains one option of dealing with child- and eldercare duties. In 2008, although equal proportions of men and women had full-time jobs, 73 % of those filling part-time jobs were women. Almost one-third (32.1 %) of women employed in the EU-27 worked on a part-time basis in 2011, a much higher proportion than the corresponding figure for men (9 %). Part-time employment is most common among older workers (aged 55+) and young workers (15–24 years). The reasons underlying the U-shaped curve of part-time employment are different at the different ends of the age spectrum. In the case of older workers, part-time employment is a way of remaining in the labour market if, for example, health problems do not allow full-time employment. Looking after grandchildren or incapacitated relatives is another reason often stated by older women for preferring part-time jobs. A high proportion of female part-timers are underemployed, meaning that they work part-time involuntarily. Part-time work has been used as a measure to avoid unemployment in times of crisis, but in the EU-27 in 2010 more than two-thirds of underemployed part-timers were women (68.4 %), that is 5.8 million women as compared with 2.7 million men.

There is a distinct pattern to be observed in the eastern countries, where part-time employment is uncommon. With regard to sectors and occupations, part-time work prevails in the more service-driven sectors (e.g. health, education and other services) and occupations that are female dominated (e.g. healthcare, service and sales and unskilled jobs). There has been a notable increase in part-time work in elementary occupations for men, as well as for women.

It seems that female part-time workers invest their free time in non-paid domestic work. When taking into account the composite working hour indicators (i.e. the sum of the hours worked in the main job and in secondary jobs, plus the time spent on commuting and on household work) the research finds that women in employment systematically work longer hours than men. This gives a clear illustration of the 'double role' increasingly played by women in both the labour market and the household. Interestingly, when considering composite working hours, on average, women in part-time jobs work more hours than men in full-time jobs. There is a need for greater recognition of the links between women's paid and unpaid work, and their effect on women's health, including combined risk exposures and less spare time.

Part-time work may also hide multiple employment. A 2005 study in France showed that over a million workers, almost 5 % of the working population, were in multiple employment. For women, these jobs mostly involved childcare and elderly care and domestic work, where women's OSH is difficult to follow and protection difficult to implement. A German study demonstrated that 640,000 fewer women worked full-time in 2009 than 10 years earlier, replaced by over a million temporary engagements and 900,000 'mini-jobs'. This was highlighted as an issue of concern by the OSH authorities.

Temporary employment is increasing for women and men in most of the EU-27 countries. However, this is distributed more evenly across both genders than is part-time employment. However, fewer workers have employment contracts; as few as 25 % of workers in agriculture and less than one-quarter of unskilled workers are on contracts. The number of jobs in agriculture has declined for both women and men. However, more women than men work involuntarily in the agriculture sector in fixed-term jobs. Also, in 2005, according to the European Labour Force Survey, over 30 % of women employed involuntarily in fixed-term jobs were in education and health. Some 43 % of women and 48 % of men employed in fixed-term jobs involuntarily held contracts of less than 6 months.

The contractual arrangements under which women are working contribute considerably to the gender pay gap, as well as reducing their chances of moving into management jobs. And the gender pay gap grows with age: in 2011, while the difference was up to 7 % until the age of 24 in the EU Member States, it rose to 35–45 % for women aged over 55 in some countries. A recent US study has demonstrated that women and younger workers aged between 22 and 44 years in particular could be at risk of hypertension when working for low wages.

The use of fixed-term contracts among workers is relatively common in about a third of EU Member States. The considerable range in the propensity to use limited-duration contracts between Member States may, at least to some degree, reflect national practices, the supply and demand of labour and the ease with which employers can hire or fire. In 2011, the proportion of female workers on such contracts was highest in Spain (27 %), but was also relatively high in Cyprus, Poland, Portugal, the Netherlands, Slovenia, Finland and Sweden, while it was lower but increasing in some of the other eastern European countries, and lowest in the Baltic countries.

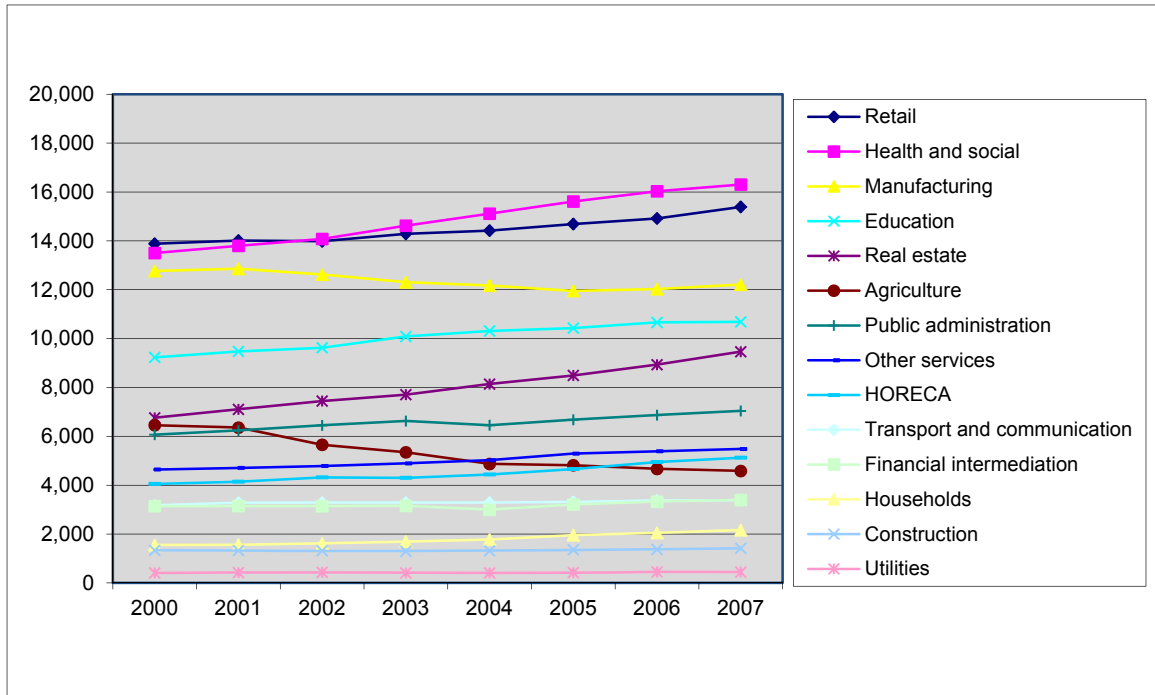
Fixed-term contracts are more frequent among female than male workers. This is especially the case in Cyprus, where in 2011 20.7 % of women were on fixed-term contracts, compared with only 7 % of men. The proportion of women on fixed-term contracts, relative to the proportion of men on such contracts, was also high in Sweden and Finland.

The contractual arrangements under which women are working contribute considerably to the gender pay gap, as well as reducing their chances of moving into management jobs. The gender pay gap grows with age: in 2011, the difference among male and female workers under the age of 24 was up to 7 % in EU Member States (Eurostat, 2013 a), but the gap rose to 35–45 % in those aged over 55 in some countries. A recent US study has demonstrated that women and younger workers aged between 22 and 44 years could be particularly at risk of hypertension when working for low wages (Leigh et al., 2012).

Occupational segregation

Overall, the concentration of female activity in a few sectors seems to be increasing rather than falling. There has not been much positive improvement in the aggregate levels of segregation in sectors and occupations, although women continue to take up traditionally 'male' jobs. The most important and steadily increasing sector for women's employment is the health and social sector (Figure 1), which is ranked third in the general population (Figure 2). The retail sector is the second most important employment sector, for both women and the general population. Education is ranked third in all sectors of employment among women and has overtaken manufacturing during the financial crisis. Public administration ranks fifth. Female employment is declining in the previously predominant sectors of agriculture and manufacturing, although the proportion of female workers is increasing in agriculture.

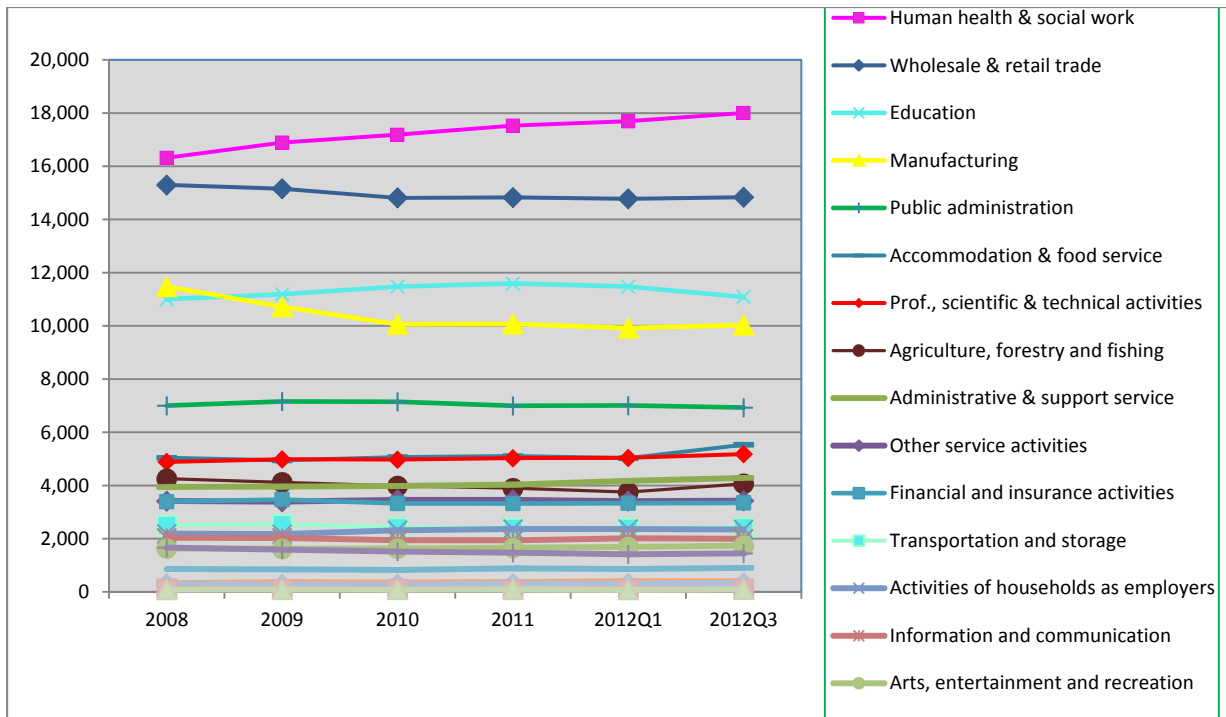
Figure 1: Main employment sectors of women, EU-27, 2000–2007. Women employed, aged 15 years and over (thousands)



Source: Eurostat, EU-LFS (2010)

In 2008, there was a break in the series because of a change to the coding of industrial sectors (from NACE Rev. 1.1. to NACE Rev. 2), which now better reflects service professions. Therefore, data are presented here for the period up to and after 2008.

Figure 2: Main employment sectors of women, EU-27, 2008–2012, NACE Rev. 2. Women employed, 15 years and over (thousands)

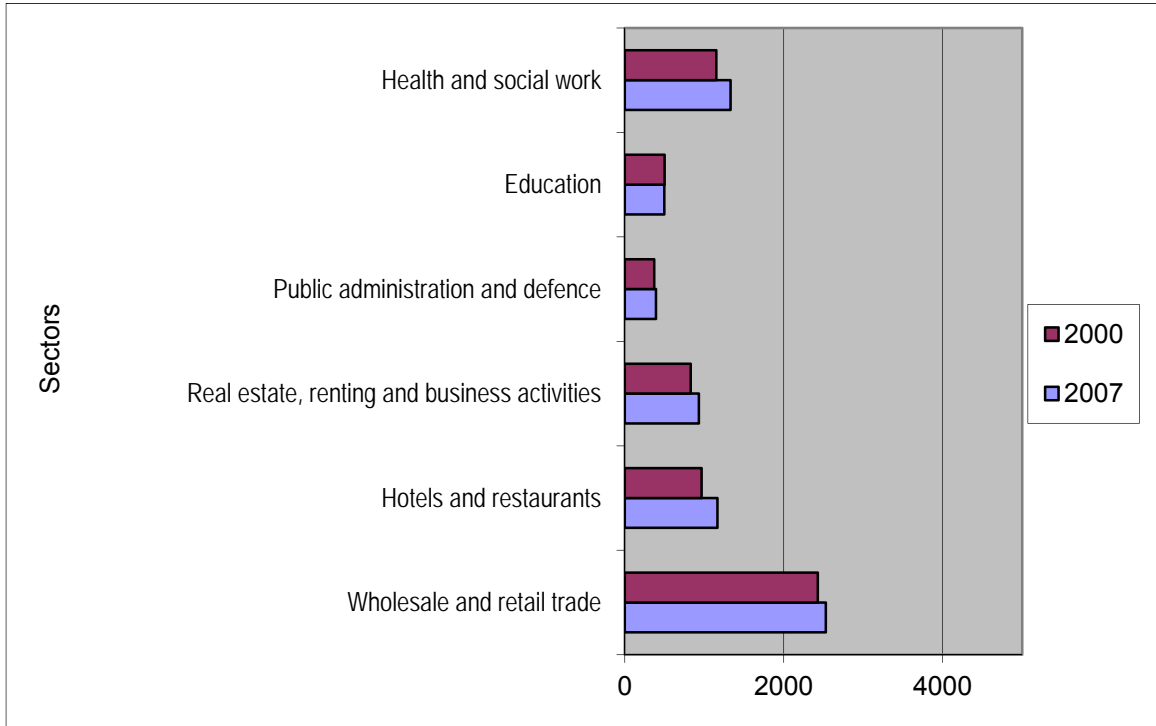


Source: Eurostat, EU-LFS (2013)

There are very distinct patterns of employment according to the different age groups: while younger women work more in retail and Horeca, older women work more in education and healthcare.

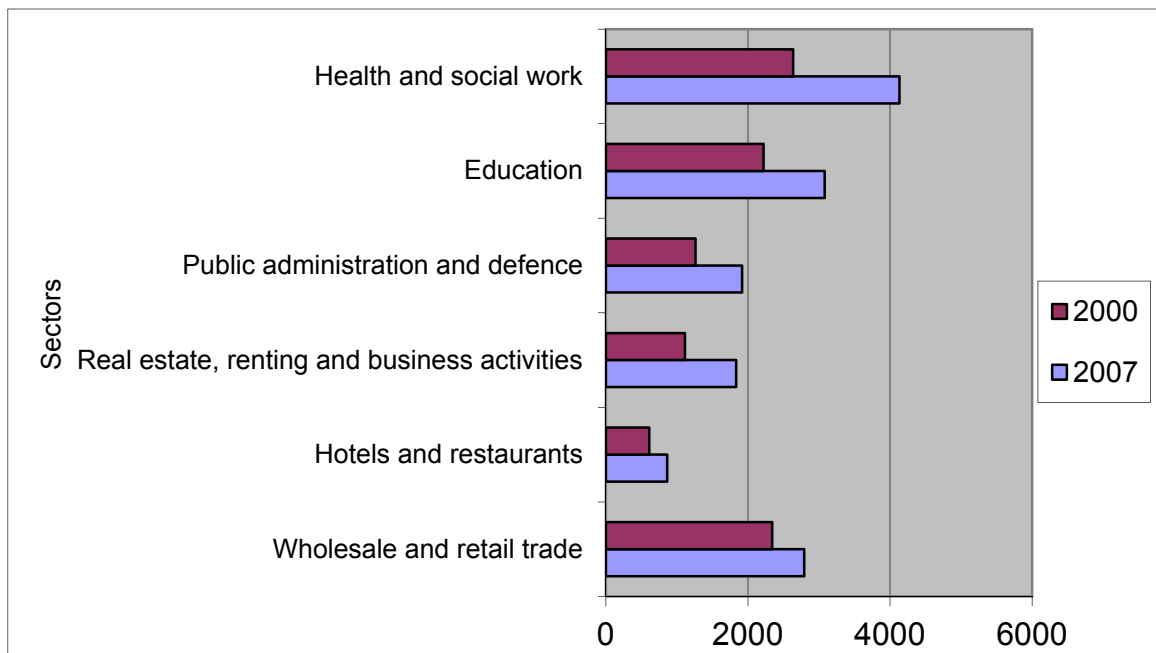
Figures 3 and 4 display figures up to 2007. The change in the industrial sector coding is expected to better reflect the move from industry to services and provide more detail on the trends in female employment in the future.

Figure 3: Female employment in EU-27 by economic sector, ages 15–24, in 2000 and 2007



Source: Eurostat, EU-LFS

Figure 4: Female employment in EU-27 by economic sector, ages 50–64, in 2000 and 2007



Source: Eurostat, EU-LFS

Women's move into traditional male jobs has also been slowly increasing. The most recent edition of the EWCS demonstrates that there are more women working in male-dominated jobs than there are men working in traditionally female-dominated sectors. However, research from the USA shows that 'new' occupations in which women choose to work may not necessarily have the required preventions in place to reduce the risks that women face at the workplace. One study of female long-haul truckers showed that fewer than one-third of companies provided sexual harassment or violence prevention training or had a policy for violence protection. This is confirmed by recent EU-OSHA research in the transport sector (EU-OSHA, 2011a), which recommended that specific prevention policies should be introduced and risk assessment and prevention should take into account both the increasing number of women working in the transport sector and the increasing number of female service occupations found in this sector (e.g. caterers on trains, sports trainers on ships, cleaners).

While younger women are more likely to work in the retail and Horeca sectors, older women are more likely to work in education and healthcare.

Further, women moving into traditional male professions such as construction and civil engineering may start to assume the work habits of their male colleagues (long hours, presenteeism, visibility), which will tend to maintain the status quo and will not help to improve work-related outcomes such as job strain.

The choices women make professionally are also reflected in their education: many more women than men are educated to a tertiary (university) level in most European countries. However, there is still a marked difference between the fields of education in which women and men successfully complete (the first stage of) tertiary-level programmes. While women make up a large majority of those graduating in law, business, social sciences, health and welfare, teacher training and education programmes, the reverse is the case in engineering, manufacturing and construction. Overall, this may perpetuate the present segregation and should be taken into account when designing policies and allocating resources.

Informal work

Another source of work for women are those jobs described as informal work. Informal work could be considered as a growing 'sector' as it has an increasing rate of employment, with most of the jobs filled by women. However, informal work is hazardous for women as it makes them vulnerable to harassment and violence and exposes them to various physical risks and unfavourable working time arrangements. Precise data on employment in the informal economy are difficult to come by. As demonstrated by various studies discussed in this review, this employment is difficult to measure because it is highly complex; in addition, people involved in these activities try not to be identifiable.

Another problem is that countries define informal employment differently; as a result, the data collected reflect only a partial picture of the scope of activity that is taking place in the informal economy. For example, many of the data collected at the national level refer only to those workers whose main job or only job is in the informal economy, leaving out those who have secondary jobs in the informal economy (a number thought to be quite large in some countries). Many types of informal work and sectors are 'engendered' in the same way as they are in the 'visible', formal side of the labour market. The main features of both male and female informal workers are their insecurity and vulnerability, as well as their higher poverty risk compared with 'formal' workers.

Most people working informally, and especially women, are deprived of secure work, benefits, protection, representation or voice. A special Eurobarometer (Riedmann and Fischer, 2007) represents the first attempt to measure undeclared work on an EU-wide basis and showed that one-third to one-half of all suppliers of undeclared work are women. Younger people, the unemployed, the self-employed and students are over-represented in informal work. Household services are the most significant undeclared activity, including cleaning services, care for children and the elderly. Another area is the Horeca industry.

Many women in rural areas are engaged in occupations that are comparable to a professional activity but are not recognised, protected or paid as such. Further, women in rural areas are more affected by hidden unemployment than men owing to traditional role models and the poor provision of infrastructure, such as childcare facilities, in many areas. Some specific risks faced by these women

include the lack of basic rights such as holidays and insurance, a lack of information about risks and preventive resources and a lack of workers' representatives. Evening, night and weekend work are quite common in Horeca, as are irregular shifts. These patterns (i.e. working in the evening, at night and at weekends) often lead to increased tiredness and problems with combining work and non-working life, including child- and homecare duties and parental care duties, which are more likely to affect women.



Courtesy of the Belgian public service Employment, Labour and Social Dialogue.

Literature sources directly addressing OSH in the context of undeclared work were not found, for either men or women. Data are often dispersed and presented in non-official reports. Nevertheless, some information about labour/working conditions is available in studies at both EU and national level, often related to sectors. As demonstrated in previous EU-OSHA research (EU-OSHA, 2007a, 2008a), there are no measurements of health status of undeclared workers (such as self-estimated health, absenteeism, work accidents, mental ill health) and they are likely to be under-reported in occupational statistics.

The particular challenge for OSH prevention regarding undeclared work remains the inaccessibility of the workers and their workplaces for labour inspections. The particular combination of uncontrolled workplace exposures, precarious labour relations, fear of losing one's job, lack of knowledge about rights and lack of representation make it difficult to reach these workers. Knowledge about OSH in sectors typically viewed as having a high percentage of female workers and activities where informal work is more prevalent is a good starting point in determining the risks and health problems faced by women who work undeclared.

Knowledge about OSH in sectors typically viewed as having a high percentage of female workers and activities where informal work is more prevalent is a good starting point in determining the risks and health problems faced by women who work undeclared. Clients of such services should be included in the target groups for OSH information and campaigning for prevention in these sectors, as should the organisers of such services.

Whereas enforcement in agriculture and Horeca may have become easier, traditional approaches to implementation of workplace legislation fall short of measures in some areas, such as home services. A recent Eurofound report (Eurofound, 2005) provides an up-to-date evaluation of current different approaches and measures used in the 27 EU Member States to tackle undeclared work. Some policy measures are applicable to typical female activities, mainly household services. Service vouchers to buy services at a lower price, or widespread childcare facilities to eliminate this sector from the undeclared economy, can be seen as an example. In Slovenia, the above-mentioned activities and arts and crafts work and similar activities were identified as 'personal supplementary work' in a regulation that established a procedure leading to notification. This is the first step towards the implementation of legislation, including OSH regulations. These measures could be complemented by OSH measures, as has already been proposed in some Member States, for example in home care, a sector that has increased in size with the increasing age of the European population, for which basic guidance can be provided on protecting workers who provide care services in private homes. Clients of such services should be included in the target groups for OSH information and campaigning for prevention in these sectors, as should the organisers of such services.

Female migrant workers

One growing trend affecting the OSH of female workers is the rising migration rate of women, which is close to that of men. Migrant women workers may face double or triple discrimination, especially when they work 'informally'. Other groups with a high proportion of informal workers, include unemployed people, the self-employed, seasonal workers, students and children, many of whom are female. An increasing trend includes those women who engage in domestic work or work as cleaners. Women in these sectors may not speak the language of their employer, may not receive training or OSH information, may have to work long hours and may be asked to do tasks without the correct equipment. They may also be subjected to harassment, violence, victimisation, discrimination and low pay.

Women migrant workers in Europe tend to work to a greater extent in areas that are open to them, such as the social work and household services sectors, with these offering few chances to leave or obtain promotion. They tend to get jobs in workplaces that have little culture of safety and health training. Pregnant immigrant workers are a particularly vulnerable group, and workplaces are rarely adapted to protect them from health and safety risks.

Studies have identified language problems, poor communication and on-the job training, hours of work and fatigue as possible factors for higher workplace injury rates for ethnic minorities. Accidents and lost-time injury were also associated with length of time at work, ethnicity and having had near-miss injury events. Immigrant workers are rarely covered by official statistics or surveys. Therefore, there is a lack of data on the risks to which they are exposed and the health problems they incur. This is even more of an issue for service professions, which tend to be excluded from the data because of the temporary and precarious character of the contracts.

Family obligations have a significantly higher impact on activity and employment of female immigrants than for female nationals. This reflects cultural norms, but is also highly influenced by restrictions in labour market access for female workers migrating for family reasons.

Migrant women are not a homogeneous group. Second-generation migrant women have better educational levels and better integration into the labour market than those of the first generation and even nationals in some Member States. The success factors behind these positive trends should be analysed and shared among Member States to improve the situation for young female immigrants as well as young women in general.

Studies have identified language problems, poor communication and on-the job training, hours of work and fatigue as possible factors for higher workplace injury rates for ethnic minorities. Family obligations have a significantly higher impact on activity and employment of female immigrants than for female nationals. Migrant women are not a homogeneous group. Second-generation migrant women have better educational levels and better integration into the labour market than those of the first generation and even nationals in some Member States.

Accidents at work

The fact that men are more likely to experience accidents at work, because of their involvement in more 'high accident risk' sectors, has not changed, but, overall, there has been a decrease in the rate of accidents. According to a recent EU study (Eurostat, 2009a, 2010a), when women do experience accidents at work it is most likely when they work in the 'agriculture, hunting and forestry', 'hotels and restaurants' and 'health and social work' sectors. Unlike the accident rates, the rates for work-related health problems are similar in both genders. Female workers with work-related health problems most often report MSDs (60 %), of which 16 % also report symptoms of stress, depression and anxiety.

There is another difference between the genders: accident levels among men seem to taper off with age, while there is almost no influence of age on the percentage of female workers who suffered an accident.

Accident levels among men seem to taper off with age, while there is almost no influence of age on the percentage of female workers who suffered an accident. This difference should be further analysed.

There is also a methodological issue to be raised. A 2002 study (Dupré, Eurostat 2002) found that the difference between women and men was smaller when incidence rates were calculated on a full-time equivalent basis, because women worked part time more often than men and were therefore exposed to the risk of accidents for shorter times. If the incidence rates were also standardised for the different occupations in which women and men work, the incidence rates were almost equal in Denmark, Ireland and United Kingdom. Unfortunately, these standardised data are not available from Eurostat for other years.

A 2002 Eurostat study found that the difference in accident rates between women and men was smaller when they were calculated on a full-time equivalent basis, because women worked part time more often than men and were therefore exposed to the risk of accidents for shorter times. If they were also standardised for the different occupations, the incidence rates were almost equal.

There is more information now than before about the types of accidents and health problems women are exposed to at work, which are more recognised as directly linked to the differences in the type of work they do. Women are more exposed than men to slips, trips and falls and to accidents linked to violence. In an exploratory Eurostat study looking at the causes and circumstances of accidents, the most frequent types of deviation in women were 'slipping, stumbling and falling', causing 29 % of the severe accidents in 2005, and 'body movement under or with physical stress', causing 21 % of severe accidents. Women significantly more often suffered accidents involving 'office equipment, personal equipment, sports equipment, weapons and domestic appliances' and 'living organisms and human beings'. This seems to be linked to the occupations and sectors in which they work, and also means that accident prevention needs to be refocused to address the circumstances relevant for these accidents if it is to be effective for female workers.

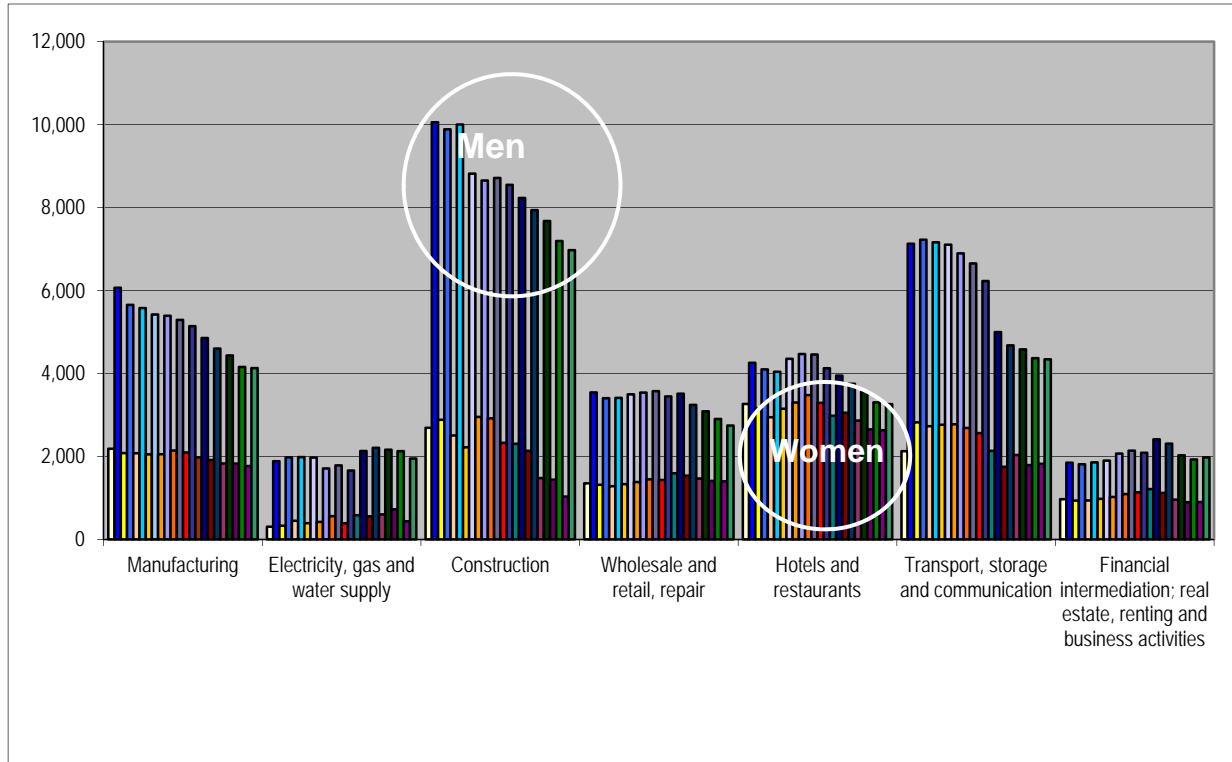
Some of the characteristics of work that women do, for example work organisational issues such as monotonous and repetitive work leading to fatigue, interruptions (considerably more frequent in female jobs) and lower autonomy, together with less access to training, may also lead to increased accident risk.

Women significantly more often suffer slips, trips and falls and accidents involving 'office equipment, personal equipment, sports equipment, and domestic appliances' and 'living organisms and human beings'. This is linked to the occupations and sectors in which they work.

Economic sectors with the highest incidence rates of accidents for women were 'agriculture, hunting and forestry', 'hotels and restaurants' and 'health and social work' (Figure 5, incidence rates: male workers – blue-green, female workers: red-orange). Owing to the high percentage of women working in services, the highest absolute numbers were found in the 'public administration', 'education', 'health and other services sectors. Eurostat now publishes incidence rates for accidents in public administration, education, health and other services (NACE L-P), with many of these jobs in the public sector. In the past, however, over 45 % of employed women working in these sectors were not

covered. In the 'agriculture, hunting and forestry' and 'health and social work' sectors we find both a high accident rate and a high prevalence of work-related health problems.

Figure 5: Standardised incidence rate of accidents at work by economic activity, severity and sex (per 100,000 workers), EU-15, 1995–2006*



Source: Eurostat, ESAW (2008)

(*)incidence rates: male workers – blue-green, female workers: red-orange

Eurostat now publishes incidence rates for accidents in public administration, education, health and other services (NACE L-P), with many of these jobs in the public sector. In the past, however, over 45 % of employed women working in these sectors were not covered. In the 'agriculture, hunting and forestry' and 'health and social work' sectors we find both a high accident rate and a high prevalence of work-related health problems.

Commuting accidents and accidents when driving to work

On average, both men and women aged from 20 to 74 spend at least 1 to 1.5 hours per day travelling to and from work. However, the modes of travel differ between the genders. Female workers seem to use private cars less often and seem to spend more time walking than their male counterparts. The different modes of transport, and different family obligations, may have an impact on women's commuting accident patterns, and this should be explored. The concept of a commuting accident may have to be revised to, for example, take into account an accident occurring when taking children to school before going to work, which, according to some studies, remains largely a female duty. A recent review of commuting accidents in Germany (Eurogip, 2012) has demonstrated that rates of non-fatal accidents are particularly high in the health and welfare services, administration and retail and warehousing and that a high percentage of the fatal commuting accidents also happen in these female-dominated sectors.



Photograph by Josu Gracia (EU-OSHA photo competition, 2009)

Exposures, health problems and occupational diseases

The occupational health risks of female workers tend to relate to their exposure to material, physical and ergonomic hazards, as well as intimidation and discrimination at work. These types of exposures are especially high for women who work in agriculture, hotels, restaurants and catering, transport and manufacturing. Women in the manufacturing sector also report high rates of exposure to vibrations, which is a risk not normally attributed to 'female' workplaces. In addition, although initially it may seem that male workers are more exposed to specific risks than their female counterparts, because female workers are segregated largely into fewer sectors and often perform different tasks from men, they may be more exposed in some instances than their male colleagues. According to the fourth EWCS, on average substantially more male (43 %) than female (25 %) workers have to carry or move heavy loads at work. However, the exposure to jobs involving lifting or moving people has a higher prevalence among female workers (11.1 %) than among male workers (5.8 %) and is of course one of the main factors in health- and homecare.

One of the risk factors for which exposure of women remains underassessed is noise at work, which continues to contribute to a high proportion of occupational diseases, mainly recognised for male workers. Generally, women appear to be more exposed to medium levels of noise, with the exception of known high-noise sectors such as textile and food production. Moreover, women are occasionally exposed to sudden and disturbing noise, which can be considerably higher than for male workers. This is particularly the case for the female-dominated education, health, hotel, restaurant and catering and social sectors, as well as for jobs in call centres and other offices. A high proportion of women in these sectors report tinnitus, and a considerable proportion also suffer voice disorders. Interestingly, according to Schneider (EU-OSHA, 2005b), the proportion of women reporting that they suffer from noise at work was higher in the newer Member States than in the EU-15. Noise levels may be high in some occupations, such as work in nurseries and primary schools, in emergency wards of hospitals or in school workshops, where they may be above the permissible occupational exposure limits. Medium- and high-level noise may also lead to circulatory diseases and contribute to work-related stress.

Generally, at first glance, male workers seem to be more exposed to vibration than their female counterparts. However, as female workers are more segregated into fewer sectors and often perform different tasks from men, the data should be extracted by sectors and occupations. When specifically assessed, 30 % of female workers are exposed to vibration in manufacturing. Accordingly, vibration should be regarded as a priority for prevention in women's workplaces in industry. Female workers may also be exposed to high noise levels and ergonomic risks, as well as accidents involving machinery in the relevant sectors, for example agriculture, food production and the textiles industry.



Courtesy of INSHT

Mental health problems — an emerging issue

Within the Labour Force Survey 2007 ad hoc module on accidents at work and work-related health problems, 8.6 % of workers in the EU-27 (excluding France) reported one or more work-related health problem during the 12-month period before the survey. Rates were similar for female and male workers. The prevalence of work-related health problems increased with age for both genders from approximately 3 % in the age group 15–24 years to nearly 12 % in the age group 55–64 years. This is in contrast to the frequency of accidents at work, which remained almost constant in women and declined with age in men. Within the group of female workers with a work-related health problem, 60 % reported MSDs. Stress, depression and anxiety were reported by 16 % of the women and headache and/or eyestrain by 6 %. All other illnesses or complaints were reported by fewer than 5 % of the women.

Across the EU there is an observed trend of increasing absenteeism and early retirement due to mental health problems, particularly in relation to stress and depression. Women are particularly affected by this trend. The Mental Health Foundation (2007) suggests that women are particularly exposed to some of the factors that may increase the relative risk of poor mental health because of the role and status that they typically have in society. Some of the key social factors that may affect women's mental health include:

- More women than men act as the main carer for their children and they may care for other dependent relatives too — intensive caring can affect emotional and physical health, social activities and finances.
- Women often juggle multiple roles — they may be mothers, partners and carers, as well as being employed in paid work and running a household.
- Women are over-represented in low-income, low-status jobs (often part time) and are more likely than men to live in poverty.
- Poverty, working mainly in the home on housework and concerns about personal safety can make women feel particularly isolated.

The characteristics of their work, lack of career progression, multiple jobs, work intensification and lack of autonomy contribute to higher strain and stress levels.

Client work, violence and harassment

According to the latest European workers' survey, women have a higher psychosocial risk because they work in jobs where there is more direct contact with clients. Women reported slightly higher levels of unwanted sexual attention, threats, humiliating behaviour, sexual harassment and bullying, while men reported higher levels of physical violence at work.

Recent EU-OSHA research on the transport sector had similar findings and illustrates some of the major issues. While workers were increasingly exposed to violence, the possibilities for reporting and tackling violent incidents were limited. Transport workers were often found to be at the forefront of reorganisation and were at the 'front line' communicating organisational changes to the clients. They were therefore exposed to angry reactions and harassment. The report therefore recommended that reporting procedures be implemented and improved, and that the prevention of violent incidents and harassment by customers be included in general OSH management. It also recommended that workers be offered more support. Regarding female workers, the report found a lack of adaptation of physical and organisational conditions to female workers and recommended urgent implementation of changes. One study referenced in the report found double (racial and gender) discrimination against female public transport staff. Transport jobs with an increasing proportion of female workers were school bus drivers, and workers in public transport, taxi and courier services. Additionally, while often exposed to similar risks, support and administrative female staff were often overlooked. Typical examples are cleaners and office workers in the transport sector, and also hospitality workers on ships or trains.

EU-OSHA research on the transport sector found a lack of adaptation of physical and organisational conditions to female workers and recommended that changes be implemented urgently. Transport jobs with an increasing proportion of female workers were school bus drivers, and workers in public transport, taxi and courier services. Cleaners and office workers in the transport sector, and also hospitality workers on ships or trains, were often overlooked.



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In general, the risk of experiencing both threats of violence and actual violence is greatest in the healthcare sector, public administration and in defence, but other occupations are also seeing an increase in violence. There are considerable differences between the various Member States; these differences may be due to under-reporting in some countries and greater awareness in others. One of the occupations at risk is teaching, in which women make up the majority of the profession and at least one-third of the six million teachers in the EU are over the age of 50. The violence in schools could emanate from several sources: pupils, parents of pupils and other teachers. However, this is not a well-researched area and more research needs to be carried out into the causes and consequences, so that better solutions to address violence in schools can be generated. Cyber-harassment, as a relatively new form of bullying, the use of information and communication technologies for repeatedly deliberate and hostile behaviour by an individual or a group, with the intention to harm others, is prevalent among teachers. It may take the form of continuous e-mail sending, threats, making teachers the subject of ridicule in forums or posting false statements. A survey among national teacher

organisations revealed that the most frequently cited cause of cyber-harassment was gender, followed by racial or ethnic origin, sexual orientation, age, disability, religion and belief.

A recent EU-OSHA review on violence and harassment at work (EU-OSHA, 2011b) also provides an in-depth review of data from the different Member States, and EU-OSHA has provided advice on how to organise OSH prevention and examples of good practice in several of its information products. The report presents the prevalence of violence and harassment at work based on international and national statistics, as well as the results of scientific studies on antecedents and consequences of work-related violence. A survey of the Agency's focal point network suggests that there continues to be insufficient awareness and recognition of problems with third-party violence and harassment in many EU Member States, and there is a clear need to promote and disseminate good practice and prevention measures that are sensitive to the national context. Some measures proposed by the EU, International Labour Organization, World Health Organization and national experts are included in this report.

Another gender difference can be found regarding unwanted sexual attention. Sexual harassment is reported three times more often by female than male workers in Europe. The gender difference is even clearer when results are viewed at the country level. Women under 30, and women in white-collar occupations — particularly in management — are particularly at risk of unwanted sexual attention. Moreover, women on fixed-term contracts or temporary agency workers (5 %) report higher levels than those on indefinite contracts (2 %).

Discrimination and harassment often go hand in hand. Interestingly, in 2005, almost 42 % of the females who reported experiencing age discrimination also cited acts of bullying or harassment at the workplace. This proportion can be compared with an overall average incidence of bullying or harassment of about 6 % among female workers. Moreover, almost 23 % of women who experienced age discrimination also reported gender discrimination, compared with about 2 % of female workers overall.

Workers who experience violence or bullying at the workplace have more work-related health problems than those who do not. The potential exposure to occupational violence was found to be associated with a significant increase in the potential risk of both depression and stress-related disorders in both women and men. The relative risk was found to increase incrementally with increasing prevalence of violence and threats. Violence and harassment at work has immediate effects on women, including a lack of motivation, loss of confidence and reduced self-esteem, depression and anger, anxiety and irritability, and may contribute to the development of MSDs. Over time, these symptoms are likely to develop into physical illness, reproductive disorders, cardiovascular diseases and mental disorders, and may culminate in an increased risk of occupational accidents, invalidity and even suicide.

Furthermore, women who work at their clients' premises may be particularly vulnerable to attack, whether physically or psychologically. The scope for adapting their conditions may be limited and they may work in several jobs and for several employers. Policy and prevention needs to address the specific situation of these women and identify ways by which to enforce the principles of OSH legislation for them and demonstrate how they could be better protected. How to reach these workers and consult them about their specific situation may be a particular challenge for inspection and prevention services.

Women returning to work from caring responsibilities often have to suffer from discrimination, such as being given only limited job responsibilities, unfair work allocation and/or denial of access to specific tasks. Women who work part time, on shifts and on non-standard working hours may be left out of the equation and not be addressed by prevention efforts.

Managers and workers need training on how they can most effectively address violence and harassment. Effective management also includes providing information to the customers and wider public. Lone workers' safety systems are applied in other areas of industry. They could also be adapted to the specific needs of female-dominated service sectors.

Musculoskeletal disorders (MSDs) — an increasing health problem

Musculoskeletal disorders and work-related stress remain more of a concern for women than for men (as shown in previous EU-OSHA research on gender issues at work (EU-OSHA 2003a), Table 1 and 3). They may also interact to aggravate the problems.

In connection with MSDs, the lifting of heavy loads or people remains a risk for women workers, especially those who work in healthcare or carry out informal work. For example, as shown in this review, a German study found that healthcare workers carry greater loads than construction workers. Overall, the data reflect the misperceptions that continue to exist about what is strenuous work, especially for those jobs mainly done by women.

When extracting the data by sectors and occupations, interesting results are found. As an example, carrying or moving heavy loads affects on average 5.8 % of workers, but in the female-dominated healthcare sector it affects almost half the working population (43.4 %), an effect suppressed by a general averaged appreciation of the situation. Considering that the main group in the healthcare sector is characterised by middle-aged to older women, this highlights the need for them to be considered for prevention.

The different female-dominated sectors show distinct patterns of exposure to risk factors that have been related to MSDs, and this should be taken into account when designing OSH prevention and action for these workplaces. In the hospitality and retail sectors, jobs tend to be more monotonous and repetitive, with fewer training needs reported and fewer learning opportunities, whereas jobs in the health sector, public administration and education seem to be characterised by complex tasks, higher training needs and more learning opportunities. Team working and task rotation are quite common in the health sector, while the education sector is characterised by more lone work. In education, public administration and education workers report that they have to solve problems more often than do workers on average.

Regarding recognised occupational diseases, while the incidence rate of MSDs is lower in female than in male workers, with the exception of carpal tunnel syndrome and hand and wrist tenosynovitis, when considering all occupational disease, MSDs make up a much higher proportion of all recognised occupational diseases among female workers than among male workers. The prevalence and incidence of MSDs differs by occupational sector among women.

Research by EU-OSHA has shown that the risk of MSDs among women may be under-rated, and that specific diseases linked to prolonged standing, sitting and static postures may be left out of the picture. But some Member States have designed effective programmes to tackle static work, for example in office jobs.

Recent research by EU-OSHA (EU-OSHA, 2010) has shown that the risk of MSDs among women may be under-rated, and that specific diseases linked to prolonged standing, sitting and static postures may be left out of the picture. For example, French researchers found that certain jobs were



Courtesy of INSHT

linked to an increased risk of osteoarthritis in the knees, hips and hands; the workers found to be most at risk were female cleaners, women in the clothing industry, male masons and other construction workers, and male and female agriculture workers. This is why the report recommended that national worker surveys be extended to include lower-limb symptoms, for example pain in legs, hips and knees, in their assessments and that they record static postures and prolonged standing and sitting and their health effects. Static work is not currently assessed, and the related health effects are under-researched. Some national surveys address these risk factors and demonstrate that women may be considerably affected by them — a fact that is currently excluded from the general European picture.

Many of the MSD problems experienced by women workers can be exacerbated by the fact that work equipment (such as desks, chairs and factory benches) is designed to meet the ergonomic needs of the average male. Gender insensitivity to the way in which work and workplaces are designed could contribute to repetitive strain injury among female workers.

Static work may affect women in particular, as more women than men work in the public service and in office jobs. With computers and the use of e-mail, there is no longer much need for people to move around the office. The everyday tasks that used to be a routine part of office work — hand-delivering documents, walking over to co-workers to discuss issues or share work — can now be accomplished with a simple mouse click. No movement is required. There are examples of good practice to address these problems. The German ‘New Quality of Work’ initiative developed a brochure offering advice to workers who spend much of the day sitting down, to help get them up and moving more often. Basic information is given on how to incorporate appropriate work organisation into office workplace design, including ‘dynamic’ furniture to make it more motion-friendly. It provides guidance on how workers can alternate work postures, and offers dynamic solutions for frequent movement to help workers stay healthy. It is EU-OSHA’s role to collect such examples across Member States and help in promoting and sharing these positive experiences.

In some Member States, rates of MSDs are also increasing among young workers. This should be explored to target prevention to young women and tailor it to their specific conditions at work.

In some Member States, rates of MSDs are also increasing among young workers. This should be explored to target prevention to young women and tailor it to their specific conditions at work.

Alongside understanding the role of work-related risk factors for MSDs faced by women workers, it is also important to identify and understand the nature of risk factors faced by women at home and how these contribute to or interact with risk factors in the workplace. Risk factors at work (repetitive work and poor ergonomic equipment) and factors at home (having less opportunity to relax and exercise outside of work) may help explain the observed gender difference in symptom severity.

There is a perception that the invisibility of risks is natural for women, and this is facilitated by the stereotyping of the effects of the distribution of risks. For example, it is accepted that women who work as nurses and teachers will cope with their workload, as part of the natural condition of being mothers, sisters and spouses, and so are better conditioned to deal with difficult patients, for example. The ‘risk’ therefore has traditionally tended to be ignored in such situations.

It can be concluded that the definite conditions of work need to be considered, regarding not only physical risks but also organisational risks, when risk assessment is carried out.

Avoiding assumptions is key to setting up appropriate prevention measures and providing the many female workers in these sectors with appropriate training and support.

Women’s exposure to dangerous substances remains largely unexplored

This review found that exposure to dangerous substances remains underassessed. The EWCSs over the past 20 years revealed that female workers are more often exposed to infectious materials such as waste, bodily fluids and laboratory materials at work, and female workers report more infectious diseases than their male counterparts.

Among the exposures to dangerous substances, handling chemical substances and infectious materials can be found mainly in the female-dominated health sector, but also in other service occupations. These exposures are often overlooked. Moreover, workers in service sectors, such as healthcare, hairdressing and cosmetology, may also be exposed to dangerous carcinogens at work. In ‘green jobs’, such as waste management, women may be exposed to asbestos and silica dusts, as well as a variety of chemical substances and biological agents. Food manufacturing and textile and leather industries are other sectors where women may be exposed to a variety of chemicals and biological agents.

Women are generally not considered to be exposed to carcinogens to the same extent as men, but they may be in specific occupations, for example dry-cleaners exposed to trichloroethylene; dental workers exposed to beryllium; healthcare workers exposed to the hepatitis virus, which may cause liver cancer, or cytostatic drugs; or manufacturing workers exposed to silica or mineral fibres. This is also reflected in the low number of notified occupational diseases, although with wider screening and monitoring national figures have revealed a slow increase in notified mesothelioma cases in women.

Exposures in these occupations, but also in other tasks such as cleaning, may be varied and are often unpredictable. This is why it is crucial to avoid assumptions about what women are exposed to and to



Courtesy of INSHT

apply the same principles of risk assessment, substitution and elimination, and the hierarchy of prevention measures, as defined in EU prevention approach, as for other workers. Table 1 provides an overview of the many exposures that women may incur.

Table 1: Examples of potential exposures to dangerous substances for female workers

Substance	Source	Circumstances	Occupation, task
Solvents	Cleaning products Fuels Ambient air Paints, inks, glues and varnishes Cosmetics Resins and glues Drugs	Cleaning Dry-cleaning of textiles Printing Laboratory work Handling medication Fabrication of dental and optometric devices	Manufacturing Leather industry Textile industry Cleaners and dry-cleaners Hairdressers Service workers on ships, trains, buses Printing Laboratory work, pharmacists, chemists
Disinfectants	Cleaning products Healthcare products	Cleaning work areas Disinfection in healthcare	Healthcare workers Cleaners Maintenance workers
Cosmetic products		Hairdressing Domestic care Healthcare	Hairdressers Healthcare workers
Dusts, particles	Dangerous goods Textile fibres (e.g. cotton) Foodstuffs (grain dust, dust from stored foodstuffs)		Textile workers Cleaners and dry-cleaners Maintenance workers
Pesticides and storage chemicals	Foodstuffs Storage Plants Animals	Agriculture and farming Horticulture Workers who handle goods from containers and in storage areas	Farmers and agricultural workers Gardeners Retail Cleaners
Flammable and explosive substances	Solvents (see above) Fuels	Cleaning, dry-cleaning Handling solvent-containing products Accidents and spills Maintenance Refuelling	Cleaners, dry-cleaners Manufacturing workers Maintenance workers
Exhaust fumes Diesel exhaust and particles	Exhaust from combustion engine, including diesel and other engines on trucks, ships, trains and buses	Unintentional contact when loading and unloading Maintenance	Maintenance workers Retail workers Drivers, delivery and cargo workers

Substance	Source	Circumstances	Occupation, task
		Refuelling Vehicle parking areas	Couriers Workers on business trips Transport workers
Sensitising substances	Foodstuffs, perishable goods Cleaning agents		Catering, cooks Cargo workers Cleaners
Biological and infectious agents	Animals Foodstuffs, perishable goods Insects and other vectors Contact with passengers, patients, clients	Cleaning Contact with foodstuffs Contact with infected clients and goods Contact with animals Cuts and stings Contact with infectious agents when travelling abroad	Farmers and agricultural workers Cleaners Service and maintenance workers Healthcare staff Hairdressers Catering staff Teachers and nursery workers Retail workers Home care
Lead and other metals	Manufacturing of electronic devices Dental care Optometrists	Manufacturing of dental prostheses, spectacles, electronic devices	
Carcinogenic substances			
Drugs	Cytostatic drugs		Healthcare
Asbestos	Insulation materials Waste management		Waste handlers Maintenance and cleaning workers Relatives of asbestos workers
Formaldehyde	Cosmetics Healthcare products		Hairdressers and associated professions Healthcare
Trichloroethylene	Cleaning, dry-cleaning Manufacturing		Cleaners and dry-cleaners Manufacturing
Beryllium	Dental workers		Fabrication of dental prostheses
Mineral fibres	Waste management Manufacturing of glass and objects made of glass		
Rubber constituents	Retail Manufacturing		
Ethylene oxide	Healthcare	Disinfection of medical devices	
Crystalline silica	Workers exposed to dust and ambient dust Sanding of manufactured textile and other products	Sanding of textiles Abrasive treatment of silica generating materials, such as glass	Manufacturing Textile industry Cleaners, e.g. on construction sites or from contaminated clothing
Tobacco fumes	Hotels, restaurants and catering		
Carcinogenic solvents	Manufacturing, for example of shoes and leather products	Use of paints and glues Use of organic solvents	Shoe and leather manufacturing

Substance	Source	Circumstances	Occupation, task
	Laboratories		Laboratory workers, chemists
Carcinogenic dyes	Textile industry Hair dyes	Dyeing of hair and textiles	Textile industry Hairdressers
Carcinogenic soldering fumes	Manufacturing of electronic devices		
Radioactive substances	Healthcare Laboratories		
Asbestos-containing talcum	Healthcare Laboratories		
Diesel fumes	Vehicles, including in storage areas	Working in storage areas Workers driving and attending vehicles	Transport workers Retail workers Couriers and workers on business trips Cleaners in areas with high numbers of vehicles

Gender differences in uptake and metabolism of dangerous substances have been further explored: it has been found that, on average, women have smaller body dimensions than men, which equates to a smaller surface for chemical exposure through the skin. However, despite this smaller surface their organ blood flow is relatively higher, thereby increasing the rate at which chemical substances circulating in the blood reach the tissues; their renal clearance is also slower than men's, which reduces their capacity to emit toxic compounds. As such, the gender perspective in exposure is very relevant.



Courtesy of the Austrian Workers' Compensation Board

Scientific evidence increasingly shows that some industrial chemicals, known as endocrine-disrupting compounds (EDCs), or hormone disruptors, can have considerable effects on workers and act on their offspring, particularly if exposure occurs during fetal development. Other stages of rapid development are also vulnerable to hormone disruption. With exposure, women and girls are at greater risk of developing reproductive health problems such as early puberty, infertility and breast cancer.

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Occupational diseases and cancer in women

Information on occupational cancer in women is still scarce, although the recent recognition of night work as a major cause of breast cancer has led to a breakthrough, allowing for organisational factors to be considered a leading cause for diseases normally attributed to dangerous substances. This review also confirms that cancer assessment and exposure monitoring for carcinogens, as well as occupational disease lists, are still strongly focused on male jobs and male exposures. Initial attempts have been made to provide advice on how to better organise shift work and rest schedules to prevent cancer risks. These initiatives are presented in this report.

One ongoing French study found similar rates of occupational cancer occurring in both genders from exposures to at least three different carcinogens. Recognised mesothelioma cases in women are also increasing, and a possible link between cancer and occupational exposure to chemicals has been established for women in some service occupations, such as middle-aged healthcare workers, hairdressers and textiles and home services workers.

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However, recognition rates are still very low, as is the state of knowledge about the exposures that may lead to occupational cancer in women. In the USA, the National Institute for Occupational Safety and Health (NIOSH) continues to study the links between the hazardous substances ethylene oxide (ETO), polychlorinated biphenyls (PCBs) and perchloroethylene and cancer in women (especially breast and cervical). ETO is used to sterilise medical supplies, and in 2001 it was estimated that more than 100,000 women in US workplaces were exposed to the substance. PCBs are compounds previously used in the electrical industry that have been banned since 1977. However, products made with PCBs remain in the workplace and in the environment, so workers remain exposed to the compound. Women who work in the dry-cleaning industry are exposed to perchloroethylene as it is the main solvent used in this industry.

Earlier studies that found that female flight attendants were at an increased risk of developing all cancers, particularly of melanoma and breast cancer, were confirmed.

A recent study (Tieves, 2011) has demonstrated that awareness may be key: a detailed analysis of national data on occupational diseases shows that diseases of female workers are significantly less often notified and, when they are, recognition rates are much lower. Many diseases are not assessed for their occupational component. The link between occupational exposure and disease is also much less explored for female workers, leading to omission of risk factors relevant for women from the overall assessment. This suggests the need for a better assessment of chemical-related cancer diseases in women.

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As noted, women work part time more often than men. Part-time workers tend to have less access to training, less control over their work, and less access to preventive services. These factors all increase their exposure. In this way, broader issues may considerably influence the health and safety situation and the ability of these workers to cope with their exposure. Also, they may be left out of relevant research and therefore overlooked. Exposures are rarely documented.

Combined exposures

This review attempted to explore literature describing combined exposure to women at work (Tables 2, 4). A recent EU-OSHA review (EU-OSHA, 2009a) addressed combined exposures to noise and ototoxic substances and found that they could be relevant to women in various sectors and occupations, in manufacturing sectors with a high proportion of female workers, such as food production and the textile industry, and also in service sectors such as hotel, restaurant and catering and healthcare, or in industrial cleaning and maintenance. Combined exposures of noise and chemicals may lead to neurotoxic effects.

The European Risk Observatory's emerging risks reviews have also highlighted combined exposure as a particular issue for research, especially for workers in service professions.



By courtesy of INSHT

Detailed analyses of national and European data sources show that in many professions women are exposed to several ergonomic risks at any one time, which in turn may contribute to the higher prevalence of MSDs when compared with male workers. The different sectors show distinct patterns of exposures to different risk factors, but in all sectors several risk factors are much more prevalent than on average. As an example, while workers in the hotel, restaurant and catering sector more often perform monotonous and repetitive tasks, carry heavy loads and are exposed to tiring postures, their counterparts in the healthcare sector report complex tasks, frequent interruptions and working with computers. Both groups are highly exposed to prolonged standing and other multiple physical and organisational risk factors that may lead to MSDs.

The European Risk Observatory's emerging risks reviews have also highlighted combined exposure as a particular issue for research, especially for workers in service professions.

In addition to the single risk factors, as demonstrated by a French study, multiple exposures to more than one risk factor related to MSDs are slightly more common among women than among their male counterparts (SUMER, 2003). Also, while exposures decreased with age for male workers, they increased for females. The patterns of combined exposures are also distinct and characterised by repetitiveness and postures that are particularly strenuous ergonomically (twisting, bending and stretching).

Other studies highlight prolonged standing and sitting combined with static work as particularly relevant for female professions and underassessed in national surveys and monitoring tools. A European study found that there was a higher proportion of women carrying out repetitive tasks for a longer period than men and that this may be because of the need to retain jobs in areas that suit their wider social needs.

According to the fourth EWCS, more female workers (48.5 %) than their male counterparts (43.1 %) worked with computers. Furthermore, female workers (38.0 %) used the Internet and e-mail more often at work than the opposite sex (34.5 %). Women predominate in health education and the public sector, as well as in clerical occupations, which can all be characterised by a greater use of IT, static postures and prolonged standing or sitting.

Complex tasks go hand in hand with the need for more training in healthcare and education, while monotonous tasks are combined with high speed of work and tight deadlines in the hotel, restaurant and catering sector. Common to all the service professions is that the pace is dependent on customers and there are frequent interruptions.

A recent EU-OSHA study (2009b) found that the age of workers and the fact that cleaners are working at night or early in the morning contributed to the risk of slip and trip injuries, as their reaction times increase and concentration levels decrease at night. A characteristic of the cleaning sector in Europe is the dominance of women, particularly mature women. However, age is not the only reason for high accident rates. Cleaners have to work with and on dirty floors, wet floors, different floor coverings and changes from wet to dry areas. Moreover, cleaners can seldom influence the orderliness of a workplace. Thus, the risk of a trip caused by objects dropped on the floor is quite high. The cleaning

industry also employs a high proportion of workers from ethnic minorities and many migrant workers, who may work without adequately understanding the instructions of the trainer or employer. Above all, there is a tendency to ignore health and safety in low-paid jobs such as cleaning.

While the review provides some recent information on combined exposures in female jobs, it also highlights this as an area where more research is needed to improve prevention.



Courtesy of INSHT

Table 2: Combined risks — a major issue for women at work

Risk factors and conditions	Outcomes
Working in service sectors	Stress and mental health problems
Jobs not covered by OSH legislation	
Prolonged standing and sitting	Different accidents: slips, trips and falls, violence related, needlestick injuries, cuts and sprains
Static postures	
Monotonous and repetitive work	Fatigue and cognitive disorders
Moving loads repetitively and moving people	
Exposure to biological and chemical agents	Musculoskeletal disorders
Client and patient contact	Infectious diseases
Working at clients' premises	Skin disorders, asthma
Multiple roles	
Lack of information and training	
Low control, autonomy and support	

Table 3: Examples of hazards and risks found in female-dominated occupations

Work area	Risk factors and health problems			
	Biological	Physical	Chemical	Psychosocial
Healthcare	Infectious diseases — bloodborne, respiratory, etc.	Manual handling and strenuous postures; ionising radiation	Cleaning, sterilising and disinfecting agents; drugs; anaesthetic gases	'Emotionally demanding' work; shift and night work; violence from clients and the public
Nursery workers	Infectious diseases, particularly respiratory	Manual handling; strenuous postures		'Emotional work'

Work area	Risk factors and health problems			
	Biological	Physical	Chemical	Psychosocial
Cleaning	Infectious diseases; dermatitis	Manual handling; strenuous postures; slips and falls; wet hands	Cleaning agents	Unsocial hours; violence, e.g. if working in isolation or late
Food production	Infectious diseases, e.g. animal borne and from mould spores; organic dusts	Repetitive movements, e.g. in packing jobs or abattoirs; knife wounds; cold temperatures; noise	Pesticide residues; sterilising agents; sensitising spices and additives	Stress associated with repetitive assembly-line work
Catering and restaurant work	Dermatitis	Manual handling; repetitive chopping; cuts from knives; burns; slips and falls; heat; cleaning agents	Passive smoking; cleaning agents	Stress from hectic work, dealing with the public, violence and harassment
Textiles and clothing	Organic dusts	Noise; repetitive movements and awkward postures; needle injuries	Dyes and other chemicals, including formaldehyde in permanent presses and stain removal solvents; dust	Stress associated with repetitive assembly-line work
Laundries	Infected linen, e.g. in hospitals	Manual handling and strenuous postures; heat	Dry-cleaning solvents	Stress associated with repetitive and fast-paced work
Ceramics sector		Repetitive movements; manual handling	Glazes, lead, silica dust	Stress associated with repetitive assembly-line work
'Light' manufacturing		Repetitive movements, e.g. in assembly work; awkward postures; manual handling	Chemicals in micro-electronics	Stress associated with repetitive assembly-line work
Call centres		Voice problems associated with talking; awkward postures; excessive sitting	Poor indoor air quality	Stress associated with dealing with clients, pace of work and repetitive work
Education	Infectious diseases, e.g. respiratory, measles	Prolonged standing; voice problems	Poor indoor air quality	'Emotionally demanding' work, violence

Source: EU-OSHA (2003a: 12–13)

Disability and rehabilitation

As work ability has become a major issue in social policy, as a result of the ageing of the working population, and considering the fact that female workers suffer more from diseases leading to long workplace absences such as MSDs and mental health problems, this review looked at women's access to rehabilitation and back-to-work schemes and disabled women's access to work. Work ability is also an important issue as more and more older women enter the labour market and the retirement age is being revised for women in many national pension systems.

In examining workers with disabilities and their access to vocational rehabilitation and compensation, the data show that, on average, within the EU women and men tend to have similar rates of disability. This equality tends to reduce, however, when workers access rehabilitation and apply for compensation. In general, doctors are less likely to recommend rehabilitation programmes to women, which may be one of the contributing factors to women's lower participation rates in these schemes. Other contributing factors may be their age, their lower income and the fact that they are often caring for dependants.

The study also found that there is no clear line drawn between acquired disability and disability linked to other factors, and this was especially true for female workers. When they gain employment, women with disabilities still have barriers to overcome, such as their perception of their job, underemployment, lack of accommodation for their disability and employers' attitudes. Accommodation is a crucial aspect of women's ability to progress in their careers. One issue that affected how women overcame problems was assistance at work, but this was most influenced by whether or not the disability was visible. One study reported that a larger percentage of women with 'visible' disabilities, such as amputations, artificial limbs or blindness that required the use of canes and guide dogs, were likely to state that they received assistance than those whose disabilities were less pronounced.

One study found that vocational rehabilitation training was biased towards industry rather than sectors such as services and the public sector, in which women predominate. In addition, the vocational rehabilitation schemes operated on the assumption that employment will be full time, so failed to take into account the working patterns that may be more suitable for women workers. This in turn led to low participation. As so few women chose to attend, there was no pressure on the centres to change their schemes to accommodate them. Another study remarked that compensation often fails to account for childcare needs while the rehabilitation takes place.

In Sweden, one assessment of the relationship between sick leave and disability pension found that, although more women than men were granted a disability pension because of their condition, more women were granted a part-time temporary disability pension and more men a permanent pension. This is despite women having a higher rate of long-term sick leave. Those authors suggest that as men are more likely to work full time there may be a cultural bias against giving them a partial pension. Also, they note that if women state that they are able to do housework, then they are rarely given a full-time disability pension. The need for women to consistently and constantly have to *justify* their right to compensation does not seem to have advanced far since the 1950s and 1960s, when the difficulties that women encountered when seeking compensation for work-related injuries and illnesses were first highlighted.

It can be concluded that there needs to be a higher take-up by women of these schemes, as women with disabilities, whether acquired at work or not, are limited in their choice of occupation, and may engage in jobs that are repetitive and could be more hazardous, as the workstations, machinery and equipment that they use are often designed for men.

EU-OSHA's research on young workers also found that access for young workers to rehabilitation schemes was very limited. This should also be considered for young women, particularly as research also shows that they display high levels of MSDs, and levels of disease in young people were found to be increasing in Member States where data were thoroughly analysed.

Conclusions for policy, research and prevention

A large proportion of women work in jobs that are safe and that offer training and promotion opportunities. However, many do not and it is important that these concerns are put on the agenda for policy-makers and researchers.

With more and more women working under non-standard working conditions, other issues that need to be addressed by research, legislation and prevention are:

- How to reach women who work weekends, part time and shifts.
- How to cover them in workplace inspections by inspectors or OSH professionals.
- How to assess their exposure.
- How to ensure their representation as workers.
- How to ensure the OSH of women who work in personal services, at the premises/homes of their employers.
- How to ensure the OSH of women who work for several employers.

It is important for women that risk assessments take account of psychosocial as well as physical risks. This is because most women, more so than men, work in education, healthcare, retail and the hotel restaurant and catering sectors, which entails having face-to-face contact with customers and clients. In addition, women continue to do most of the childcare and the housework at home. Many of these are public sector jobs for which OSH implementation is a challenge.

It must be remembered that women, as much as men, are not a single category of workers; they are a diverse labour force and the needs of the different age groups and different cultures within this body of workers may be different. In view of this, a more targeted, gender-sensitive approach to research and prevention is needed.

As outlined over the years, more information, and therefore research, is required to explore the links between women's reproductive health and the conditions under which they work. This is still not a priority within policy or research agendas and this needs to change. Further, women have a high rate of developing certain cancers, such as breast, colorectal and endometrial, which have been linked to environmental factors and working conditions, and more research is needed to further explore these connections.

Other broader issues

Work–life balance has been researched consistently over the last 20 years or so and the evidence shows that the ability to balance work and home life remains problematic for women and impacts on their psychological well-being to an even greater extent than for men. Women generally tend to be seen as the 'carers' within the social system and so assume responsibility for the home and for children and parents. Therefore, when the demands of work and home are combined, women have more responsibilities and work longer hours than men. Even in countries with 'women worker' family-friendly policies, women experience stress more often than men and are discriminated against with respect to work-related compensation for a disability because of their ability to do housework.

As with part-time work, some women choose to work shifts, again often to deal with childcare and eldercare obligations. Migrant women and those who work 'informally' are also likely to engage in these work patterns. These work patterns, while not gender specific, make women more vulnerable to work risks and hazards. It is important that OSH risks are analysed by gender and sector, as well as by occupation.

Implications for practice and research

This review examines many aspects of women at work and their OSH concerns. However, there are gaps in the research that need to be addressed, and there are policies that are promoted from a 'worker' perspective that is more beneficial to the male than the female employee. As this review shows, more research is needed in such areas as **non-standard working conditions, domestic workers within multiple households or multiple offices, ageing workers in the health sector, the increasing rate of work intensity, assessing risks for female workers, multiple exposures**

including biological risks, increasingly static work in services, women-specific research on rehabilitation and re-entry into work and informal work. These growing, but under-researched, areas should provide information that will outline to a greater degree the issues that impact on women's OSH. It is important to fit the job to the worker, rather than fit the worker to the job, especially when the worker can be seen from different perspectives, for example female, young, migrant or with a disability. Overall, OSH needs to reflect the specific needs of the worker.

Table 4: How employment trends and combined exposures may impact on women's OSH

Trends	OSH implications
Employment trends	
<p>Women are increasingly concentrated in part-time and casual jobs, particularly in the retail trade and consumer services sector, impacting on their salaries and career prospects</p> <p>Informal work and jobs in home care and as cleaners are on the increase, especially for migrant women</p> <p>Move towards 'mini-jobs' not covered by labour law</p> <p>Women continue to trail men in terms of career advancement, levels of compensation and gaining higher status</p>	<p>Stress and related health problems, fatigue and cognitive health problems</p> <p>Repetitive strain injuries caused by repetitive and monotonous work</p> <p>Low job control and autonomy, feelings of low self-esteem, low motivation and job dissatisfaction for women</p> <p>OSH difficult to organise for women who work at their clients' premises, how to enforce, how to assess risks, how to ensure labour protection</p> <p>Less access to (OSH) training, consultation, less representation in decision-making that may influence their working conditions</p>
Occupational segregation	
<p>Women continue to work mainly in services, whereas men work mainly in construction, utilities, transport and manufacturing</p> <p>Increases in activity highest for women aged 55–64 years</p> <p>Older women work more in education, health and social work and public administration</p> <p>Employment in manufacturing is decreasing</p> <p>Female workforce is ageing in some sectors (manufacturing, agriculture)</p> <p>Women highly represented in informal work, home and domestic services</p>	<p>Different risks for men and women — prolonged sitting and standing and static work are significant for women</p> <p>More client contact — more harassment and violence</p> <p>Different risks for different age groups — prevention should be tailored</p> <p>Occupational accident rates stagnating in some sectors, not recorded for education, healthcare and sectors with high rates of informal work (e.g. agriculture)</p> <p>Older women exposed to heavy work</p> <p>Less access to training for older women, less access to consultation, representation and preventive services in the informal sector</p>
Work organisation and working time	
<p>When both paid and unpaid work (domestic) are considered, women have the longest total working week, especially if they work full time</p> <p>Trend to irregular working times, especially in the informal sector, when working at clients' premises, and in the restaurant and hotel trade</p> <p>Shift and weekend work in Horeca, retail and healthcare concern women of all ages</p>	<p>Stress</p> <p>Circulatory disorders</p> <p>Reproductive problems</p> <p>Musculoskeletal disorders</p> <p>Less access to preventive services, consultation, and representation</p> <p>Difficulties in assessing what is work related and implementing changes</p>

Trends	OSH implications
Less autonomy at work	Labour law does not apply to mini-jobs, enforcement difficult Difficulties to enforce OSH for multiple jobs and constantly changing jobs Exposures difficult to assess for multiple jobs, difficulties to monitor and record risks and health effects
Younger women	
Unemployment gap between young men and women has clearly diminished; in some countries unemployment of young men has even become slightly higher. Younger women work more in retail and Horeca Younger women work more in low-qualified jobs and on temporary contracts Gender pay gap already at the start of career Employment gap particularly high for mothers aged 15–24 with very young children and school-age children	Different risks and trends for different age groups — prevention should be tailored Lack of experience and training of young women Younger women exposed to sexual harassment High exposure to violence, due to client contact Occupational accidents even increasing in some countries in female-dominated sectors, such as Horeca Less access to consultation, preventive services, representation at enterprise level Young mothers are a particularly vulnerable group

Policy recommendations

The European Commission's five-year Strategy for Safety and Health at Work 2007–2012 has recently been evaluated. As the European Parliament noted in its Resolution on the strategy in January 2008 (EP, 2008a):

it is worrying that the reduction in the number of occupational accidents and diseases has not been evenly spread as certain categories of workers (e.g. migrants, workers with precarious contracts, women, younger and older workers) certain companies (notably small and medium-sized enterprises (SMEs) and micro-enterprises), certain sectors of activity (in particular construction, fisheries, agriculture and transport), and certain Member States present rates of occupational accidents and diseases much higher than the EU average.

The Strategy set a target to reduce the incidence rate of accidents at work by 25 % for the EU-27, through support for the full and effective implementation of EU legislation. The Strategy also called for the development of national strategies to encourage and support approaches that are focused on health in the workplace and to identify new potential risks. However, there are clear indications that accident rates are stagnating or even increasing in some sectors with a high proportion of women, such as hospitality or retail sectors.

Specific actions in relation to OSH are also included in the Commission Staff Working Document on Actions to implement the Strategy for Equality between Women and Men 2010–2015 (EC, 2010b) to include measures to:

- promote health and gender impact assessment of policies and programmes;
- take due account of gender aspects in the forthcoming EU Strategy on Health and Safety at Work (2013–2020);
- take account of the gender aspects in the legislative work on ergonomics and work-related musculoskeletal disorders (WRMSDs) as well as in the preparatory work for a possible review of Directive 2004/37/EC; and
- take account of the gender aspects in the preparatory work for a possible review of Directive 2004/37/EC on carcinogens and mutagens.

Other recommendations can be drawn from the results of this report:

- The need for gender-specific safety and health legislation and monitoring should be reassessed, as sectors traditionally deemed as 'low risk', for example those involving education and office-related jobs, are now seen as more dangerous, for example regarding harassment and stress. It can be concluded that the definite conditions of work, regarding not only physical but also organisational risks, need to be considered when risk assessment is carried out. Avoiding assumptions is key to setting the appropriate prevention measures and providing the many female workers in these sectors with appropriate training and support.
- Improving the identification of risks and exposures will be important to 'make the invisible visible', as are improved data documenting these risks and exposures, and the related health effects, and a wider range of indicators and more differentiated monitoring instruments to reflect the tasks, occupations and risks specifically faced by women.
- Ensure women's participation in policy discussions and when drawing up legislation. It will be important to ensure that women participate in the development of OSH strategies and policies and their implementation in the workplace. For example, it will be important to ensure that more women elect directly and take roles as workplace safety and health representatives, and that the social partners play a key role in driving gender mainstreaming in OSH.
- Member States should be encouraged to actively implement gender mainstreaming in OSH and include the gender and diversity element in their national OSH strategies.
- As highlighted before by EU-OSHA, EU Member States, when transposing Directives, should ensure that gender is dealt with in a systematic and comprehensive fashion. This is especially important as more women are moving into occupations that were traditionally dominated by men, such as construction, transport and agriculture, and their OSH needs may differ.
- A broader and more holistic approach to OSH would also enable a shift away from an exclusive emphasis on accidents to a more comprehensive approach that takes into account psychosocial factors, work autonomy and work-life balance, among others.
- Recent trends in the world of work, such as the move away from industrial workplaces to services, increasing mobility, use of new technologies, intensification and increasing precariousness of work need to be assessed for their specific effect on women and their OSH. The adaptation of research and monitoring tools also needs to take account of these trends.
- Owing to the prevailing occupational segregation, there are different patterns of occupational disease and illness between men and women. As the standards continue to reflect male characteristics that do not take account of the physical and physiological differences between men and women, the current taxonomy still does not sufficiently reflect women's exposures and health problems at work. Although comprehensive studies have been conducted in the area of occupational exposures of women at work, researchers have highlighted the need for further exploration related to occupational exposures and women.
- Adapt labour inspection practice to the increasing number of women in the labour market, the observed shift from industry to services, and the changes in contractual arrangements. A gendered approach to interventions is warranted: resources should be assessed for the contribution they make for an increasingly female workforce, and for how they are adapted to the specific needs in these diverse service sectors. Design OSH prevention resources to address these changes.
- The differences between countries are enormous, and for this reason the situation should be assessed in a differentiated way, and by country. National OSH strategies that integrate developments which impact on the employment situation of women, such as education and vocational training, health provision, care facilities and employment strategies, could help tailor the actions at the national level and make them more effective. Furthermore, the gender impact of rapid changes in the newer Member States should be monitored in order to avoid the risk of wider gender inequality.
- The differences between Member States' policies should be explored to identify what the success factors are for the effective integration of women in the labour market, while at the same time taking account of their OSH situation.

- Some of the ways that have been proposed to make jobs safer include increasing and improving training to workers, especially those who work part time. For example, training and OSH education could be scheduled at times when part-timers or workers on flexible hours are able to participate. For older women entering the labour market after years of vocational inactivity, retraining would be beneficial. Flexible working would benefit women with work–family conflicts, such as child and elder care responsibilities.
- Female workers on business trips or workers who have to work at their clients' or patients' premises may not be covered by the usual OSH structures, such as OSH preventive services and inspections by the authorities. These workers may be more vulnerable and dependent on their clients, while at the same time have limited scope for adapting their working conditions. They may also work for several employers and in several jobs. Policy, research and prevention should address the risks that female workers on farms, in homes (home care, cleaners, childcare), driving for work and at clients' premises may face. Clients of such services should be included in the target groups for OSH information and campaigning for prevention in these sectors, as should the organisers of such services.

Monitoring and statistics

- Monitoring tools at the European level need to be critically assessed on how confounding factors and wider issues are taken into account. For the European accident statistics, it was found that the difference between women and men was smaller when incidence rates were calculated on a full-time equivalent basis, because women worked part time more often than men and were therefore exposed to the risk of accidents for shorter times. If the incidence rates were also standardised for the different occupations in which women and men work, the incidence rates were nearly equal for some countries. Unfortunately, these standardised data are not available from Eurostat for other years.
- All EU countries should be encouraged to have well-developed National Working Conditions Surveys, which are critically reviewed with regard to gender and diversity aspects, in order to obtain information that is standard across countries and provides detailed information.
- This may also support attempts to explore multiple exposures and design a more holistic approach to OSH research, prevention and practice.

Violence at work

- Measures to target violence and harassment at work should be adapted to the specific needs of the sector and group considered. EU-OSHA has produced some multilingual guidance for some of the sectors (education, healthcare, hospitality).
- Efficient reporting systems for violence at work should be put in place to address under-reporting. These systems need to be linked with quick measures for action, whether to provide immediate support to workers in case of an event or counselling after the event.
- Generally, a holistic approach to OSH should be taken which identifies and takes into consideration work–life balance, harassment and discrimination. To strengthen awareness of the need for such an approach, stakeholders should discuss OSH activities with regard to female workers.

Accidents and health effects

- Accident rates of female workers are not falling as much as they are for male workers. A lot is known about accidents sustained by male workers according to age groups and in the different sectors, but this is not the case for female workers. To target accident prevention, more information should be gathered about the type of accidents that women suffer in different occupations and sectors. Factors such as age, self-employment, sector and occupation, and migration background should be taken into account, as should multiple jobs. Part-time work and lack of access to preventive services could also be contributing factors.

- Women and men engage in different behaviours even when working in the same sector and in the same types of jobs. Women doing some jobs, such as taxi drivers, have significantly lower accident rates. This should be explored to help improve prevention.
- Static work, prolonged standing and sitting are risk factors particularly relevant to female service occupations that are not currently monitored and assessed in many workers' surveys, and the related health effects are under-researched. This is why a recent EU-OSHA report recommended that they be included in workers surveys, and that the occurrence of lower limb disorders in particular be investigated. Regarding age, the study demonstrated that MSD rates in young workers were increasing in some Member States. These trends should be followed up for young women and prevention measures tailored to reduce their MSD risk.
- Women are more susceptible to fatigue, depression and anxiety than men, and their poorer mental health may be linked to the multiple roles they perform on a daily basis. These data should be assessed in the context of cardiovascular diseases as the leading cause of death in EU countries.
- Exposures to dangerous substances in service occupations are common, but remain underassessed. Women's exposure in healthcare, hospitality, dry-cleaning, hairdressing and waste management may also involve carcinogens. Exposures in these occupations, and also in other tasks such as cleaning, may be varied and are often unpredictable. This is why it is crucial to avoid assumptions about what women are exposed to and to apply the same principles of risk assessment, substitution and elimination, and the hierarchy of prevention measures as defined in the EU's prevention approach for other workers. Gender differences in the uptake and metabolism of dangerous substances should also be explored further.
- Research needs to address occupational diseases affecting women, in particular occupational cancer. A detailed analysis of national data shows that diseases of female workers are notified significantly less often, and, when they are, recognition rates are much lower. Many diseases are not assessed for their occupational component. The link between occupational exposure and disease is also much less explored for female workers, leading to risk factors relevant for women being omitted from the overall assessment.
- A broader view on reproductive health is needed. As raised in 2003 by EU-OSHA, and as the 'lack' of research continues to highlight, there should be a greater focus on reproductive issues in respect of overall occupational risks in the research agenda. More importantly, while there is some research on pregnant women and new mothers, there is far less research on other women's life experiences, such as hormonal effects, menstruation disorders and menopause.
- Also, in 2003 the point was made that research in respect of cancer mainly involved men, and this situation has not changed, as shown in this review over the medium term, although efforts have been made in some areas, for example regarding breast cancer.
- Recognition of night work as a contributing factor to the development of breast cancer in female workers has broken the ground for the recognition of work organisational causes in the development of occupational cancer. This could pave the way for an entirely new approach to occupational cancer, taking into account so-called 'soft' risks, in addition to the known 'hard' risks. Equally, such approaches could help pave the way for a better exploration of occupational risks to both men and women in emerging service occupations and a more holistic approach to OSH research and prevention.
- Research by WHO (WHO, 2009) recommended that specific gender-focused research needed to be undertaken in occupational health policies and programmes, to improve training, capacity and the delivery of occupational health services.

Rehabilitation and reintegration

- Owing to the position of women within the workforce, policy-makers and labour organisations should be aware that women with disabilities are at risk of double or multiple discrimination and therefore require special attention, and policies with a focus on gender should make

allowances for this issue to reinforce guidelines for disability mainstreaming, especially as women with disabilities are discriminated against more than men with disabilities.

- Employers should be encouraged to have flexible and effective rehabilitation into work policies, so workers who are able to work only a percentage of the normal hours are retained in the workforce. This is becoming more of an issue as the working population in Europe is ageing. Female workers need to be explicitly addressed: rehabilitation measures should also be targeted at temporary workers and part-timers, who are often women, young or migrant workers.
- Rehabilitation and back-to-work policies should also address the pattern of work-related health problems specific to women, particularly the occurrence and distribution of MSDs and the higher prevalence of mental health disorders.
- Those responsible for implementing systems need to consider gender issues, and in particular the home life of women and how this affects their rehabilitation. Rehabilitation costs need to include both direct and indirect costs.

There needs to be more research for women on vocational retraining, rehabilitation and reinsertion into work.

Vulnerable groups of female workers

- Some groups of women, such as young women or young mothers, may be particularly affected by the financial crisis, and it would be worth monitoring how this impacts on their health and safety at work. In some sectors where women work in large numbers, such as the hospitality sector, accident rates are increasing or stagnating. As demonstrated in previous EU-OSHA research, young workers in these sectors may also be more vulnerable and their employment conditions (e.g. difficulties in entering the labour market, temporary or short-term contracts) may make them accept inferior conditions of work.
- Older women are more likely to enter the workforce than in the past, and they are a much-needed group due to the overall ageing population across Europe. In this respect any research and preventive measures that could be carried out to ensure a more productive working environment for this group should be explored.
- More research is needed to assess the prevalence and gender aspects of the phenomenon of undeclared work in the EU.
- A comprehensive analysis is needed in respect of working conditions to confirm if there are significant gender differences between the formal and informal economy.
- Information on migrant workers' OSH can be a source of data about undeclared workers and gender issues related to work. More research should be carried out on migrant women workers and undeclared work.
- It may be beneficial to develop synergies with organisations that provide support to informal workers, for example to run non-governmental organisation-defined OSH training for workers in this sector to ensure that they are better able to deal with some of the risks and hazards they may encounter in these jobs, as these workers are difficult to reach.



Courtesy of INSHT

Gender mainstreaming and OSH — examples of successful implementation

Information is particularly scarce on official policies that aim to target the specific conditions of women at work, including the effective mainstreaming of gender aspects into, for example, OSH legislation and inspection practice by taking a gender-sensitive approach. For the purpose of this report, EU-OSHA has collected information on examples from Member States (Table 5), in particular:

- OSH legislation specific to women at work and regarding OSH issues, which is additional to pregnant women and breastfeeding mothers provisions implementing the Directive.
- Results of targeted inspection campaigns.
- Guidance, for example on OSH and diversity issues addressing gender.
- Gender-specific studies on risk factors, such as:
 - exposure to violence and harassment;
 - exposures to biological and chemical agents, including exposures to infectious agents, ergonomic risks, climatic risks;
 - gender differences in accident risks and causes and circumstances of workplace accidents;
 - work organisational issues (unusual working time, shift work, lone work, etc.);
 - use of personal protective or other equipment; and
 - work in 'male' sectors.
- Information on health outcomes:
 - Specific health problems identified, for example in surveys, targeted research or inspections.
 - Specific recognised occupational diseases.
- Issues related to specific groups (lone workers, migrant workers, young or older female workers, etc.).
- Inclusion of gender issues in research programmes.
- Programmes about how to make labour inspectors 'gender aware' or incorporate gender issues in their work.
- Programmes about how OSH authorities incorporate gender issues in their work.



Photograph by Ruben Buhagiar (EU-OSHA photo competition, 2009)

- Assessing work programmes for gender balance (e.g. ensuring that hospitals, hotels, restaurants and catering services, as well as construction, receive attention; gender-sensitive budgeting ⁽²⁾).

Some of the examples are included throughout this report and in a dedicated chapter towards the end of the report (Chapter 8). A more detailed study of such good-practice examples is currently being prepared by EU-OSHA and will be published in 2014.

Table 5: Women and health at work — examples of gender-sensitive studies and policies included in this report

Country	Programme	Issue
Europe	NEXT	Exploring experiences of work-related violence and premature departure from their profession among nurses in 10 Member States
Europe	ETUCE Second Survey on Cyber Harassment of Teachers	Exploring national teacher unions' actions and strategies Gathering good practice to revise the ETUCE Action Plan on Violence and Harassment in Schools and include cyber-harassment
Austria (Austrian Labour Inspection)	Gender mainstreaming policy of the Austrian Labour Inspection	Gendered OSH strategy Policy for labour inspection activities, training of labour inspectors Guidance documents related to gender aspects of OSH and gender-sensitive workplace inspection Guidance for specific activities and emerging sectors/occupations, such as home care
Austria	Gender mainstreaming and noise exposure in orchestras	Risk assessment for female orchestra musicians Designing specific prevention measures (seating arrangements, hearing protection, screens,

⁽²⁾ According to the European Women's Lobby, 'gender budgeting' is the process by which public budgets are examined in order to assess whether or not they contribute to greater equality between women and men and subsequently to bringing about changes that promote gender equality accordingly. In the evolution of these exercises, the focus has been on auditing government budgets for their impact on women and girls. 'Gender-sensitive budgets' are not separate budgets for women and men. They are attempts to break down, or disaggregate, the government's mainstream budget according to its impact on women and men, and different groups of women and men (Women's Net, European Women's Lobby).

Country	Programme	Issue
		organisational measures)
Austria	Targeted campaign in nursing homes	OSH in elderly care homes and home care, gender-sensitive sectoral inspection and awareness-raising initiative to assess and improve the OSH situation of mainly female workers in the sector
Finland	The WORK programme focuses on women at work, especially with regard to the continuing increase in atypical employment contracts in Finland. In particular, two projects are funded by the Academy of Finland: 'Gender inequalities, emotional and aesthetic labour and well-being in work' and 'Impact of lifestyle modification on pregnant women's work ability, sick leave and return to employment'	Gender inequalities, emotional and aesthetic labour and well-being in work Mapping the practices of gender in working life more generally through qualitative case studies Analysing the practices of recruitment processes Practices of customer service in call centres and in women's small firms Impact of lifestyle modification on pregnant women's work ability, sick leave and return to employment Reducing sick leave Increasing work ability and return to work after maternal/parental leave
Finland	FIOH projects on women worker cancer survivors	Cancer survivors' employment Cancer survivors' work ability Cancer survivors' received and needed social support from their workplace and the occupational health services Cancer survivors' work engagement
Finland	Population Research Institute's project 'Equality and Multiculturalism at the Workplace'	Promoting the participation in working life of women with an immigrant background Target groups were workplaces recruiting immigrants and their personnel. The study showed the deep differences between the integration strategies of women from different socioeconomic backgrounds. It showed the importance of personal networks and supportive colleagues in attaining success at work
Finland	FIOH, 'Promoting gender equality and diversity at work'.	Ministry set a detailed strategic goal, to increase gender equality in Finnish working life by producing new scientific knowledge and by developing tools and practical methods for human resources managers and OSH professionals The 'work-life balance' research and action programme was launched (2005–09) to support a balance between work, family and other spheres of life The MONIKKO project emphasised the importance of equality from a wider perspective, taking into account age, ethnicity and family situation The Institute has drafted a Gender Equality Plan, which was prepared in close cooperation with staff members
France	Gender analysis of the SUMER survey (expert survey conducted by OSH professionals among workers)	Gender dimension of workplace exposures and complaints, synthesised view of workplace exposures, based on national monitoring sources

Country	Programme	Issue
Spain (Región of Castilla-León)	Guide for the prevention of OSH risks with a gender focus	Description of the situation of women at work Overview of relevant OSH and equalities legislation and programmes of relevant institutions Recommendations to protect women's health at work, including work-life balance, gender mainstreaming into OSH and protection of pregnant and breastfeeding women
Spain (Instituto Nacional de Seguridad e Higiene en el Trabajo)	Gender-sensitive guide to evaluation of physical loads	Guide addressing musculoskeletal disorders and risk factors from a gender-differentiating perspective. Provides monitoring methods, checklists and questionnaires regarding fatigue, physical workload (ergonomic assessment) and background guidance, including practical examples
Spain	Dulcinea — EQUAL Project	Training women for coordinating posts in construction
Spain	Gender Equality Observatory (Observatorio de la Mujer)	The Observatory prepares studies on gender impact in the military
The Netherlands	Taskforce DeeltijdPlus (Part-time Plus) Dutch social partners and government (Ministry of Social Affairs and Employment) and local authorities	27 pilot studies to investigate barriers and opportunities to make the labour market more flexible for women. The objective of the taskforce is to stimulate women in the Netherlands who have part-time jobs of fewer than 24 hours a week to work more hours
United Kingdom	Single Equality Scheme for the Health and Safety Executive, 2010–2013	Identify sectors where women and/or men are particularly at risk and ensure that example risk assessments for these areas include gender OSH issues To promote gender-specific messages about risks to health in the workplace on the website Address issues in relation to correct face-fit of respiratory protective equipment, particularly in relation to female face size/shape Research into the reported association of shiftwork and breast cancer and other major diseases Agriculture and food sector scoping study on respiratory disease in the bakery industry to include diversity issues of gender, age and race Research the risk of mesothelioma in females and males Continuation of research to estimate the occupational cancer burden in the United Kingdom, including breast and prostate cancer Encourage more involvement of women in health and safety decision-making

1 Introduction

This review assesses women at work within the European Union (EU), especially with regard to their occupational safety and health (OSH). It follows on from previous research by the European Agency for Safety and Health at Work (EU-OSHA, 2003a, 2005) and its purpose is to address a request to EU-OSHA's Risk Observatory to describe specific challenges in terms of health and safety posed by the more extensive integration of women into the labour market. Inequality, both inside and outside the workplace, could have an effect on the health and safety of women at work, and thus on their productivity. It is essential to keep women on the agenda with respect to work-related issues as an important source of labour; they do and will continue to contribute to the economy and the work environment. This chapter gives an overview of women who work, followed by an assessment of eight areas that impact on women in the workplace.

The second chapter introduces the topic of gender and employment in the EU, the third chapter considers the gender impact on working conditions, and the fourth examines violence and harassment at the workplace. The fifth chapter discusses the gender aspects of work accident and diseases statistics and the sixth chapter explores exposures, risk and health problems. The seventh chapter focuses on the choices that women pursue, such as why women enter informal work, and the OSH limitations of migrant women and investigates domestic work as an emerging profession. The eighth chapter presents information on policies and programmes related to women at work in Finland, Austria and Spain. Chapters 9 and 10 summarise the trends and issues and discuss the impact of policy, prevention and research on women who work.

1.1 Why look at women and OSH?

There are several reasons to explore the dynamics of women in the working environment. One of these is their relationship with occupational illness. In 1995, women accounted for 45 % of allergies, 61 % of infectious illnesses, 55 % of neurological complaints and 48 % of hepatic and dermatological complaints (EC, 2002). In addition to occupational illnesses, the type of jobs performed by women, such as those in health and social services and the hospitality sector, showed a stagnation or even a growth in accident rates, including fatal accidents. In addition, the European Women's Lobby (EWL, 2007) has highlighted the violence that occurs against women, and notes that this is a result of their unequal status. Women are also more likely than men to experience bullying and harassment, including sexual harassment (Eurofound, 2007a).

These outcomes support the need to review the new and focused research on the OSH of women at the workplace to determine any changes (both positive and negative) in this area.

1.2 Women, work and risks

More than 30 years ago Milkman (1976: 76) noted that

The vast majority of women work in 'women's jobs,' occupations which frequently have some structural resemblance to their family role. They work in industries, which produce commodities formerly manufactured by women in the home, such as clothing and processed food. In white collar occupations, as secretaries, teachers, waitresses, nurses, and so forth, women perform such wifely and motherly functions as schedule management, ego-building, child socialisation, cleaning up, caring for the ill, and serving as a sexual object.

In the twenty-first century, in looking at the new risks and trends in the safety and health of women at work, it is important to assess the new risks and trends in the workplace for women who work, and to examine whether or not women continue to be defined as 'homemakers' for whom work is an adjunct, rather than a distinct, aspect of their lives, which thereby reduces the relevance of any such risks and trends.

It is important to acknowledge that women's concept of work is not restricted to one facet, but seen as a continuum (Oakley, 1997 as cited in Watts, 2009a). For example, one Swedish study that explored the dual role of women found that the three domains of person, task and environment were useful in understanding how women cope with daily activities (Erlandsson and Eklund, 2003); in other words, a

complete understanding of what women do could not be gained from looking at just one domain. In this respect, women carry out close to two-thirds of unpaid work in English-speaking countries, including raising children, caring for the elderly, preparing food and keeping houses clean — essential aspects of health and well-being (see Briar, 2009). Women link paid work and unpaid work throughout the day.

It is generally accepted that women have become a significant aspect of the working environment and that they will remain within the workforce, regardless of how they choose to work, that is as full-time, part-time or temporary workers. Despite this acceptance, the focus on ensuring that adequate interventions are in place to meet the requirements of women's health and safety needs is still not as strong as it could be (Polychronakis et al., 2008). This remains of some concern as exposures and risks are increased for women because of their, on average, smaller frame (manual handling concerns, see Polychronakis et al., 2008); higher organ blood flow realising an increased rate of chemical absorption (health concerns, see Gandhi et al., 2004, as cited in Polychronakis et al., 2008); and lower rating on the *healthy worker effect* with more healthy men than women hired as workers (Lea et al., 1999). This last effect may exist as, typically, men are hired for more physically demanding tasks and may be subjected to a more meticulous selection process than are women (Polychronakis et al., 2008). Further, women are less likely to find proper fitting personal protective equipment (PPE), such as filtering face pieces (Han, 2000; Frost, 2007), which may leave them more exposed in the workplace (Quinn et al., 2000). This lack of proper fitting PPE does not seem to have improved greatly over the last 20 years. In 1981, a survey of over 350 companies showed that 14 % provided ear protection, 58 % hand protection, 18 % respirators, 14 % head and face protection, 50 % body protection and 59 % foot protection in women's sizes (Murphy et al., 1981, as cited in Quinn et al., 2000).

Another factor that may account for an increased risk for women is when they engage in presenteeism (going to work when ill) at the workplace. Quinn and Woskie (1988) note that women who work are more likely to use their sick leave allowances for child or elderly care, which then results in them needing to work when they are ill themselves. Presenteeism contributes to higher sick leave rates as well as lower productivity (Hillier et al., 2005).

Recent research, in addition to confirming that women who work have a higher level of well-being, also noted that the women in the study worked mainly part time, which might help to reduce the negative effects of working, such as work stress, while increasing the positive effects, such as facilitating a wider social network (Dijkstra and Barelds, 2009). Other research has substantiated the benefits that women gain when they work fewer hours, such as job satisfaction (French et al., 2006) and less need for recovery arising from work-related fatigue (Verdonk et al., 2010). Overall, work remains good for individuals and has an impact on well-being, with unemployment leading to poorer health (Cooper et al., 2008) and increased mortality (Nylén et al., 2001).

However, women are more likely than men to descend into poverty, especially single mothers (32 %) and those over 65 (21 %; EC, 2009a). This risk continues to increase as women get older and, by the age of 75, women are 1.7 times more likely than the general population to live in poverty (OECD, 2010). In the EU-27 in 2006, 23.1 % of all female full-time workers were low-wage earners (20.1 % in the euro area), whereas only 13.5 % of all male full-time workers were low-wage earners (Eurostat 2010b). The countries with the highest proportion of female low-wage earners were Cyprus (33.4 %), Latvia (32.3 %), the United Kingdom (30.6 %) and Lithuania (30.1 %). Their proportion was the lowest in Finland (8.8 %), France (10.6 %), Denmark (11.6 %), Belgium (12.8 %), Malta (13.3 %) and Sweden (14.9 %).

1.3 Overview of women at work within the EU

Women continue to be a major factor in the EU workforce. In the fourth quarter of 2012, the female employment rate was 58.6 % (EU LFS database). Between 1992 and 2005 the female employment rate in the economically active age groups rose in most European countries, with the exception of Sweden, Poland and the Czech Republic. On average, growth was stronger for women (+7.7 %) than for men (+0.4 %), whose employment rate even fell in Germany, Austria, Sweden, Poland and Portugal. Overall, the gap between male and female employment rates narrowed considerably, from 22.8 to 15.5 percentage points for the EU as a whole (EU-15) (Thévenon, 2009).

One important issue with respect to women at work is that the extent to which women contribute economically tends to be underestimated (Stace, 1987). This may explain why research in this area is not as extensive as it could be. Women either choose to or have to work and for those who do, it could have beneficial effects.

Comprehensive research has shown that employment does not have an adverse effect on women's health; rather it tends to be either beneficial or neutral (see Klumb and Lampert, 2004).

In reviewing women at work it is essential to note that *the family* is integral to how and why the majority of women work, due to their commitments within the family structure. This will help to get a better understanding of the work practices and the choices that women take in seeking jobs. Research has shown that this focus on the family extends from working in simple jobs (Valls-Llobet et al., 1999) to becoming female entrepreneurs (see Mirchandani, 1999). One of the most important factors that women need to be aware of, when working, are their family commitments, as they still work longer hours than men, especially when hours of care and hours of paid employment are combined and added to time spent on commuting and household work, and this is still true when they work part time as the differences in unpaid household work are considerable between men and women (Arber and Ginn, 1995; Eurofound., 2007a). Despite this, it has been established that women's entry into the labour force does not reduce the time spent on elder- or childcare (see Arber and Ginn, 1995; MacDonald et al., 2005). In view of this, one of the coping mechanisms women use to improve their work-life balance is to engage in self-employment (MacDonald et al., 2005).

However, while the family tends to be central to women, parenthood has been shown to have a different effect on the life satisfaction of mothers compared with fathers. Men who are fathers seem to have increased life satisfaction, but for mothers the reverse seems to be true — they are less satisfied with their lives than those women who do not have children. These differences were observed in 1991 and in 2001. Additionally, in 1991 and 2001, both men and women agreed that it was the mother rather than the father who had primary responsibility for childcare in their family (Duxbury and Higgins, 2001). These findings reiterate that women, especially those responsible for child- or eldercare, have a dual focus when contemplating employment.

At present, a sizeable difference exists between the average earnings of men and women across the EU. In 1995, women working full time in the EU received on average 75 % of the average hourly earnings of men, reflecting a gender pay gap of 25 percentage points (Labour Market Trends, 2004). This is despite the fact that within the EU women account for 59 % of all tertiary graduates. They are still not gaining higher-paying managerial positions because of the 'glass ceiling effect' (Europa, 2007a). The wage gap typically widened towards the top of the wage distribution (the 'glass ceiling effect'), and in a few cases it also widened at the bottom (the 'sticky floor effect'; Arulampalam et al., 2007). From recent Eurostat estimates (based on Structure of Earnings survey), it appears that there are considerable differences among Member States in this regard. For the economy as a whole, women's gross hourly earnings were on average 16 % below those of men in 2011 in the EU (EU-27). Across Member States the gender pay gap⁽³⁾ varied by 25 percentage points, ranging from 2 % in Slovenia to 27 % in Estonia (Eurostat, Gender pay gap statistics March 2013).

Across the EU, the sparse data that are available on ethnicity and employment indicate that non-EU nationality has a stronger impact on the activity rates of women than it does for men. While the activity rate of foreign men aged 25–54 (91 %) was similar to that of national men (92 %), the labour market participation of foreign women (68 %) was 10 percentage points below the level of nationals (78 %). This effect was more noticeable for third-country national women (63 %) and in particular for women who were citizens of countries with a low or medium Human Development Index (62 %). This inequality between national and foreign women can be seen in the majority of Member States for which data were available and the gaps recorded between female nationals and female third-country nationals were larger than 25 percentage points in a number of Member states (Eurostat, 2013b).

⁽³⁾ The unadjusted gender pay gap represents the difference between average gross hourly earnings of male paid employees and female paid employees as a percentage of average gross hourly earnings of male paid employees.

1.4 Women as workers

Seifert and Messing (2007) argue that women generally are not considered as workers who can make a valued contribution. This perception is facilitated by several factors: they are primarily responsible for childcare, they tend to work part time to a greater extent, they are highly likely to seek work in the informal sector and they remove themselves from the workplace for extended periods of time. Despite this, there are women throughout their adult lives who function in the workplace *like men*, i.e. work full time, in the formal sector and do not take extended leave to cope with family responsibilities. Unfortunately, despite these differences in work patterns women are usually considered as one group, and that is as workers not fully committed to the work environment.

It is essential that women are maintained as an active part of the workforce, as they provide valuable input, particularly during a time of change to the population structure and an ageing population). It is estimated that by 2030 the average age of the workforce will rise from 39 to close to 43, with more workers responsible for elder care (Vaughan-Jones and Barham, 2009). As the number of those who can contribute actively is decreasing, all groups who could contribute should be considered as capable workers. These will include women with disabilities and older ⁽⁴⁾ women.

1.4.1 The feminisation of work

There is a hypothesis that the concept of work is becoming feminised, which makes it easier to control and manipulate. As such, this further devalues women's contribution in the workforce and facilitates their continued marginalisation. As Haraway (1991: 166) notes:

The 'homework economy' *is* a restructuring of work that broadly has the characteristics formerly ascribed to female jobs, jobs literally done only by women. Work is being redefined as both literally female and feminised, whether performed by men or women. To be feminised means to be made extremely vulnerable; able to be disassembled, reassembled, exploited as a reserve labour force; ...; subjected to time arrangements on and off the paid job ... Deskilling is an old strategy newly applicable to formerly privileged workers. However, the homework economy does not refer only to large-scale deskilling, nor does it deny that new areas of high skill are emerging, even for women and men previously excluded from skilled employment. Rather, the concept indicates that factory, home, and market are integrated on a new scale and that the places of women are crucial — and need to be analysed for differences among women and for meanings for relations between men and women in various situations.

In professions where there is an increasing female working population to be observed, for example in some medical disciplines and healthcare occupations and in education, salaries tend to stagnate and decrease.

1.5 Women and the research process

While data are available on the situation of European women, it must be constantly acknowledged that women at work are (still) not a main focus for researchers seeking to define OSH. This may be because women, although they make up a large proportion of the workforce, are not regarded as the main wage earner or are seen to do jobs that are secondary to those of the male workforce. Moreover, one aspect that is often neglected is that work done by men and by women might demand different preventive measures or that preventive measures and risks might change depending on whether a task is done by a man or a woman. Quinlan (1996) highlights that the major issues influencing the OSH of women continue to be neglected greatly, and that this needs to change in order to better meet women's OSH needs. Previous EU-OSHA research (EU-OSHA, 2003a, 2005) has demonstrated that taking a gender-neutral approach in policy and legislation has contributed to less attention and fewer resources being directed towards work-related risks to women and their prevention.

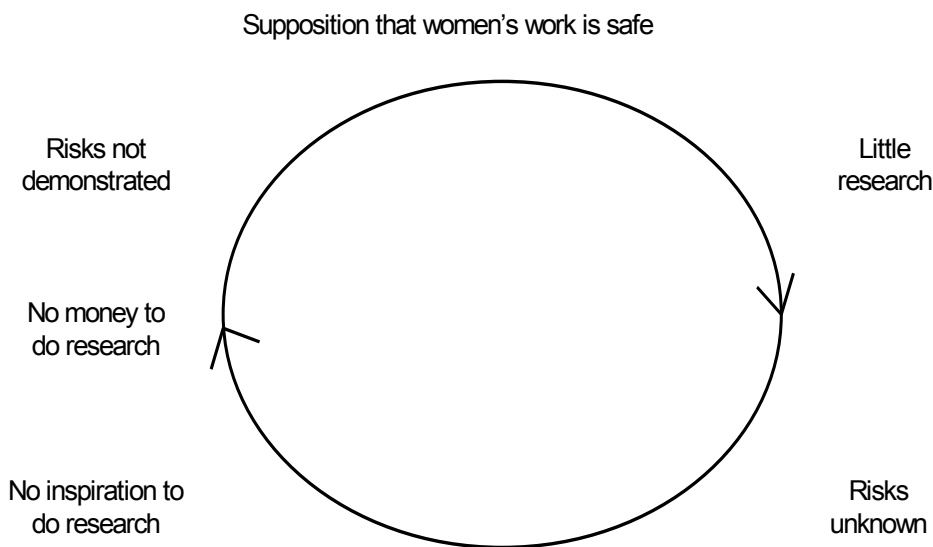
⁽⁴⁾ Although a uniform definition of 'older worker' does not exist, it is generally accepted that those aged 50 or over fall in this category (ILO, 2008).

Moreover, women are traditionally seen as working in sectors that are not as arduous as those of men. Their work is also viewed as unskilled, despite the dexterity they may use to complete tasks (Webster, 1996). However, Messing (1998) in reviewing research on the ergonomic aspects of jobs traditionally performed by women, such as bulk sewing and processing, highlighted that such jobs require mental alertness, physical dexterity, endurance and an enormous amount of concentration. She concluded that the label of 'light work' should never be given to such jobs, especially as these types of jobs were initially given to workers recovering from work accidents.

Women are traditionally seen as working in sectors that are not as arduous as those of men.

As mentioned previously, one very common problem with assessing women who work is that women are less often considered as workers. As a result of this perception, women tend to be excluded from scientific studies, leading to a vicious circle where health problems are shown as occurring only among men, which then leads to a reluctance to study women because of an impression that not many women develop occupational diseases (Figure 6) (Messing, 1998).

Figure 6: The vicious cycle in research on women and occupational health



Source: Messing (1998), p. 87. Reproduced with permission

This situation is further exacerbated because, traditionally, women have been excluded from epidemiological studies examining worker populations and from data collection systems (see Stellman, 1999), with little research being conducted into the health and safety hazards of female-dominated industries (Stellman, 2000). Previous EU-OSHA research recommended that, in addition to basing exposure assessment on the real jobs people do, research and monitoring can be improved by systematically including the gender dimension in data collection and adjusting for hours worked. Epidemiological methods should also be assessed for any bias. Indicators in monitoring systems, such as national accident reporting and surveys, should effectively cover occupational risks to women and take account of differences in exposure and working conditions.

In addition to the exclusion of women from the research process, this is exaggerated further within different groups of women. Although it is accepted that migrant women form a vibrant labour force, they are still not incorporated into the mainstream of migration research and analysis (Harzig, 2001).

1.6 'New' risks and trends

The work environment in the majority of the established EU Member States has changed from one focused on manufacturing to one that is service driven. The advances in technology and increasing globalisation have contributed to these changes and have also introduced new risks and hazards into the workplace (ILO, 2010a).

The International Labour Organisation (ILO) (2010a) highlights some of the 'new' risks:

- Changing patterns of work — caused by precarious employment
- New trends
 - higher workloads
 - work intensification from downsizing
 - migration — poor work conditions
 - jobs in the informal economy
- Emerging forms of employment
 - self-employment
 - outsourcing
 - temporary contracts
- Increased pressures — to meet the demands of modern working life
- Age profiles are changing
- Gender balance is changing
- New technologies and production processes, e.g. nanotechnology, biotechnology

Some of the specific risks and their potential outcomes (EU-OSHA, 2009c; ILO, 2010a) include:

- Exposure to chemicals — can cause cancer, jeopardise reproduction and negatively affect the nervous, immune or hormonal systems
- Restructuring of work patterns and organisations has made it more difficult to achieve a healthy work–life balance — could influence mental ill health (e.g. work-related stress, depression and anxiety)
- Excessive noise — could cause hearing impairment.

More women are also lone working⁽⁵⁾, which brings its own specific risks and hazards that need to be considered at an individual level (Hodgkinson, 2003).

Some of these 'new' risks and trends will be explored in this report, especially in the context of women at work and their OSH. Over the next few decades more workers in the EU will be over 50 (EU-OSHA, 2009c) and women are, at present, achieving higher levels of education than men. These trends have to be monitored as recent research has shown that highly educated women, especially those aged 50–64 years, are more likely to have a high need for recovery due to work-related fatigue (Verdonk et al., 2010), while high work pressure has been linked to the risk of ischaemic heart disease in women (Allesøe et al., 2010).

1.7 Women and non-traditional jobs

More women are moving into non-traditionally 'female' jobs, such as construction, transport and IT. Some of the reasons women choose these occupations are to gain the recognition, work satisfaction and higher pay that is denied to some extent in the more traditional jobs in which women predominate, such as office work (McIlwee, 1982; Kissman, 1990; Marshall, 1990).

Women in these non-traditional occupations face different safety and health hazards than if they worked in more traditional female occupations (Quinn and Woskie, 1988) and of particular concern is the lack of proper education and training inherent in these transitions for women (Goldenhar and Sweeney, 1996; Welch et al., 2000; Rowe, 2002). Other concerns centre on the hazards they

⁽⁵⁾ Lone working may be defined as any work activity that is intended to be carried out in isolation from other workers by an individual or a small team of people (London Hazards Centre, 2000).

encounter when using equipment designed for the larger male build (Anonymous, 2000a), and in particular for the construction industry where women have to use and 'make fit' gloves, boots, hard hats, overalls and hand tools that are not female specific (Goldenhar and Sweeney, 1996; Welch et al., 2000). Rowe (2002) notes that on construction sites in the USA the sanitary facilities, including the provision of separate ones for women, remain poor and may increase disease as well as urinary tract infection. Women construction workers are also more likely to encounter harassment and may leave their jobs as a result (Welch et al., 2000).

However, despite this increasing movement into male-dominated occupations, and the rising number of women completing tertiary education, women remain a minority in the fields of science, technology, engineering and mathematics (Diekman et al., 2010). Diekman et al. (2010) note that women are less likely to choose these fields as they prefer to pursue careers that fulfil communal goals (working with or helping people). These authors note that the fields listed above do help people, and that this should be pointed out to girls and young women to encourage more women to study these disciplines.

Men are now more likely to work in male-dominated jobs than are women in female-dominated ones, meaning that women are more likely to work across occupations and jobs than men, despite being concentrated in some professions. Many women, for example, have moved into medical professions (EC, 2010a).

1.8 Limitations

While every effort has been made to collect data that are EU focused, owing to the shortage of OSH-specific data on women, on women with disabilities, in informal work and on women experiencing combined exposures, it has been necessary to reference material from sources outside the EU. However, all sources are useful as they add to the knowledge of the context and scope of women at work.

1.9 Method

The method of data collection for each chapter is specific. Overall, the data are from structured databases and peer-reviewed journals, e.g. EU statistical databases, peer-reviewed research and reports. Moreover, grey literature is included to facilitate the assessment of reports and research that may not be covered during searches of electronic databases and to allow a broader, more comprehensive assessment of the various topics under discussion.

2 Gender and employment in the EU

2.1 Introduction

Member States have been developing and implementing different policies to place equal treatment and opportunities for workers at the centre of public debate. Despite these efforts, the labour market situation for women in Europe is far from ideal. The past few decades have been marked by notable changes in the employment of women by sector, occupation and type of contract. The unequal distribution of working women and men in certain sectors brings about unequal working conditions for women and puts them in a worse position in the working environment. This inequality suggests the importance of assessing OSH from a gender perspective.

In reviewing statistics on the trends in employment and integration of women in the labour market, we can measure many different aspects, including the impact of OSH on women. Women in Europe have had a higher unemployment rate than men (UGT, 2007). Women often face different workplace health challenges from men, partly because men and women tend to have different kinds of jobs. Temporary jobs, part-time employment, care and seasonal work are often carried out by women. There is also another important factor that affects women's health: working twice as long because of family responsibilities.

In addition, labour market segregation (women are more likely to work in sectors typically designated as 'female') means that working conditions for women are less favourable than for men. Furthermore, less skilled work tasks have a clear link to low pay for female workers. In addition, women in sectors with fewer favourable developmental opportunities have fewer chances to improve their working conditions (Härenstam et al., 2000). Because of this, men and women experience different job-related problems.

The dramatic increase in the labour force participation rates of women between 1995 and 2010 was accompanied by many social, economic and demographic changes in the status of women. Various reports have concluded that it is necessary to study the OSH impact of the changes that have been taking place in the world of work; for example, Fagan and Burchell (Eurofound, 2002a,b).

This chapter therefore aims to cover statistical changes and analyse their impact on the OSH of women at work. These changes include the following:

- age structure of the labour force (age of women employed and unemployed, in training, economically inactive, with care responsibilities);
- numbers and distribution by educational level;
- sectors of employment; and
- contract issues (e.g. part-time employment, self-employment, length of contracts).

2.2 Data sources

The source for the data in this chapter is Eurostat's European Labour Force Survey (EU-LFS) and data provided by Eurofound for the analysis of the European Working Conditions Survey (EWCS). The main statistical objective of the EU-LFS is to divide the population of working age (15 years and older) into three mutually exclusive and exhaustive groups — persons in employment, unemployed persons and inactive persons — and to provide descriptive and explanatory data on each of these categories.

The classification used for economic activities is the Statistical Classification of Economic Activities (NACE Rev. 1, from 2005 NACE Rev. 1.1 from 2008 NACE Rev. 2). It is based on the three-digit level for the main job and two-digit level for other job descriptions.

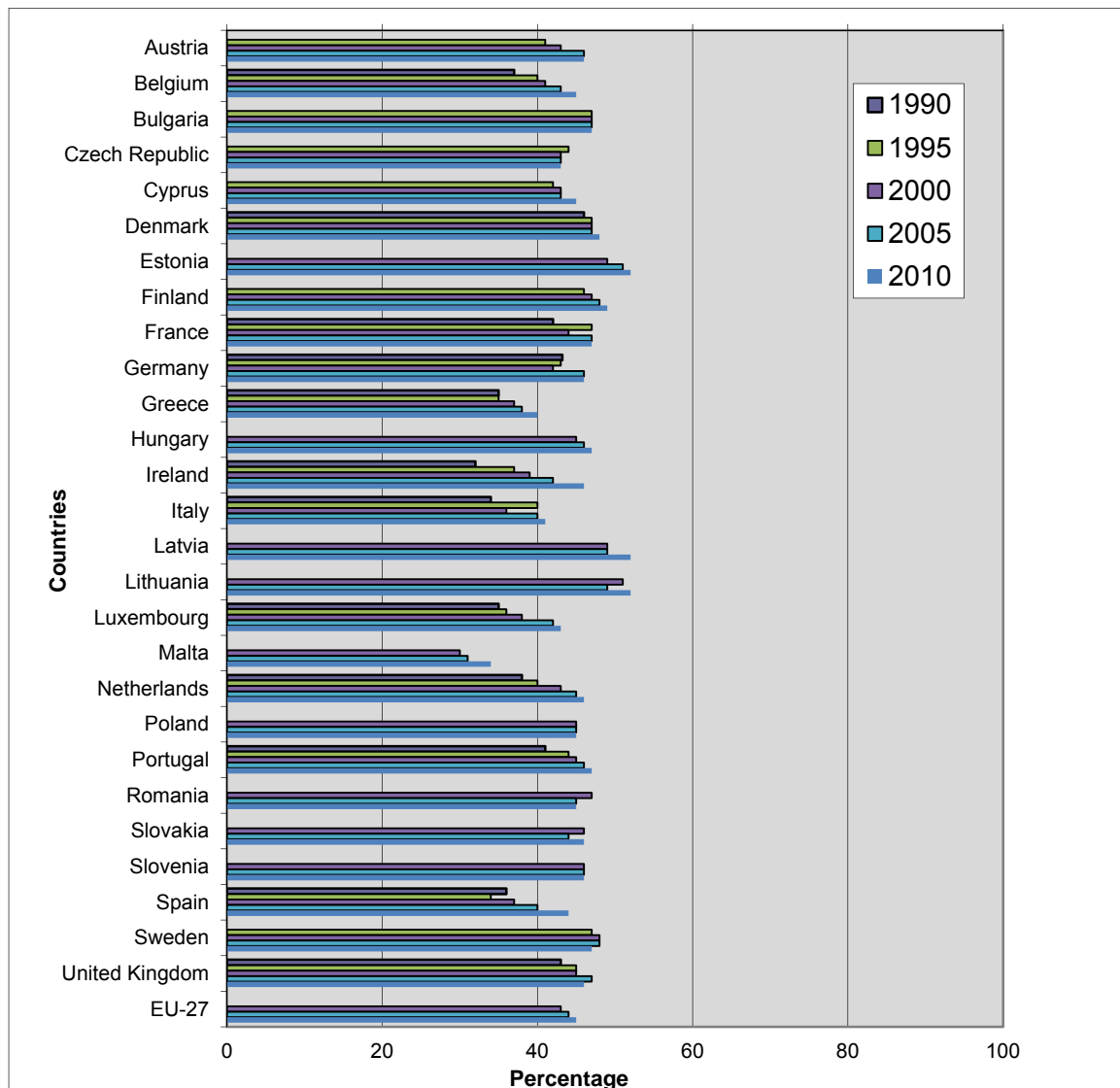
The classification used for occupation is the International Standard Classification of Occupations (ISCO-88 (Com)) on the four-digit level for the main job and three-digit level for the previous occupation.

The LFS does give rise to comparability problems over time. There are breaks in the series for a number of countries due caused by the transition from a spring survey to a quarterly continuous survey, changes in survey methods or census revisions.

2.3 Statistical data related to gender and employment in the EU

As Figure 7 shows, women made up between 35 % and 52 % of the total workforce in all EU-27 countries in 2010. On average in the EU-27 in 2010, 45 % of all workers were women. The lowest percentage of women in the workforce can be found in the southern European countries of Malta (34 %), Greece (40 %), Italy (41 %) and Spain (44 %) and in the Czech Republic and Luxembourg (43 %). The highest employment shares of women can be found in some of the eastern European newer Member States, the Nordic and the Baltic states of Lithuania, Latvia and Estonia (all 52 %). Eurofound (2004a) explains this partly by the high availability and coverage of childcare facilities in the northern European countries.

Figure 7: Women’s employment as a percentage of total employment in 1990, 1995, 2000, 2005 and 2010



Source: EU-LFS (2011)

Over the period of 1995–2010, the percentage of employment that women held has increased particularly in Spain and Ireland, as well as Malta and Luxembourg, although rates are still low, while it has stagnated in countries that already held high rates. Recent changes may also be the result of a loss of workplaces with a typically male working population such as construction and some manufacturing sectors.

Data provided by Eurostat (2009b) show that, in 2008, 17 million more people were employed in the EU than in 2000. Women accounted for 59 % of the employment creation in this time span and they showed a consistent and considerably higher employment growth rate than men over this time (Eurostat, 2009c). Of these women, 39.1 % were aged 25–54 and 19 % were aged 55–64 years. Young women aged 15–24 years and women older than 65 accounted for just 0.3 % and 0.6 % of these jobs, respectively. No less than 89.8 % of the employment creation among men and women was accounted for by employed work, and only 10.2 % by self-employment. The majority of the newly created jobs for men and women in the EU were full-time jobs (63 %) and 37 % were part-time jobs. Although equal numbers of men and women filled the full-time jobs, 73 % of those filling part-time jobs were women.

Between 2000 and 2008, 72.4 % of the newly created jobs in the EU were permanent, with only 27.6 % based on fixed-term contracts. Sixty-three per cent of those entering new full-time employment and 55 % of those entering new part-time employment were female (Table 6).

Table 6: Percentage of contribution to employment creation, 2000–2008

-	Men	Women	Total
Age and gender			
Total	41.0	59.0	
15–24	0.9	0.3	1.3
25–54	19.1	39.1	58.2
55–64	18.9	19.0	37.9
65+	2.0	0.6	2.6
Type of employment and gender			
Employees	34.8	55.0	89.8
Self-employed	5.7	4.5	10.2
Full time	32.8	30.2	63.0
Part time	10.1	27.0	37.0
Permanent	26.8	45.6	72.4
Fixed term	12.3	15.3	27.6

Source: Eurostat, EU-LFS according to Eurostat (2009b)

In 2008, although equal numbers of men and women filled full-time jobs, 73 % of those filling part-time jobs were women.

Margherita et al. (Eurostat, 2009c) also show that employment growth was not equally distributed in all Member States from 2000 to 2007; employment growth was above 20 % in Luxembourg, Spain, Ireland and Cyprus, whereas only very small increases were observed in Portugal, Germany and Hungary.

Although the reported trends are positive, it should be kept in mind that the economic crisis hit Europe in 2008 and forced the EU into recession (Eurostat, 2009b).

▪ Recent employment trends — impact of the crisis

According to the most recent edition of the ‘Employment (and Social Developments) in Europe’ report (EC, 2011), there were five million fewer people in paid employment in the EU-27 in the second quarter of 2010 than in the second quarter of 2008 as a result of the economic crisis, the most severe in a generation. During the decade prior to the crisis, the gender employment gap continued to close, with growth in female employment being greater than growth in male employment in both relative and absolute terms. The recession has accelerated this convergence, however, because of the greater impact of the crisis on sectors that are male dominated. In the more extreme cases, such as all three Baltic States, men went from outnumbering women in employment before the crisis to being outnumbered by women in the wake of the crisis.

Women had benefited most from employment growth during the preceding decade, and also fared better than men during the recession, given that the employment lost in construction and manufacturing was largely male dominated. By contrast, the few sources of (generally high quality) employment growth were in female-dominated jobs in health and education. Overall, four ‘male’ jobs were lost for every one ‘female’ job during the crisis, though the sharply gendered distribution of losses at the beginning has tended to give way to a more equal pattern of loss in the later stages of the recession and during the initial recovery.

However, the economic crisis has negatively impacted on the evolution of the employment rates for women: in the context of the economic downturn, the employment rates for women have returned to the levels of 2007. This is, simply, the result of the rise in unemployment rates. Men have been generally more affected by unemployment. However, women’s employment rates are still behind and their gap with men remains large in some eastern and Mediterranean countries (Eurostat, 2010c). On the contrary, Northern and Baltic countries register high employment rates among women, already at the 2020 target level (around 70–75 %).

Overall, four ‘male’ jobs were lost for every one ‘female’ job at the onset of the crisis. However, the economic crisis has negatively impacted on the evolution of employment rates for women: in the context of the economic downturn, the employment rates for women have returned to the 2007 levels or below.

However, three peculiarities over the period of economic crisis are worth noting. First, in 6 out of 27 countries (Denmark, Italy, Lithuania, Hungary, Netherlands and Austria) female employment rates have increased (between 2008 and 2012). Second, on average, European gender differences have reduced (from 7.6 to 6.3 percentage points) mainly because the crisis affected male employment more at first than women. Third, the evolution of employment rates varies greatly across age groups: middle-aged women (and men) have an increased participation in the labour market, whereas the young and elderly have reduced participation. As outlined in various studies (e.g. Volonté, 2012), young people in particular seem to bear the costs of the crisis.

Regarding the sectoral dimension, the ‘Employment in Europe’ report concludes that the recession has already somewhat changed the pattern of job growth compared with the decade before — from one of ‘upgrading’ with ‘some polarisation’ to one of ‘stronger polarisation’ and ‘some upgrading’. As most of the growth at the top of the income structure was attributable to public sector jobs, any impending restructuring of public sector employment would presumably lead to even more downgrading, raising concerns about the strength of the recovery in the private sector.

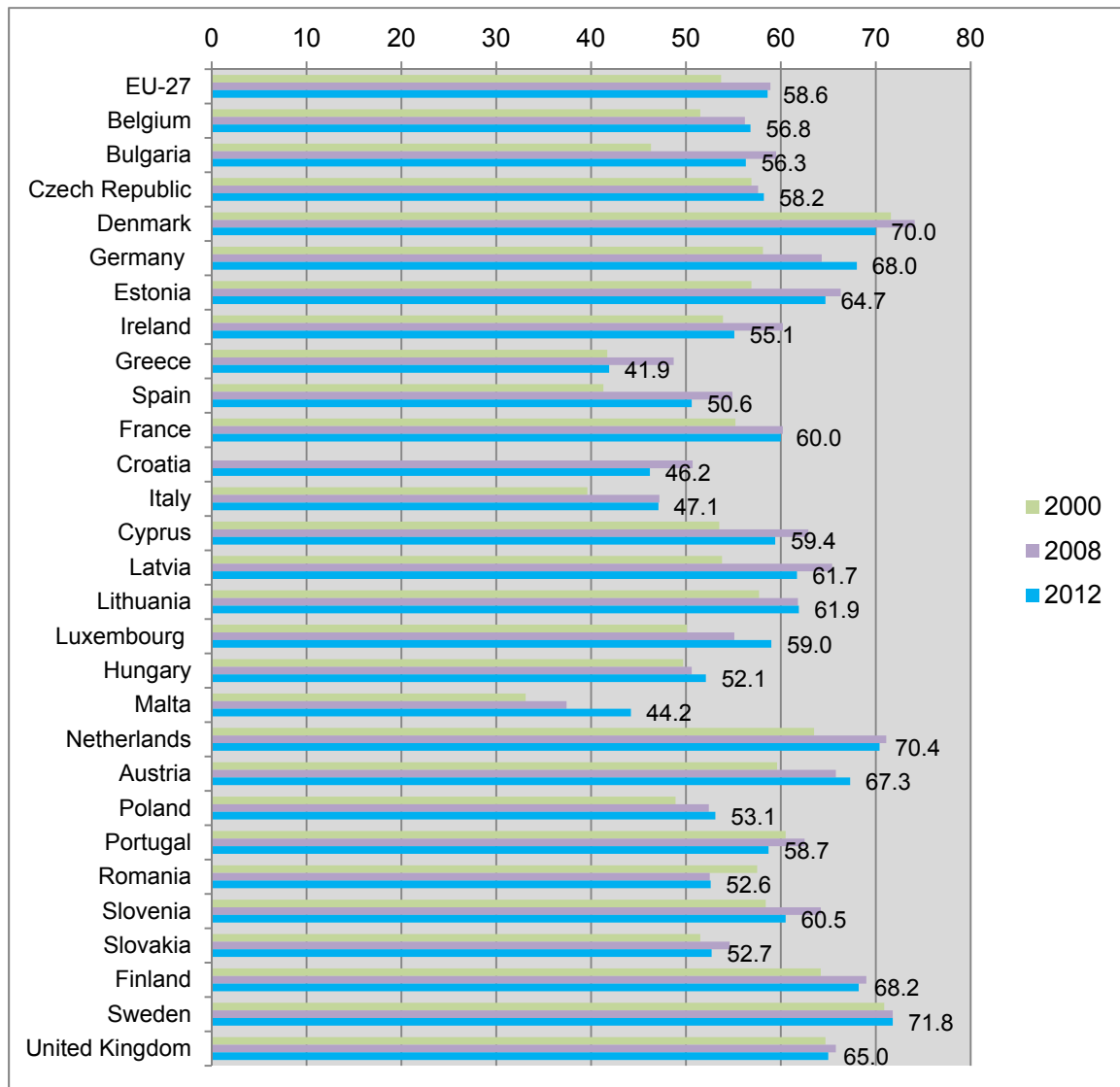
2.4 Employment rates

Although the employment rate of women is lower than that of men in all EU Member States, it increased by seven percentage points from 1997 (51.4 %) to 2012 (58.6 %). In comparison, in 2011 the employment rate for men was 70.1 %, having first risen by just two percentage points by 2008 and fallen again to the level 15 years before.

Thus, the gap between male and female employment rates narrowed. In 2011, 64.3 (down from 65.9 % in 2008) of the EU’s working-age population was employed (56.7 % of women aged 15–64 (down from a peak of 58.9 % in 2008) and 70.1 % of men aged 15–64 (down from 72.8 % in 2008)). The Lisbon Strategy set the target of a 70 % overall employment rate in the EU by 2010 and a 60 %

employment rate for women. Thus, the progress in expanding female employment has almost realised the Lisbon objective that was set for women: by 2008, 20 Member States had reached the Lisbon target of approximately 60 %. However, seven Member States missed the female employment rate target: Romania, Poland, Malta, Hungary, Italy, Spain and Greece. Malta was at the lowest level (Eurostat, 2009b) (Figure 8). One of the most important aims of the Europe 2020 Strategy is the achievement of 75 % overall employment rates for the 20–64 age group. By 2010, 16 out of 27 countries accomplished the required female employment rate of over 60 %. The severe impacts of the first wave of job losses due to the crisis combined with the effects of budget cutbacks mean that progresses made over recent years can be at risk, both in terms of employment rates and conditions and in terms of gender equality. In 2011 only one country reached the threshold: Sweden. The other Scandinavian countries are not far from it. Continental, Anglo-Saxon and Baltic countries lie at about 10 percentage points below. Eastern countries, except for Slovenia, still fall short but the gap is lower than that observed in Mediterranean countries. Italy and Greece, in particular, register the lowest employment rate in Europe, at about 50 %, followed only by Malta, at 43 %. Here, serious efforts to improve women’s entry and permanence into paid work, on both the demand and the supply side, are necessary if the Europe 2020 target is to be reached, especially among the low educated (Fondazione Brodolini, 2011).

Figure 8: Female employment rates (%) for Member States, women aged 15–64, annual averages, 2000, 2008 and 2012



Source: EU-LFS (2012)

From 1996 to 2011 the gap between male and female employment rates narrowed. By 2010, 16 out of 27 countries accomplished the required female employment rate of over 60 %, down by four from the 2008 situation, as a result of the economic crisis. Employment losses for women include retail salespersons and blue-collar workers in textiles/clothing manufacture and in agriculture.

The main reason for the lower employment rates among women than among men is the fact that women are made responsible for the care of children and elderly ⁽⁶⁾ relatives (Eurofound, 2008a; Employment Taskforce, 2003, as cited by Eurofound, 2004a). Two further reasons are provided: the number of women aged between 15 and 24 years in education is higher than that of young men; and women retire slightly earlier than men (at 59.4 years vs. 60.7 years; Eurofound, 2008b). It is also interesting to note that, for both men and women, the higher the educational level the higher the employment rate, which led Eurofound (2008b: 5) to conclude: 'As the educational qualification level of women is increasing, female employment rates are also expected to rise in the near future.'

In the EU-15 between 1995 and 2006 the employment growth among women across all income classes was higher than that of men (Eurofound, 2009a). However, women showed particularly high increases in the lowest paid jobs in the EU-15 and the second highest paid jobs, whereas 72 % of men's employment growth was focused in the second highest paid and highest paid jobs (two upper income quintiles). From 1995 to 2006, growth was more or less equally skewed towards higher paid jobs for both men and women. However, there was some evidence at that time of greater polarisation for women than for men, with comparatively higher growth in female employment in the lower quintiles (Eurofound, 2008c; Grimshaw and Figueiredo, 2011). Overall, however, the main observation was that growth in female employment was greater in every job quintile; for example, three out of every five new highly paid white-collar jobs went to women. Altogether, 62 % of the newly created jobs between 1995 and 2006 that are carried out by women belong to the two upper income quintiles. Such well-paid jobs with high employment rates for women can largely be accounted for by the strong employment rate of women in the health and education sector.

Well-paid jobs with high employment rates for women can largely be accounted for by the strong employment rate of women in the health and education sector.

At the outset of the crisis, women outnumbered men by almost two to one in the lowest quintile jobs, while there were many more men in low-medium and medium quintile jobs. The differences in higher paid jobs were less marked. During the crisis, in both qualitative and quantitative terms, almost all the employment growth in the top quintile in the EU-27 has been attributed to women. This has resulted largely from the continued expansion of professional-grade jobs in the health and education sectors. Meanwhile, net female job losses have been exclusively in middle- and low-paid jobs, with the highest employment losses for females in the four lowest quintile jobs including retail salespersons, blue-collar workers in textiles/clothing manufacture, and in agriculture. In fact, a clear contrast is visible between the patterns of employment decline for men and women, with an upgrading pattern evident for women and a stark polarisation pattern for men — a partial reverse of the patterns observed during the pre-crisis period. The upgrading of female employment during the recession can be observed in particular in the western European 'older' Member States, including Austria, Belgium, Finland, Germany, Luxembourg, the Netherlands and Sweden (as well as those Member States that suffered busts in construction) (EC, 2011).

Overall, although women benefited more from the employment growth in terms of newly created positions, men's employment growth was strongly focused on well-paid jobs. However, a partial reversal of the patterns could be observed recently, with job losses for female workers in the lower-paid categories.

In contrast, in the new Member States, women and men show similar overall increases in the employment rate. Nevertheless, in contrast to men, who show the highest increases in the second lowest paid jobs, women showed the highest increases in the highest paid jobs. Thus, 64 % of the newly created jobs conducted by women belonged to the two highest income quintiles, but only 44 % of those carried out by men belonged to the two highest income quintiles (Eurofound, 2009a). Thus, in

⁽⁶⁾ 'Elderly' in this review refers to individuals at a more advanced aged who may no longer be part of the workforce.

the new Member States men and women benefited equally well from employment growth in terms of newly created positions, but women's employment growth focused on well-paid jobs.

Up to 2008, and before the crisis, in the new Member States men and women benefited equally from employment growth in terms of newly created positions, but women's employment growth focused on well-paid jobs.

When looking at individual EU-27 countries, according to figures from the 2011 European Labour Force Survey (LFS), there is a gender gap in employment rates of more than 20 percentage points in Malta (41 % vs. 73.6 %), Greece (45.1 % vs. 65.9 %) and Italy (46.5 % vs. 67.5 %). In other countries, the employment gap has decreased because of a loss in male employment, such as Spain (from 22.9 % (53.2 % vs. 76.1 %) in 2006 to 11.2 % (52 vs. 63.2 %)) and Cyprus (from 60.3 % vs. 79.4 % in 2006 to 61.6 % vs. 74.7 % in 2011). Employment rates with gender gaps greater than 15 percentage points are seen in Ireland (59.3 % vs. 77.7 %), Luxembourg (56.9 % vs. 72.1 %), the Czech Republic (57.2 % vs. 74 %), (Eurofound, 2008f; Eurostat LFS, 2012). The Organisation for Economic Co-operation and Development (OECD) assumes that 8 % of the gap in employment rates is the result of consequences of discrimination in the labour market (OECD, 2008a).

Compared with native-born women, the employment gap is even wider between female and male immigrants, as female immigrants show lower employment rates than male immigrants (OECD, no date).

2.4.1 Employment rates by age group

▪ 15–24 years

The highest employment rates for women aged 15–24 years were constantly reached in Denmark, with around 60 % from 1990 to 2011 (Figure 9). In the Netherlands employment rates of young women are also consistently high; they increased from 52 % in 1990 to 64.4 % in 2011 with a peak of 67 % in 2000. The lowest employment rates among young women are found in Greece (from 20.3 % in 1995 down to 12.9 % in 2011), Slovakia (from 28.2 % in 2000 to 15.1 % in 2011), Italy (from 20.9 % in 1995 to 15.5 % in 2011) and Hungary (from 29.7 % in 2000 to 16.7 %), where the decline has been dramatic. Bulgaria (17.2 %), Lithuania (17.4 %) and the Czech Republic (19.9 %) all had female employment rates (for women aged 15–24) of less than 20 % in 2011. Employment rates were also halved in Luxembourg (from 36.9 % in 1995 to 18.5 % in 2011).

Interestingly, female employment rates among young workers increased from 1990 to 2005 in just eight of the EU-27 Member States (Austria, Bulgaria, Estonia, Finland, Ireland, Latvia, Spain and Sweden). In all other Member States employment rates decreased over this period. One reason for this is that young people, and particularly young women, are remaining in education for longer than before. Another important reason is that unemployment rates are twice as high for young workers than the overall unemployment rate (in 2005, 18.7 % compared with 9.0 %) and that young workers are particularly vulnerable to an economic recession (EU-OSHA, 2007b). As mentioned above, while at first it seemed that mainly young males were affected by the recent economic crisis, the trend has also affected young women recently, especially in temporary jobs and in the service sector (retail and Horeca). Female employment rates among young workers increased in just eight of the EU-27 Member States (Austria, Bulgaria, Estonia, Finland, Ireland, Latvia, Spain and Sweden) from 1990 to 2005.

Labour inclusion is harder for young women than for young men. Youth unemployment stood at 21.1 % in the EU in 2010, a figure heavily affected by the current crisis, still up from 20.1 % in 2009, and more than twice the prime-age adult unemployment rate (8.3 %). In many Member States youth unemployment remains a severe problem, with rates over 30 % in Estonia, Greece, Latvia, Lithuania and Slovakia, and over 40 % in Spain. The unemployment rate of young women is dramatically higher than that of young men in several Member States (Czech Republic, Cyprus, France, Greece, Italy, Poland, Portugal) with a difference of almost 15 percentage points in Greece (Fondazione Brodolini, 2011) The reason why young women are more vulnerable than young men is that, if on the one side young women are more educated than young men in most European countries, on the other side qualification segregation still make women more likely to be skilled in subjects with occupational

prospects that are usually worse. Moreover, owing to the expectation of career breaks and/or care leaves following childbirth, young women may be hired more reluctantly by employers, especially in more traditional gender contexts (Fondazione Brodolini, 2011). Recessions always tend to hit younger workers especially hard. Limited experience and opportunity to acquire workplace skills mean that their labour market attachment is generally more tenuous than that of older workers because it is more likely to be in non-permanent work (EC, 2011).

The unemployment rate of young women is dramatically higher than that of young men in several Member States (Czech Republic, Cyprus, France, Greece, Italy, Poland and Portugal) with a difference of almost 15 percentage points in Greece.

In the EU-25 in 2005, on average, the unemployment rates of young workers were twice as high (18.7 %) as the overall unemployment rate (9.0 %) (EU-OSHA, 2007b).

As mentioned before, net female job losses have been exclusively in middle- and low-paid jobs, with the highest employment losses for females in the four bottom quintile jobs including retail salespersons, lower-level services jobs in household and personal services, food and beverages and jobs typically held by younger and female workers (EC, 2011).

▪ 25–49 years

Figure 10 shows that in 2011 the highest employment rates of women aged between 25 and 49 were achieved in Sweden (83.2 %), Slovenia (81.3 %) and Austria (80.2 %), with all of them having a rate of 80 % or higher. Countries with employment rates of women in this age group that are below the EU-27 average (71.4 %) include Greece (57.7 %), Italy (58.9 %), Spain (62.7 %), Ireland (64.8 %), Hungary (66.6 %), Romania (67.4 %) and Slovakia (70.4 %). Malta shows the lowest employment rate of women aged 25–49 (50.6 %), although it has risen considerably.

Trend data show that in almost all countries the employment rate of middle-aged women has increased over the years. Considerable increases took place from 1990 to 2011, for example in Spain (from 40.3 % to 62.7 %), Ireland (from 42.2 % to 64.8 %) and the Netherlands (from 58 % to 79 %). However, some countries showed stagnation or a decline in the employment rates of middle-aged women: Hungary, Slovakia, Romania, the Baltic countries and the Nordic countries.

▪ 50–64 years

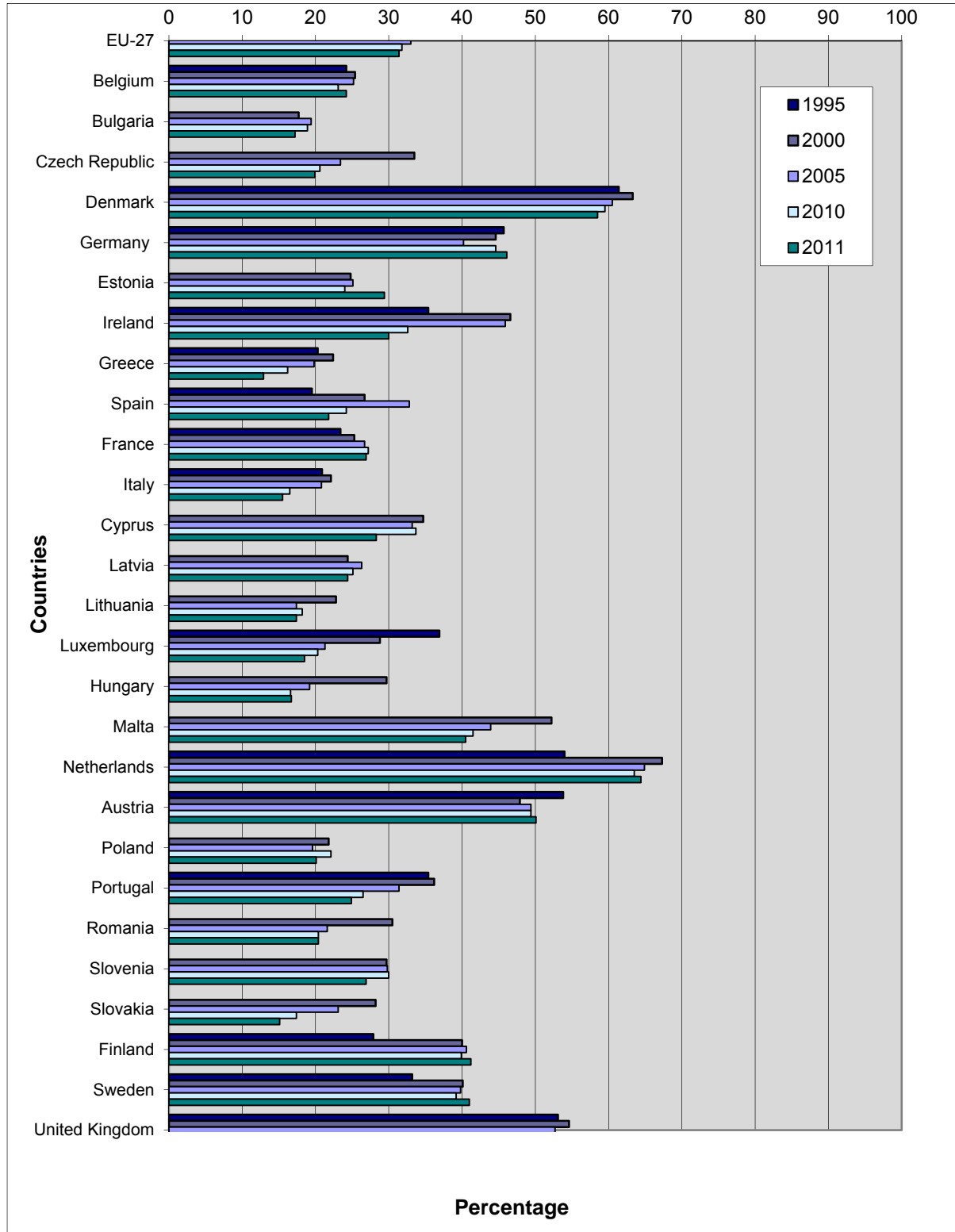
The employment rates of women decrease considerably when women aged between 50 and 64 are compared against women aged 25–49, with an EU-27 average of 71.4 % and 40.2 %, respectively (Figures 10 and 11), although trend analysis shows that the employment rates of women aged between 50 and 64 (Figure 11) increased considerably in almost all EU-27 countries except Romania (–11.8 %) and Portugal (+1.5 %). The highest increases in the employment rates of older women from 2000 to 2011 occurred in Bulgaria (from 10.3 % to 38.8 %), Germany (from 29 % to 53 %), Latvia (from 26.7 % to 49.9 %), Slovakia (from 9.8 % to 31.5 %), the Netherlands (from 26.1 % to 46.4 %) and Belgium (from 15.6 % to 36.5 %). In 2011, the highest employment rate for older women was found in the northern European countries of Sweden (68.9 %), Finland (57.2 %), Estonia (57.1 %) and Denmark (55.3 %). The lowest employment rates for older women in 2011 were in Malta (13.8 %), Slovenia (22.7 %), Italy (28.1 %), Poland (27.3 %) and Greece (27.3 %).

Employment rates of older women vary considerably between Member States. In 2011, the highest employment rate for older women was in northern European countries at more than 55 %, and the lowest was in southern European countries, all at below 35 %.

Since the 1990s employment has grown considerably in Europe and the employment of women has increased in all age groups. The Europe 2020 Strategy aims to reach an employment rate of more than 75 % in Europe. To achieve this goal, keeping women and older workers in employment is a promising approach. Thus, sufficient facilities for childcare are needed and opportunities must be given for parental leave, part-time work and flexible hours. Companies are encouraged to support older workers in caring for elderly family members and to accommodate the possibility that women may return to work after caring for babies or elderly family members. In particular, women older than

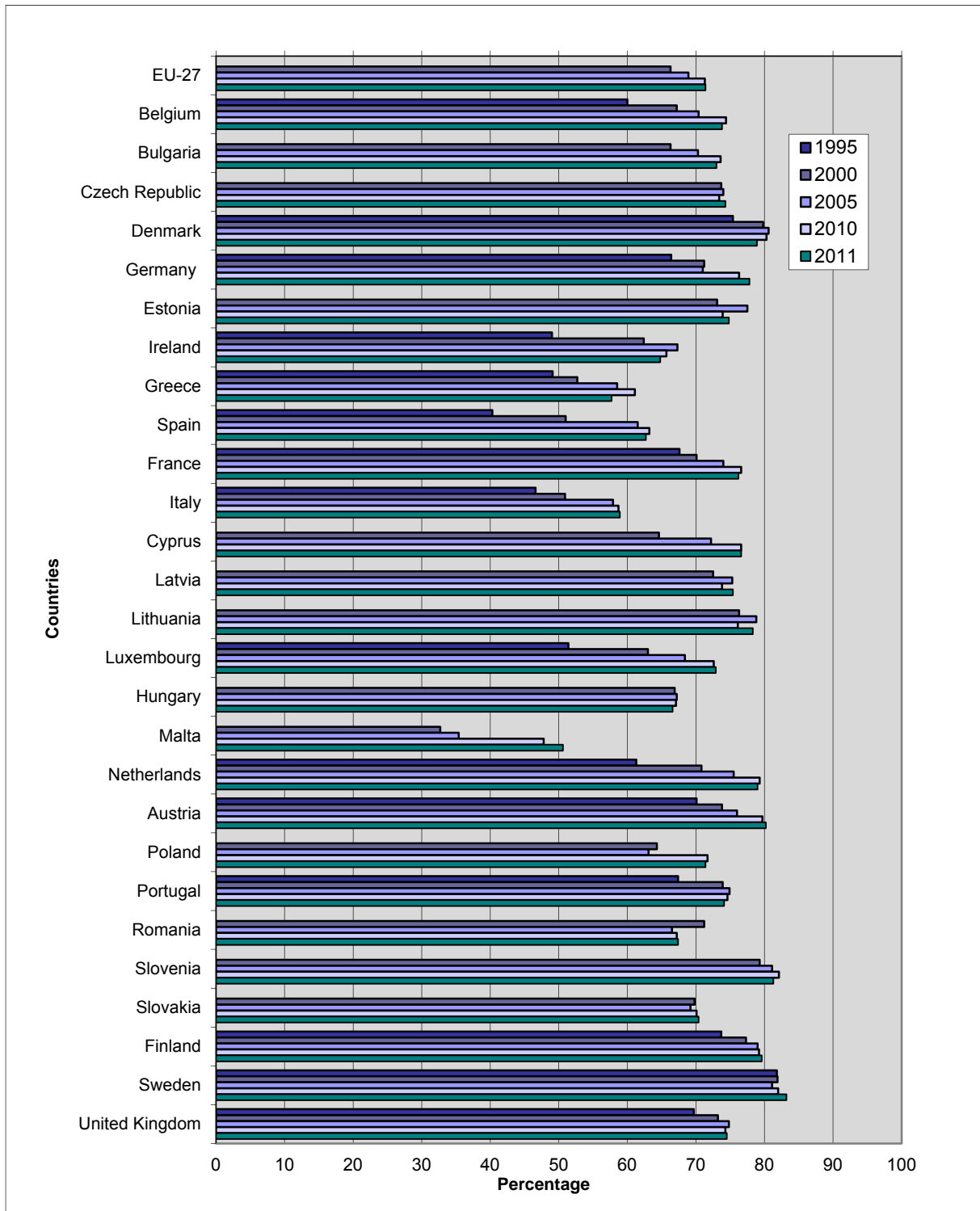
45 are in a phase of their lives where family responsibilities diminish and their availability for the labour market increases (Eurofound, 2008a). Retaining older workers in employment is also important to balance the effect of a shrinking European workforce due to low birth rates (Eurofound, 2009b).

Figure 9: Employment rate of women aged 15–24 (%)



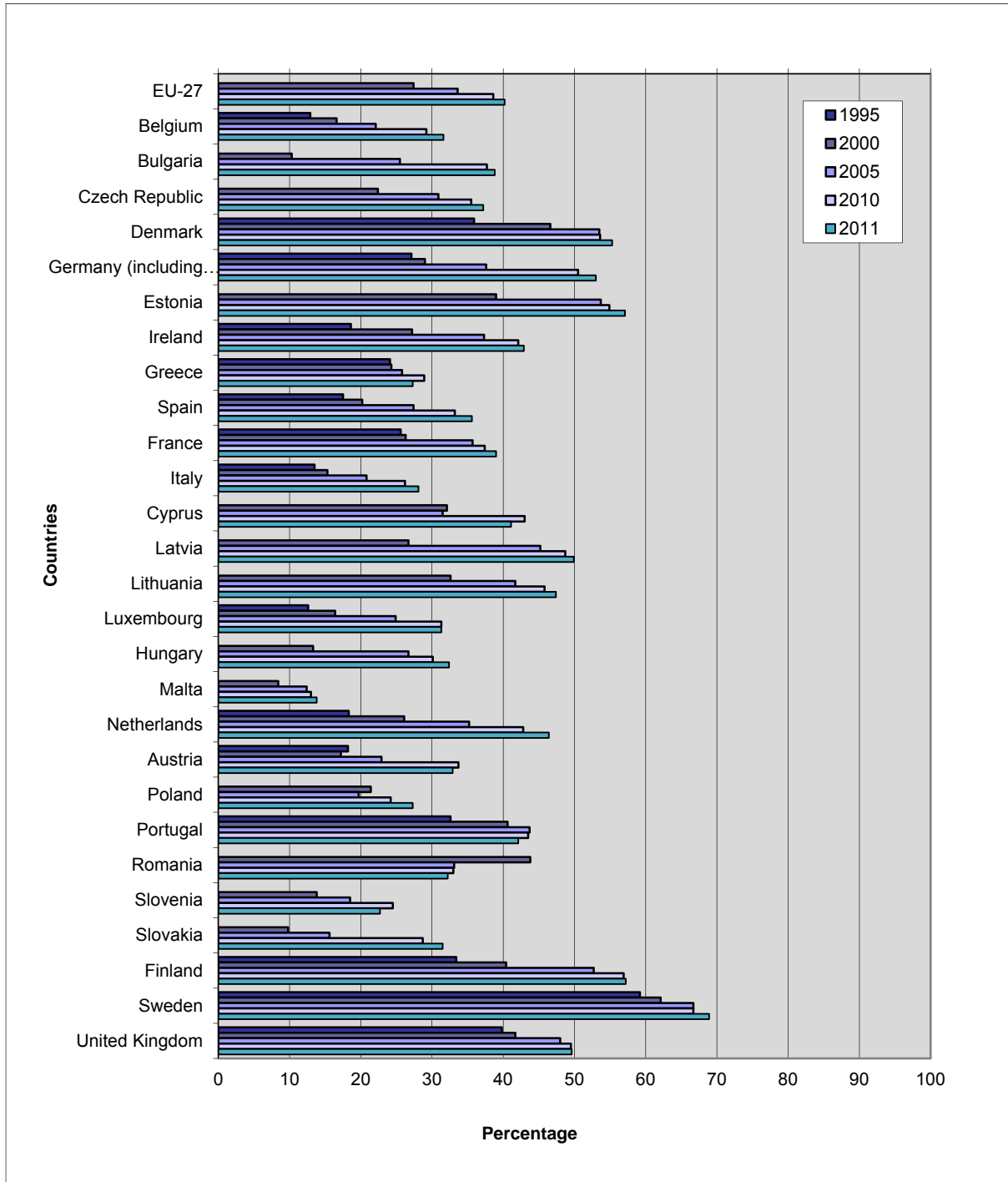
Source: Eurostat, EU-LFS (2012)

Figure 10: Employment rate of women aged 25–49, annual averages (%)



Source: Eurostat, EU-LFS (2012)

Figure 11: Employment rate of women aged 50–64, annual averages, 1995–2011 (%)



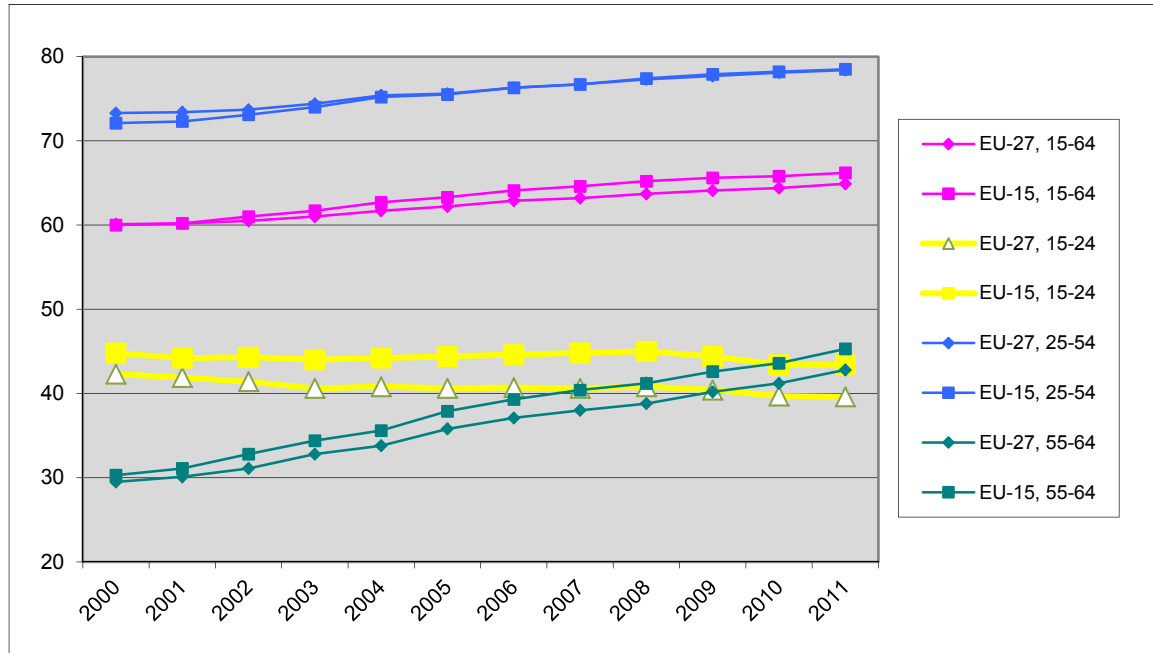
Source: Eurostat, EU-LFS (2012)

2.4.2 Activity rates

Activity rates reflect the active population, that is the sum of the employed and the unemployed, as a percentage of the population of the same age. As Figure 12 shows, female activity rates are quite comparable between the EU-15 and EU-27 in each age and gender group with the exception of the youngest (15–24). The general female activity rate (ages 15–64) increased slightly from 60 % in 2000 to around 65 % in 2011. The activity rate of women aged 25–54 years is the highest among the groups and increased from around 73 % in 2000 to 78 % in 2011. Generally, activity rates of younger women have been decreasing. The difference in the activity rate of the young women is increasing between the EU-15 and the EU-27. The higher activity rates of young women in the EU-15 compared

with the EU-27 might be partly explained by the low activity rates of women in some of the southern new Member States (NMSs) in which women's tasks are mainly traditional (household and family tasks) rather than in paid employment. The increases in activity overall are highest for the oldest group: female workers aged 55–64.

Figure 12: Female activity rate by age groups in the EU-15 and the EU-27, 2000–2011 (%)



Source: Eurostat, EU-LFS (2012)

The absolute number of inactive persons aged 55–64 years was 12.1 million men and 18.5 million women. A total of 41.1 % of men in this age category, and 68.8 % of women, were outside the labour market in the EU-27 in 2010. By country, inactivity rates of men were highest in Hungary (56.9 %), France (54.9 %), Slovenia (52.5 %) and Belgium (52.4 %) and lowest in Sweden (20.9 %), Cyprus (25.0 %) and Germany (28.8 %). On the women's side, the inactivity rates were as high as 86.7 % in Malta, 74.5 % in Slovenia and 74.1 % in Poland, and as low as 30.2 % in Sweden, 36.1 % in Estonia and 39.8 % in Finland. Inactivity rates are particularly low in Iceland: only 12.2 % of men and 20.9 % of women in this age group are inactive. Retirement is the main reason given by men in this age category for being outside the labour market. (Eurostat, 2007a). Of the total male population in this age group, 25.8 % were retired. The second most common reason is illness or disability, with 8.5 % of the male population in this age category inactive for this reason.

Since 2000 the share of the inactive population in the total working-age population has fallen from 31.4 % to 29.0 % in the EU-27. This corresponds to a reduction of 4.5 million inactive persons; this is mostly caused by the rising participation of women in the labour force. The share of women outside the labour market fell during that period from 39.9 % to 35.6 %, while the share of men outside the labour force remained almost stable, falling slightly from 22.9 % in 2000 to 22.4 % in 2010.

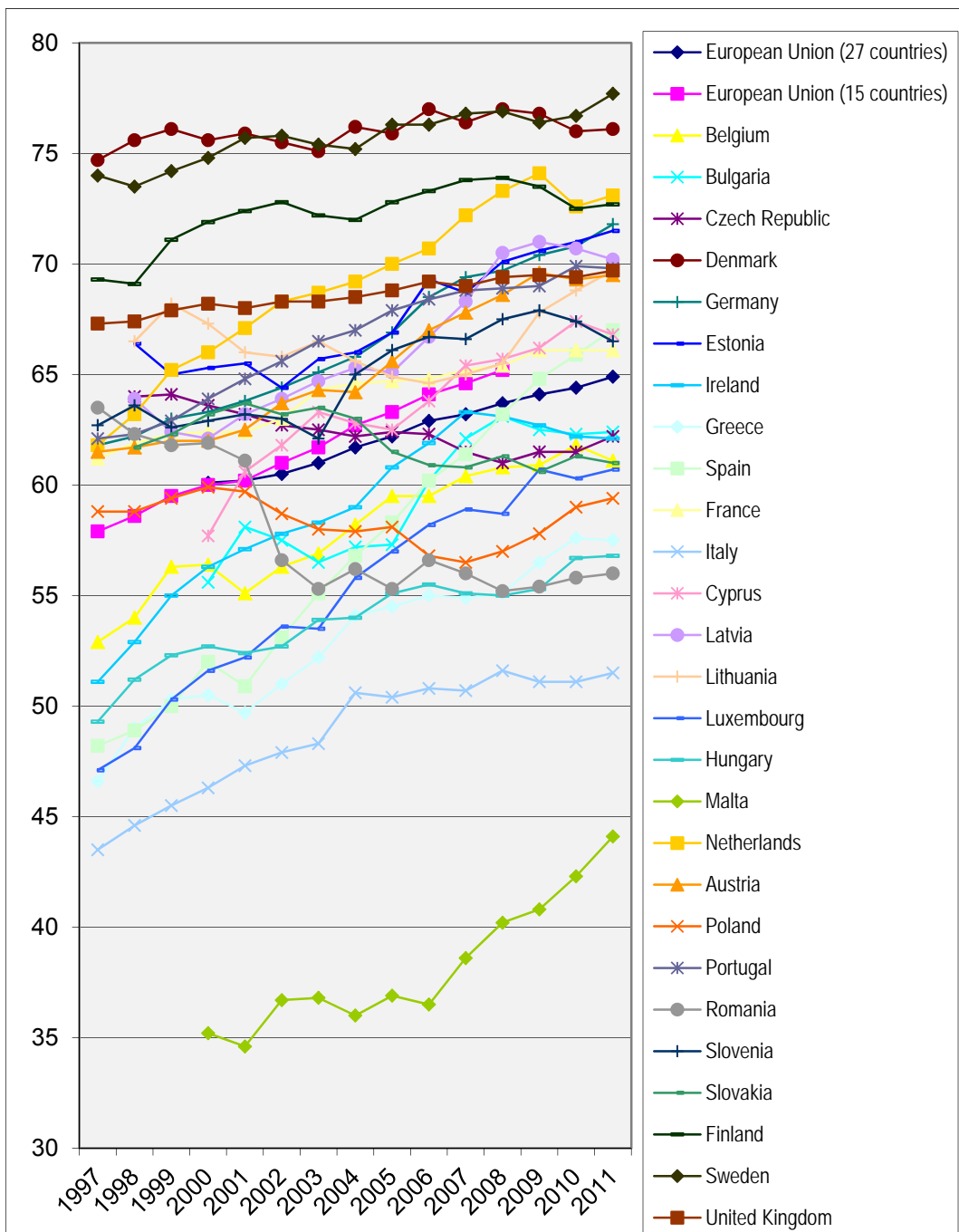
The 2010 result confirms the downwards trend in the population outside the labour market in spite of the economic crisis. The effects of the crisis are visible nevertheless: the yearly decrease of the inactivity rate used to be –0.3 % on average during the period 2003–2008, whereas the ratio decreased by only 0.1 percentage point in 2009 and 2010. The crisis has affected people differently depending on their sex and age. While in 2010 the inactivity rate of women aged 25–64 maintained the downwards trend seen in previous years, the inactivity rate among men aged 25–64 rose (+0.1 %) for the second year in a row. Young adults aged 15–24 were affected even more (+0.7 % in 2010).

In all Member States women are more likely than men to be outside the labour force. In the Nordic and Baltic countries the gender gap was seven percentage points or less in 2010, while in Malta, Italy and Greece the difference was more than 20 percentage points. The extreme cases are Lithuania, where

the gender difference is only 3.6 percentage points, and Malta, where it reaches 35.4 percentage points.

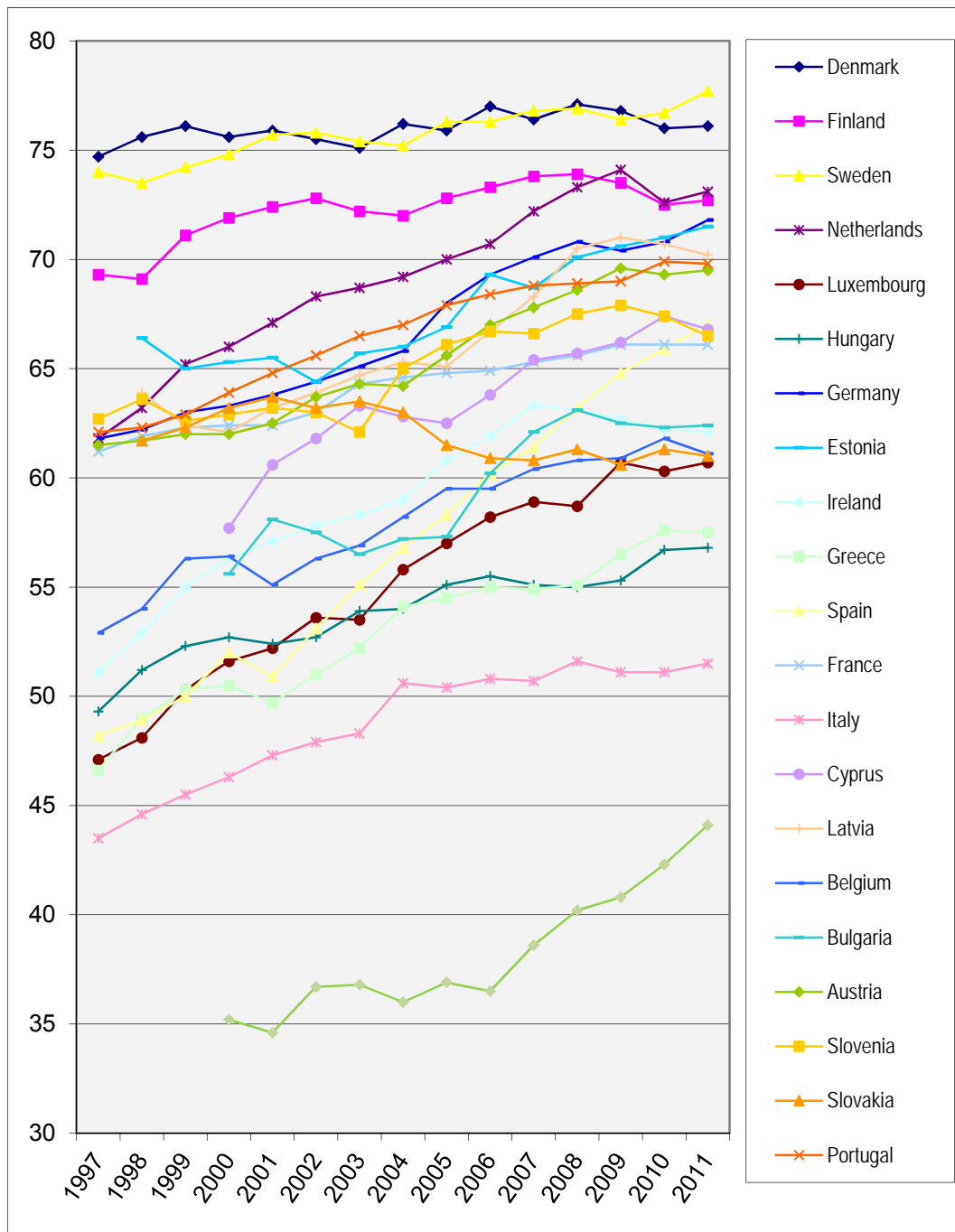
When assessing the activity rates of women aged 15–64 years in individual EU-27 countries, it can be seen that the highest activity rates over time are reached in the Nordic countries of Denmark, Sweden and Finland, followed by the Netherlands and the United Kingdom (Figures 13 and 14). Female activity rates were particularly high, at 75 %, from 1997 to 2000 in Denmark and Sweden. In contrast, by far the lowest activity rate was measured in Malta, ranging from 35 % to 40 %. The next lowest activity rates are seen in Italy and Greece, ranging between 45 % and 55 %. Interestingly, if looking at young women, the activity rate in Malta reaches 50 % to 60 % and ranks among the eight highest, even though it is decreasing. This might be explained by an early entrance of young Maltese women into the labour market before a shift towards staying longer in education.

Figure 13: Activity rates of women aged 15–64, EU-27 by country, 1997–2011 (%)



Source: Eurostat, EU-LFS (2012)

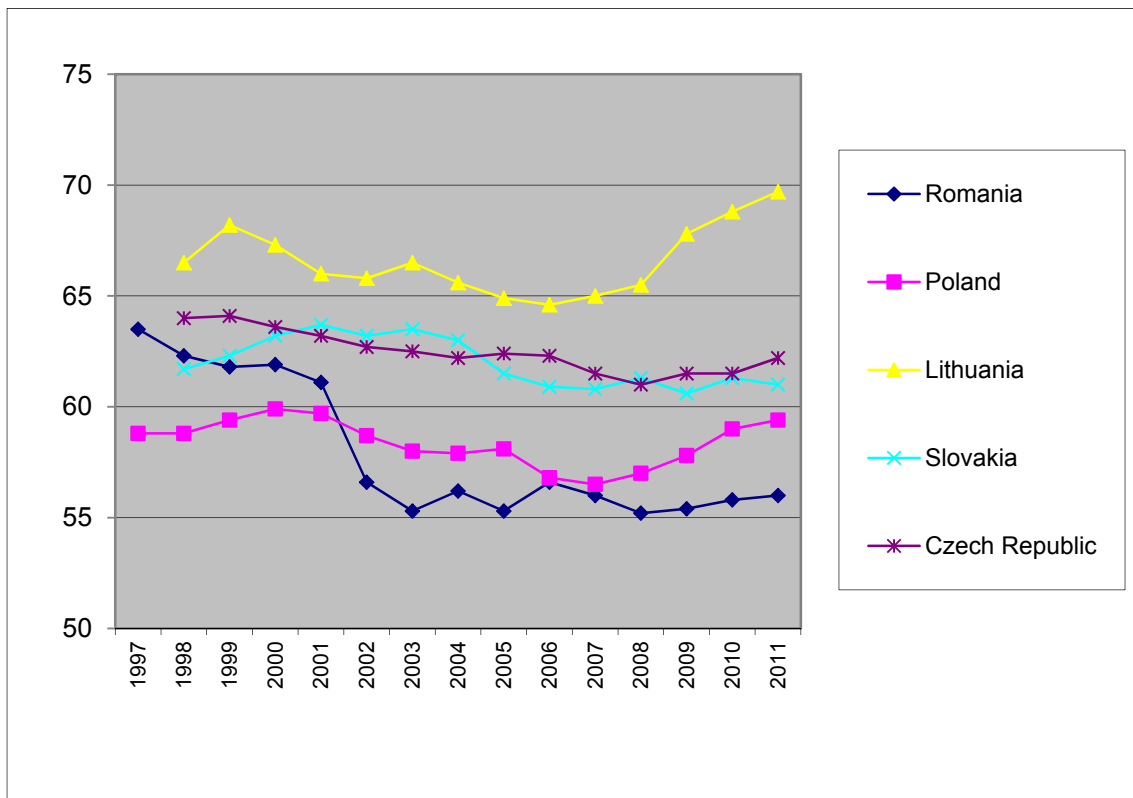
Figure 14: Countries with increasing female activity rate, 1997–2011 (%)



Source: Eurostat, EU-LFS (2012)

In the large majority of EU Member States female activity rates increased from 2000 to 2011 (Figure 14). In contrast, only five Member States (Poland, Romania, Slovakia and the Czech Republic) registered falls in the female activity rate (Figure 15). In Lithuania activity rates have increased after a marked fall.

Figure 15: Countries with decreasing female activity rate, 1997–2011 (%)



Source: Eurostat, EU-LFS (2012)

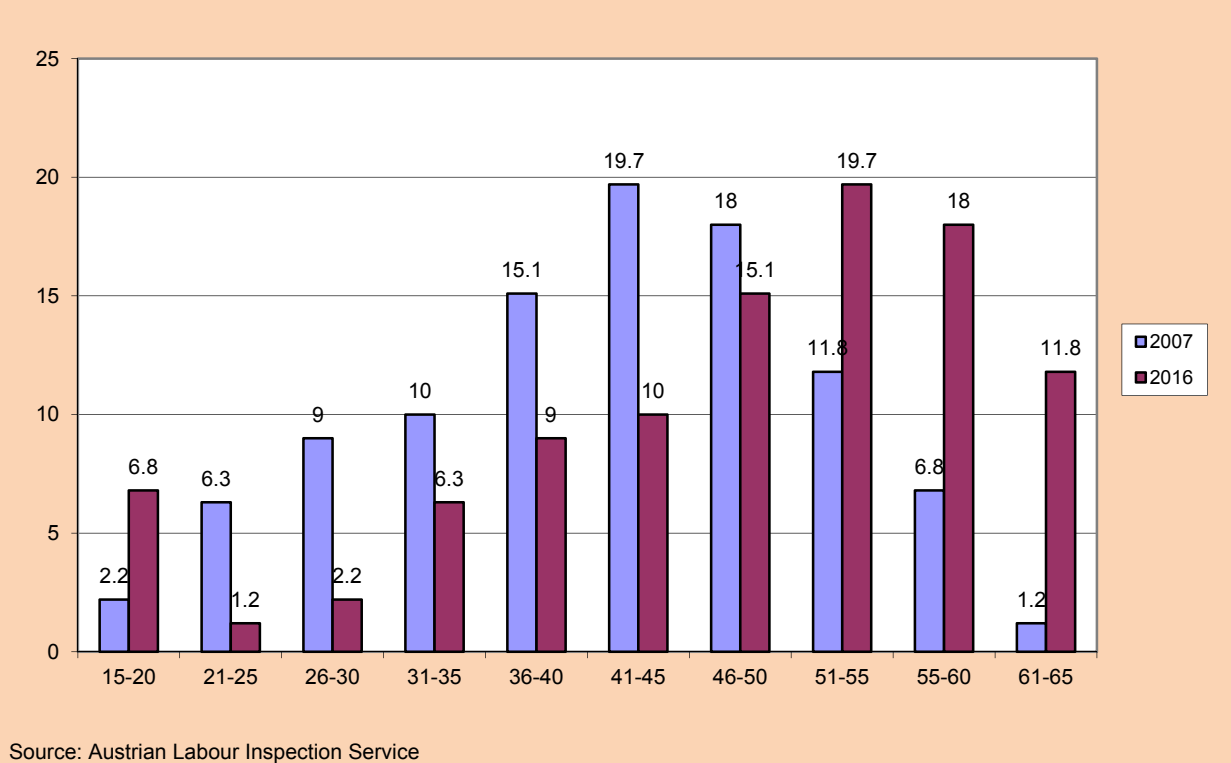
Labour Inspectorate project on age and work ability (Austria)

This project was presented at the Senior Labour Inspectors' Committee Meeting in Slovenia, 2008

A labour inspection campaign was launched in Austria that targeted small and medium-sized enterprises (SMEs) and very small enterprises in all sectors of industry. It was based on the finding that training and chances of promotion end at the age of 45; work rates, work organisation, working hours and the structure of the work environment continue to be tailored to younger people.

Fifteen enterprises per regional labour inspectorate (300 in total) were selected for the interventions. Labour inspectors received internal training and were provided with folders and tools for consultancy. The campaign was conducted in cooperation with social partners and external experts. Gender focus was ensured by including sectors with a mainly female workforce (such as within the hospitality industry and healthcare), while ensuring that women were also covered by the labour inspection visits. The aim was to raise awareness at the company level and show enterprises how to take account of age in risk assessment and related prevention measures. Enterprises were invited to assess the age structure of their workforce and attempt a projection of expected changes in future to assess possible effects of demographic trends (for an example see Figure 16). Folders, tools and brochures were developed jointly with the aim of being usable and practical to SMEs.

Figure 16: Projection of the age structure — health and social service — blue-collar workers, Austrian Labour Inspection campaign on age management at work (% of workers in the age group of the total working population)

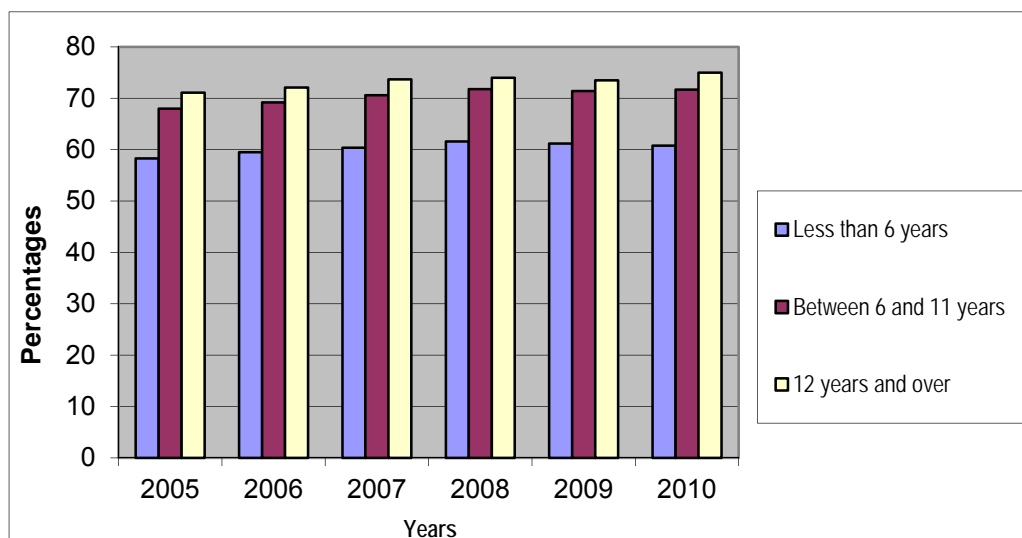


2.4.3 Older and younger women’s reasons for not seeking employment

The main influence on the lower employment rate of women in their twenties and thirties is the effect of childbearing. Employment rates are lowest immediately following the birth of a child and then increase as mothers re-enter the workforce.

As shown in Figure 17, maternal employment rates increase as children grow up. Mothers are more likely to be out of work when their children are very young and to go back when their children reach the age of compulsory schooling (around 6 years old).

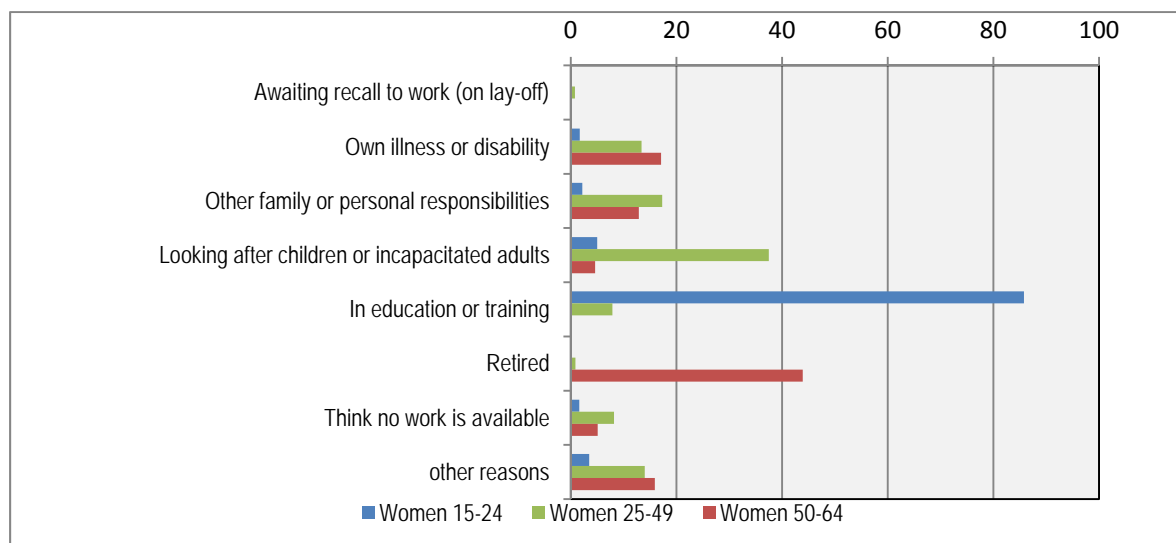
Figure 17: Maternal employment rates (those aged 25–54 years, %) by age of youngest child



Overall, women are more likely than men to be outside the labour force in all European Member States (Eurostat, 2007c) and receive less targeted support. But women aged 25–54 with young children aged younger than 7 have higher inactivity rates than women without children. Interestingly, the inactivity rates of women having more than one child increase, whereas the fathers are hardly affected.

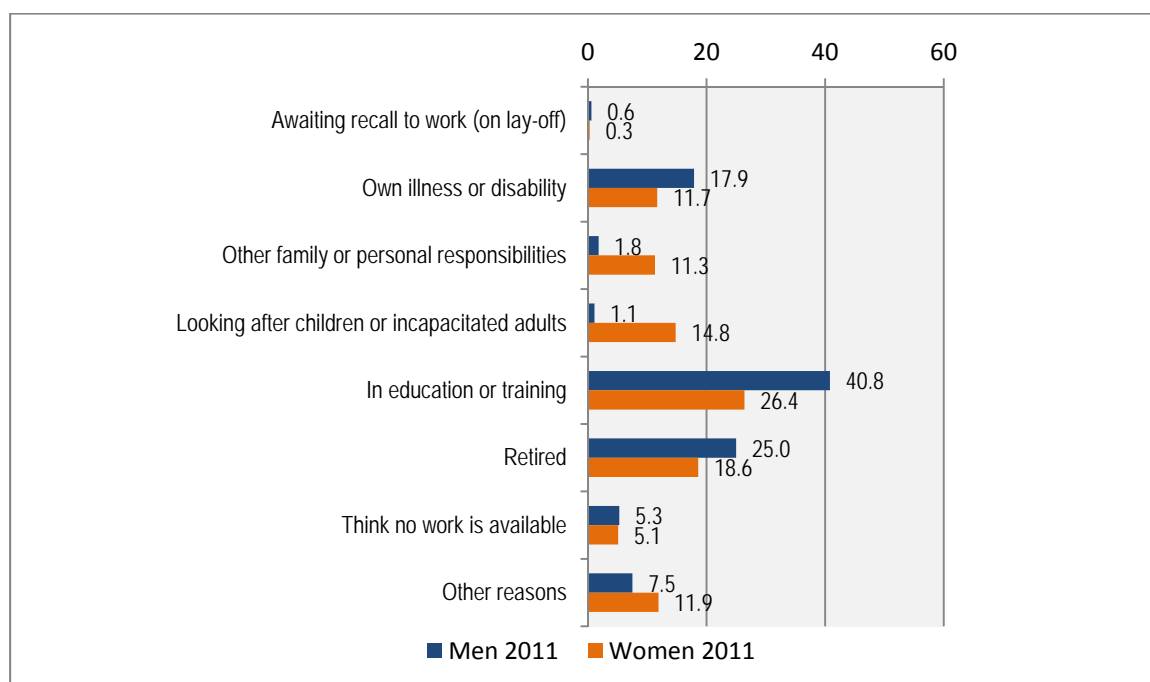
Thus, family responsibilities can be regarded as the main reason, with 10.3 % of the 24.3 % inactive women indicating that personal or family reasons are the main reasons for being inactive with regard to the labour market. Among younger women, inactivity is mainly related to (being in) education and — to a smaller degree — family responsibility (Figure 18). However, only 0.3 % of their male counterparts identify this aspect as the main reason for being economically inactive (Figure 19) (Eurostat, 2006a).

Figure 18: Main reasons for women in different age groups not seeking employment in the EU-27, 2011 (%)



Source: Eurostat (2011a)

Figure 19: Main reasons by gender for not seeking employment in the EU-27, 2011 (%)



Source: Eurostat (2011a)

The employment gap between mothers with very young children (younger than 3 years) and mothers with children of compulsory school age (6–11 years) is on average 10 points for those aged between 25 and 54.

Mothers were found to have both internal and external constraints to their decisions, so it could be that the new measures in this field are reducing obstacles for mothers returning to work (Himmelweit and Sigala, 2003).

Regarding older women, aged 55–64 years, 68.8 % (vs. 41.1 % of the men in this age group) were inactive with regard to the labour market. Retirement is the main reason for the inactivity of women aged 54–65, with 29.9 % of them citing this as the main reason. Personal or family responsibilities (7.3 %) and own illness or disability (7.6 %) are other reasons of similar importance. Unlike for men, however, the pattern for women is less consistent across Member States. Cultural or specific national factors might lead survey respondents to distinguish differently between their main reason for inactivity and other reasons. In many countries, personal or family responsibilities are the main reasons given in this age group for female inactivity, with retirement being the prevailing reason in other countries (Eurostat, 2007 a, 2011b).

Among the population aged 65–75, 96 % of the women and 91.2 % of their male counterparts were outside the labour market (Eurostat, 2006a).

2.4.4 Unemployment

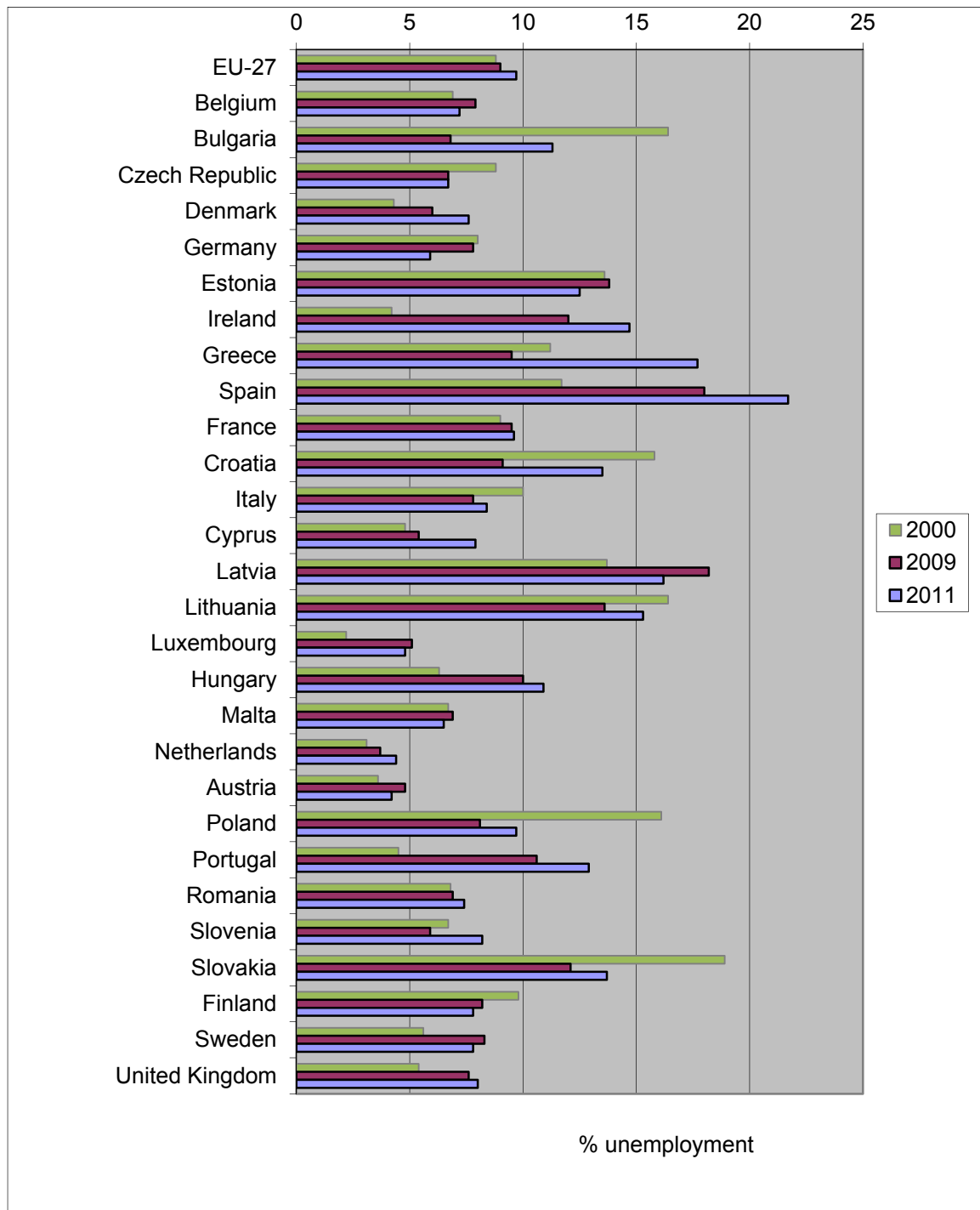
Unemployment in the EU-27 showed a slight decline until 2008, but in 2009 there was a reversal of the downwards trend in unemployment of the previous three years. Moreover, different developments could be observed across individual Member States and with respect to gender (Figures 20 and 21). In some Member states, unemployment rates have dramatically risen for female workers, for example in Spain and Ireland. In many Member States the downwards trend has been reversed.

But even in Member States with traditionally low unemployment rates, such as Austria and Luxembourg, a rise can be observed. The impact of the economic crisis would need to be assessed in a gender-sensitive manner that takes into account the high percentage of part-time employment and seasonal work.

As in the past, unemployment was generally higher among women than men. This was especially the case in Greece, where the labour market situation for women looked particularly challenging, with a gender gap of six percentage points. However, the opposite situation (of higher unemployment rates for men) is found in a few Member States. This is notably the case in Ireland and Romania, where the unemployment rate for men was two percentage points higher than that for women in 2008, while this 'reverse' gender gap was also observed in the Baltic States, Germany and the United Kingdom.

Historically, women have been more affected by unemployment than men. In 2000, the unemployment rate for women in the EU-27 was around 10 %, while the rate for men was around 8 %. By the end of 2002, this gender gap had narrowed to around 1.3 percentage points and between 2002 and early 2007 this gap remained more or less constant. In recent years, most markedly since the first quarter of 2008, male and female unemployment rates in the EU-27 have converged and by the second quarter of 2009 the male unemployment rate was higher (Governatori et al., 2009). The gender differences regarding unemployment lasting for 12 months or more also decreased. Throughout Europe, the duration of unemployment averaged 12 months for women and 11.7 months for their male counterparts. The annual average unemployment rates for 2009 and 2010 were consequently slightly higher for men (9.1 % and 9.7 %, respectively) than for women (9.0 % and 9.6 %, respectively); in 2011, however, unemployment for males slightly declined in the EU-27, while that of women continued to increase such that the rate for males was again lower at 9.6 % than that for females (9.8 %).

Figure 20: Female unemployment rates (%) for EU Member States in 2000, 2009 and 2011



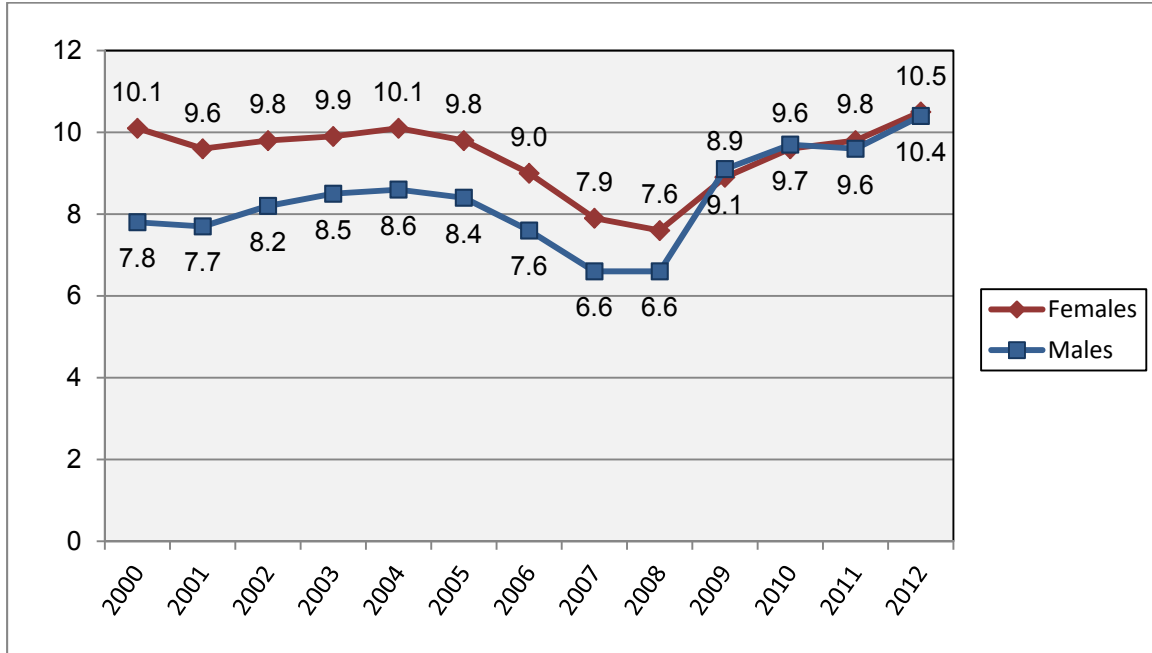
Source: EU-LFS (2012)

Regarding the trend of the absolute unemployment numbers in Europe, male workers account for two-thirds of the increase, whereas their female counterparts account for only one-third. This means that the rise in unemployment was almost twice as high among men than for women across all age groups. In comparison with approximately 20 % for women, unemployment numbers rose by almost 40 % for men over the year to the second quarter of 2009 (Governatori et al., 2009). However, as can be seen in Figure 22, female workers seem to catch up on unemployment, especially among younger workers.

Among younger people, more men than women are affected (on average) by unemployment. In 2011, the unemployment rate among young persons was higher than the rate among those aged between

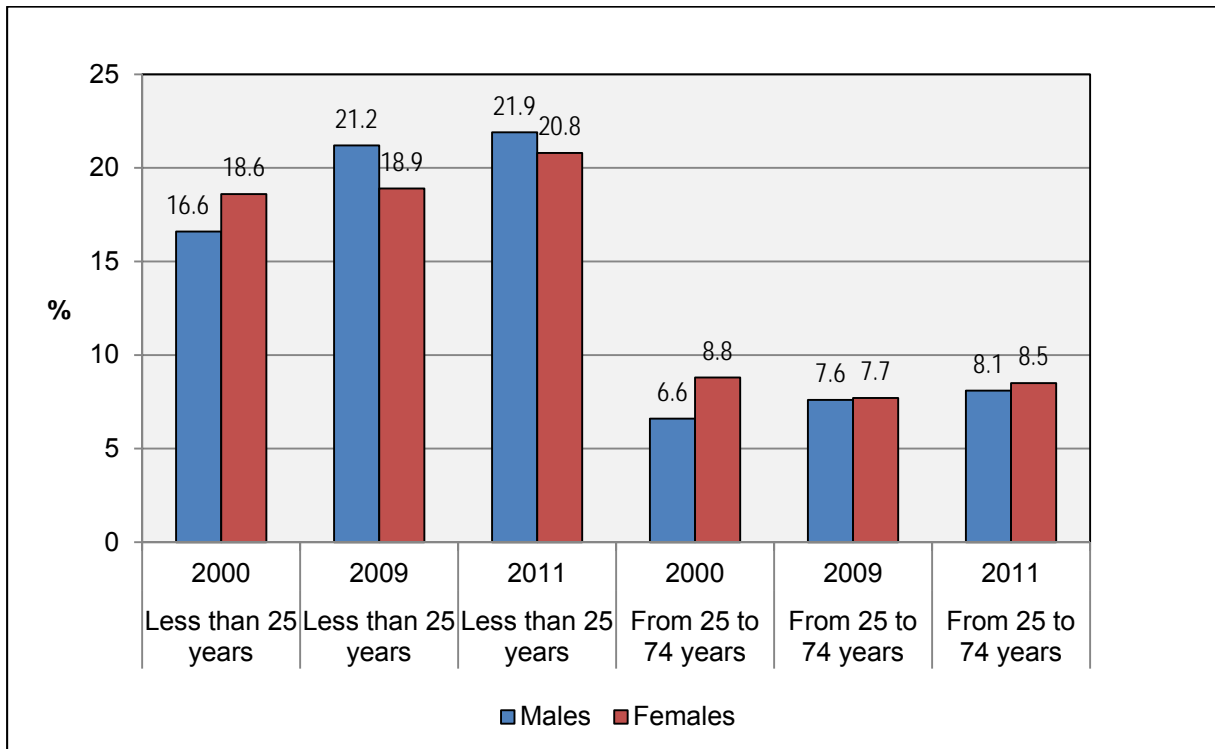
25 and 74 in all of the Member States. In Spain (46.4 %), Greece (44.4 %), Slovakia (33.2 %), Lithuania (32.9 %) and Portugal (30.1 %) youth unemployment rates were particularly high.

Figure 21: Female unemployment rates (%) in the EU-27, 2000–2012



Source: EU-LFS (2013)

Figure 22: Unemployment rates (%), annual average, EU-27, by gender and age in 2000, 2009 and 2011



Source: Eurostat (2012)

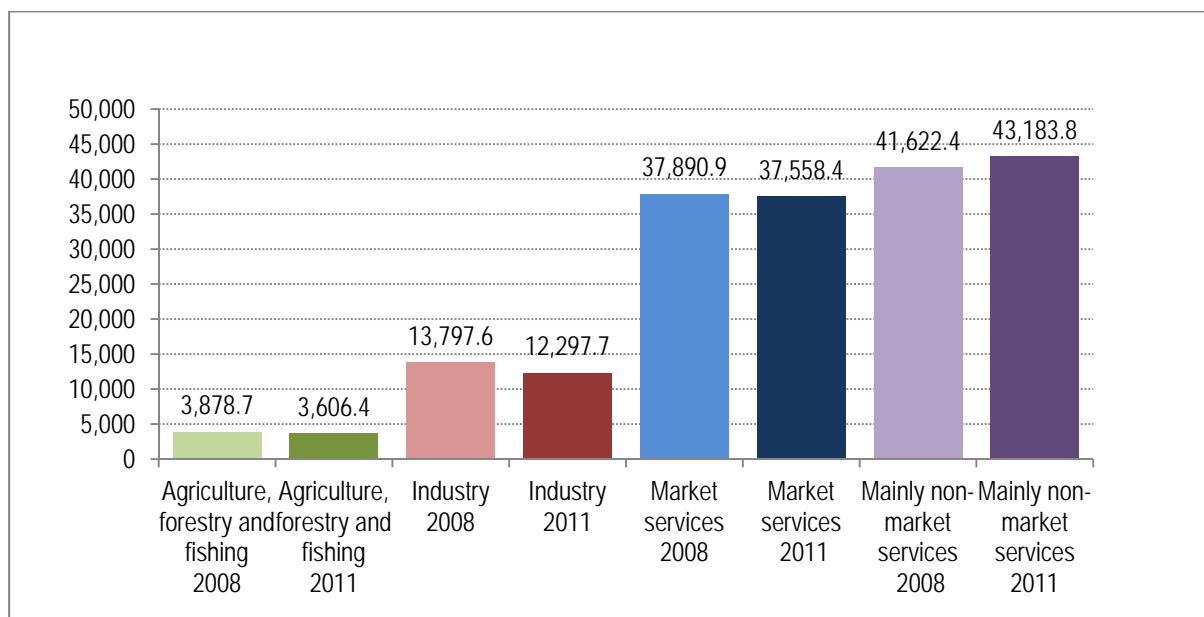
The Netherlands (7.6 %), Austria (8.3 %) and Germany (8.6 %) were the only Member States with a youth unemployment rate below 10 % (Eurostat, 2011a). Unemployment rates for young men rise sharply, so that the overall rise in the unemployment rate is mainly due to increasing unemployment among young men in Europe. However, this measure does not necessarily capture all aspects of the changing economic conditions for women, as female workers are more likely than men to leave the labour market entirely. It was demonstrated earlier (see section 2.5.2 on activity rates) that the activity rate of younger women is stagnating or decreasing, depending on the country. Moreover, the gender differences in jobs are reflected in the economic focus on their employment and unemployment patterns — with women predominating in part-time work, lower-paid jobs, jobs with shorter tenure and smaller firms. Regarding sectors, the economic crisis is affecting male-dominated sectors in particular. This may certainly lead in turn to negative effects on female-dominated service sectors. Generally, however, the increase in unemployment due to the economic crisis first affected men (Governatori et al., 2009).

2.5 Gender segregation by sector

2.5.1 Women in the industry and service sector

According to the latest Labour Force Survey, almost 70 % of employed persons (which includes both workers and self-employed) in the EU-27 worked within the service sector in 2011, compared with 62 % in 2000. Market services, such as trade, transportation and financial activities, accounted for 39 % of persons employed in 2011, while mainly non-market services, such as public administration, education and health, accounted for 30 %. The industry and construction sector accounted for 25 % and agriculture for 5 % (Eurostat, 2012a). Differences still persist among the EU Member States. Agriculture continues to be a very significant source of employment in Romania (28.6 % of the working population in 2011), whereas it accounts for only a very small share (below 2 %) in Germany, Belgium, the United Kingdom, Luxembourg and Malta. The relevance of industry was highest in the Czech Republic (38.4 %) and Slovakia (37.4 %) and lowest in Luxembourg (13.4 %). The share of market services was highest in Cyprus (45.3 %), and non-market services were most prominent in Luxembourg (41.7 %).

Figure 23: Female employment, EU-27, by sector, ages 15–64 years, in 2008 and 2011 (thousands)



Source: Eurostat, EU-LFS (2012)

In all EU-27 countries, women’s employment is considerably higher in the service sector than in industry (Figure 23 and Table 7). 44.5 % of the women employed in the EU worked in non-market

services and 12.6 % in industry and construction. For men, the picture is almost the reverse, as 35.7 % worked in industry and 18.6 % in non-market services. The percentage of women and men in market services was nearly the same (38.8 % and 39.9 %, respectively) (Eurostat, 2012a).

Table 7: Women's employment (%) by sector: agriculture, services and industry

Year	Services		Industry		Agriculture	
	2000	2011	2000	2011	2000	2011
EU-27	78.7	84.4	15.0	11.3	6.3	4.3
Austria	81.7	84.5	12.0	11.0	6.4	4.5
Belgium	88.6	91.4	10.2	7.7	1.2	0.9
Bulgaria	56.9	64.0	24.1	21.2	19.0	14.8
Cyprus	83.3	89.5	11.6	7.6	5.1	2.9
Czech Republic	69.9	75.4	26.7	22.6	3.5	2.0
Denmark	86.5	90.6	11.7	8.4	1.8	0.9
Germany	83.4	86.7	15.1	12.2	1.5	1.1
Estonia	71.8	79.5	23.8	18.1	4.5	2.4
Finland	82.6	87.5	13.6	9.8	3.8	2.7
France	86.6	89.5	10.9	8.8	2.5	1.8
Greece	70.8	81.2	10.5	7.0	18.7	11.8
Ireland	82.8	90.2	15.2	8.8	2.0	1.0
Italy	77.1	83.9	18.9	13.3	4.0	2.7
Hungary	69.2	76.8	24.1	19.3	6.8	3.9
Latvia	70.1	80.4	17.8	14.3	12.1	5.3
Lithuania	65.1	77.2	19.9	16.4	15.0	6.5
Malta	75.9	89.0	22.7	10.4	1.3	0.6
Netherlands	89.6	92.4	8.2	6.0	2.2	1.5
Poland	:	71.6	:	16.4	:	12.0
Portugal	65.0	75.9	21.5	14.9	13.5	9.2
Romania	:	45.7	:	19.8	:	34.5
Slovenia	60.7	74.8	27.5	17.6	11.8	7.6
Slovakia	73.4	80.9	23.0	17.6	3.6	1.5
Spain	81.9	89.5	13.9	8.1	4.2	2.4
Sweden	87.9	90.8	10.9	8.3	1.2	0.9
United Kingdom	89.6	93.3	9.7	6.0	0.7	0.7

Source: Eurostat database, annual results, EU-LFS

In most countries the employment of women in services has increased since 2000. The employment of women in agriculture is still relatively high in the former eastern countries of Portugal and Greece. Women working in industry are mainly employed in micro-electronics, food production, textile and footwear, chemical and pharmaceutical industries, as well as handicraft workshops. Women in the service sector are mostly occupied in teaching, office work, hospitals, banks, commerce, hotels and domestic work (Forastieri, 2000).

In 2008, a revised version of the NACE (Statistical Classification of Economic Activities in the European Community) categorisation of industrial sectors was implemented, in order to reflect the move from industry to services (Figure 23). Therefore, the employment figures are not directly comparable. However, as can be seen in Table 8, in most Member States there has been a marked

trend from agriculture and industry to services in the last 3 years, and more specifically to non-market services, including healthcare and the education sector. The trend may have been accelerated by the current economic crisis. However, as outlined above, there are major differences between Member States.

Table 8: Female employment in agriculture, industry and services in 2008 and 2011 (thousands)

Country	Agriculture, forestry and fishing		Industry (NACE Rev. 2 B-F)		Market services (NACE G-N)		Mainly non-market services (NACE O-U)	
	2008	2011	2008	2011	2008	2011	2008	2011
Austria	90.0	88.0	225.3	233.7	846.2	849.5	678.5	711.5
Belgium	19.8	17.1	197.8	197.3	712.3	715.6	1,039.4	1,105.7
Bulgaria	84.7	67.0	448.4	341.7	578.8	555.5	434.1	420.4
Cyprus	3.6	3.2	15.7	13.6	81.2	78.8	67.1	70.1
Czech Republic	48.6	38.7	568.2	501.0	785.6	789.3	710.8	748.2
Denmark	14.0	10.2	158.7	116.4	456.7	429.3	684.4	698.6
Estonia	7.2	6.6	68.3	53.9	117.9	112.1	111.5	112.4
Finland	31.3	27.1	123.2	106.4	447.6	432.9	595.6	604.0
France	222.1	226.0	1,301.1	1,284.3	4,328.5	4,307.4	6,208.5	6,275.6
Germany	212.9	197.3	2,589.8	2,572.5	7,007.1	7,323.7	7,434.7	7,936.9
Greece	199.2	196.9	164.9	122.8	751.1	690.1	643.4	614.2
Hungary	40.1	45.3	368.1	344.4	684.5	674.9	660.9	670.9
Ireland	11.5	7.5	90.2	73.1	407.7	348.7	394.8	397.5
Italy	257.9	239.0	1,476.0	1,327.2	3,756.7	3,737.1	3,765.5	3,952.4
Latvia	27.6	25.6	83.1	64.6	219.2	201.3	185.9	181.4
Lithuania	42.1	43.5	133.1	109.7	276.5	269.9	270.2	259.7
Luxembourg	1.0	:	5.1	3.6	34.6	36.9	44.3	52.1
Malta	:	:	5.0	6.3	22.4	20.7	22.0	25.1
Netherlands	62.7	55.8	274.4	230.4	1,462.2	1,324.2	1,892.0	1,891.7
Poland	921.4	826.0	1,264.8	1,190.1	2,433.6	2,622.9	2,360.5	2,498.3
Portugal	175.3	121.2	389.3	352.4	798.5	770.3	878.7	905.6
Romania	1,030.4	1,035.4	1,003.6	826.6	1,068.0	1,115.5	855.1	923.2
Slovenia	29.0	26.3	101.6	77.8	161.3	158.5	148.4	154.5
Slovakia	23.2	14.7	259.6	220.9	403.6	398.6	377.8	400.9
Spain	216.9	195.5	947.7	713.3	3,977.5	3,688.4	3,336.2	3,448.8
Sweden	17.1	17.3	172.2	162.8	729.2	752.0	1,203.7	1,215.4
United Kingdom	89.0	74.2	1,253.8	990.3	5,326.7	5,139.9	6,564.3	6,858.0

., not available.

Source: Eurostat database, EU-LFS (2012)

2.5.2 Major and growing employment sectors for women

According to Franco (Eurostat, 2007c: 2), in 2005 60 % of all employed women were concentrated in six sectors out of the 62 defined by the NACE two-digit-level categorisation. These six sectors are healthcare and social services (17 %), retail (12.5 %), education (11.5 %), public administration (7 %), business activities (7 %) and hotels and restaurants (5 %). In contrast, only 31 % of employed men worked in these sectors. The focus on specific sectors is much higher among women than among

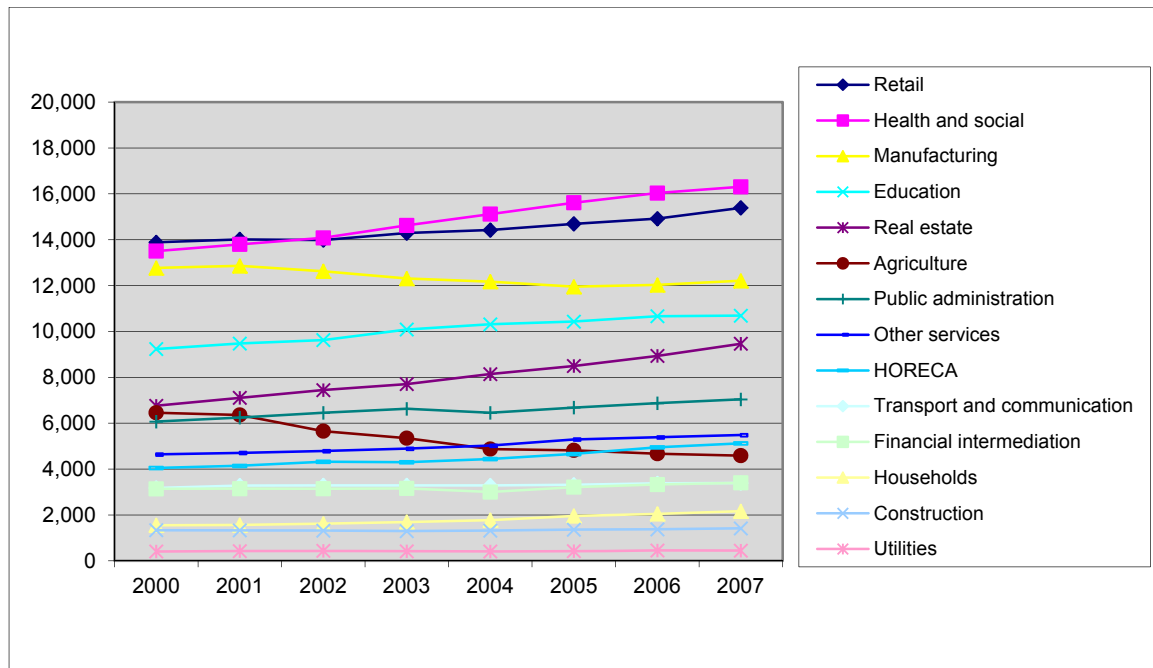
men, as only 42 % of all employed men work in the six most important sectors for them: construction (13 %), public administration (7 %), retail (6 %), business activities (6 %), agriculture (5 %) and land transport (4 %). This concentration of female activity in a few sectors seems to be increasing rather than decreasing over time. There has not been much positive improvement in the aggregate levels of segregation in sectors and occupations since 2003. In 2008, Estonia, Slovakia, Lithuania, Latvia and Finland faced high segregation in occupations, and the same five countries (though not in the same order) have the highest levels of segregation in sectors (EC, 2009a). The increasing employment of women in the service sector can be explained by job growth in the sectors of health and social work, as well as in education and business activities in which women prevail. The health, education and other services sectors provide many part-time jobs for women (Eurofound, 2007a).

The share of women who work in the public sector is considerably higher than that of men. In contrast, the share of men in the private sector is significantly higher than that of women.

Data from the Labour Force Survey show that women are mostly employed in the health and social sector and in retail, education and real estate. The most important and steadily increasing sectors for women’s employment are the health and social sector, real estate and retail. Female employment is declining in the classic sectors of agriculture and manufacturing. The same picture is true for the general working population, except for manufacturing, which remains stable in its importance for the general workforce (Figures 24–27).

In 2008, there was a break in series due to the change to the coding of industrial sectors (from NACE Rev. 1.1. to NACE Rev. 2), which now better reflects service professions. Therefore, data are presented here for the period up to and after 2008.

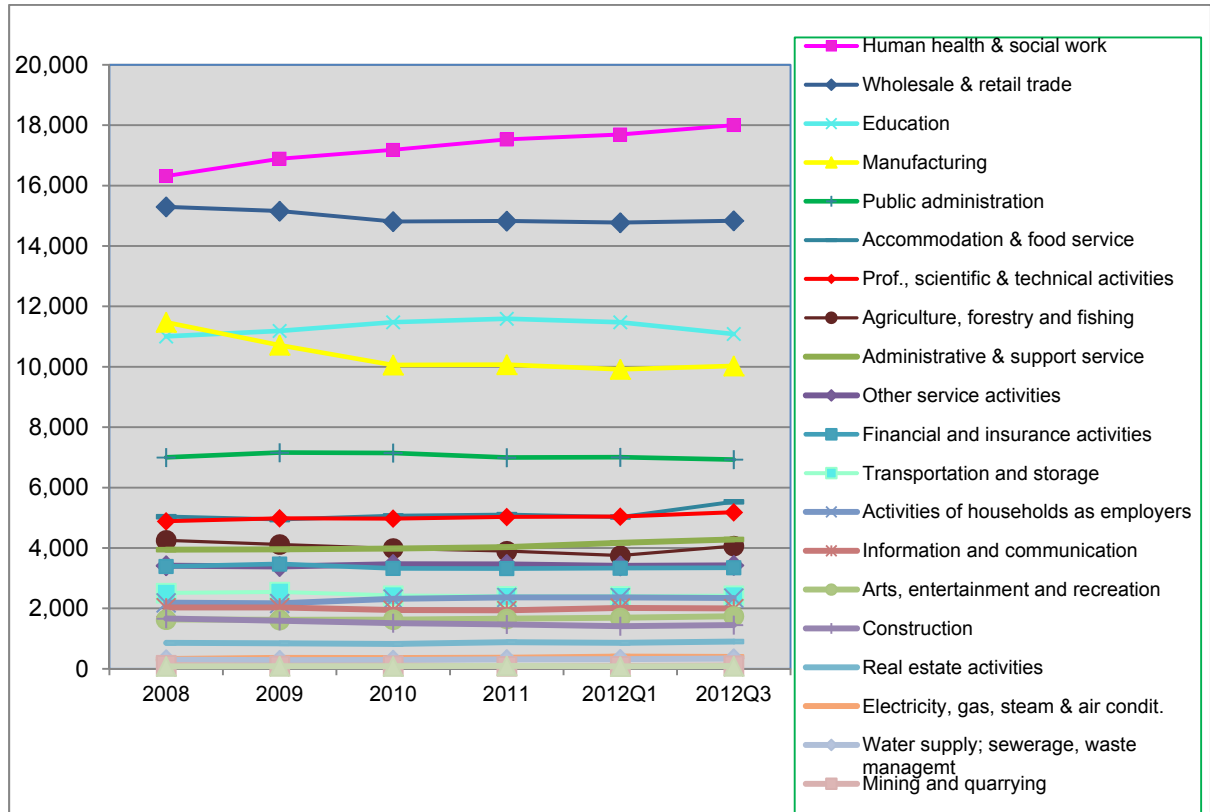
Figure 24: Main employment sectors of women, EU-27, 2000–2007, NACE Rev. 1.1. Women employed, 15 years and over (thousands)



Source: Eurostat, EU-LFS (2009)

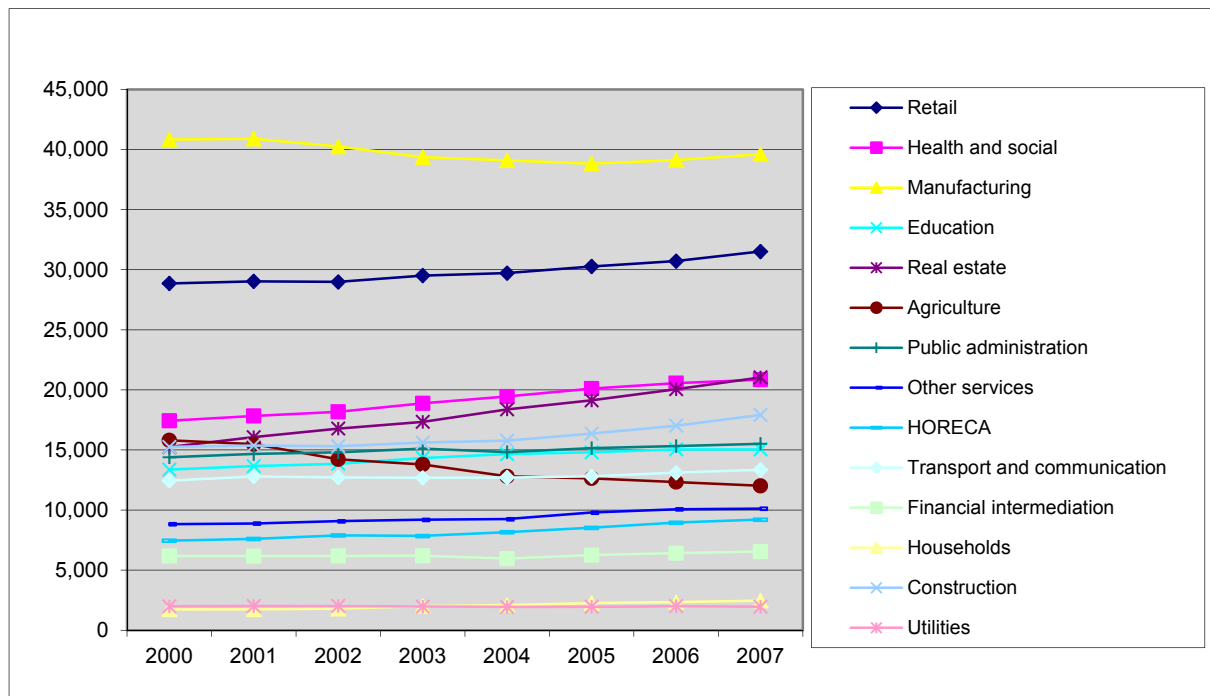
The stagnation in employment in the retail sector and public administration, as observed in Figure 25, may well be linked to the economic crisis and related austerity measures.

Figure 25: Main employment sectors of women, EU-27, 2008–2012, NACE Rev. 2. Women employed, 15 years and over (thousands)



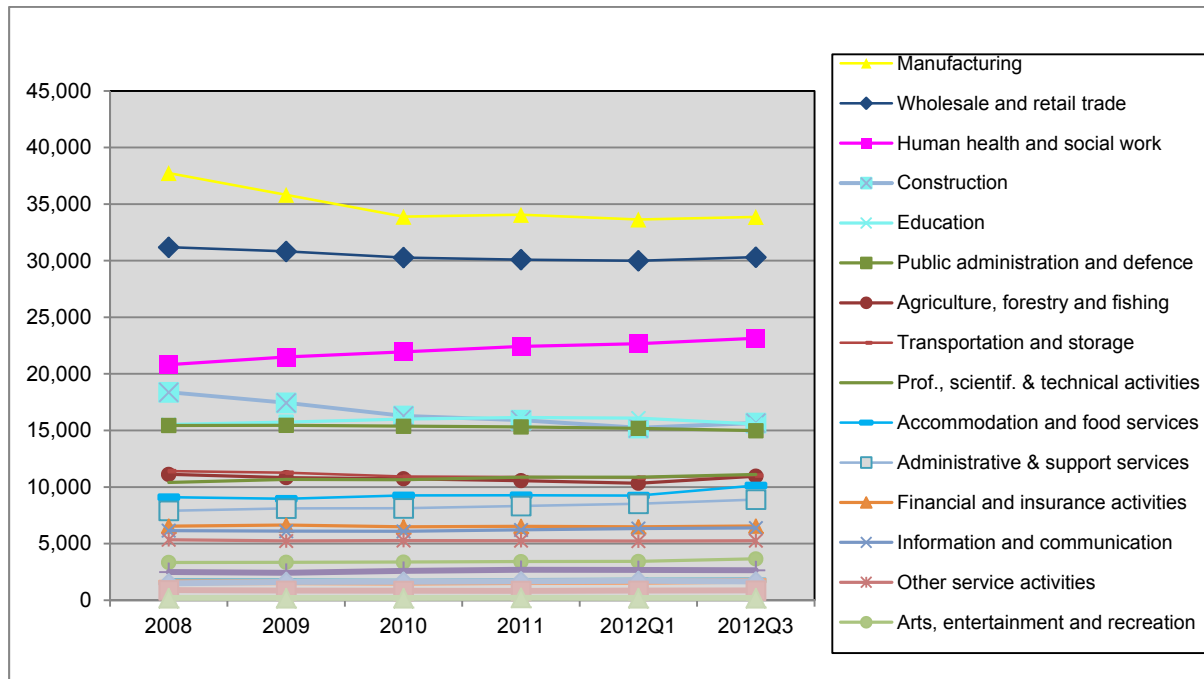
Source: Eurostat, EU-LFS (2013)

Figure 26: Main employment sectors of the working population, EU-27, 2000–2007, NACE Rev. 1.1. All employed, 15 years and over (thousands)



Source: Eurostat, EU-LFS (2013)

Figure 27: Main employment sectors of the working population, EU-27, 2008–2012, NACE Rev. 2, all employed, 15 years and over (thousands)



Source: Eurostat, EU-LFS (2013)

2.5.3 Sectoral distribution of employment growth by age groups

Figures 28–30 show the growth in jobs for women by main economic sectors in the EU-27, in 2000 and 2007, and by age groups. The sectoral distribution is different for the different age groups. While older women tend to work more in education and healthcare, the female working population in Horeca and the retail sector tends to be young. There are big differences between the Member States, but overall this trend can be observed.

With respect to those aged between 15 and 24 (Figure 28), the percentage of women in retail was higher than in the hotels and restaurants sector, but the highest increase was produced in this sector (20.6 % in hotels and restaurants, 15.6 % in health and social work).

Figure 28: Female employment in EU-27 by economic sector, in 2000 and 2007, ages 15–24 (thousands)



Source: EU-LFS (2007)

Figure 29: Female employment in EU-27 by economic sector, ages 25–49

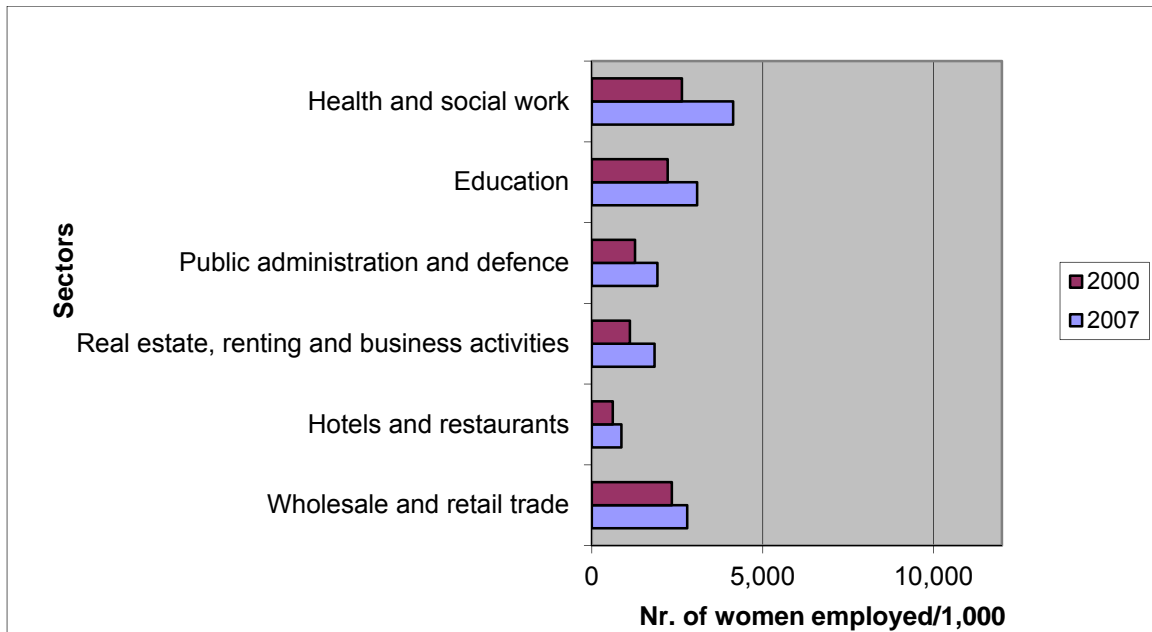


Source: EU-LFS (2007)

For those aged between 25 and 49 (Figure 29), the percentage of women is the highest in health and social work, but the real estate, renting and business activities showed the largest rise, with 39.2 %.

For those aged between 50 and 64 (Figure 30), the percentage of women was highest in health and social work, but business activities had the greatest increase at 64.7 %. It is for women aged 50–64 for whom we can find the most important increases for all these sectors.

Figure 30: Female employment in EU-27 by economic sector, ages 50–64



Source: EU-LFS (2007)

Healthcare workers face specific risks when at work (USA)

Needlestick injury: In the USA, between 600,000 and 800,000 needlestick injuries occur annually in healthcare, mostly among nurses. These injuries may contribute to serious infections due to blood-borne pathogens (hepatitis B virus, hepatitis C virus, and human immunodeficiency virus).

Latex allergy: Healthcare workers are a group at increased risk of latex allergy because of their use of latex gloves. Latex allergy may contribute to skin rashes, hives, nasal, eye or sinus symptoms, asthma and shock (though rarely).

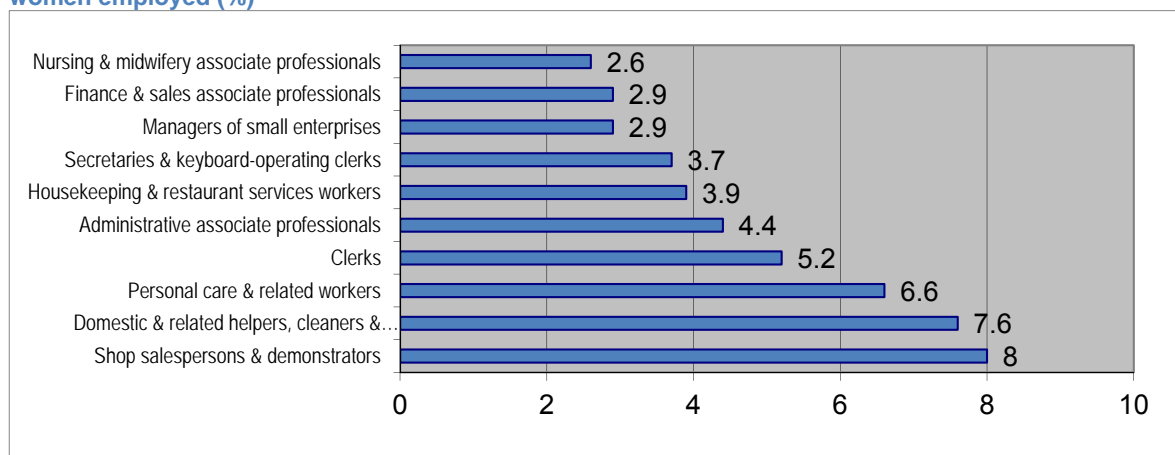
2.5.4 Activity patterns of employment — occupations

There is a greater difference among the occupations in which men and women work, than between the sectors in which they are employed. As in the case of sectors, the degree of concentration in a limited number of occupations is much higher among women than among men. In 2005, almost 36 % of women in work in the EU were employed in just six of the 130 standard occupational categories (ISCO-88 three-digit), whereas the top six occupations for men accounted for just over 25 % of the total in work (Figure 31).

The top occupational groups for women in the EU are different from those for men, though there are a few similarities. Shop salespersons and demonstrators, managers of small businesses and sales associate professionals feature among the top 10 occupations for both men and women. However, shop salespersons and demonstrators, which is the top occupational category for women, accounted for fewer men. The next three largest categories for women, ‘domestic helpers’, ‘personal care workers’ and ‘other office clerks’ employed a further 19 % of women between them, but employed only 3 % of men. The highest concentration of women’s employment in 2005 was in Cyprus and Romania, where, in each case, over 50 % of the women employed, worked in the largest six occupational groups. In Cyprus, around 19 % of women in employment worked as ‘domestic and related helpers, cleaners and launderers’, reflecting the importance of employment in hotels and private households, and in Romania just over 27 % worked as ‘crop and animal producers’, reflecting the importance of agriculture. The lowest concentration was in Italy and Latvia, where the top six occupations accounted for 32–33 % of all women in work.

In 2005, more women than men were employed across all of the occupational groups in the Baltic States (Estonia (53.1 %), Lithuania (50.7 %) and Latvia (50.1 %)), Sweden and Finland . Figures above 45 % were also found in the United Kingdom, Portugal, Germany, Ireland and Denmark. Women were more concentrated in fewer occupations than men in all countries except Lithuania. In Estonia, Latvia and the Czech Republic, the difference was relatively small. In four Member States — Denmark, France, Cyprus, Luxembourg and Sweden — as well as in Norway, the proportion of women in the top six occupations was over 15 percentage points higher than for men.

Figure 31: Concentration of women in employment by ISCO three-digit occupation in the EU-25, 2005, women employed (%)



Source: Eurostat, EU-LFS (2005)

When comparing the data from 2000 and 2005, in the EU-15, female employment increased or remained stable and no drastic changes occurred in either direction (increases or decreases of between 10 % and 20 %), except for ISCO 6 ('skilled agricultural and fishery workers'), where in Austria, Belgium, Denmark and Portugal an increase of around 10 % or more was recorded, along with a fall of more than 15 % in Germany.

Regarding qualifications, gender differences can also be found in occupations in which women and men with tertiary education are employed (Eurostat, 2007d). Interestingly, according to the 2005 EWCS, only the occupational categories 'unskilled workers' and 'professionals' (with female workers accounting for the majority of the life science, health and teaching professions) were gender balanced. Moreover, female and male workers can often be found in occupations with predominantly members of their own gender: 57 % of female workers are employed in female-dominated jobs (Eurofound, 2007a).

According to Meri (Eurostat 2008a), female workers accounted for 48 % of the employed workers in science and technology with tertiary education. However, women seem to be more successful in finding a job that matches their qualifications: 48 % of all employed female human resources in sciences and technology with tertiary education were employed as professionals or technicians, compared with only 43 % for men (Eurostat, 2008a).

In 2005, slightly more women were employed in almost all occupations than in 2000. Only in the group of 'legislators, senior officials and managers' and 'service workers and shop and market sales workers' did the figures increase substantially, by 5 % to 7 % in the EU-15. Part-time employment among women increased by almost the same amount, while part-time employment among men increased in as many occupations as it decreased.

When comparing the data from 2000 and 2005, in the EU-15, female employment increased or remained stable in all countries over all occupations, with the exception of skilled agricultural and fisheries workers.

▪ Recent figures

The professional groups of 'clerks/clerical support workers' and 'service workers and shop and market sales workers/service and sales workers' are clearly female dominated, accounting for over 50 % of employed women in almost all countries (Table 9). Other groups, such as 'craft and related trade workers' and those of the 'plant and machine operators', show rather low percentages of employed women. Burchell et al. (Eurofound 2007f: 11) state that whereas 'women work in jobs that involve caring, nurturing and providing services for people ... men tend to monopolise senior management and manual jobs which involve using machinery or production processes considered to be physically onerous, complex or dangerous'. In a considerable number of countries as well as overall in the EU-27 more than 50 % of women are employed in 'elementary occupations', as 'technicians and associate professions' as well as 'professionals'. 'Legislators, senior officials and managers' are occupations that are, in almost all countries, male dominated.

There is a greater difference among the occupations in which men and women work than between the sectors in which they are employed. As in the case of sectors, the degree of concentration in a limited number of occupations is much higher among women than among men. Women are more concentrated in fewer occupations than men in all countries except Lithuania. In Estonia, Latvia and the Czech Republic, the difference is relatively small.

The female-dominated occupations are 'clerks' and 'service workers and sales workers', as shown in Tables 9 and 10. Moreover, 'managers', 'agricultural and fishery workers', 'craft and related trade workers' and 'plant and machine operators' are male-dominated professions. An approximately balanced ratio between men and women can be found in the occupations of 'professionals' and 'technicians and associate professions'. In some countries there are notable increases in 'agricultural and fishery workers' (Austria, Belgium, Portugal) and 'elementary occupations' (Belgium, Germany, Greece, Italy, Portugal, Spain, United Kingdom). As there are also decreases to be observed in the number of agricultural workers, the restructuring of the agricultural sector needs to be analysed for its relevance to female jobs and how women are exposed to OSH risks.

Table 9: Women's percentage share of each ISCO major occupational group and of all employment, by country, EU-15, 2000

Country/ ISCO	Legislators, senior officials and managers	Professionals	Technicians and associate professions	Clerks	Service workers, shop and market sales workers	Skilled agricultural and fishery workers	Craft and related trade workers	Plant and machine operators	Elementary occupations	ALL
Austria	29.8	53.6	48.8	66.9	66.8	25.3	8.4	17.6	64.4	43.9
Belgium	29.3	57.8	37.0	61.0	63.6	10.2	8.3	14.1	47.7	43.4
Denmark	22.7	43.4	54.8	70.1	79.7	15.5	5.4	25.2	46.4	48.4
Finland	30.4	58.8	56.4	82.0	76.8	41.8	8.6	22.8	55.0	50.0
France	:	:	:	:	:	:	:	:	:	:
Germany	23.8	38.1	60.1	67.7	75.5	39.5	9.9	16.1	54.2	45.9
Greece	21.5	50.6	50.3	56.8	46.7	24.0	13.2	10.2	51.9	39.1
Ireland	38.8	55.5	41.5	73.8	65.1	:	7.1	26.6	34.8	45.7
Italy	9.3	63.6	42.9	54.2	51.3	16.3	17.2	22.7	41.1	40.1
Luxembourg	25.0	38.4	45.7	56.1	56.4	:	2.3	4.9	69.1	40.2
Netherlands	23.3	42.6	51.3	68.9	67.6	24.6	5.5	11.6	47.0	43.7
Portugal	29.7	58.1	47.9	60.9	64.2	25.7	25.7	23.3	61.2	45.8
Spain	17.6	50.9	41.3	60.1	55.4	11.8	7.7	16.1	47.4	38.2
Sweden	33.2	53.4	49.0	73.6	80.9	28.6	5.7	18.7	68.0	50.7
United Kingdom	34.3	49.3	50.6	72.8	70.5	11.1	8.0	16.4	49.7	48.0

NB: percentage share > 50 % are highlighted in yellow

Source: Eurostat, EU-LFS (2009)

The former eastern European countries, the UK, Germany and Finland show a higher proportion of female technicians. The eastern European and Baltic countries have higher shares of professionals. The restructuring of the agricultural sector needs to be analysed for its relevance to female jobs and how women are exposed to OSH risks, as there are considerable increases in the proportion of women in some countries. The proportion of female workers in elementary occupations has also increased. The increasing proportion of technicians and professionals may be due to higher education levels among young women and as compared with their male counterparts.

Table 10: Women's percentage share of each ISCO major occupational group and of all employment, by country, EU-15/EU-27, 2012, quarter three

Country	Managers	Professionals	Technicians and associate professionals	Clerical support workers	Service and sales workers	Skilled agricultural, forestry and fishery workers	Craft and related trades workers	Plant & machine operators, and assemblers	Elementary occupations	Total
Austria	31.0	48.9	45.8	72.1	67.3	44.6	8.1	14.6	61.8	46.4
Belgium	35.3	55.6	44.6	61.1	65.4	16.6	6.7	13.2	64.4	45.8
Denmark	30.0	56.4	45.4	71.7	65.1	18.1	5.7	15.4	45.9	47.9
Finland	29.4	48.2	57.2	76.7	72.6	32.9	7.8	15.8	58.7	48.8
France	39.9	49.5	45.8	71.6	68.5	24.8	9.7	16.1	57.1	47.6
Germany	31.1	43.0	54.5	66.2	65.0	21.4	10.3	16.5	63.2	46.1
Greece	24.7	50.1	49.9	57.7	47.3	41.7	8.4	7.4	57.5	40.6
Ireland	32.9	55.1	48.0	76.3	67.1	8.4	8.2	15.4	36.1	46.9
Italy	26.3	54.3	40.0	62.7	58.1	21.1	10.5	18.2	48.5	41.4
Luxembourg	24.6	44.2	49.7	53.2	61.6	21.3	4.3		69.1	44.5
Netherlands	30.2	46.5	49.6	67.4	70.3	23.1	6.0	10.9	47.8	46.7
Portugal	36.6	60.7	41.3	61.6	63.1	41.2	16.3	28.7	7.1	48.0
Spain	29.2	55.0	38.5	65.3	59.0	22.9	7.4	13.1	63.9	45.3
Sweden	35.6	58.3	44.6	68.3	69.3	26.0	5.9	16.1	55.6	47.8
United Kingdom	34.7	47.4	52.0	69.3	68.1	12.5	5.6	11.1	42.9	46.4
Bulgaria	38.5	69.2	47.5	73.6	59.4	40.0	26.8	27.1	40.1	47.6
Cyprus	16.2	52.2	42.0	78.1	56.2	16.7	4.6	6.0	67.8	47.9
Czech Republic	26.1	55.7	43.2	78.4	65.3	37.4	10.6	24.6	60.7	43.1
Estonia	33.8	67.2	56.7	73.5	74.2	43.4	9.1	30.4	62.4	49.3
Hungary	38.8	54.8	62.6	74.9	60.0	29.0	9.3	30.5	51.9	46.4

New risks and trends in the safety and health of women at work

Country	Managers	Professionals	Technicians and associate professionals	Clerical support workers	Service and sales workers	Skilled agricultural, forestry and fishery workers	Craft and related trades workers	Plant & machine operators, and assemblers	Elementary occupations	Total
Latvia	47.4	64.5	61.0	81.4	72.2	34.2	21.3	9.3	51.1	50.4
Lithuania	36.7	73.6	60.9	74.5	73.9	42.0	19.4	21.4	53.5	51.4
Malta	28.8	48.5	31.2	58.3	50.6			20.8	29.6	36.2
Poland	39.7	63.1	52.6	64.0	63.0	43.0	11.7	14.2	56.5	44.5
Romania	32.7	57.2	55.0	63.6	62.5	47.7	21.1	24.4	44.5	44.3
Slovakia	34.8	59.8	54.0	72.1	63.6	24.4	10.0	22.9	50.6	44.0
Slovenia	39.7	61.1	47.1	57.7	60.9	37.8	11.3	29.9	58.9	45.7
EU-27	34.4	51.2	48.9	62.0	64.3	35.4	10.4	17.4	54.7	45.6

Note: percentage share > 50 % highlighted in yellow

Source: Eurostat, EU-LFS (2013)

The increasing proportion of technicians and professionals may be due to higher education levels among young women and as compared with their male counterparts. However, there are differences between countries, with the former eastern European countries, Germany and Finland showing a higher proportion of female technicians. Quite a number of the countries of the NMS-10 also have a higher proportion of female professionals; however, this is not reflected in the proportion of managers, with the exception of Portugal. In the Baltic and the former Eastern Bloc countries there is the widest spread across occupations. According to Table 11, the proportion of full-time female technicians is decreasing again, an indication of reversing trends as a result of the crisis.

- **Part-time work is much more common in female-dominated and elementary occupations**

In 2000, 2005 and 2012, part-time work was far more widespread among women than among men (Tables 11–14). Interestingly, part-time work among women is the most widespread in occupations that are female dominated and more common in occupations where men and women are equal, and on a very low level in such occupations that are male dominated. The share of men working part time is very low in all occupations. In the EU-27 part-time work among men is more frequent in female-dominated occupations with the exception of skilled agricultural and fishery workers. This is probably because of peaks during harvest time, when additional workers are needed, or troughs in winter, when fewer workers are needed. While more female workers are employed in elementary occupations, the proportion of part-time workers has increased in elementary occupations for both genders, probably an impact of the crisis, with the use of reduction of working time as a mitigating measure.

Part-time work is the most widespread in such occupations, which are female dominated, and more common in occupations where men and women are equal, as well as in elementary occupations. There has been a notable increase in part-time work in elementary occupations for men as well as for women.

Table 11: Occupational segregation of women's and men's employment in the EU-15, 2000

ISCO	% share	Male			Female			Total
		FT	PT	All	FT	PT	All	
Legislators, senior officials & managers		63.4	3.1	66.5	29.3	4.2	33.5	100.0
Professionals		50.1	3.4	53.5	35.4	11.1	46.5	100.0
Technicians & associate professions		50.6	2.2	52.8	32.9	14.2	47.2	100.0
Clerks		31.0	2.0	33.0	46.0	21.0	67.0	100.0
Service workers, shop & market sales workers		30.0	4.3	34.3	36.8	28.9	65.7	100.0
Skilled agricultural & fishery workers		71.0	3.6	74.6	22.2	3.2	25.4	100.0
Craft & related trade workers		85.6	2.7	88.3	8.8	2.9	11.7	100.0
Plant & machine operators		81.3	2.7	84.0	13.5	2.5	16.0	100.0
Elementary occupations		45.3	6.9	52.2	23.8	24.0	47.8	100.0

Source: Database for third EWCS (2000)

Table 12: Occupational segregation of women's and men's employment in the EU-15, 2005

% share ISCO	Male			Female			Total
	FT	PT	All	FT	PT	ALL	
Legislators, senior officials & managers	69.3	2.2	71.5	23.3	5.2	28.5	100.0
Professionals	48.0	3.2	51.3	35.1	13.6	48.7	100.0
Technicians & associate professions	40.2	3.2	43.4	42.3	14.3	56.6	100.0
Clerks	27.6	3.9	31.5	45.7	22.8	68.5	100.0
Service workers, shop & market sales workers	35.2	5.9	41.1	33.9	25.0	58.9	100.0
Skilled agricultural & fishery workers	57.1	4.1	61.2	34.9	4.0	38.8	100.0
Craft & related trade workers	88.2	1.9	90.1	7.2	2.7	9.9	100.0
Plant & machine operators	80.4	3.8	84.1	13.2	2.6	15.9	100.0
Elementary occupations	41.0	5.6	46.6	28.2	25.2	53.4	100.0

Source: Database for fourth EWCS (2005)

Table 13: Occupational segregation of women's and men's employment in the EU-27, 2005

% share ISCO	Male			Female			Total
	FT	PT	All	FT	PT	All	
Legislators, senior officials & managers	68.4	2.2	70.6	24.5	4.9	29.4	100.0
Professionals	45.0	3.1	48.1	39.6	12.3	51.9	100.0
Technicians & associate professions	41.1	3.2	44.3	42.9	12.8	55.7	100.0
Clerks	26.9	3.7	30.6	48.6	20.8	69.4	100.0
Service workers, shop & market sales workers	35.6	5.6	41.2	35.8	23.0	58.8	100.0
Skilled agricultural & fishery workers	51.6	8.2	59.9	30.7	9.4	40.1	100.0
Craft & related trade workers	84.2	2.6	86.7	10.6	2.6	13.3	100.0
Plant & machine operators	77.6	3.9	81.5	16.1	2.4	18.5	100.0
Elementary occupations	41.2	6.5	47.6	29.9	22.5	52.4	100.0

Source: Database for fourth EWCS (2005)

Table 14: Occupational segregation of women's and men's employment in the EU-27, 2012, quarter 3

% share ISCO	Male			Female			Total
	FT	PT	All	FT	PT	All	
Legislators, senior officials & managers	63.8	2.1	65.9	29.1	5.0	34.1	100.0
Professionals	45.0	3.6	48.6	39.6	11.8	51.4	100.0
Technicians & associate professions	48.1	3.0	51.2	35.2	13.7	48.8	100.0
Clerks	29.6	3.3	32.8	45.9	21.3	67.2	100.0
Service workers, shop & market sales workers	30.1	5.6	35.7	38.9	25.3	64.3	100.0
Skilled agricultural & fishery workers	55.8	8.7	64.5	26.3	9.2	35.5	100.0
Craft & related trade workers	86.1	3.5	89.6	8.6	1.8	10.4	100.0
Plant & machine operators	78.7	4.0	82.6	14.8	2.5	17.4	100.0
Elementary occupations	35.6	9.7	45.3	25.5	29.2	54.7	100.0

Source: Eurostat, EU-LFS database

2.6 Employment status

2.6.1 Part-time employment

Workers with non-standard employment contracts, such as part-time employment or non-permanent contracts, accounted for most of the increases in employment figures (Eurostat, 2008e).

Figure 32 shows that the extent of part-time employment varies in the EU-27 countries. In all EU-27 countries part-time employment is a phenomenon that affects women more than men. Part-time employment seems to be more common in countries with poor childcare facilities such as the Netherlands, Germany and Austria (Employment Taskforce, 2003 as cited by Eurofound, 2004a). Part-time workers tend to have less access to training and less control over their work and less access to preventive services. It needs to be ensured that they are also covered by exposure assessment and prevention measures, and their situation is considered when workplaces are inspected and assessed for workplace risks.

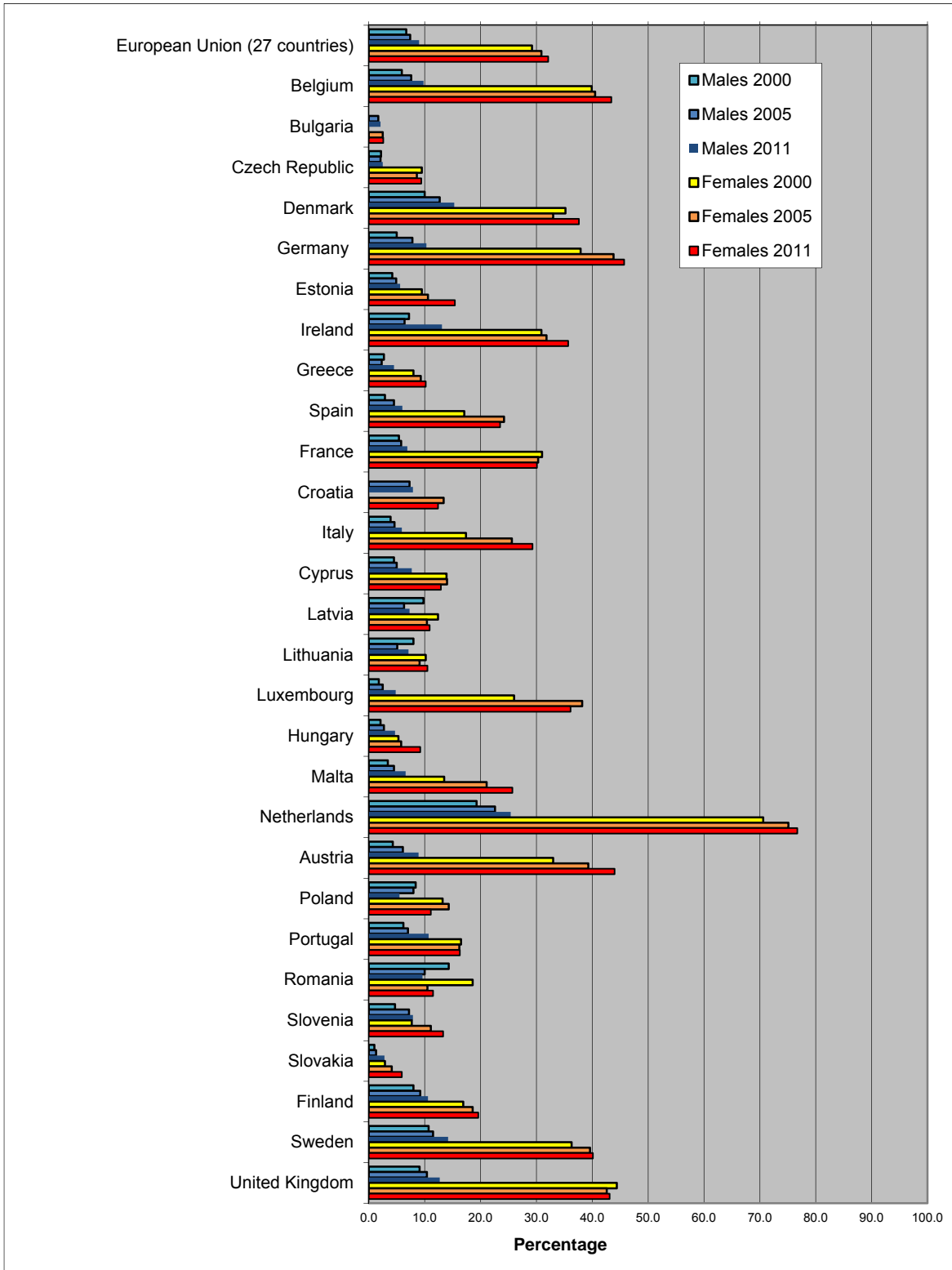
Almost one-third (32.1 %) of women employed in the EU-27 worked on a part-time basis in 2011, a much higher proportion than the corresponding figure for men (9 %). Part-time employment seems to be more common in countries with poor childcare facilities such as Germany and Austria.

The proportion of the EU-27 workforce reporting that their main job was part time increased steadily from 16.2 % in 2000 to 19.2 % by 2010. The highest proportion of part-time workers was found in the Netherlands (48.9 % in 2010), followed by the United Kingdom, Denmark, Sweden, Germany and Austria, where part-time work accounted in each case for over a quarter (25–27 %) of those in employment. In contrast, part-time employment was relatively uncommon in Bulgaria (2.4 % of employment) and Slovakia (3.9 %). There is a distinct pattern to be observed in the eastern European countries, where part-time employment is uncommon; the lowest percentages for part-time employment for both men and women can be found in Bulgaria, Slovakia, Hungary, Greece, the Czech Republic, Estonia, Lithuania and Slovenia.

The incidence of part-time work differs significantly between men and women. Almost one-third (32.1 %) of the women employed in the EU-27 worked on a part-time basis in 2011, a much higher proportion than the corresponding figure for men (9 %). Three-quarters (76.7 %) of all women employed in the Netherlands worked on a part-time basis in 2011, this is by far the highest rate among

the Member States. The smallest differences in the percentage of men and women in part-time employment are in the eastern countries — Bulgaria, Romania, Slovakia, Hungary, Lithuania, Slovenia, Latvia and Estonia – where part-time employment is generally not common for either men or women.

Figure 32: Part-time employment as a percentage of total employment, for those aged 15 and over



Source: Eurostat, EU-LFS (2011)

The biggest differences between the share of part-time employment of women and men were found in the Netherlands, followed by Germany, Luxembourg, Belgium, Austria and the United Kingdom.

Three-quarters (76.7 %) of all women employed in the Netherlands worked on a part-time basis in 2011, by far the highest rate among the Member States. The smallest differences in the percentage of men and women in part-time employment are in the eastern countries.

Part-time employment is most common among older workers (55+) and young workers (15–24 years). Workers aged between 25 and 54 are less affected by part-time work (Eurofound, 2008e). Different reasons exist for the U-shaped structure of part-time employment over the different age groups. For older workers, part-time employment is a way to remain in the labour market even if, for example, health problems do not allow full-time employment. Looking after grandchildren or incapacitated relatives is another reason often stated by older women for preferring part-time jobs. For young workers, the opposite is true, as part-time employment might lead to full-time employment and constitutes both a step out of unemployment and a step towards full-time employment (Rivaud and Ulrich, 2007). With increasing age, part-time employment represents more and more of a voluntary choice: whereas about 45 % of the 15- to 42-year-old females were voluntary part-time workers according to this study, 77 % of the women aged older than 55 years were content with part-time work (Eurofound, 2008e).

With regard to sectors and occupations, part-time work prevails in the more service-driven sectors (e.g. health, education and other services) and occupations (e.g. in the healthcare sector, service and sales workers, and unskilled workers), which are female dominated (Eurofound, 2009a).

- **Women are often underemployed part-time workers**

More than two-thirds of the underemployed part-time workers, who, although employed, do not work full time and have an insufficient volume of work, are women (68.4 %) in the EU-27 in 2010, namely 5.8 million women as compared with 2.7 million men. The shares among women are highest for age groups 35–44 (28 %) and 45–54 years (27 %).

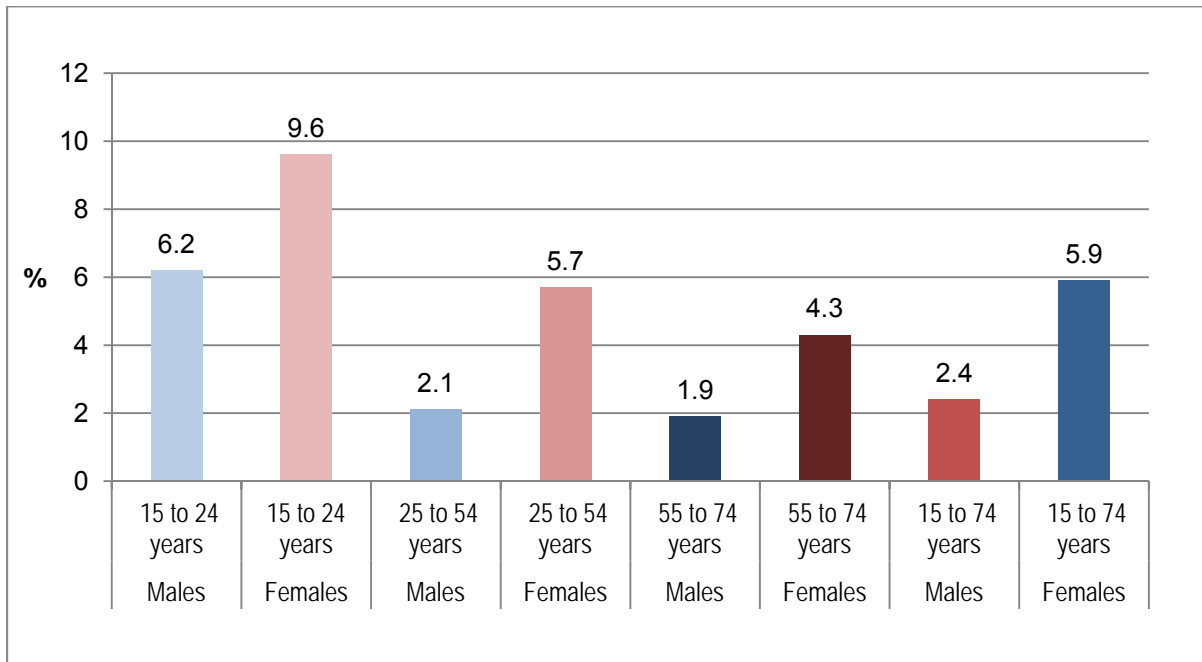
Eurostat has recently released three new indicators covering these groups in order to supplement the unemployment rate indicator. The first indicator, underemployed part-time workers, covers persons who, although employed, do not work full time and have an insufficient volume of work, so there is some similarity with unemployed persons. This indicator captures in particular part-time workers who would like to have a full-time job.

The second and third indicators focus on persons outside the labour force but not completely detached from the labour market. They are not considered as unemployed under the ILO definition. The second indicator, persons seeking work but not immediately available, describes mostly people who do not qualify for recording as unemployed because of their limited availability to start a new job.

The third indicator, persons available to work but not seeking, covers people wanting to work and available to do so, but who are not recorded as unemployed because they are not actively looking for a job. It includes, among others, discouraged jobseekers and persons prevented from jobseeking because of personal or family circumstances (Eurostat, 2011c).

The predominance of women is strongest in the group of underemployed part-time workers. More than two-thirds of them are women (68.4 %) in the EU-27 in 2010, namely 5.8 million women as compared with 2.7 million men (Figure 33). This imbalance mirrors the gender gap in part-time employment (whether underemployed or not), as 75.5 % of all part-time workers in the EU-27 in 2010 were women.

Figure 33: Underemployed part-time workers by gender and age, percentage of total employment (EU-27)



Source: Eurostat (2011c)

A simultaneous breakdown by age and sex reveals further differences in underemployed part-time workers. The shares among women are highest for age groups 35–44 (28 %) and 45–54 (27 %). It may be that women at this age still have children so young that they limit the mother’s scope for involvement in the labour market. The shares are lower for younger women aged 25–34 (21 %) and 15–24 (15 %). Instead the shares among men are concentrated in the young age groups of 15–24 and 25–34 (24 % and 25 %, respectively) and decrease for older age groups.

Taskforce DeeltijdPlus (Part-time Plus) (the Netherlands)

This programme, run by the Dutch labour unions, the association of employers, national government ministries (Ministry of Social Affairs and Employment) and local authorities, addressed the high rate of part-time employment among women. The objective of the taskforce was to stimulate women in the Netherlands who have part-time jobs that involve working fewer than 24 hours a week to work more hours.

Persuading women to increase their contribution to the national economy is not an easy task. Research indicated that female part-timers would like to work as much as five hours a week more — a figure that translates into more than half a million full-time jobs. But there are obstacles that need to be overcome. The taskforce’s objective was to find ways to help women make the choices that would enable them to work more, and act on them, to fulfil their potential, both personally and professionally. To achieve this goal, a concerted programme has been put in place. The project started in April 2008 and was scheduled to last for two years. The broader aim was to make proposals for changes in organisation and Dutch society in such a way that women can account for a greater share of the economy, so that talents of men and women may be used in equal measure.

The taskforce actively engaged in the debate on women and work: in the media, at conferences and meetings, in the regional context in part-time cafés and on the Internet. Part-time cafés also took place at the Household Fair 2010, at which the taskforce exhibited. The taskforce launched a website (www.meerurenwerken.nl), mainly aimed at two target audiences: employers and workers. Both the website and the monthly newsletter provided a platform for discussion and were a source of information for interested parties. In order to bring together the expertise, experience and insights of the organisations and individuals involved, the taskforce organised a number of expert meetings and a work conference.

It already emerged at the beginning of the taskforce's activities that many men and women had no insight into financial independence and what working more hours would yield in individual cases. They therefore developed an online guide (www.werk-en-geld.nl) to provide women and men with a practical instrument with which they can calculate how much net income they would have if they were to work more hours.

Twenty-seven pilot projects investigated barriers and opportunities to make the labour market more flexible for women in governmental services, healthcare, education, professional services and retail. In these projects, employers, human resources advisers and part-time workers presented practical possibilities for prolonged working time. A sounding board of representatives from employer and employee organisations was set up for each sector. These sounding boards provide an important link with the sector and their members. Together with the Labour Foundation, the taskforce shared the initial results with a broader audience during the Meer Tijd voor Deeltijders [More Time for Part-timers] symposium. Transferable instruments and manuals on the possibilities of increasing workers' part-time jobs were brought together in the *Handbook for larger part-time jobs*, which employers can use for strategic personnel planning, introducing flexible working and entering into dialogue with workers.

There is also a majority of women among persons seeking work but not immediately available (56.2 %, i.e. 1.3 million women compared with 1.0 million men) and a considerable majority among persons available for work but not seeking it (58.2 %, i.e. 4.8 million women vs. 3.4 million men) (Eurostat, 2011c).

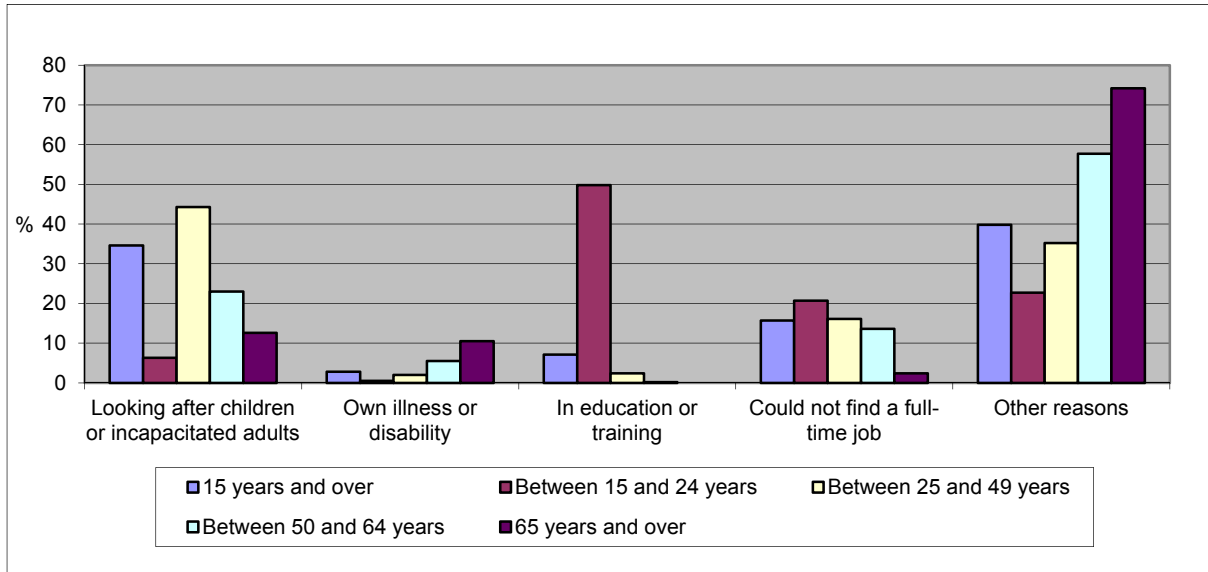
2.6.2 Main reasons for part-time work

It seems that female part-time workers invest their free time when not in paid employment in non-paid domestic work. According to a Eurofound study (2008e, f), about 75 % of women spent time on housework every day compared with just 23 % of men. In particular, women in the new Member States were affected by poor work-life balance as both 'working hours for paid and unpaid work are longer in these countries' (Eurofound, 2007a: 6, Eurofound, 2007h). This might be explained by a more family-based welfare system than in the older Member States, meaning that family members provide care to other family members. Women in the EU devote twice as much time to childcare than men.

According to a 2004 Eurostat survey on working time arrangements (EU Labour Force Survey ad hoc module 2004), when comparing the main reasons for part-time work among men and women from EU-15 countries and the NMS, it is interesting to note that 'looking after children or incapacitated adults' is in all age groups a reason listed almost only for women. This factor was not mentioned at all by men in any age group from the NMS and only very rarely from men in EU-15 countries. In contrast, it was an important reason for women aged 25 and more in EU-15 (with a peak of 44 % in those aged 25 to 49), but only 20 % of the women in the NMS between the ages of 25 and 49 listed 'looking after children or incapacitated adults' as a main reason for part-time work. Generally, for both male and female young workers (15–24 years of age) the main reason for part-time employment was being 'in training or education'. In the NMS, the main reason for part-time employment, 'could not find a full-time job', was more frequently cited than in the EU-15, for both men and women, but especially for men. In the EU-15 and the NMS, 'Other reasons' is the main category cited for men and women aged between 50 and 64 years for working part-time (Figures 34–37).

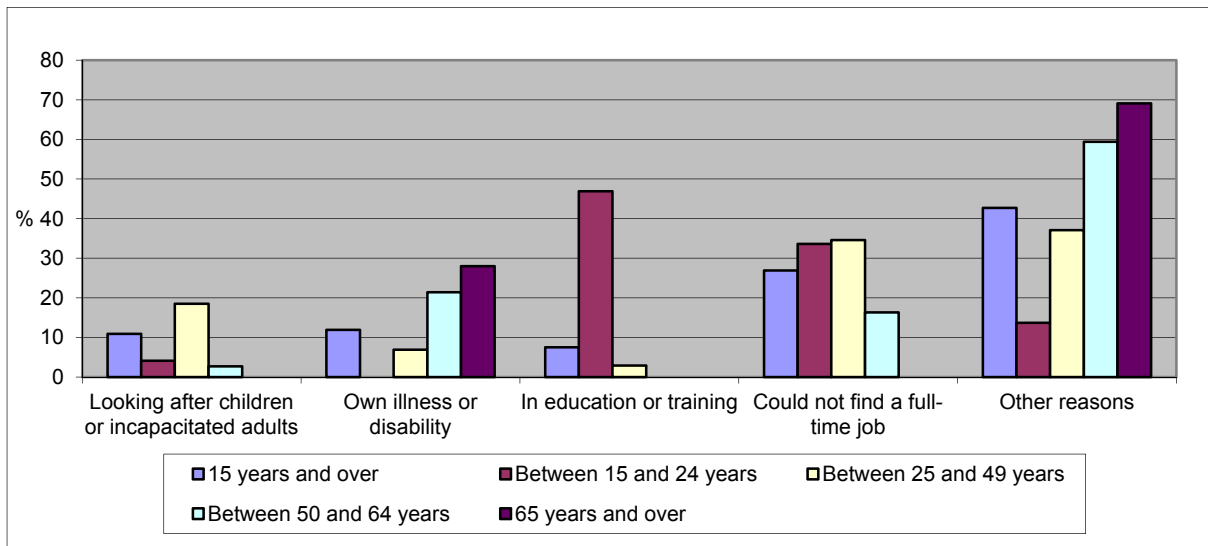
The next EU Labour Force Survey on work organisation and working-time arrangements will be in 2015.

Figure 34: Main reasons for part-time work among women, EU-15, 2004, by age



Source: Eurostat, EU-LFS (2009)

Figure 35: Main reason for part-time work among women, NMS-10, 2004, by age

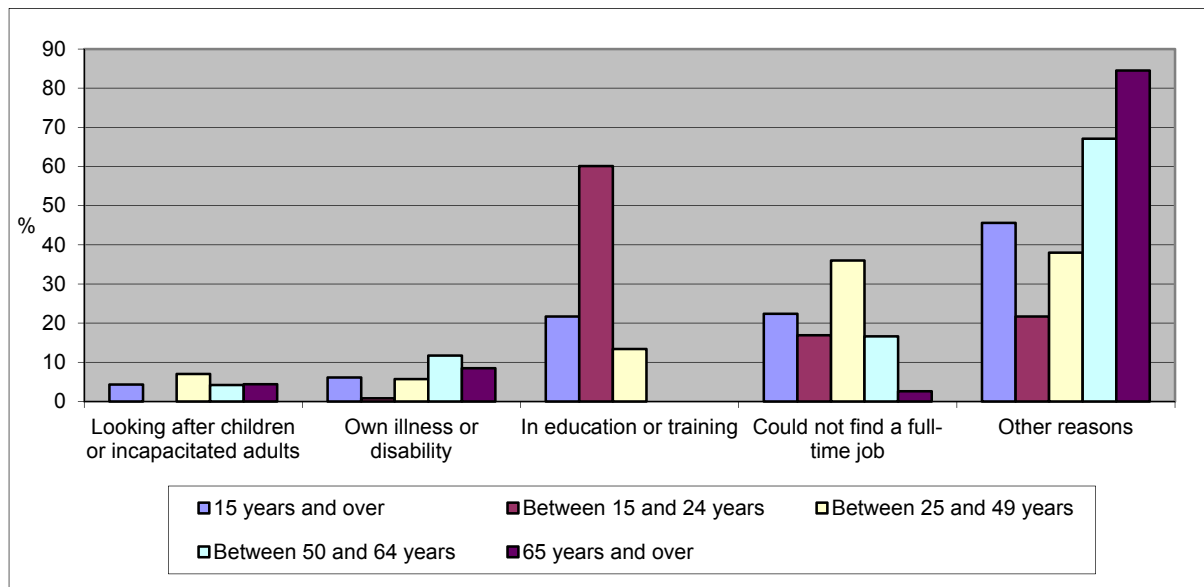


Source: Eurostat, EU-LFS (2009)

One way by which to reconcile work and family life is to work part time. In 2011 in the EU-27, almost a third (32 %) of employed women aged 25 to 54 with one child aged younger than 6 years worked part time, while for employed women with three children or more, where the youngest is aged 6 or less, where the youngest is aged 6 or less, half (50 %) worked part time. For employed men, the rates were significantly lower (5 % and 7 %, respectively). Whereas the proportion of women working part time increases when they have children, and further as the number of children increases, the proportion of men working part time remains relatively stable. Among employed persons without children, 22 % of women and 7 % of men worked part time in 2011.

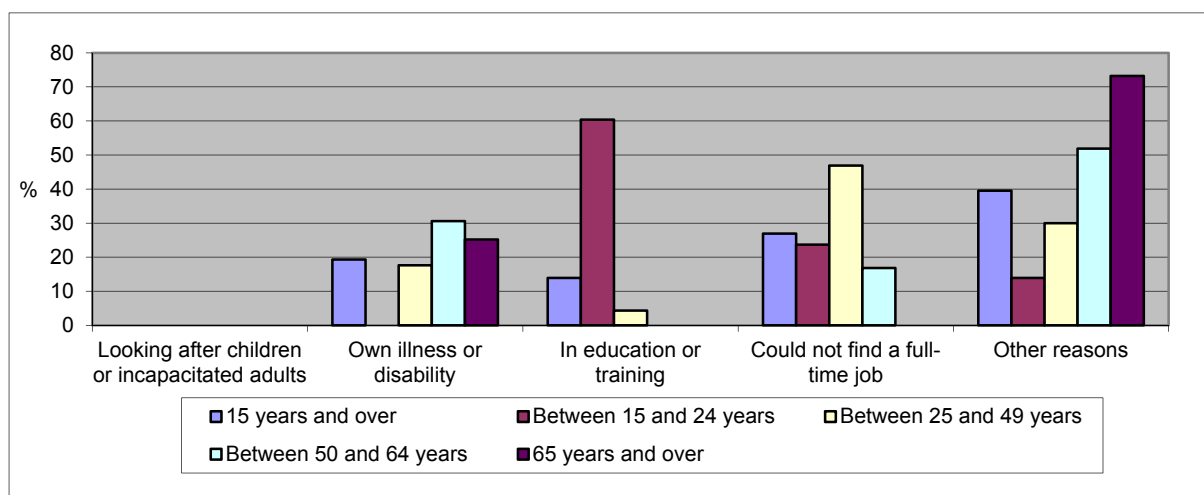
Part-time employment is most common among older workers (55+) and young workers (15–24 years). When comparing the main reasons for part-time work among men and women, it is interesting to note that 'looking after children or incapacitated adults' is in all age groups a reason listed almost only by women.

Figure 36: Main reasons for part-time work among men, EU-15, 2004, by age



Source: Eurostat, EU-LFS (2009)

Figure 37: Main reason for part-time work among men, NMS-10, 2004, by age



Source: Eurostat, EU-LFS (2009)

Both for women having one child younger than 6 and for those having three or more children, where the youngest is aged 6 or less, the highest proportions of those working part time were observed in the Netherlands (81 % for those with one child younger than 6 and 92 % for those with three or more children), Austria (60 % and 69 %), Germany (56 % and 77 %) and the United Kingdom (48 % and 67 %).

The latest figures from Eurostat (Table 15) state that the highest proportions of those working part time were observed in the Netherlands (81 % for those with one child younger than 6 and 92 % for those with three or more children), Austria (60 % and 69 %), Germany (56 % and 77 %) and the United Kingdom (48 % and 67 %) (Eurostat, 2013b).

Table 15: Part-time employment by gender and number of children, % workers aged 20–49, 2012

Nr. of children Gender Country	No children		1 child		3 children or more	
	Male	Female	Male	Female	Male	Female
EU-27	8.9	21.1	5.9	32	6.8	46.5
Belgium	7.2	27.3	5.9	41.4	6.7	53.9
Bulgaria	1.9	2.5	:	:	:	:
Czech Republic	2.7	6.3	1.1	8.1	0.9	19.1
Germany	9.6	25.3	6.7	55.5	6.7	74.9
Estonia	5.8	11.1	3.9	8.3	:	21.6
Ireland	12.9	16.6	12.2	34.3	8.9	47.7
Greece	5.9	11.2	4.3	12.3	3.3	14.5
Spain	9.8	21.4	7.5	29.5	6.4	31.8
France	7.6	20.3	4.7	26.6	4.9	44.6
Italy	8.5	25.8	5.8	37.3	5.1	42.9
Cyprus	9.0	8.7	5.8	14.8	:	16.7
Latvia	6.6	10.3	6.1	10.8	:	:
Lithuania	7.4	11.3	6.2	8.8	:	:
Luxembourg	3.9	15.8	4.3	35.0	:	53.6
Hungary	3.5	6.7	3.5	9.2	4.5	17.2
Malta	5.0	9.3	3.6	26.3	:	34.1
Netherlands	22.9	55.8	15.6	80.9	12.2	89.4
Austria	8.3	26.4	5.5	53.3	6.6	66.8
Poland	4.5	8.2	2.4	8.3	3.2	11.6
Portugal	8.2	12.4	4.5	10.8	:	15.6
Romania	8.0	6.5	6.2	6	14.8	16.3
Slovenia	5.3	8.4	2.7	10.1	3.5	16.4
Slovakia	2.5	3.6	1.8	4.6	9.3	11.4
Finland	9.4	16.9	3.7	13.6	2.2	20.9
United Kingdom	9.1	18.3	7.8	46.6	10.3	68.5
Croatia	3.8	4.9	3.0	5.2	2.2	3.7
Denmark	19.8	36.6	6.1	24.6	4.8	36.9
Sweden	14.2	31.5	8.2	32.5	8.0	42.0

Source: Eurostat, EU-LFS (2013)

: Not available

2.6.3 Flexibility of working-time arrangements

Another way by which to reconcile work and family life is to have some form of flexible working hours, which depends on personal choice, national legislation and the policy applied by the employer.

Surprisingly, working-time arrangements do not seem to provide much support for people with children. Workers with children seem to be less likely to work in jobs with flexible working-time arrangements than those without children. In many Member States, a higher proportion of full-time employed men than women enjoy flexible working arrangements. In the EU-27, 26 % of female and 29 % of male full-time workers aged 15–64 used flexible working hours in 2010.

The European Employment Strategy aimed to achieve a high level of employment with equal access to jobs for both genders, as does the Europe 2020 Strategy. Across Europe, approximately 75 % of workers aged between 25 and 49 (among them a large proportion of women) work fixed or staggered hours. Approximately 25 % of workers enjoyed flexible arrangements such as banking working time in order to take time off later, the opportunity to decide their starting and finishing time, and the opportunity to determine or vary work schedules. Surprisingly, working-time arrangements do not seem to provide much support for people with children. Workers with children seem to be less likely to work in jobs with flexible working-time arrangements than those without children. Moreover, the proportion of married or cohabiting women aged 25–49 with children under the age of 12 and women living alone with a child account for a larger proportion of fixed or staggered hours than women without children. However, the proportion varies with the sectors in which the women are employed (Eurostat, 2007e).

This is confirmed by the latest Eurostat figures (Eurostat, 2013b). In the EU-27, 26 % of female and 29 % of male full-time workers aged 15–64 used flexible working hours in 2010. The largest shares for both women and men were registered in Finland (53 % of female and 59 % of male full-time workers), Sweden (49 % and 47 %), Denmark (both 44 %), Germany (39 % and 41 %) and Austria (36 % and 39 %).

2.6.4 Home work

Women working part time seem to use the time saved to carry out unpaid work, while male part-time workers dedicate even less time to unpaid work than male full-time workers. Interestingly, even when excluding the population not in paid employment, female workers spend more time in unpaid work than do male workers, in all European countries. Although male workers work longer hours than the opposite sex in paid employment, women work more hours in unpaid activities including housework and caring for children and adult dependants. In fact, when taking into account unpaid work, and owing to the unequal gender division of unpaid domestic work, in the EU-27 women have a longer total working week, particularly if they are employed full time (Forastieri, 2000; Eurostat, 2006b).

It seems that, when not in paid employment, female part-time workers invest their free time in non-paid domestic work. Female workers spend more time in unpaid work than do male workers, in all European countries. This gender gap is less significant in the Netherlands and Scandinavian countries than in southern, central and eastern European countries. Moreover, the difference is highest among couples with children, especially for households with children up to six years old.

Whereas Fagan and Burchell (Eurofound, 2002a) did not report a gender difference in the rate of home working, newer studies (e.g. Eurostat, 2006b) presented more detailed results on the topic. Throughout Europe, women aged 20–74 spend much more time than men on domestic work including food preparation, cleaning and maintenance, dishwashing, laundry, ironing and handicraft. Women spend more hours in unpaid activities, such as housework and caring for dependants, than their male counterparts. This gender difference is highest in families with younger children. Additionally, working part time allows for better reconciliation between work and family duties. While women spend more time on domestic tasks, their male counterparts use their time more often by gainful work. The reason might be that part-time work and parental leave is more common among female workers. In some countries, the total hours worked, including gainful work, study and domestic work, add up to more than 8.5 hours per day and are higher for female than for male workers (Eurostat, 2006b).

However, this gender gap is less significant in the Netherlands and Scandinavian countries than in southern, central and eastern European countries. Moreover, the difference between men and women regarding employment and domestic work is highest among couples with children, especially for households with children up to six years old. Women carry out three-quarters of the physical childcare for a child younger than six. The time needed for childcare reduces as the child grows older. Nevertheless, women continue to take care of a larger share of domestic duties. Living as part of a couple — even without children — appears to lengthen the time spent on domestic duties such as cooking, washing and cleaning, and this occurs more for women (1 hour) than for men (0.5 hour) (EC, 2006a).

Impact of children on career perspectives of young women and men (France)

A Generation 98 survey from 2005 shows that more women (37 %) compared with fewer than 3 % of men reported that they regularly carry out most of the vacuuming, meal preparation and shopping. This gap widens when the number of children increases. Further, as shown in Table 16, the average wage for women declines when they have more than one child, whereas it increases for men (Nicot, 2009). The results are based on statistical analysis of the ‘Generation 98’ survey conducted by Céreq (Centre d’étude et de recherche sur les qualifications) on career paths. The survey covers 16,000 young people, representing the 742,000 who completed their education in 1998. It involves young couples at the end of the seventh year of their working life. They rely on the third round of Generation 98 surveying carried out in autumn 2005, which provides information on career paths. The survey aims to compare the situations of individuals at the end of their first seven years of active life: married life, spouse’s employment status, number of children, distribution of tasks household within couples, etc.

The survey participants were asked the following questions: ‘Which partner vacuums most often?’, ‘Who most often cooks dinner when you are both at home?’ and ‘Who most often does the shopping?’. Those who declared that they carried out all three tasks most often were considered to be mainly responsible for housework.

Table 16: Average gross wage and involvement in household tasks for young high-skilled workers*, by gender, 2005 (€)

Number of children	Working full time		Women			Men		
	Very involved in housework	Use of external help	Very involved in housework	Use of external help	All active women	Not very involved in housework	Use of external help	All active men
None	1,500	1,700	1,500	1,680	All	1,740	2,200	1,900
one child	1,500	1,770	1,450	1,730	1,510	2,030	2,450	1,900
More than one child	1,410	2,040	1,280	1,700	1,410	2,220	2,330	2,000

Source: CEREQ (2007), as cited in Nicot (2009).

*After seven years in the labour market holding a third-level qualification (International Standard Classification of Education level 5).

EIROnline (2008), citing Parent-Thirion et al. (Eurofound, 2007a), states that

the amount of unpaid household work is particularly high among those aged between 25 and 54 years, reaching 31.8 hours for the 25–39 age group and 26.9 hours for the 40–54 age group, which compare to a respective amount of 9.2 hours and 8.6 hours performed by men in the same age brackets. When taking into account the composite working hour indicators — i.e. the sum of the hours worked in the main job and in secondary jobs, plus the time spent on commuting and on household work — the research finds that women in employment systematically work longer hours than men. This points to a quite clear illustration of the ‘double role’ increasingly played by women in the labour market and in the household. Interestingly, referring to composite working hours, on average, women in part-time jobs work more hours than men in full-time jobs (56 hours for women compared with 54 hours for men), while women in full-time jobs work the longest hours, reaching more than 65 hours a week.

2.6.5 Commuting

Regardless of gender, people aged from 20 to 74 spend on average 1–1.5 hours per day travelling to and from work. However, the modes of travel differ between the genders. Female workers seem to use a private car less often and seem to spend more time walking than their male counterparts (Eurostat, 2006b). The different modes of travelling and different family obligations may have an impact on their commuting accidents pattern, and this should be explored. The concept of a commuting accident may have to be revised, for example to take into account accidents occurring when taking children to school before going to work, which, according to some studies, remains largely a female duty.

2.6.6 Temporary employment

Part-time and temporary work among German female workers

In Germany, an increasing number of women work part time, on temporary contracts and in ‘mini-jobs’, which impacts on their salaries and career perspectives.

Although employment rates for women are rising in Germany, in 2009 there were 640,000 fewer women working full time than 10 years earlier. The number of part-time jobs had risen by 1.1 million and the number of ‘mini-jobs’ by 900,000. More women (47.2 %) work part time, compared with 0.3 % of male workers; for more than half of these women the reason is family and personal commitments, a condition that applies to only 10 % of their male colleagues working part time.

While in industry indefinite work contracts still predominate, structural changes are occurring in services, leading to a change from the traditional forms of contracting. This was confirmed by a recent parliamentary inquiry, a study by the Bertelsmann Foundation, statements of the President of the German Federal Institute for Labour and the 2008 edition of the annual report on safety at health at work (SUGA, 2008). Recent studies have further confirmed this trend. The rate of mini-jobbers is particularly high in female-dominated service occupations such as retail and healthcare, as well as the food industry, and in micro-enterprises (one to nine workers) (30 % as compared with 20 % across all enterprises) (Hohendanner and Stegmaier, 2012).

The contractual arrangements under which women work contribute considerably to the gender pay gap, as well as reducing their chances of moving into management jobs. The gender pay gap widens with age; while the difference is 2 % until the age of 24, it rises to 30 % for women over 60.

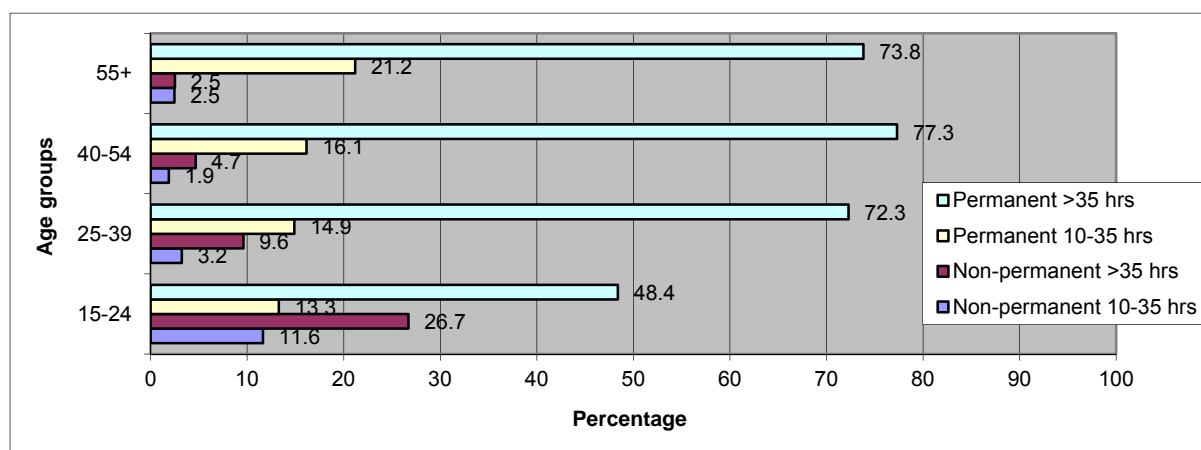
According to figures from the 2005 EWCS, 14.9 % of the female workforce and 13.9 % of the male workforce worked under fixed-term contracts. Of this group, 50.3 % of the females and 48.2 % of the males were employed involuntarily on fixed-term contracts. Women in all of the occupational groups, except for elementary occupations, are more likely to engage in involuntarily working under a fixed-term contract than men (Eurofound, 2008b). In 2005 and 2000, young workers were far more likely to be on non-permanent contracts than those workers aged 25 and over. A comparison of permanent employment in men and women for the years 2000 and 2005 showed that, for all age groups and for

both genders, permanent employment, that is 35 hours or more, was more widespread in 2000 than in 2005. Non-permanent employment contracts and permanent contracts with fewer working hours per week (10–35) increased in comparison with 2000 (Figures 38–40).

Young workers are far more likely to be on non-permanent contracts than those aged 25 and over. While young women work fewer hours, young men are more likely to have temporary contracts.

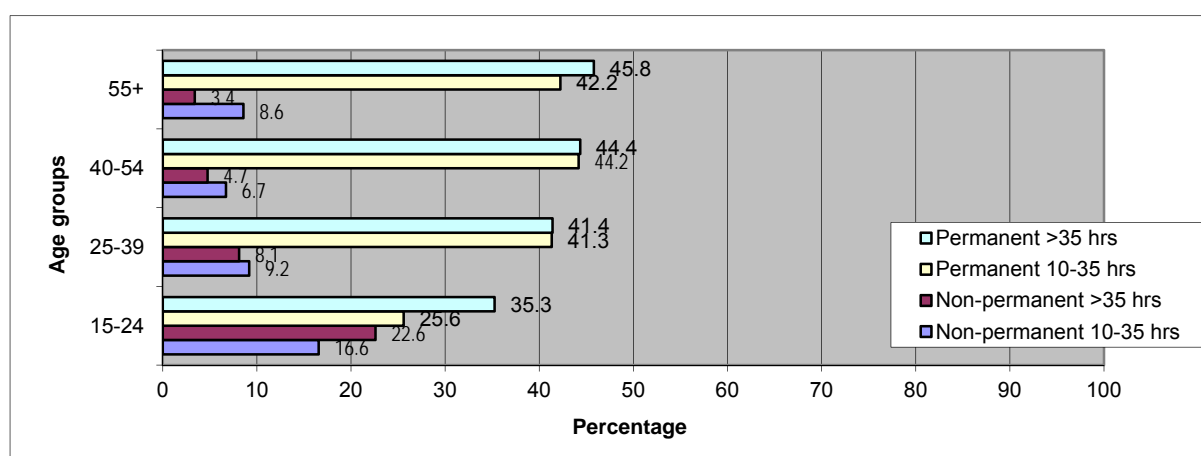
Comparisons of employment status by age and gender in 2005 between the EU-15 and NMS-10 showed that permanent employment (35 hours or more per week) was generally more widespread in the NMS-10. Whereas the percentages for men were only slightly higher in the NMS-10, striking differences could be seen for women. In the EU-15, the numbers of those permanently employed for 35 hours or more per week and 10–35 hours per week are similar in all age groups, but far more women were permanently employed on 35 or more hours per week than on 10–35 hours per week in the NMS-10. In the NMS-10, in all age groups, more than 50 % of women worked under permanent contracts. By contrast, in the EU-15 figures for permanent employment at 35 hours or more per week amount to 45.8 % among women aged 55 or older.

Figure 38: Employment status by age and gender: percentage of workers (not self-employed) with different types of employment contracts and weekly working hours, EU-15, 2005, men

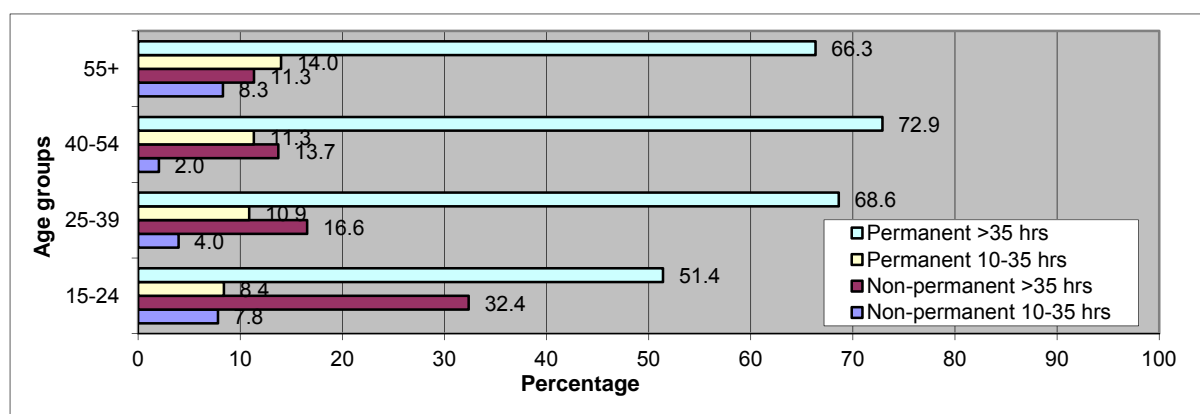


Source: Database for fourth EWCS (2005)

Figure 39: Employment status by age and gender: percentage of workers (not self-employed) with different types of employment contracts and weekly working hours, EU-15, 2005, women



Source: Database for fourth EWCS (2005)

Figure 40: Employment status by age and gender: percentage of workers (not self-employed) with different types of employment contracts and weekly working hours, NMS-10, 2005, women


Source: Database for fourth EWCS (2005)

In 2005, far more women were permanently employed on 35 or more hours per week than on 10–35 hours per week in the NMS-10. In the NMSs, in all age groups, more than 50 % of women worked under permanent contracts.

In the EU-15, non-permanent employment contracts and permanent contracts with fewer working hours per week (10–35) increased in comparison with 2000.

As Table 17 shows, from 2000 to 2010, in many EU-27 countries temporary employment increased for both men and women. However, this is not the case for all countries. In Bulgaria, Romania, Slovakia, Malta, Luxembourg, Lithuania, Ireland, the United Kingdom and Estonia the percentages of men and women in temporary employment are low (below 7 %). One in four workers had a temporary contract in Poland and Spain in 2010 and the share was close to this level in Portugal. Although in most countries women are more likely than men to engage in temporary employment, the phenomenon of temporary work affects men and women far more equally than the phenomenon of part-time employment (Eurostat, 2011b).

Table 17: Percentage of temporary workers aged 15–64 by gender and country

Country	Women			Men			
	Year	2000	2005	2000	2005	2010	
Austria		8.4	8.8	8.9	7.6	9.3	9.8
Belgium		12.1	11.4	9.6	6.6	6.8	6.7
Bulgaria		:	6.1	3.9	:	6.6	5.0
Cyprus		14.3	19.5	20.6	7.6	9.0	6.9
Czech Republic		8.6	9.2	9.8	6.0	6.9	6.8
Germany		13.1	14.1	15.0	12.5	14.5	14.5
Denmark		11.7	11.3	8.8	8.7	8.4	8.1
Estonia		:	:	2.7	3.2	3.5	4.9
Greece		16.3	14.3	14.4	12.2	10.1	11.0
Spain		34.7	35.7	26.2	30.9	31.7	23.9

Country Year	Women			Men		
	2000	2005	2010	2000	2005	2010
Finland	20.9	20.0	18.4	14.5	12.9	12.3
France	16.4	14.8	15.9	14.6	13.0	14.1
Hungary	6.3	6.4	9.2	7.3	7.5	10.0
Ireland	6.6	4.3	10.0	4.3	3.1	8.6
Italy	12.2	14.7	14.5	8.8	10.5	11.4
Lithuania	2.7	3.5	1.7	5.0	7.6	3.3
Luxembourg	4.4	5.8	8.3	2.6	4.9	6.2
Latvia	4.5	6.2	5.0	8.9	10.6	8.9
Malta	5.1	6.2	7.3	3.4	3.6	4.6
Netherlands	17.1	16.9	19.8	11.3	14.1	16.9
Poland	4.7	24.6	27.1	6.4	26.5	27.3
Portugal	22.2	20.5	23.7	17.8	18.7	22.4
Romania	2.9	1.9	1.0	3.0	2.8	1.2
Sweden	16.5	17.6	17.3	12.1	13.9	13.5
Slovenia	13.4	19.1	19.2	12.1	15.4	15.2
Slovakia	4.3	4.8	5.8	3.7	5.0	5.5
United Kingdom	7.6	6.2	6.4	5.7	5.2	5.6
EU-15	14.7	15.1	14.8	12.8	13.7	13.3
EU-27	12.9	14.5	14.6	11.6	13.5	13.3

.; not available.

Source: Eurostat, EU-LFS.

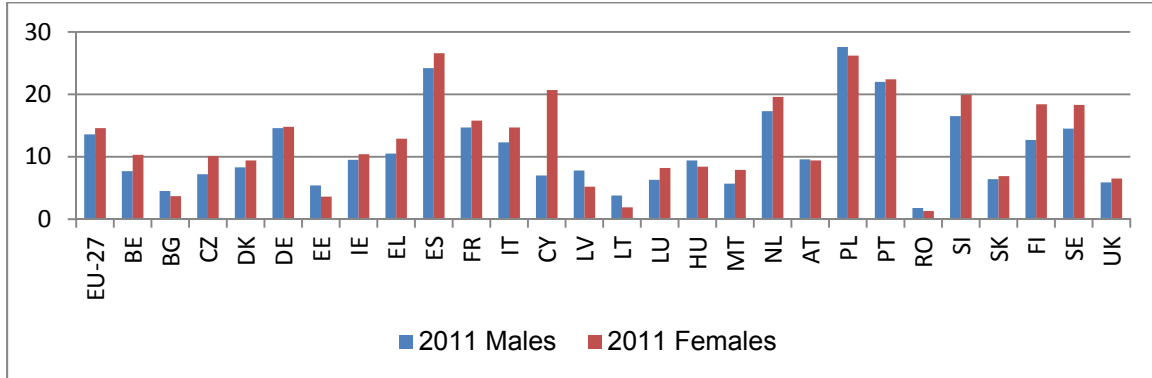
The use of fixed-term contracts among workers is relatively common in about a third of EU Member States. The considerable range in the propensity to use limited-duration contracts between Member States may, at least to some degree, reflect national practices, the supply and demand of labour and the ease with which employers can hire or fire.

In 2011 the share of female workers on such contracts was highest in Spain (27 %), but was also relatively high in Cyprus, Poland, Portugal, the Netherlands, Slovenia, Finland and Sweden, while it was lower, but increasing, in some of the other eastern countries, and lowest in the Baltic countries.

Although in most countries women are more likely than men to engage in temporary employment, the phenomenon of temporary work affects men and women far more equally than the phenomenon of part-time employment. In Cyprus, where the share of fixed-term contracts for women was 20.7 % in 2011, it was only 7 % for men. Sweden and Finland also displayed relatively high shares of fixed-term contracts among women compared with men.

Fixed-term contracts are more frequent among female than male workers. This is especially the case in Cyprus, where the share of fixed-term contracts for women was 20.7 % in 2011, whereas for men it was only 7 %. Sweden and Finland also displayed relatively high shares of fixed-term contracts among women compared with men (Figure 41).

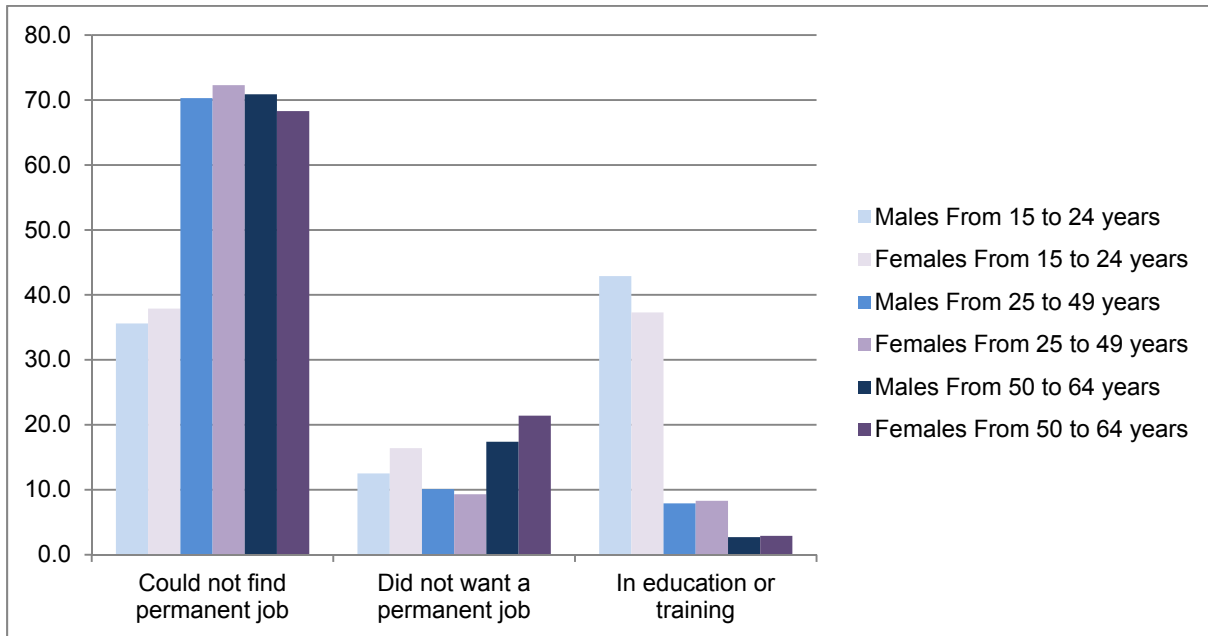
Figure 41: Fixed-term employment by Member State and gender, 2011



Source: Eurostat, EU-LFS (2012)

The main reason for workers to be on a temporary contract was that they could not find a permanent job, as can be seen in Figure 42. Across the age groups, women and men share the same reasons for temporary employment.

Figure 42: Main reason for fixed-term employment by age and gender, EU-27 (%)



Source: Eurostat, EU-LFS (2012)

2.6.7 Fixed-term jobs — sectoral distribution

Almost 15 % of female and 14 % of male workers worked in jobs with fixed-term contracts in the EU in 2005. Around half of them were in such jobs because they could not find a permanent job. Employment on a fixed-term basis involves uncertain and precarious situations for the persons concerned (Eurostat, 2007f). Some 7.5 % of all female and just over 6.5 % of male workers worked involuntarily in jobs of this kind (Eurostat, 2007f; 2008b).

The main findings are:

- The share of both women and men employed in fixed-term jobs and those employed in such jobs involuntarily increased between 2000 and 2005.
- Almost a third of women and men younger than 30 had fixed-term contracts in 2005 and around 40 % of these were employed in fixed-term jobs involuntarily.
- The largest shares of involuntary fixed-term employees are in agriculture and among those employed in private households.
- A much larger share of employees in elementary occupations are employed in fixed-term jobs involuntarily than those employed as managers, professionals and technicians.
- Some 43 % of women and 48 % of men employed in fixed-term jobs involuntarily have contracts of less than 6 months.

Over one million workers have more than one employer (France)

In 2005, workers with several employers and/or various occupations accounted for 1,126,000 people, representing 4.8 % of the salaried population in France.

According to a recent publication by the National Institute for Statistics and Economic Studies (Institut National de la Statistique et des Études Économiques, INSEE), between 2003 and 2005 the proportion of salaried workers with more than one job rose by more than the average population of salaried workers, rising from 977,000 to 1,126,000 workers. Of these, 70 % work part time in their main job and they are generally less well paid. There are distinct gender patterns. Men mainly work as secondary school teachers, university lecturers, art teachers, sport educators or private security agents, while women are mainly occupied in the services sector as home-helps, childminders or office cleaners. Seventy-five per cent of the women in this group work in childminding, home-help for older and/or disabled people and home-help for private individuals.

The proportion of both men and women employed involuntarily in fixed-term jobs is higher in agriculture than in other industries, amounting to 20 % of women workers in 2005 and almost 16 % of men in the EU-25 (Table 18). Relatively few women and men, however, work as employees in this activity (most being self-employed). The proportion of women in employment in private households (domestic service in particular) who were employed involuntarily on a fixed-term contract was only slightly smaller, at 19 %.

Table 18: Percentage of women and men employed in fixed-term jobs by sector of activity in the EU-25, 2000 and 2005

Economic activity	Gender			
	Women (%)		Men (%)	
	2000	2005	2000	2005
Agriculture	15.3	20.0	12.5	15.8
Industry	4.7	6.1	5.7	7.3
Wholesale and retail trade	5.1	6.2	4.0	4.6
Hotels and restaurants	8.7	11.1	8.7	9.4

Economic activity	Gender			
	Women (%)		Men (%)	
	2000	2005	2000	2005
Transport and communications	4.9	5.1	3.6	4.2
Financial intermediation	2.4	3.1	1.6	2.1
Business activities	5.9	6.7	4.5	5.9
Public administration	5.6	6.7	3.7	4.3
Education	6.8	8.6	5.8	8.1
Health and social work	5.3	6.1	5.4	5.9
Other community services	7.8	8.3	6.5	9.2
Private households	14.9	19.3	10.5	8.9
Extra-territorial organisations	7.8	8.8	5.2	4.7

Source: EU-LFS (2005)

Over 30 % of women employed involuntarily in fixed-term jobs were in education and health, compared with fewer than 10 % of men (Table 19). On the other hand, only around 14 % of women in this situation were employed in manufacturing, which was responsible for 46 % of men working involuntarily in a fixed-term job.

Table 19: Division of women and men employed involuntarily in fixed-term jobs by sector of activity in the EU-25, 2005 (% of women and men employed fixed-term involuntarily)

Economic activity	Gender	
	Women (%)	Men (%)
Agriculture	3.3	6.3
Industry	13.6	45.9
Wholesale and retail trade	13.1	8.7
Hotels and restaurants	7.2	4.2
Transport and communications	2.8	5.7
Financial intermediation	1.6	0.9
Business activities	8.2	7.4
Public administration	7.8	6
Education	15.2	5.6
Health and social work	15.3	3.7
Other community services	5.8	5.3

Economic activity	Gender	
	Women (%)	Men (%)
Private households	6	0.4
Extra-territorial organisations	0.1	0.1

Source: EU-LFS (2008)

Interestingly, the EWCS 2010 found that 5 % of workers in the EU do not have contracts. In four countries — Cyprus (38 %), Greece (28 %), Malta (27 %) and Ireland (23 %) – this proportion is well above the EU average. These are also the countries with less than the average number of permanent contracts. This is mostly the case in agriculture, where in 2005 24 % of the employees had no type of contract, as well as among unskilled workers, of whom 14 % did not have a contract (Eurofound, 2008f). Further, unskilled workers, because of their lower vocational educational attainment, and as they are usually restricted to certain types of work, are in a particularly weak position to insist on contracts.

2.6.8 Self-employment

In the EU-27, self-employment is twice as common among male as for female workers (Eurostat, 2008e). Franco (Eurostat, 2007c) confirmed these results by reporting that more men than women run their own businesses and manage businesses across European Member States. In 2005, self-employed women in industry and services accounted for approximately 8.6 % of the total number of women in work. However, this small proportion of self-employed women can be partly explained by the large proportion of women employed in sectors with limited possibility for self-employment, including public administration, education and health and social work. In addition to the small numbers of females who are self-employed, only 2.5 % of women in industry and services were classified as self-employed with employees in the EU-25 in 2005, as compared with almost 6.4 % of their male counterparts in the same category. Regarding the trend, the overall proportion of self-employed with employees in the EU-25 remained the same for both women and men, with a consistent gender gap (Eurostat, 2007c).

Almost one-third of self-employed women with employees worked in the distributive trade sector in 2005. This is significantly more than the proportion of female employees in the sector (25 %) in the EU-25. Another 16 % of self-employed women with employees worked in business and financial services, which is significantly lower than the proportion of female employees in this sector, while 14 % worked in the Horeca sector, as well as in the community and personal service sector. Thus, these four sectors account for around 75 % of all self-employed women (Eurostat, 2007c).

As businesses might be run by salaried employees rather than the self-employed, the female proportion among supervisors can be regarded as a better indicator for gender differences than their proportion among the self-employed (Eurostat, 2007c).

2.6.9 Women in leadership positions

Women still have difficulties in attaining senior positions within organisations because of the ‘glass ceiling effect’; the idea that people in senior management promote those who are like themselves, so that this makes it difficult for women to ‘fit’ into the established model (Kumra and Vinnicombe, 2008; 2009b). Moreover, although more women are working in managerial roles than in the past, they continue to be subjected to traditional stereotypes and are discriminated against based on institutionalised systems that maintain subjective assessments of leadership capability (Melero, 2004).

Across Europe, in 2005, 33 % of managers were women, that is those with workers whom they directly supervise. Latvia is one of the countries with a high percentage of women managers (51 %), and across most of the eastern European countries women account for more than 40 % of managers. In northern Europe and Scandinavia the percentages are slightly lower, averaging around 30–40 %, except in Luxembourg, where only 17 % of managers are women. In southern Europe, the proportions

decline further, with, for example, only 16 % in Malta (Melero, 2004). In micro-enterprises, with 10 or fewer employees, there is an equal distribution of male and female managers, but this equality disappears in larger organisations, resulting in 30 % of women having supervisory roles.

Women remain under-represented in the decision-making processes of companies. A survey of 2,315 private companies in Luxembourg revealed that women are under-represented on the boards of these companies. While women make up 35 % of the workforce of companies having a board, just 16 % of the board members are women. This imbalance in board representation of women holds true for all sectors except for the construction sector, in which women are over-represented on company boards, and the sectors 'manufacturing of textiles, chemicals and wood' and 'electricity, gas and water supply', as well as 'transport', in which figures are balanced (Eurofound, 2007d).

More highly educated men (36 %) than women (15 %) work as managers. Men are also less likely than women to be managed by a woman, with 42 % of female employees having a woman as their supervisor, compared with only 10 % of working men (Melero, 2004). However, for employees having female immediate supervisors, the figures rose by four percentage points from 21 % in 1995 to 25 % in 2005, and to 31 % in 2010 (Eurofound, EWCS, 2010, Fifth European Working Conditions Survey: available at: www.eurofound.europa.eu/surveys/ewcs/2010). Interestingly, however, these women can mostly be found as bosses of other women managing more often part-time workers and smaller numbers of workers. Thus, women seldom manage male and high-skilled workers (Eurofound, 2007a). Higher shares of workers in the northern countries report they have a woman as their immediate supervisor than in the southern countries. Whereas in 2005, in Finland almost 40 % of employees reported having a female immediate supervisor, in Italy only 18 % could state this and in Cyprus only 15 % (Eurofound, 2009a). Moreover, if women succeed in becoming supervisors, they are mostly supervisors of other women.

According to the 2010 EWCS, for workers having female immediate supervisors, the figures rose from 21 % in 1995 to 25 % in 2005, and to 31 % in 2010. Rates vary considerably between Member States.

Female managers have realised positive outcomes in respect of human resources policies. When more women are included at the management level, this results in more intense interpersonal communication, greater involvement of managers in employees' career administration and more democracy in decision-making at the workplace (Melero, 2004). However, Melero also found that workers (both male and female) who have female bosses are more likely to report bullying and harassment at their workplace at the overall EU-27 level and in the Nordic countries, Ireland and the United Kingdom and the northern European countries. He suggests that this may be because the workplace is more democratic, but the data cannot identify the exact cause. Also, workers with women managers are likely to report slightly lower levels of job satisfaction than those with male managers.

Despite these restrictions, women do break through the glass ceiling, and, when they do, their leadership abilities are seen as no different to those of men (Rosette and Tost, 2010). However, women need to become better at accessing social capital (relevant elements of knowledge, resources and networks), as these tend to assist men in their career development (Timberlake, 2005). Timberlake (2005), in her review, emphasises that, although women and men enter the workplace with the same amount of human capital (intelligence, education, skills and experience), men are more successful at accessing social capital, that is membership in networks that provides an understanding and adopting of organisational norms, values and aims, which in turn strengthens their ability to gain organisational power.

The gender representation on corporate boards in the EU shows that the proportion of women involved in top-level business decision-making remains very low, although there are small signs of progress. In January 2012, women occupied on average just 13.7 % of board seats of the largest publicly listed companies in EU Member States. Since the final quarter of 2003, the share of women on boards has risen from 8.5 % to 13.7 %, an increase of 5.2 percentage points in a little over 8 years. This represents a slow average rate of change of around 0.6 percentage points per year. These figures are based on the European Commission's database for women and men in decision-making. France, Italy and Belgium have enacted quota legislation for company boards that includes sanctions. These countries followed the example of Norway, which has seen rapid progress and comprehensive compliance with a 40 % quota passed in 2003. The European Commission Work Programme for 2012 announces a legislative initiative on improving the gender balance in the companies listed on the stock exchange (EC, 2012)

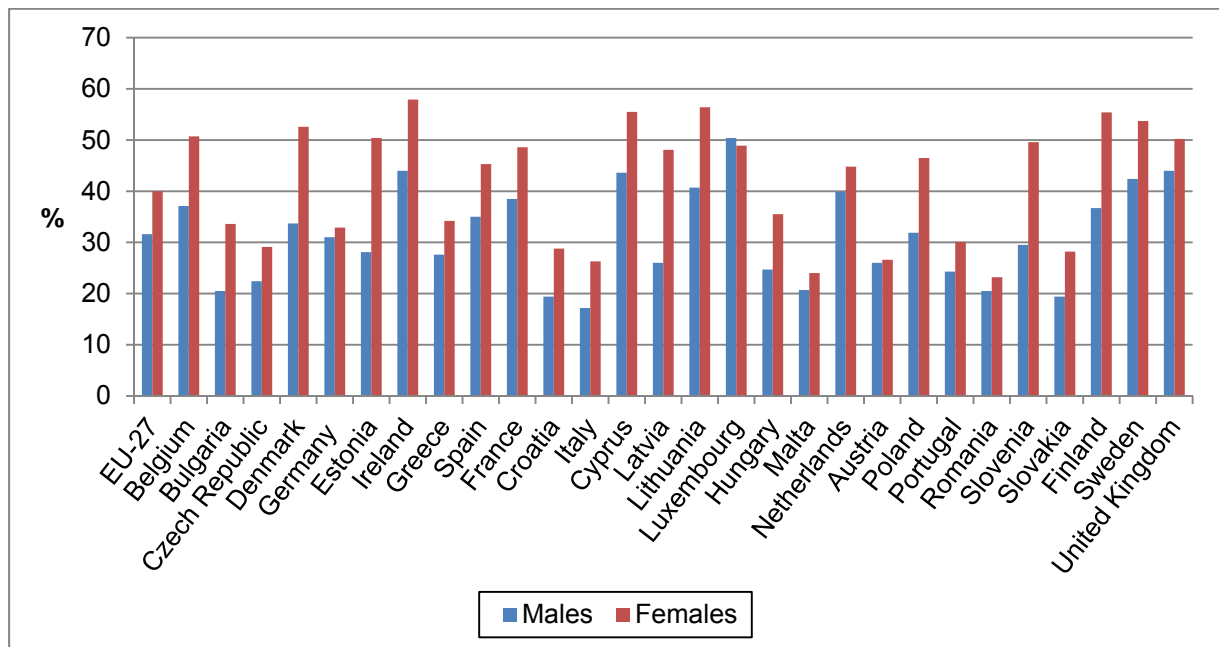
In January 2012, women occupied on average just 13.7 % of board seats of the largest publicly listed companies in EU Member States. Since the final quarter of 2003, the share of women on boards has risen from 8.5 % to 13.7 %.

2.7 Women’s level of education

Recent decades have been characterised by considerable educational expansion across Europe, particularly among young women. In the past few decades an increasing number of young people — especially women — have gone on from compulsory schooling to tertiary education (Müller and Wolbers, 1999; Eurostat, 2001; Smyth, 2002), to the extent that the education levels of women have surpassed those of their male counterparts. Many more women than men are educated to a tertiary — or university — level in most European countries. The gap between women and men in this respect has, moreover, tended to widen in recent years in most countries as participation in tertiary education has increased.

The share of women among students increased between 1997/98 and 2003/04 in virtually all countries for which data are available for both years, except for Finland and Lithuania, marginally, and Cyprus and Bulgaria, more markedly. Although there are marginally fewer women than men in the 17–22 age group across Europe, women made up over half of all those of this age successfully completing upper secondary and post-secondary non-tertiary education in 2004 (i.e. ISCED — International Standard Classification of Education — levels 3 and 4) in 13 of the 17 countries for which data were available. In the EU-25 as a whole, women accounted for almost 55 % of all students enrolled in tertiary-level education (i.e. ISCED levels 5 or 6) in 2003/2004. In Germany and Portugal, women accounted for almost 57 % of all those completing education or training at this level (though in Germany, the data exclude vocational courses, which are particularly important in this country) and in Denmark, Lithuania and Poland, for over 53 % (EC, 2008a).

Figure 43: Persons with tertiary education attainment ⁽⁷⁾ aged 30–34 by gender, 2011 (%)



Source: Eurostat, tertiary education statistics (2012)

⁽⁷⁾ The share of the population aged 30–34 years who have successfully completed university or university-like (tertiary-level) education with an ISCE 1997 education level of 5 or 6. This indicator measures the Europe 2020 Strategy’s headline target to increase the share of the 30 to 34 year olds having completed tertiary or equivalent education to at least 40 % in 2020.

Women seem to be more successful than men in completing their tertiary-level studies. In 2004, women made up around 59 % of students graduating with ISCED level 5 qualifications in the EU-25, four percentage points more than the share of women in enrolments.

Regarding non-formal education, more female (23 %) than male (19 %) workers participate in non-formal education across Europe (Eurostat, 2007d).

Relative age also seems to affect the data. Across Europe, the proportion of women aged 30–34 with tertiary education is higher than for those aged 50–54. In 2005 in the EU-25, 30 % of women aged 30–34 had tertiary-level qualifications compared with 27 % of the men in this age group. Among workers aged 50–54, only 19 % of women as opposed to 22 % of men had tertiary-level qualifications.

The strategic framework for European cooperation in education and training that was adopted in May 2009 set a number of benchmarks, including one for tertiary education, namely that by 2020 the proportion of 30 to 34 year olds with tertiary educational attainment should be at least 40 %. Just over one-third (34.6 %) of the population aged 30–34 in the EU-27 had a tertiary education in 2011 (Figure 43), rising to almost 4 out of 10 (38.5 %) among women, and falling to just over 3 out of 10 (30.8 %) among men. In Ireland, Luxembourg, Sweden and the United Kingdom, the proportion of 30- to 34-year-old men and women with tertiary educational attainment was already 40 % or more in 2011. By contrast, less than 20 % of men in this age range had a tertiary education in the Czech Republic, Slovakia, Romania and Italy, as was also the case in Croatia. In 2010, Germany, the United Kingdom, France, Poland, Italy and Spain accounted for two-thirds of all EU-27 students in tertiary education. Romania was the only other Member State to record at least one million tertiary students.

Fewer women than men, however, go on to undertake advanced research. There are, in addition, substantial differences between women and men in the subjects studied.

Many more women than men are educated to a tertiary — or university — level in most European countries. The gap between women and men in this respect has, moreover, tended to widen in recent years in most countries as participation in tertiary education has increased. Fewer women than men, however, go on to undertake advanced research and women remain under-represented in secondary and tertiary teaching professions. There are, in addition, substantial differences between women and men in the subjects studied.

- **Women study other topics than men at university**

There is a marked difference between the fields of education in which women and men successfully complete (the first stage of) tertiary-level programmes. In 2004 women made up a large majority of those graduating in health and welfare and teacher training and education programmes at ISCED level 5, outnumbering men by more than three to one on average. However, the reverse is the case in engineering, manufacturing and construction. Similarly, in science, mathematics and computing programmes, the number of men was 50 % higher than the number of women, whereas in business and administration the number of women was almost 50 % higher than the number of men, in law, 54 % higher, and in social sciences and journalism and humanities and the arts, twice as high or more. In other broad areas, in agriculture and veterinary and services, the number of men and women was more equal (EC, 2008a).

Across the EU-27, in 2010, just over one-third (34.0 %) of students in tertiary education were studying social sciences, business or law, with more female (3.9 million) than male (2.8 million) students in this field of education. The second largest number of students by field of education was in engineering, manufacturing and construction-related studies, which accounted for 13.6 % of all students in tertiary education; three-quarters of the students in this field were male (Eurostat, Tertiary education statistics, 2012).

- **Women dominate the teaching profession**

Women dominate the teaching profession, particularly in primary education. There are significantly more female than male teachers at primary education level in all Member States. In 2011, 85 % of primary education teachers in the EU-27 were women, with the highest percentages in the Czech Republic and Slovenia (both 97 %), Italy, Lithuania and Hungary (all 96 %), and the lowest in Denmark (69 %), Luxembourg (74 % in 2010) and Spain (75 %). While there are also more female than male

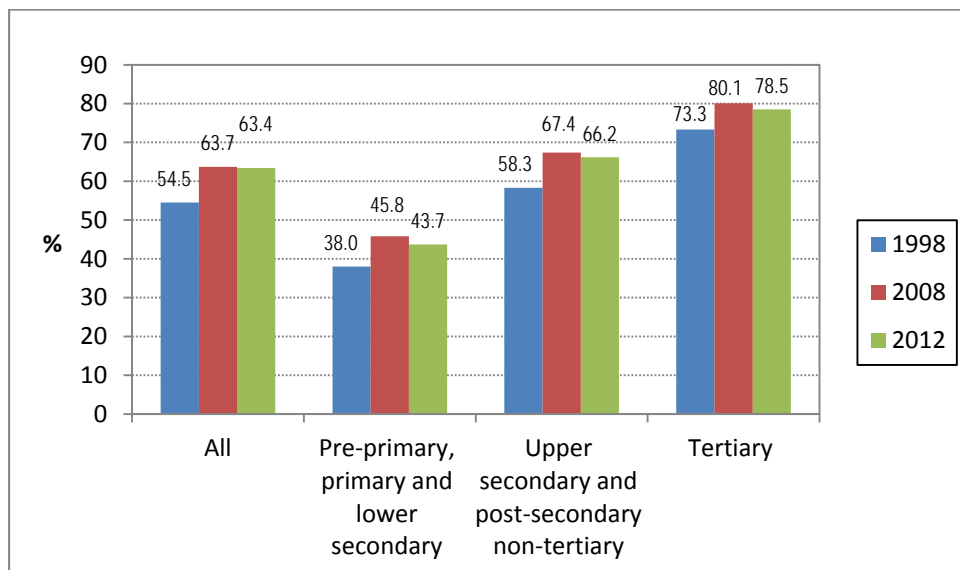
teachers at upper secondary education level in the EU-27, the pattern is less pronounced. In 2011, the proportion of female teachers at upper secondary level was 59 %, with the highest percentages in Latvia (80 %), Lithuania (79 %) and Bulgaria (78 %), and the lowest in Malta (43 %), Germany, Spain, Luxembourg and the Netherlands (all 50 %). On the other hand, at tertiary education level there are fewer female than male academic staff (which includes lecturers and researchers) in the EU-27. In 2011 the proportion of female academic staff was 40 % in the EU-27, with the highest percentages in Latvia (59 %), Lithuania (55 %) and Finland (50 %) and the lowest in Malta (30 %), the Czech Republic, France and Italy (all 36 %) (Eurostat, 2013b).

▪ **Employment rate and education**

Employment rates also vary considerably according to levels of educational attainment: for statistics on this issue employment rates are based on the age group 25–64 rather than 15–64. The employment rate of those who had completed a tertiary education was 83.7 % across the EU-27 in 2011, much higher than the rate (53.5 %) for those who had attained a primary or lower secondary education. The EU-27 employment rate of persons with an upper secondary or post-secondary non-tertiary education was 73.2 %. The largest falls in employment rates since the beginning of the financial and economic crisis (comparing 2008 with 2011) were witnessed for persons with a primary or lower secondary education (Eurostat, employment statistics, 2012).

As can be seen in Figure 44, the employment rate of women in all educational groups has gone down slightly with the economic crisis; the same is true for the EU-27. Also, the employment rate is increasing with educational attainment, and this is true for all Member States.

Figure 44: Employment rate of women aged 20–64 by educational level for EU-15, 2012 (%)

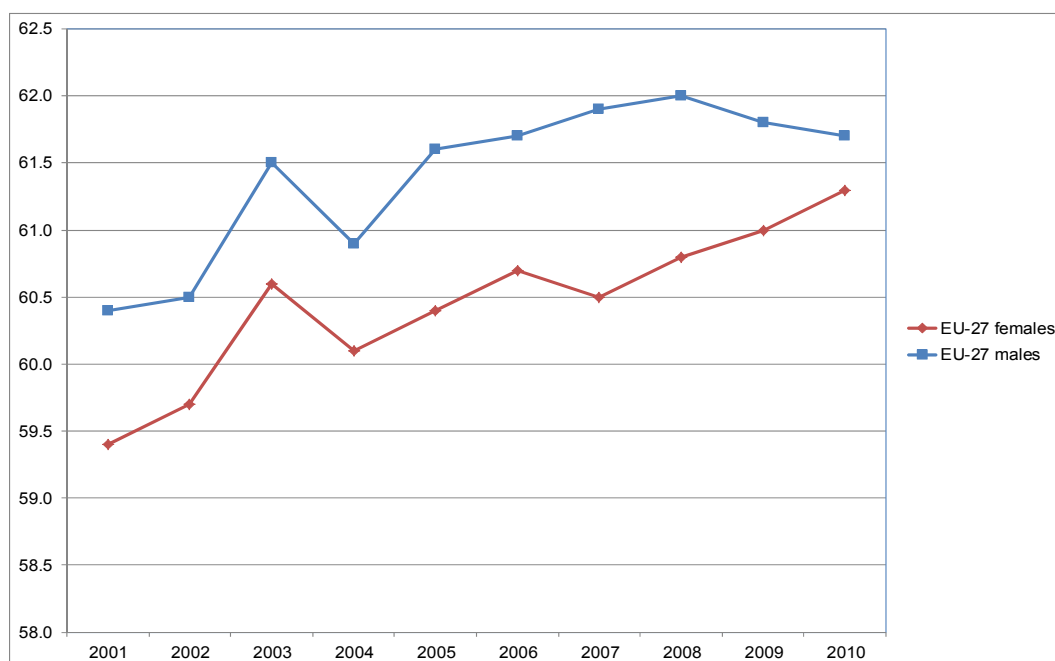


Source: Eurostat, EU-LFS (2013)

2.8 Retirement

The age at which workers are entitled to draw a full retirement pension varies between 60 and 65 for women and between 62 and 65 for men in most of the EU Member States. However, both genders retire before the official age in most European Member States. In 2010, the median age of retirement for women was 61.3 years compared with 61.7 years for men in Europe. This means that the retirement age for women is about 4 months earlier than for men. Focusing on the period from 1998 to 2010, it is apparent that the median age of retirement has increased for both genders. Whereas the median rose by around 1 year 10 months for men, it rose by about 2.5 years for women across the EU, especially since 2001 (Figure 45).

Figure 45: Average exit age (years) from the labour force of men and women in Europe, 2001–2010



Source: Eurostat, EU-LFS (2013)

In 2010, the median age of retirement for women was 61.3 years compared with 61.7 years for men in Europe.

Average (median) pension levels of 65 to 74 year olds across the EU-27 were generally lower than average earnings for those aged 50–59 in 2010. This was particularly the case in Cyprus, Greece, Bulgaria and Denmark, where pensions represented between 36 % and 44 % of the average earnings among those aged 50–59. This ratio, known as the aggregate replacement ratio, was highest in Luxembourg, France, Romania (2011), Slovakia and Austria, where it was at least 60 %. Relatively low aggregate replacement ratios may reflect low coverage and/or low income replacement from pension schemes within current pension systems, as well as incomplete careers or an underdeclaration of earnings. Between 2005 and 2009 the aggregate replacement ratio for the EU remained stable at 51 % — meaning that pensioners have to live on roughly half the income of those just before retirement. In 2009 the ratio varied within Member States between 34 % and 68 %, with the highest ratios in France, Austria and Hungary, while the lowest ratios were in Bulgaria, Latvia and Cyprus. Fifteen Member States had ratios below 50 % (Eurostat, Statistics explained, 2012).

2.9 Wages and wage structure

2.9.1 Paid employment

Women are 20 % less likely than men to have a paid job in Organisation for Economic Co-operation and Development (OECD) countries (OECD, 2008b). In addition to the lower female employment rate, many women work part time (EC, 2006). However, there are differences between the Baltic states, where the proportion of women in paid employment is almost equal to that of men, and southern European countries such as Turkey, Malta, Greece and Spain. In Malta, where the employment gender gap was the highest, the female employment rate was less than half that of males in 2004 (EC, 2006a).

In addition to increasing numbers of women in the labour force and in higher-paying occupations, higher proportions of females are gaining a tertiary education. This narrowing of the gender gap reflects a large rise in the employment rate for women, from 52.9 % in 1999 to 55.7 % in 2004 (EC, 2006a), 58.3 % in 2006 (EC, 2009b) and 58.6 % in 2011.

2.9.2 Pay

Generally, women earn less than men. According to the OECD (no date), the median earnings in OECD countries in full-time jobs between men and women differ by about 15 % and even exceed 20 % in countries such as Korea, Japan, Germany, Switzerland, Canada and the USA. In contrast, the gender gap is less than 12 % in New Zealand, Belgium, Poland, Greece and France. These numbers are not affected by the preference for part-time work among women; however, men tend to work longer hours than their female counterparts (OECD, no date). Even after correcting estimates for differences between men and women in their labour market characteristics, women are paid less money per hour than their male counterparts. One reason for this may be the 'glass ceiling effect' across most European countries. It indicates that the gender pay gap is higher towards the top of the wages distribution than towards the lower end of the distribution. That makes it harder for women to advance to the top of the pay ladder (Arulampalam et al., 2007; Kumra and Vinnicombe, 2008) (see also sections 1.3 and 2.6 of this report).

Accordingly, the ILO (2007a) reports that there is a worldwide gender gap in payment, with a women's income per hour worked being on average about 75 % of men's income, although there are more women in high-status jobs today. The European Commission (2009b) and the OECD (2008b) state that, on average, women earn 16 % less than men across Europe.

- **The gender pay gap remains high in Europe**

According to the Statistics on the Structure of Earnings (SSE), in 1995 women working full time received 75 % of the average hourly earnings of men in the EU in industry and services. Although there was considerable variation between countries, in only four cases — Belgium, Denmark, Luxembourg and Sweden — were average women's earnings more than 85 % of men's. The figure was highest in Sweden, at 88 %. At the other extreme, in Greece and the Netherlands, women's pay was only 70 % of men's and in Portugal the figure was as low as 67 % (Thewlis et al., 2004; Eurostat, 2008e).

Similarly, according to the European Commission, the gross hourly earnings of women were estimated at 16 % lower than the gross hourly earnings of men in the EU-15 in 2003. The gender pay gap varied between 4 % and 25 % in 2003. The smallest differences were found in Italy, Malta, Portugal and Slovenia, the biggest in Estonia, Germany, the United Kingdom, Cyprus and Slovakia (EC, 2006b). Regarding the trend of the gender gap in payment, The European Union (2008) also reports that, having amounted to 16 % in 2000, the pay gap stabilised at 15 % after 2003, almost the same as in 1994 (EC, 2006b).

Women's gross hourly earnings were still on average 16 % below those of men in 2011 in the EU (EU-27). Across Member States the gender pay gap varied by 25 percentage points, ranging from 2 % in Slovenia to 27 % in Estonia.

There are various reasons for the existence and size of a gender pay gap and they may differ strongly between Member States, for example the types of job held by women, consequences of breaks in career or part-time work due to childbearing, decisions in favour of family life, etc. Moreover, the proportion of women working and their characteristics differ significantly between countries, particularly because of institutions and attitudes governing the balance between private and work life that impact on the careers and thus the pay of women.

According to the fourth EWCS, occupation, gender and employment status (full- or part-time job) can be regarded as the most important determinants of the pay difference between female and male workers. Part-time workers, workers on temporary contracts and workers in the agricultural sector are more likely to belong to the lower income group, while senior officials, managers or professionals and persons in a supervisory capacity are more likely to fall into the higher income categories (Eurofound, 2007a). Thus, men are more concentrated in higher paid sectors and occupations, as well as being more likely than women to hold managerial responsibilities within these sectors and occupations. Hence, their earnings are relatively higher.

Furthermore, women often work in sectors where wages are on average lower than for those dominated by men (BLS, 2007), with more than 40 % of women (twice as many as men) working in sectors such as health, education or public administration (EC, 2009b). Furthermore, the statistics on annual gross earnings from 2003 show that in most countries the gender pay gap is wider in wholesale

and retail trade, which are dominated by women, than in industry — which is a strongly male-dominated sector (EC, 2006a). Last but not least, women are highly represented in informal employment, which is characterised by low pay (ILO, 2007b). Additionally, gender pay gaps differ between public and private sectors, with the gender pay gap being higher in the private sector than in the public sector (Arulampalam et al., 2007).

Additionally, while both men and women have lower earnings in female-dominated sectors and occupations, this wage penalty is more pronounced for women. In Europe — except in the acceding countries — approximately 50 % of female workers are positioned in the bottom third of the scale with regard to their pay (Eurofound, 2007a). For all country groups, female workers are under-represented in the top third of the income scale. Whereas 70 % of men employed full time have a high income, only 47 % of the female full-time workers had an income in the same segment of the earnings distribution in 2005. Moreover, women employed part-time were more likely to be paid less than men employed part-time (78 % of women vs. 61 % of men; Eurofound, 2007a). When analyses of the difference in gender pay are based on estimating the difference in absolute pay for a female and male worker having the same job, the difference in the gender pay gap is usually smaller. In analyses that are more sensitive to the fact that women tend to have lower paid jobs, even if they can be characterised similar to the jobs occupied by male workers, significantly higher proportions of female workers still fall into the lower income group category than male workers with, for example, a similar occupation, employment status and tenure (Eurofound, 2007a). When focusing on full-time employment, the wage gap between men and women is almost as large as the wage gap before part-time work was controlled.

Are low wages risk factors for hypertension?

A recent US study has demonstrated that both women and younger workers between 22 and 44 years old could be at particular risk of hypertension when working at low wages. The study analysed longitudinal, nationally representative US data from four waves (1999, 2001, 2003 and 2005) of the Panel Study of Income Dynamics. The sample covered employed persons aged 25–65 years. Hypertension incidence was self-reported based on physician diagnosis. The study was prospective because data from three base years (1999, 2001, 2003) were used to predict newly diagnosed hypertension for three subsequent years (2001, 2003, 2005). Correlations were stronger when three health variables — obesity, subjective measures of health and number of comorbidities — were excluded from regressions. Doubling the wage was associated with 25–30 % lower chances of hypertension for persons aged 25–44 years. The authors concluded: ‘Hypertension is often associated with older males so it was somewhat surprising when the research revealed strong correlations between hypertension and women and hypertension and younger workers between the ages of 25 to 44.’

The European and national legislation on equal pay has facilitated a decrease in the number of cases of direct discrimination such as differences in pay when a man and a woman are doing exactly the same job with the same experience and skills and the same performance (EC, 2009b). However, despite EU legislation on equal pay, the gender pay gap narrows at a much slower pace than the gender employment gap. This is because of direct discrimination against women and structural inequalities including segregation in sectors, occupations and work patterns, access to education and training, biased evaluation and pay systems and stereotypes (EC, 2006a). Other factors that may partly explain gender pay gaps include differences in the personal and job characteristics of men and women in employment and differences in the payment of these characteristics. Female and male workers differ with regard to their personal and job characteristics, including labour market participation, employment, earnings, the sector and occupational employment structures, as well as job status, job type and career progression (EC, 2006a). According to the Bureau of Labor Statistics (2007), in addition to occupation and employment status, the length of job tenure and supervisory role have stronger impacts with regard to determining the pay than gender itself.

Last but not least, it can be concluded that labour market institutions, such as childcare policy, as well as wage setting, affect the average gender pay gap in Europe (Arulampalam et al., 2007).

Finally, independent of the initial pay differential, the gender pay differential widens considerably throughout women’s working life (EC, 2006a).

2.9.3 The gender pay gap — a sectoral dimension

Generally, the gender differences in pay are high among older workers, the highly skilled and those employed in supervisory or managerial jobs. They also vary between different sectors of activity and different occupations (EC, 2006a).

One of the main reasons for the gender pay gap in most EU countries is women's segregation in low-paid occupations and the fact that few women occupy managerial positions. Women's interrupted working patterns, as a result of maternity absences, also influence their lifetime earnings. One Estonian study shows a reduction by 3.6 % for each child, but this does not alter for men's earnings. In Norway, 36 % of the gender pay gap in 2003 was attributed to having children, especially those in the private sector, and for those with a higher level of education. In Germany, it benefits women to return to work from parental leave within 12 months and then to work full time as this reduces the gender pay gap to 6 %, compared with 12 % for single women working full time and 14 % for women who return from parental leave after three or more years (Eurofound, 2010a). However, there is already a marked gender pay gap for young people entering the labour market in many occupations (Bispinck et al., 2009).

- **The size of the gender pay gap by economic activity strongly differs among Member States**

After analysing gender pay gaps at the level of the whole economy (except public administration and defence and compulsory social security), a breakdown for the different sectors of the economy also reveals interesting patterns. Even in those sectors in which women predominate, they earn less than men (Table 20).

According to the most recent Eurostat figures (Eurostat, 2013a, gender pay gap statistics), in almost all EU Member States, the gender pay gap in the financial and insurance activities was sizeably higher. The highest was in the Czech Republic and the United Kingdom (43 %) and the lowest in Bulgaria (21 %). For the business economy, the highest gender pay gap was recorded in Estonia (27 %) and the lowest in Slovenia (8 %).

Within the manufacturing industry, Sweden (8 %) had the lowest pay gap and Portugal (33 %) the highest. Portugal, however, recorded the lowest pay gap (–22 %) in the construction industry. While no fewer than 10 Member States registered negative pay gaps in the construction industry, the highest gap (19 %) was observed in the United Kingdom. A negative gender pay gap means that on average women's gross hourly earnings are higher than those of men in that particular sector.

In 2011, the majority of EU countries recorded a higher gender pay gap in the private sector than in the public sector. This might be because within the public sector, in most countries, employees are protected by collective pay agreements and other similar contracts establishing pay. On the other hand, the opposite was observed in five EU countries: Bulgaria, Latvia, Hungary, Romania and Finland. The Netherlands registered the same level of pay gap (18 %) for both the public and private sector. Among the countries for which data are available, the highest pay gap was observed in Finland (20 %) and the lowest in Latvia (–4 %). Within the sector of education, Estonia and Ireland (25 %) recorded the highest pay gaps, while Malta (–5 %) and Lithuania (–2 %) had the lowest.

The highest difference between the public and private sector for the same country was registered in Cyprus, where the pay gap varied by a factor of 25 percentage points. Romania recorded the highest pay gap within the public sector (23 %) but the lowest pay gap within the private sector (3 %). In Belgium a negative pay gap was observed in the public sector (–3 %). The United Kingdom and Germany had the highest pay gap (26 %) in the private sector.

Table 20: Gender pay gap unadjusted (%) in selected sectors in which women work, 2011

Country	Manufacturing	Wholesale & retail trade	Transport & storage	Accommodation & food service	Public admin. & defence	Education	Human health & social work	Other services
BE	11.2	16.7	3.9	8.5	:	3.2	9.0	20.0
BG	24.9	9.5	15.5	12.2	10.3	11.1	26.1	2.6
CZ	27.7	27.5	2.6	7.9	14.3	21.9	27.6	15.9
DK	13.2	22.2	12.2	8.0	8.7	8.5	10.2	15.9
DE	27.2	25.1	4.3	13	8.4	9.2	24.7	24.3
EE	31.2	38.0	10.6	20.5	10.2	25.3	30.3	13.6
EIE	:	:	:	:	:	:	:	:
EL	:	:	:	:	:	:	:	:
ES	22.3	23.5	11.1	18	10.1	10.5	24.2	20
FR	15.2	20.9	0.8	9.7	11.6	12.4	18.4	10
HR	24.9	24.9	22.2	10.1	47.8	32.6	28.6	5.9
IT	14.4	14.8	0.4	:	:	13.6	24.3	26.4
CY	32.7	31.5	34.4	20.9	16.3	11	41.5	49.1
LV	17.7	23.4	8.6	22.0	-4.3	:	9.7	43.1
LT	26.9	19.3	-2.4	15.3	6.2	-1.8	22.8	23.1
LUX	15.4	25.8	8.6	17.1	:	6.8	5.1	17.6
HU	25.8	11.9	-0.7	20.7	3.9	17.6	16.4	5.1
MT	15.6	30.4	9.5	15.0	:	-4.7	11.2	3.8
NL	18.8	17.1	18.2	18.8	11.8	19.3	16.4	29.2
AT	:	:	:	:	:	:	:	:
PL	20.9	26.7	-3.7	27.7	16.8	1.0	17.8	18.4
PT	33.3	23.8	-18.3	28.7	:	10.8	35.7	20.0
RO	22.4	13.5	5.6	8.1	2.4	13.5	10.7	24.5
SV	12.8	11.6	-19.8	11.9	4.7	9.3	16.9	33.1
SK	28.3	26.9	1.4	0.4	19.1	15.8	24.1	7.4
SF	13.6	22.7	12.9	10.9	19.6	11.1	17.6	19.9
SE	7.7	14.7	3.3	8.3	9.0	11.8	15.2	12.9
UK	20.6	24.3	2.4	15.2	16.1	18.3	29.3	19.7

.; not available.

Source: Eurostat, Gender equality indicators

The differences in the gender pay gap are striking when assessed by occupations. They can range from less than 10 % for computer and information technology jobs, as well as those in marketing and social services, to more than 20 % in healthcare and medical occupations, food processing and jobs in the chemicals industry (Eurofound, 2010b).

Even in those sectors in which women predominate, they earn less than men. In 2011, the majority of the EU countries recorded a higher gender pay gap in the private sector than in the public sector.

While most EU countries are trying to address the gender pay gap through achieving gender equality, a few have started to focus directly on reducing the gender pay gap. These are Austria, Belgium, Cyprus, Denmark, Finland, France, Italy, Lithuania, Luxembourg, the Netherlands, Norway, Romania, Slovenia, Sweden and the United Kingdom. The measures put into place have been implemented through national action plans, direct or indirect legislation, dedicated bodies and specific wage policies (Eurofound, 2010a)

2.9.4 Poverty

The gender pay gap decreases women's lifetime earnings and pensions, which may be a strong contributor to their experience of poverty in later life (EC, 2009b). A slightly higher proportion of women (17 %) than men (15 %) were at risk of income poverty in the EU-25 in 2004 (EC, 2006a). Similar results are found among workers who were in the labour force for at least 27 weeks in 2005, where women were slightly more likely than men to live in poverty (6.1 % vs. 4.8 %) in the USA (BLS, 2007). In particular, single parents, women working in the agriculture and fishery sector and older women are at risk of poverty (EC, 2006b). Among workers aged 25 years and older being paid hourly rates, 1.8 % of women had earnings at or below the minimum wage — twice the rate for men (BLS, 2007). Regarding the age group 65 and over, 21 % of women are at risk of poverty compared with 16 % of men (EC, 2009b). This is partly because of their shorter, slower and less well-paid careers. In contrast, in the USA, poverty rates for women decrease with age: in 2005, 10 % of women aged 16–24 lived below the poverty level, while only about 3 % of women aged 45 and older lived in poverty (BLS, 2007).

In Denmark, Luxembourg, Hungary, Malta, the Netherlands and Finland, men and women are at equal risk of poverty, whereas in Poland and Slovakia men are at slightly higher risk. The gender difference (women more likely to be poor) in the risk of income poverty in 2005 was more than 5 % in the Czech Republic, Germany, Estonia, Ireland, Cyprus, Latvia, Lithuania, Hungary, Austria, Slovenia, Finland, Sweden and the United Kingdom (EC, 2006b).

Last but not least, women are more likely to have shorter or interrupted careers and therefore fewer rights than men. This increases the risk of poverty, especially for single parents, older women and women working in family-based businesses such as agriculture and fisheries (EC, 2006a).

- **Recent figures**

When comparing rates of people at poverty risk (Table 21), it can be observed that, despite higher employment rates and counter-measures under the EU sustainable development strategy, more older women than men aged over 60 are at poverty risk and the gaps are larger than for the general population. Given the low pension levels in some of the same Member States and the low employment rates of older women in these countries, it is to be expected that older women are at high poverty risk, especially in some of the NMS-12. The high rate of part-time employment among older women, even in professions such as healthcare, may also impact on their retirement pension and social benefits.

Although the average exit age from work is converging between genders despite the financial crisis, more older women than men aged over 60 are at poverty risk and the gaps are larger than for the general population. The poverty risk is particularly high in some of the newer Member States.

Table 21: People at risk of poverty and social exclusion (%), by age, 2011

Country	All ages		60 or over	
	Males	Females	Males	Females
EU-27	23.1	25.3	17.3	22.2
EU-15	21.4	23.6	16.2	20.4
NMS-12	29.7	31.4	22.8	29.5
Belgium	20.4	21.5	19.7	20.6
Bulgaria	47.7	50.5	53.0	61.3
Czech Republic	13.7	16.9	6.2	13.8
Denmark	18.2	19.5	11.9	14.8
Germany	18.5	21.3	15.3	18.5
Estonia	23.2	22.9	11.9	18.7
Ireland	29.0	29.8	16.7	15.7
Greece	29.6	32.3	26.2	30.6
Spain	26.6	27.3	21.2	22.7
France	18.6	19.9	9.6	12.9
Croatia	31.8	33.6	29.0	35.6
Italy	26.4	29.9	19.7	25.9
Cyprus	21.8	25.5	30.8	39.3
Latvia	40.1	40.7	29.9	36.7
Lithuania	33.2	33.6	29.6	34.3
Luxembourg	15.6	18.0	5.2	6.2
Hungary	30.5	31.4	15.5	21.4
Malta	20.6	22.2	21.6	19.3
Netherlands	14.9	16.6	7.0	7.7
Austria	15.2	18.5	11.8	19.1
Poland	26.6	27.7	19.8	26.4
Portugal	23.8	25.1	21.3	25.3
Romania	39.5	41.1	30.2	36.5
Slovenia	17.4	21.1	15.1	27.4
Slovakia	19.5	21.7	9.1	16.5
Finland	17.3	18.5	12.9	20.9
Sweden	14.2	18.0	9.7	20.8
United Kingdom	21.4	24.1	18.6	23.9

Source: Eurostat, Income and living conditions statistics, 2013

2.10 Discussion

2.10.1 *Employment and unemployment*

This chapter presented trend data on women's employment and showed that on average women account for 44.5 % of all workers in the EU-27. The employment rate of women was lower than that of men in all European countries (58.5 % vs. 69.6 % in 2012, down from a high of 72.7 % in 2008) but their employment rate increased to a greater degree than that of men since 1996 and reduced the size of the employment gap between men and women.

Increases in the percentage of women employed in the workforce were registered for all European countries from 1990 to 2008 (as far as trend data were available). Whereas the lowest percentages of women in the workforce could be found in some southern European countries, the highest percentages were found in the Baltic States. The recent recession has altered the trends and the employment rate has slightly decreased again. Young women are particularly affected by the recession in some countries such as Greece.

From 1996 to 2011 the gap between male and female employment rates narrowed. By 2010, 16 out of 27 countries accomplished the required female employment rate of over 60 % down by four from the 2008 situation, as a result of the economic crisis. By 2008, 20 countries had already reached the Lisbon target of a 60 % employment rate of women.

Southern European countries showed the highest employment gaps between men and women. These gaps are particularly high in the 20–40 age group as the net rate of women entering the labour market decreases when they are in their twenties for two main reasons: (1) the educational qualification level of women aged 15–24 is higher than that of men, leading to a postponed entrance to the labour market and (2) women are more likely to feel responsible for childcare or care of elderly relatives than men.

Women aged between 50 and 64 years showed increased employment rates when data from 1990 are compared with data from 2011. While the highest gains have been reached among older women, their employment rates vary considerably between Member States. The highest employment rates for women were in northern European countries, at more than 60 %; the lowest were in southern European countries, all at below 35 %.

Between 2000 and 2008 activity rates of women decreased in only five EU countries, all in eastern Europe: Lithuania, the Czech Republic, Romania, Slovakia and Poland, but recently trends have changed in several countries because of the crisis. The general female activity rate (ages 15–64) rose slightly from 60 % in 2000 to around 65 % in 2008. However, recently activity rates have stagnated or slightly fallen in a number of Member States as a result of the economic crisis and four countries have fallen below the employment goal they had previously reached in 2008.

Employment losses for women include retail salespersons, blue-collar workers in textiles/clothing manufacture, and agriculture workers. Employment gains are mostly in high-paid jobs in healthcare and education; often public sector jobs.

In Europe the unemployment rate was traditionally higher among women than men. Overall, unemployment rates have risen for both men and women and, owing to the economic crisis, have converged in recent years to approximately the same level, although there are significant variations across Member States.

In the past, young women were more affected by unemployment, but this gap has recently started to narrow as female unemployment is declining and male unemployment is rising in Europe. Although at the onset of the crisis unemployment rates were rising more for men, women are slowly catching up and the unemployment rate overall has converged. Young women are catching up with young men with regard to unemployment. Combined with the high proportion of temporary contracts and part-time work, and if combined with early motherhood, it may make the entry of young women into working life particularly difficult. In addition, employment in the typical jobs for young women, in Horeca and retail, is stagnating or decreasing.

Maternal employment rates rise as children grow up and inactivity rates of women rise if they have more than one child. Family responsibilities are the main reason for women to be vocationally inactive. Overall, in Europe, the employment gap between mothers with very young children (under 3 years old) and mothers with children of compulsory school age (6–11 years old) is especially high for those aged

between 15 and 24, and still notable for those aged between 25 and 54. As the 2003 review showed (EU-OSHA, 2003a), and as shown from the more recent data in this chapter, motherhood and the age of children is still a strong influence on when and how women participate in the workforce. Consequently, young mothers with small children should be regarded as a particularly vulnerable group that should receive special attention with regard to employment and OSH protection.

Women accounted for 59 % of the employment creation between 2000 and 2008. In addition, women aged 25–54 years (39.1 %) and women aged 55–64 years (19 %) took up most of the newly created jobs. Recent employment gains have been in public administration, education and healthcare, the last two occupied by more older women. Rates of part-time work are increasing in healthcare and other female occupations.

Up to 2008, although women benefited more from employment growth in terms of newly created positions, men's employment growth was highly focused on well-paid jobs. However, with respect to the new Member States the situation is slightly different, as women and men seem to have benefited equally from employment creation in the higher income groups.

Nevertheless, women remain under-represented in the decision-making processes of companies. When looking at all EU-27 countries it can be summarised that higher shares of workers in the northern countries report having a woman as their immediate supervisor than in the southern countries. This situation has not improved significantly over the short term, as, in 2002, more men than women were supervisors (see EU-OSHA, 2003a).

Despite the progress made in employment rates and education level (more women than men have a high educational level throughout the Member States, except in one country), and although the retirement age between men and women has been converging, the proportion of older women at risk of poverty is higher than for men in several Member States, particularly in some of the eastern countries.

2.10.2 Non-standard employment contracts

Workers on non-standard employment contracts, such as part-time employment or non-permanent contracts, accounted for most of the increases in employment figures.

Part-time employment affects women more than men, as 80 % of all part-time workers are women, and that reflects the pattern found in 2003 (see EU-OSHA, 2003a).

The distribution of part-time work is U-shaped as young workers (15–24 years) and older workers (over 55 years) are the most affected. Whereas part-time work might be a 'door-opener' to full-time employment for young workers, it permits older workers to stay in employment even if, for instance, health problems or family responsibilities do not allow for full-time employment.

In general, family obligations are a major reason to work part time as part-time work seems to be more likely in countries with poor childcare facilities. There is a distinct pattern to be observed in the eastern European countries, where part-time employment is uncommon. The lowest percentages for part-time employment of both men and women and the smallest differences in part-time work between men and women can be found in the eastern European countries.

Whereas Fagan and Burchell (Eurofound, 2002a) did not report a gender difference in the rate of home working, newer studies (e.g. Eurofound, 2007a) presented more detailed results regarding this aspect. According to the newer work, women spend more hours in unpaid activities such as housework and caring for dependants than their male counterparts. This gender difference is highest among families with younger children. Additionally, working part time allows for better reconciliation between work and family duties (Eurofound, 2008e), while it is also putting women at a disadvantage with regard to career progression and related pay increases, training and education, consultation and access to OSH prevention services. The rise in the number of women doing shiftwork and subject to non-standard working times may also outweigh the advantages. Women continue to do more childcare and housework than men (as shown previously in EU-OSHA, 2003a), and, as new research has shown, for eldercare as well; this remains one of the reasons for their choice of part-time work.

Women spend more hours in unpaid activities such as housework and caring for dependants than their male counterparts. This gender difference is highest in families with younger children. Additionally, working part-time allows for better reconciliation between work and family duties. Female

part-time workers often invest their spare time in non-paid domestic work. Women in the EU spend twice as much time on childcare as men. Figures show that, when unpaid and paid work are considered, women in part-time jobs work more hours than men in full-time employment. Women from NMSs where part-time employment is not common are at a particularly high risk of a poor work–life balance.

In addition, part-timers are often underemployed, which means that they involuntarily work fewer hours. The main reason for women to work part time is to attend to children or other family members; however, a significant proportion of women report that they could not find another job.

From an OSH point of view, part-time workers tend to have less access to training, less control over their work and fewer promotion opportunities. They also have less access to OSH preventive services, and consequently may be overlooked in workplace risk assessments and when workers are consulted about their work and the best OSH prevention measures to be taken at their workplaces. They may easily be left out of the equation. These issues were highlighted in EU-OSHA's 2003 report and, as they are more relevant for women, this indicates that women's OSH-related concerns need a stronger focus in the future.

Part-time employment has an impact on the gender pay gap. In countries where women tend to have higher rates of part-time employment (e.g. the Netherlands, Germany, the United Kingdom, Austria, Belgium, Sweden and Luxembourg), the gender pay gap tends to be relatively high (EC, 2010c). In addition, in most of those countries in which women are less likely to be employed (e.g. Malta, Italy, Greece, Poland, Hungary, Romania, Slovakia), the pay gap is lower than the average, which may be a reflection of the smaller proportion of low-skilled or unskilled women in the workforce in these countries (EC, 2010c). There are still differences between the pay rates of men and women (as shown in EU-OSHA, 2003a) and the question of equal pay should remain on the agenda in order to deal with concerns, such as the fact that women are more likely to be affected by poverty. This issue on bridging the gender pay gap is explored further in the next chapter. The gender pay gap also increases with the number of children.

Temporary employment also comes to the fore and is increasing for men and women in most EU-27 countries. Although women in most countries are more likely to be in temporary employment than men, the phenomenon of temporary work affects men and women to a greater degree than the phenomenon of part-time employment.

Young workers are far more likely to have non-permanent contracts than workers aged 25 or over. Permanent employment of 35 hours per week is generally more widespread in the NMS-10. In the NMS-10, in 2005, in all age groups more than 50 % of women worked under permanent contracts, but trends are expected to have changed with the financial crisis.

2.10.3 Gender segregation by sector and occupation

This chapter has explored women's employment in service and industry between 1990 and 2012.

In all EU-27 countries women's employment is considerably higher in the service sector than in industry. Employment of women in services increased in all EU-27 countries. According to data from the Labour Force Survey, women are mostly employed in the health and social sector, retail, manufacturing, education and real estate. This is comparable to previous findings (EU-OSHA, 2003a) and shows the 'restriction' of women in the labour force, especially considering that women are more likely to work in the public sector and men are more likely to work in the private sector. All in all, it could be stated that the construction sector; electricity, gas and water supply; transportation and communication; manufacturing and mining; and agriculture and hunting are male-dominated sectors. The education and health sectors are female dominated. The fastest growing sectors for female employment are the health and social sector and education. Stagnation in the formerly growing sectors of retail, public administration and real estate may well be linked to the economic crisis, as well as austerity measures. Female employment is falling in the classic sectors of agriculture and manufacturing overall, as it is for male workers. However, in some countries there are notable increases in 'agricultural and fishery workers' (Austria, Belgium, Portugal) and 'elementary occupations' (Belgium, Germany, Greece, Italy, Portugal, Spain, United Kingdom), whereas, regarding agricultural workers, in some countries there are also decreases to be observed. The restructuring of the agricultural sector needs to be analysed for its relevance to female jobs and how women are

exposed to OSH risks, and national and regional specificities need to be considered. While in some countries, there are higher proportions of agricultural workers, in others women in agriculture and farming are often family helpers. The proportion of workers without contracts is also the highest in agriculture.

The distribution of women across sectors has an age-dimension: while younger women tend to work more in retail and the HORECA sector, older women work more in education. Health care and education are also the sectors with an ageing female working population.

The female-dominated occupations are 'clerks' and 'service workers and sales workers'. Moreover, 'managers', 'craft and related trade workers', and 'plant and machine operators' still are male-dominated professions. An approximately balanced ratio between men and women can be found in the occupations 'professionals' and 'technicians and associate professions'.

The increasing proportion of technicians and professionals may be due to higher education levels among young women and as compared with their male counterparts. A considerable proportion can also be accounted for by the higher employment figures in these jobs in the eastern European and especially the Baltic countries.

Finally, the gender segregation (men, women, full- and part-time work) is shown in trend data on occupations. The occupational groups 'clerks' and 'service workers and shop and market sales workers', as well as 'elementary occupations', are clearly female dominated. In contrast, men can often be found in senior management and in jobs related to machinery use. However, patterns are distinct with regard to technicians and professionals, where women are catching up. The rates of women in these professions were higher in the new Member States and have been increasing, although there are indications that this trend may be reversed because of the recent economic crisis.

2.10.4 Educational levels, the gender pay gap and career prospects

Generally, more male than female workers are in paid employment, but the rates of paid employment for women have increased in recent years. Women have seen an 8 % increase in their rates of employment from 1996 to 2006. Regarding wages, women are more at risk of low pay and are less likely to benefit from higher earnings than men. This is probably because women are over-represented in part-time jobs and often work in sectors where wages are on average lower than in sectors dominated by men. Also, owing to the gender pay gap, poverty in later life can more often be found among women than among men. However, different views can be found in the research reviewed on the issue of whether the gender pay difference has remained the same since the mid-1990s or if women can increasingly be found in higher-paid occupations.

There has been a significant increase in female employment in elementary occupations, and many of these workers work part time. Together with the figures on underemployment, which are higher in less skilled occupations, a trend to precariousness and confinement can be seen in low-paid jobs with little access to preventive services and training. The trend is also in line with some findings in Member States such as Germany, where a high proportion of full-time permanent contracts for women have been replaced by temporary, part-time and mini-jobs, according to national statistics.

However, there is also the opposite trend to be observed with regard to professionals and technicians, with more women moving into these professions. Rates of part-time work have not been altered considerably in these professions, although there are some decreases among female crafts workers. The proportion of full-time female technicians is also decreasing again, an indication of reverse trends due to the crisis. Employment rates for women with tertiary education have been increasing and are the highest, although lately a slight decrease has been observed.

In line with the segregation of women in specific sectors and despite the fact that women make up a majority of the workforce, the gender pay gap is important in many of these sectors, generally around 17–20 %, although considerable efforts have been made over the past decade to narrow it. However, overall, the gender pay gap has stabilised since 2003 and there is no progress to be observed. The gender pay gap also tends to be higher in the private than in the public sector. There are considerable differences between Member States with regard to both these differences and pay gaps according to sectors and age.

This confirms previous EU-OSHA-reported findings and recommendations. The gender pay gap can also be observed in female-dominated professions. A true assessment of the risks that women incur at work and a modified perception of the values attached to women's work may indirectly help narrow this gap, if the contribution of women's work is equally rated and valued to men's.

Although there has been a political push for higher representation of women in managerial positions, the situation is still far from being equal. This is despite the fact that in nearly all Member States young women aged 30–34 have achieved higher educational attainment rates than men, a higher proportion having achieved tertiary education levels.

2.10.5 OSH in the perspective of the European Employment Strategy

In line with the Europe 2020 Strategy, the European Employment Strategy encourages measures to help meet three headline targets by 2020, namely for

- 75 % of people aged 20–64 to be in work;
- school drop-out rates to fall below 10 %, and for at least 40 % of 30 to 34 year olds to have completed a third-level education; and
- at least 20 million fewer people to be in or at risk of poverty and social exclusion.

Not all of these aims are at reach with regard to women at work. Employment rates for younger and older women especially fall short of these goals, and the trend is more worrying for young women than for older women, where rates are still steadily increasing. Although average educational levels among young women are high in many Member States, their prospects for entering the labour market are limited in many of these countries.

The best results have been achieved in regard to educational attainment, which also promotes higher employment rates, but it does not translate into career prospects and representation in managerial positions.

Poverty risk has decreased in many countries for women and men, but the periods spent on child and elderly care, and higher underemployment and part-time work rates, put these goals at risk. The recent economic crisis and budget cuts may have a higher influence on women's prospects for social transfers and old-age income.

These trends have a high impact on the OSH of women, as their health and safety concerns may not be voiced and their training needs may not be adequately met. Enforcement of OSH is difficult in sectors such as healthcare and the education sector, the growing employment sectors for women, and often also public sector jobs.

The increasing rate of part-time work in the growing number of elementary occupations may mean that workers exposed to considerable physical workplace risks are not adequately covered by preventive services, training, monitoring and labour inspection control. In that respect, although progress has been

2.10.6 Recommendations

Recommendations for research, monitoring and OSH enhancement

- Women are a diverse labour force and the needs of different age groups may be different. A more targeted approach to research and prevention is needed.
- Explore the differences between Member States' policies and identify what the success factors are for an effective integration of women in the labour market, and across sectors and occupations, while at the same time taking account of their OSH situation and the specific risks to which they may be exposed.

- If an increasing number of women work under non-standard working arrangements, this needs to be addressed by research, legislation and prevention on how to reach women who work weekends, part time and shifts; how to cover them in workplace inspections by inspectors or OSH professionals; how to assess their exposure; and how to ensure their representation as workers.
- Adapt labour inspection practice to the increasing number of women in the labour market, the observed shift from industry to services, and the changes in contractual arrangements. A gendered approach to interventions is warranted: resources should be assessed for the contribution they make for an increasingly female workforce, and for how they are adapted to the specific needs in these diverse service sectors. Design OSH prevention resources to address these changes.
- Adapt research, prevention and monitoring to the sectors where women work, and to the average age of the working population. While younger women tend to work in retail and Horeca, older women tend to work more in education and healthcare. Age projection and human resources planning may be important tools to complement and help target OSH measures.
- Many of the newly created jobs for women are in the public sector. Better OSH enforcement in the public sector is therefore crucial for the OSH protection of women.
- Target employment agencies to educate them about the risks women incur in specific jobs, such as healthcare, with an increasingly ageing female workforce; the hotels and restaurants sector, where often young, unexperienced women work; and elementary occupations, with a high physical workload. Retraining and vocational rehabilitation should be tailored to the needs of women.
- The restructuring of the agricultural sector needs to be analysed for its relevance to female jobs and how women are exposed to OSH risks.
- An increasing number of women work in elementary occupations, part-time and mini-jobs. Ensure that these women are covered by OSH measures, research and monitoring.
- Could the situation of women in low-paid positions or precarious employment relations make them more prone to accept more unfavourable conditions?
- Ensure that female part-time workers and workers on temporary contracts are covered by risk assessment, prevention measures and OSH training. Include female part-timers and temporary workers in inspection and exposure assessment, and target prevention measures to their needs. Consult them on their working conditions, the risks they feel exposed to and the prevention measures to put in place to tackle these risks. Include workers from subcontracted services (e.g. cleaners, clerical support staff, maintenance workers).
- Provide training and OSH education at times when part-timers or employees with flexible hours are able to participate.
- Consider psychosocial strains in risk assessments as well as physical strains, as most women work in education, healthcare and retail, and thus interact frequently with 'clients'.
- There is a case to be made for very young mothers (aged 15–24) with small children, for which the employment gap is particularly high. Social policy and worker protection should have a closer look at their labour and working conditions and should find ways of facilitating their safe entry into working life.
- Increase awareness of work–family conflicts of workers so that companies increase their attempts to support parents or caregivers by offering flexible working models regarding time and place.
- Offer favourable and/or facilitate opportunities to take parental leave, as well as leave for caring for elderly relatives for both men and women, so that family tasks can be shared without jeopardising careers. Offer childcare facilities to workers.
- Look into ways of adapting workplaces for an ageing working population in some sectors, for example healthcare (there are more older women in this sector).
- Provide OSH education adapted to older women entering the labour market after years of vocational inactivity.

- The gender pay gap is higher towards the top of the wage ladder than towards the lower end. This means that it is harder for women to advance to the top of the pay ladder. Thus, female workers should be given more managerial responsibilities at work and other measures should be taken to reduce this kind of 'glass ceiling' effect and thereby narrow the gender gap.
- Top management commitment is crucial for the implementation of OSH prevention measures. It should be ensured that women are represented in medium managerial positions and their concerns are voiced at the top management levels of enterprises.
- Wider issues such as longer unpaid and paid working times and lack of equality are leading to a less favourable OSH situation at workplaces.
- Ensure that the arduousness of female jobs is reflected in equal pay.
- Look into ways of ensuring the OSH of women who work in personal services, at the premises/homes of their employers, as well as those who work for several employers.
- What does it mean for OSH if non-standard working arrangements become more common; for example, if an inspector or a safety professional needs to inspect the workplaces of weekend, night or part-time workers?

The information presented in this chapter leads into the next chapter, where gender is assessed against working conditions. As outlined above, women are concentrated in certain sectors, such as health and social work, and are more likely to work in part-time and temporary jobs. In view of this, these types of working patterns and jobs are likely to impact on women's OSH, depending on the OSH enhancement measures that are in place.

3 Assessing the relationship between gender, occupational status and working conditions

3.1 Introduction

Although the female employment rate is lower than the male employment rate in all European countries, the proportion of jobs that are held by women has increased. The highest gender employment gaps are found in Malta, Spain, Greece, Italy, Luxembourg and Cyprus; however, female employment rates are higher in all other European countries.

The intensity of work has increased for female and male workers in recent years. Interestingly, this increase has been greatest among female workers (Eurofound, 2013). Thus, it is important to look more closely at their working conditions.

In addition to work organisational parameters such as job content and work autonomy, this chapter focuses on the occupational health risks faced by female workers. These risks include women's exposure to material and physical as well as ergonomic hazards, and their exposure to intimidation and discrimination at work. An assessment is made to determine how their skill levels match their job demands. In addition, this chapter summarises results from analyses in the framework of European campaigns conducted by EU-OSHA (for example on noise and musculoskeletal disorders (MSDs)). Figures available for comparison were from the 2005 EWCS.

3.2 Job content

3.2.1 Problem solving and learning/training/provision/training received

The segregation between the genders in respect of job content becomes visible when examining access to education and training (EC, 2006a). According to the EWCS 2005, despite the fact that 70.2 % of male and 67.8 % of female workers learned new things, only 27.1 % of the female and 25.3 % of the male workers had undergone paid-for training in the previous 12 months. Thus, female workers seem to have undergone slightly more training than their male counterparts (Eurofound, 2007a). The European Commission (EC, 2006b) reports similarly that slightly more women (11.1 %) than men (9.4 %) participate in education and training. The gender gap is largest in Latvia (11.8 % vs. 6.1 %), Lithuania (7.9 % vs. 5.0 %) and the United Kingdom (25.3 % vs. 17.4 %) (EC, 2006a, b). However, after controlling for individual and job-related characteristics of workers, female workers, because of their limited career prospects and high rates of part-time work, and the segregation into lower-paid sectors, receive fewer training opportunities than their male counterparts. Focusing on female workers, those in the oldest age group in particular receive fewer opportunities for learning and training on new equipment at work. The age gap regarding training opportunities persists when taking into account the different job and employment characteristics of younger and older workers. In addition to age influencing the opportunities to benefit from training, training opportunities seem to increase with job tenure, education, skill and company size, whereas they diminish for those working in part-time jobs (Eurofound, 2008e). Other findings show that the majority of female workers — especially those from the lower economic levels — lack opportunities for education (Forastieri, 2000). Similarly, female blue-collar workers are the least likely to have training opportunities, with 90 % of female blue-collar workers reporting that they have not received training in the previous year. All in all, the young and the qualified seem to participate more often in education and training (EC, 2006a).

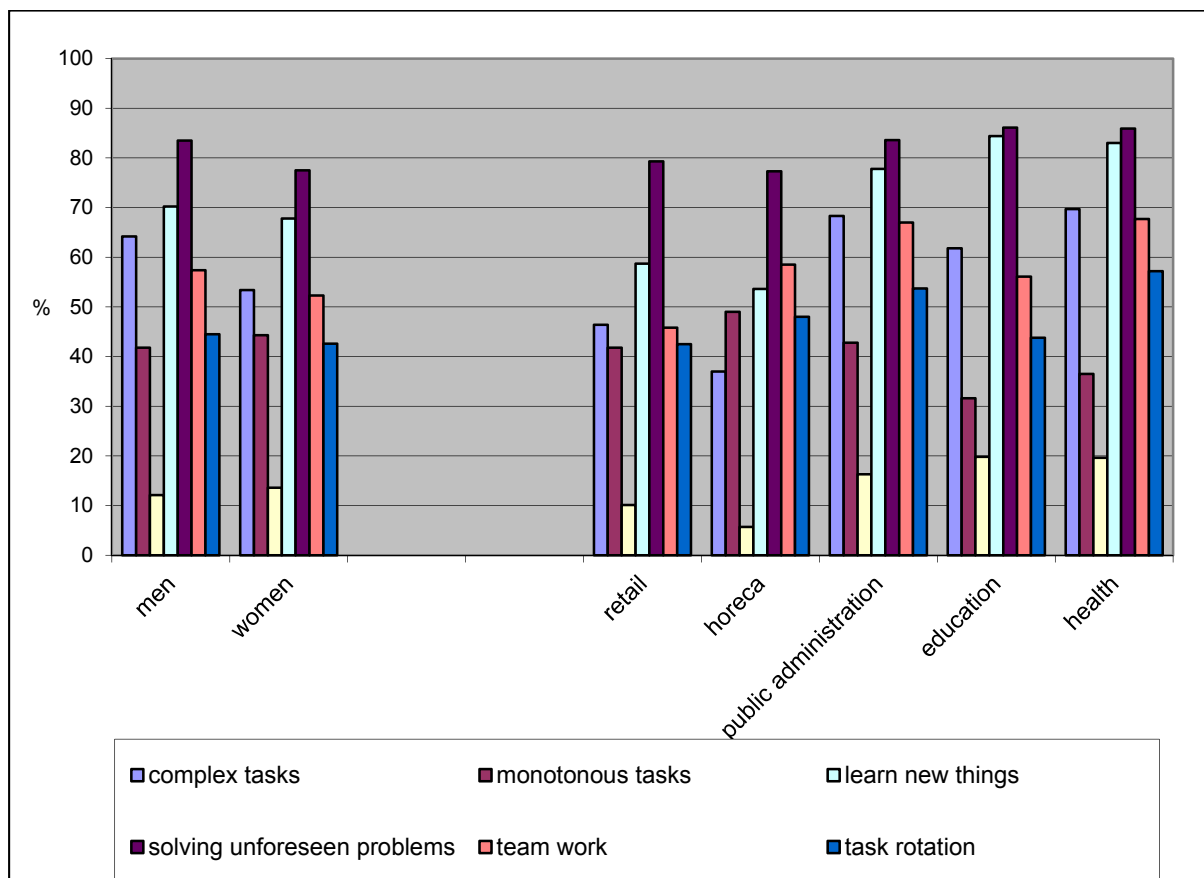
Female workers, particularly those in the oldest age group, receive fewer opportunities for learning and training. Female blue-collar workers are the least likely to have training opportunities. Lack of education and training for women could result in negative outcomes. Jobs in the service sectors, such as the hospitality industry or healthcare, also involve multiple accident risks that may lead to serious health impairments. As opposed to the general decreasing trend, national accident figures are stagnating or even increasing in these sectors.

Lack of education and training for women could result in negative outcomes, especially when they work in jobs such as those in construction and manufacturing where information and training are essential to be able to work correctly and safely (Goldenhar and Sweeney, 1996). According to EU-OSHA research (2008b), jobs in the service sectors, such as the hospitality industry or healthcare,

also involve multiple accident risks that may lead to serious health impairments. Typical accidents are cuts and burns; trips, slips and falls caused by wet and slippery floors or obstacles; and falls from a height. As shown in Chapter 5, as opposed to the general decreasing trend, national accident figures are stagnating or even increasing in service occupations.

According to the EWCS, compared with female workers (77.5 %), male workers (83.5 %) seem to slightly more often report being able to solve unexpected problems on their own. This difference seems to increase with age. Among workers aged between 15 and 29, 75.6 % of male and 72.7 % of female workers solve unexpected problems on their own. In the age group 30–49, 86.0 % of men and 79.4 % of women reported the same situation, but the biggest gender difference could be found among workers over 50 (85.4 % for men vs. 77.6 % for women). The reasons could probably be found when lower cognitive demands are considered, which are related to a lower educational level and specific occupations and sectors in which female workers predominate such as the Horeca sector or retail (Eurofound, 2007a). This may also be a sign of more restricted autonomy of workers in the service sectors. In the hospitality sector, workers reported a low degree of influence over their own work and also experienced a low predictability of work (EU-OSHA, 2008a). The combination of low autonomy and lack of training may lead to considerable health and safety risks, especially for young workers (EU-OSHA, 2007a), who make up a considerable part of workers in this sector and are exposed to a high risk of accidents (Figure 46).

Figure 46: Job content and skills match, workers reporting, EWCS 2005



Source: EWCS 2005

The combination of low autonomy and lack of training may lead to considerable health and safety risks, especially for young workers, who make up a considerable part of workers in retail and Horeca and are exposed to a high risk of accidents.

3.2.2 Task complexity/monotony

According to the EWCS, there are differences in the extent to which the genders have to perform complex and monotonous tasks. On average, female workers (53.4 %) carry out complex tasks less often than their male counterparts (64.2 %) (. However, in selected female-dominated sectors, tasks are complex and, accordingly, workers report a higher need for training. Moreover, more female workers (44.3 % vs. 41.8 % for male workers) (Eurofound, 2007a), and especially those working in the informal sector, end up doing work that can be described as monotonous. Similarly, although the gender and age effect on cognitive demands of work is rather low, women systematically reported lower levels of cognitive demands, as well as more monotonous tasks than their male counterparts in all age groups. This situation is also a result of female workers having fewer choices as to where they can work (Levy and Wegman, 1988). In particular, female blue-collar workers are significantly more likely to be exposed to monotonous tasks (Eurofound., 2007a).

However, approximately half of all male and female workers perceive their work as often or always intellectually demanding.

More female workers, and especially those working in the informal sector, end up doing work that can be described as monotonous. Women systematically report lower levels of cognitive demands, as well as more monotonous tasks, than their male counterparts in all age groups. In particular, female blue-collar workers are significantly more likely to be exposed to monotonous tasks.

However, in selected female-dominated sectors, tasks are complex and, accordingly, workers report a higher need for training.

3.2.3 Teamwork/task rotation

According to the EWCS, compared with 57.4 % of male workers, only 52.3 % of female workers are involved in teamwork. Accordingly, compared with full-time workers, part-time workers, representing a large proportion of the female workforce, receive less assistance and social support. Moreover, part-time workers are less likely to be involved in teamwork. Thus, the gender differences can be linked to the gendered division of labour and to the fact that women work part time more often than men (Eurofound, 2007a).

In the EU-27, 44.5 % of male and 42.6 % of female workers have jobs involving rotating tasks with their colleagues, that is they are functionally flexible. Regarding functional flexibility, different skills are required from the workers in almost 77.8 % of cases. However, in 71.6 % of cases the manager decides on the division of tasks, while the team participates in the division of tasks in 51.0 % of all cases. Whereas task rotation seems to be most prevalent in Slovenia and Denmark, it is seldom found in Hungary. Regarding sectors, the health sector displays the greatest prevalence of workers rotating tasks with colleagues; the lowest prevalence can be found in other service sectors including real estate and financial intermediation (Eurofound, 2007a).

Consequently, different sectors seem to display different patterns of teamwork and task rotation. While health workers have stronger involvement in teamwork and task rotation, in other service occupations the situation is very different, and one possible explanation for this may be linked to the higher proportion of part-time workers in the health sector.

Although there are distinct patterns in different sectors and occupations, lone work or lack of team work seems to be more common among female workers.

3.2.4 Planning responsibilities

On average, female workers have fewer managerial responsibilities than men. In 2004, only 32 % of managers in the EU-25 were women, and more recent figures show that the proportion of female managers throughout Europe has not changed significantly (32.1 %) (Eurostat, 2006a). According to 2010 figures, in the private sector women accounted, on average, for only 30 % of managers (but in most countries the share is below 25 %, including Denmark, Finland, Ireland, Malta and Cyprus), while

the proportion of women members of the highest decision-making body of the largest quoted companies was just 11 % (EC, 2010d). The highest percentages of female managers were reported in Lithuania and Latvia, while the lowest percentages were found in Malta and Cyprus (EC, 2006b). The fourth EWCS displays similar findings, with male workers dominating in senior management (Eurofound, 2007a).

However, the trend indicates that women can be increasingly found in higher-paying managerial and professional occupations. According to the US Bureau of Labor Statistics (BLS) the proportion of managerial jobs held by women more than doubled, increasing from 20 % to 46 % between 1972 and 2002 (BLS, 2003). In 2006, women even accounted for 50.6 % of all persons employed in management, professional and related occupations, somewhat more than their share of all employed workers (46.3 %) (BLS, 2007). Interestingly, in the USA, employed Asian women (46 %) were more likely to work in the higher-paying management, professional and related occupations than employed white (39 %), black (31 %) or Hispanic (22 %) women (BLS, 2007).

Although the number of women in managerial positions increased from 1995 (20 %) to 2012 (25 %), leading to their highest percentages achieved in supervisory and managerial positions in northern and eastern European countries, female workers continue to occupy fewer supervisory and managerial roles than men in Europe: 23 % of male full-time employees have some supervisory responsibilities, compared with just 15 % of women employed full time. Thus, men manage about 75 % of the workforce. Interestingly, women mainly manage workers of the same sex or less qualified personnel. Whereas 42.0 % of female workers reported that they have a female immediate boss, only 9.4 % of male workers did so. Last but not least, female managers and supervisors are more prevalent at the lower ranks of organisational hierarchies (Eurofound, 2007a). Despite their segregation in specific sectors, as they are less represented at the management level, women may have less influence over managerial decisions regarding their health and safety at work.

According to 2010 figures, in the private sector women accounted, on average, for only 30 % of managers (but in most countries the share is below 25 %, including Denmark, Finland, Ireland, Malta and Cyprus), while the proportion of women members of the highest decision-making body of the largest quoted companies is just 11 %. Consequently, women may have less influence over managerial decisions regarding their health and safety at work. Despite their segregation in specific sectors, women mainly manage workers of the same sex or less qualified personnel. Female managers and supervisors are more often at the lower ranks of organisational hierarchies.

3.3 Skill match

This section assesses if skill levels match job demands. According to the EWCS, similar proportions of female (52.9 %) and male (51.7 %) workers reported that their skill levels match their job demands well. Interestingly, those workers carrying out complex tasks and learning new things at work are much more likely to feel that they need further training, whereas the opposite is the case for those carrying out monotonous or repetitive tasks (Eurofound, 2007a). This need for more training when doing complex tasks might be explained by Karasek and Theorell's (1990) active learning theory, which proposes that workers learn under conditions that require them to meet challenges or high demands where they are able to exercise a high amount of decision-making. So, the more they learn, the more they wish to learn (Karasek and Theorell, 1990). Another explanation may lie in the motivation-hygiene theory by Herzberg (1966). According to Herzberg, motivators such as achievement, the work itself and responsibility tend to encourage positive work attitudes, such as job satisfaction.

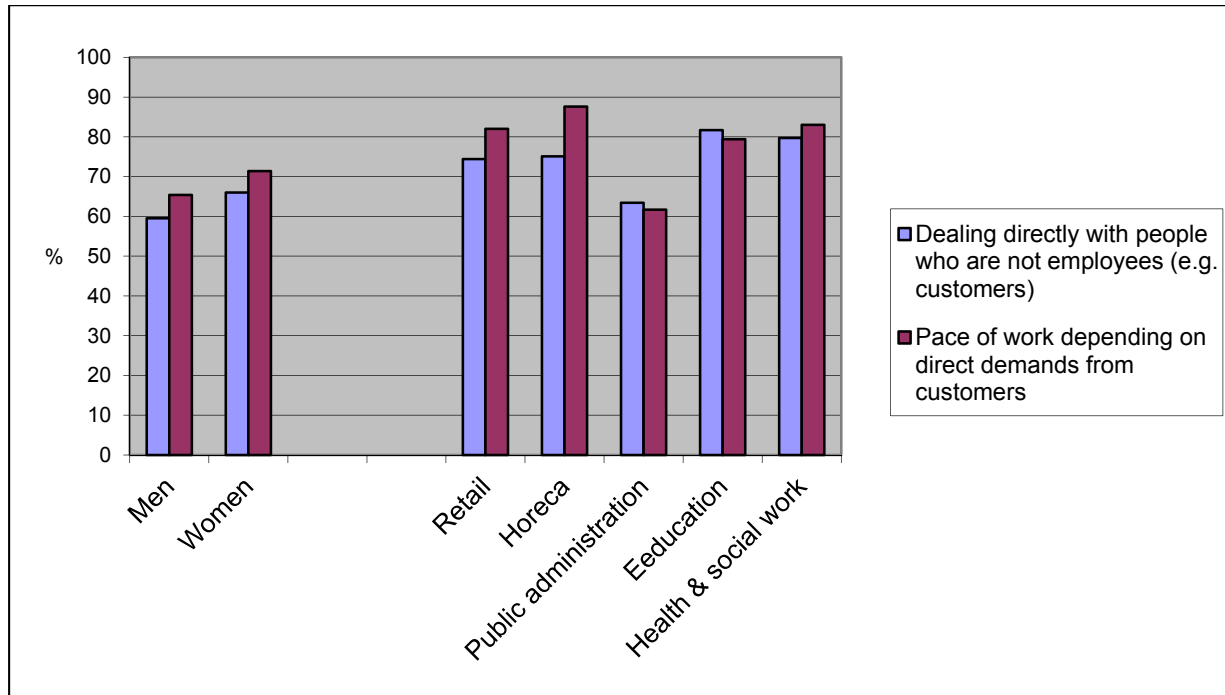
3.4 Customer service and 'people' work

As outlined in the previous chapter on employment, in the EU-27 women are more likely to be employed in the service sectors, with jobs in these sectors increasing steadily. The proportion of work time that is spent dealing directly with people external to the workplace (e.g. customers, passengers, patients, pupils) is considered in this section. According to the EWCS 2005, more female workers (66.0 %) than male workers (59.5 %) reported that they deal directly with people who are not employees, for example customers. In addition, more female than male workers perceive that their

work imposes emotional demands on them. These proportions are probably related to the fact that female workers outnumber their male counterparts in the service sectors (Figure 47).

According to the European Working Conditions Survey (EWCS, 2005), more female workers (66.0 %) than male workers (59.5 %) reported that they deal directly with people who are not employees, for example customers.

Figure 47: Working with customers, gender dimension and rates in female-dominated sectors, EWCS 2005 (%)



Source: EWCS2005

Typical occupations of female workers are related to caring, nurturing and providing services for people. There are more female than male workers in the health sector, education and other services, as well as in the wholesale and retail trade sector. Jettinghoff and Houtman (Eurofound, 2009c) also found a high proportion of women among those working in private households (81.9 %). In addition, female workers account for the majority of clerical workers and service and sales workers.

Moreover, female workers have increasingly moved into the service sector the world over. Thus, female workers are mainly engaged in teaching, office work, healthcare, banking, commerce, hotel work and domestic work (Forastieri, 2000).

3.5 Work intensity

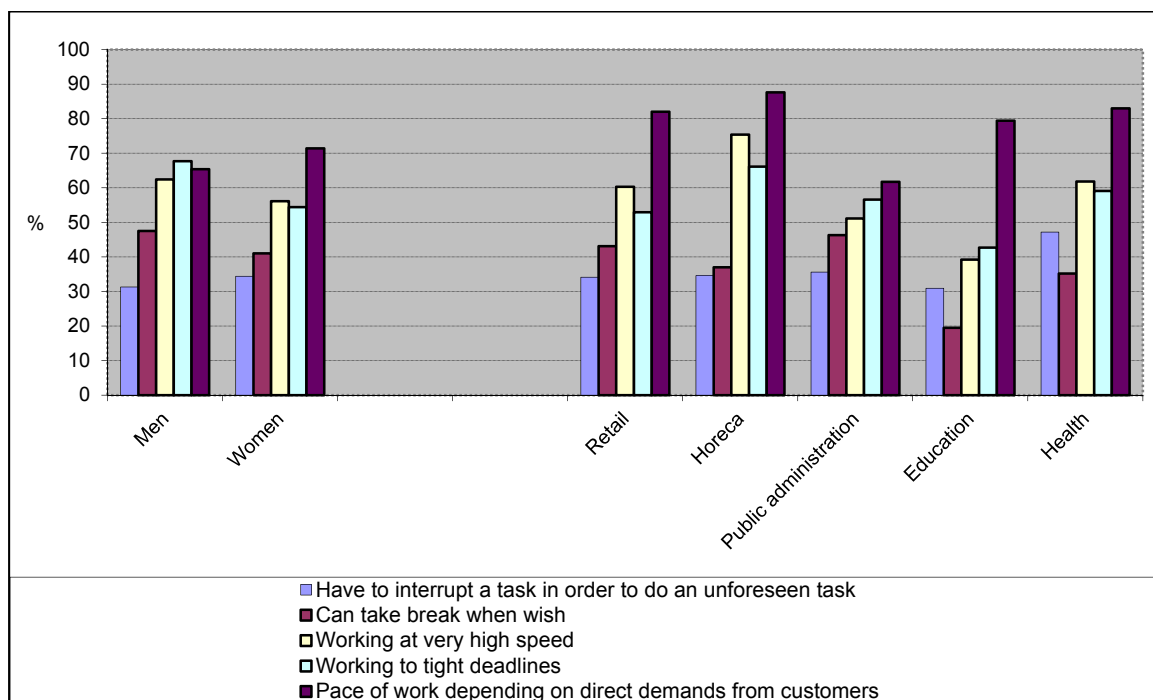
3.5.1 Factors setting the pace of work

Direct demands from customers, as well as numerical production/performance targets, can be regarded as the most relevant factors setting the pace of work. The pace of work of 71.4 % of female workers and 65.4 % of male workers is influenced by direct demands from customers. This is particularly the case in the construction (57.6 %) and manufacturing and mining sectors (51.6 %). Numerical production/performance targets set the pace of work of 35.1 % of female workers and 47.6 % of male workers — especially in the construction (51.5 %) and agriculture and fisheries (50.1 %) sectors. In addition to direct demands from customers and numerical production/performance targets, 38.8 % of female and 44.9 % of male workers complain about colleagues setting the pace of

work. This is particularly the case in the hotels and restaurants (87.6 %), health (83.0 %) and the wholesale and retail trade (82.0 %) sectors, in education (79.4 %) and the financial intermediation sector (77.2 %) (Figure 48). Another substantial proportion of workers, 35.3 % of female and 36.0 % of male workers, reported that their pace of work depends on their boss. This effect can be found especially in manufacturing and mining (46.1 %) and the construction sector (43.3 %).

The highest gender gap could be found regarding the pace of work set by automated equipment/machines (13.2 % for female vs. 23.2 % for male workers), with the highest proportions in the construction (23.5 %), the transport and communications (22.4 %) and the agriculture and fisheries (22.1 %) sectors (Eurofound, 2007a). However, with female employment catching up in agriculture and transport, these trends may change.

Figure 48: Work organisational factors, EWCS 2005, by gender and in female-dominated sectors (%)



Source: EWCS 2005

In the female-dominated healthcare, hotels and restaurants, wholesale and retail, education and financial intermediation sectors, the pace of work depends highly on direct demands from customers.

3.5.2 Working at high speed

According to the fourth EWCS, 62.4 % of male and 56.1 % of female workers reported working at very high speeds (Eurofound, 2007a). Workers are especially exposed to working at very high speed in the following sectors: the female-dominated Horeca sector (75.4 %), the construction sector (72.3 %) and the transport and communication sector (63.1 %). In the female-dominated health sector (61.8 %) high proportions of workers have to work at very high speeds for at least 25 % of the time. Additionally, many female workers can also be found among service and sales workers, of which a high proportion reported that they suffer from working at very high speed (EU-OSHA, 2010).

In the female-dominated Horeca sector, the construction sector, the transport and communication sector and the female-dominated health sector, high proportions of workers have to work at very high speed for at least 25 % of the time.

3.5.3 *Insufficient time to get the job done*

Most of the female (70.6 %) and male workers (68.8 %) have enough time to get the job done (Eurofound, 2007a). The most critical sectors regarding having enough time to get the job done are the construction (only 64.3 %), transport and communications (only 65.5 %) and the female-dominated health sector (only 65.8 %).

3.5.4 *Tight deadlines*

Despite enough time to get the job done, 67.7 % of male and 54.4 % of female workers reported that they have to work to tight deadlines. This is especially true for the construction sector (77.2 %), transport and communications (72.7 %) and real estate (70.3 %), but workers in the female-dominated hotels and restaurants (66.1 %) and healthcare (59.1 %) sectors also have to work to tight deadlines (Eurofound, 2007a).

3.5.5 *Disruptive interruptions*

Disruptive interruptions occur more often in the female-dominated retail, Horeca, public administration and healthcare sectors.

Approximately one-third of both female (34.4 %) and male (31.3 %) workers have to interrupt their work to carry out an unforeseen task (Eurofound, 2007a). This is particularly relevant in the retail, Horeca, public administration and female-dominated health sectors (47.2 %).

Multitasking and work interruptions are detrimental to health and performance (Germany)

Multitasking and work interruptions are a burden on workers and do not improve the quality of their work, according to a study by the Federal Institute for Occupational Safety and Health (BAuA), 'The effects of work interruptions and multitasking performance and health'. The study shows how disturbing work interruptions and multitasking are, regardless of the age of the person concerned. The BAuA report refers specifically to nurses in hospitals, who are often disturbed by patients, physicians and colleagues. Multitasking is also frequent in professions in which information is processed intensively. Work interruptions are becoming more common and an increasing number of workers are affected. The German Stress 2012 Report (Lohmann-Haislah, 2013) shows that about 44 % of respondents often have to interrupt their work. Approximately one in four feels burdened by these interruptions. In addition, multitasking is demonstrably associated with poor performance.

Multitasking and work interruptions cannot be completely prevented. Small, often cost-neutral measures in job design, however, can improve the situation.

In one of the hospitals studied, for example, a telephone service was introduced, so that the work of nurses was not constantly interrupted by calls at peak times. The study recommends that these and similar measures of work organisation are implemented. In addition, workers can learn how to deal with multitasking. After stressful situations, for example, breaks can help. More tips on this topic are provided in the BAuA brochure 'Do not disturb! Tips for dealing with work interruptions and multitasking'.

Female jobs are often considered less arduous. However, when analysing work organisation in female-dominated sectors, as described above, a high proportion of workers have to either work at high speed and with frequent interruptions, and under pressure from clients' demands, or carry out monotonous jobs under pressure.

3.6 **Job autonomy and working-time autonomy**

3.6.1 *Work methods*

Females in managerial and professional positions are less autonomous than men. The highest indicators for autonomy at work can be found in the financial intermediation, gas, electricity and water

and real estate sectors. The lowest indicators are found in the female-dominated Horeca sector, as well as manufacturing. Regarding occupations, differences are even higher. Senior managers, professionals and technicians enjoy the highest levels of autonomy, with machine operators and skilled workers reporting the lowest levels of autonomy. Interestingly, with increasing age, workers have a greater opportunity to choose or change their methods of work (Eurofound, 2007a). Villosio et al. (Eurofound, 2008g) found similar results. Male workers, especially adult male workers, benefit from a higher degree of autonomy. However, the values depicting autonomy are lower for men aged 15–24 than those for female workers of the same age group. Thus, the level of autonomy seems to rise with increasing age, in particular when comparing the values of the extreme age groups (Eurofound, 2008e). Similar results were found by Parent-Thirion et al. (Eurofound, 2007a), who stated that, compared with their older colleagues, workers younger than 24 suffer from a relatively low level of choice regarding their methods of work (Eurofound, 2007a).

Around two-thirds of both male (67.2 %) and female workers (66.7 %) can choose or change their methods of work (Eurofound, 2007a).

Male workers on average benefit from a higher degree of autonomy, with the exception of the youngest age group. Women in managerial and professional positions are less autonomous than men.

3.6.2 Speed of work

Around two-thirds of both female (69.3 %) and male workers (69.3 %) can choose or change their speed of work. Workers under 24 are less often able to change or choose their speed of work than their older colleagues. However, the lowest proportions of workers who are able to choose or change their speed of work are found in manufacturing, as well as in the female-dominated Horeca sector. Similarly, workers under 24, as well as plant and machine operators/assemblers and those in the armed forces, experience similar working conditions (Eurofound, 2007a).

3.6.3 Task order

In the EU-27, 64.1 % of female and 62.8 % of male workers are able to choose or change the order of tasks. In particular, workers under 24, as well as workers in the manufacturing, transport and communication, female-dominated Horeca and construction sectors can less often choose or change the order of tasks than workers of other sectors. Moreover, plant and machine operators/assemblers as well as craft and related trade workers are less often able to change the order of tasks (Eurofound, 2007a).

Case study: work organisation in a printing workshop

The regional statutory social insurance organisation ARACT Basse-Normandie examined a printing company where a high proportion of the female workers reported complaints of physical pain and an increased rate of sick leave. It was found that there was a differential impact of working conditions on health according to gender. Women's constraints were invisible and women working in specific tasks, such as 'finishing', had no career opportunities. Because they remained in the same positions for a longer time, their work involved more repetitive and monotonous tasks for longer periods and they were more prone to develop related MSDs. Even task rotation did not improve the rate of MSDs reported by the female workers, as overall tasks were not varied enough to counteract the effect of repetitive work. This led the company to recognise the skills of women working in 'finishing' and to provide career progression, and thereby to limit stress on limbs and heavy lifting.

This case study illustrates how career progression and gendered work organisation can have a direct and recognisable effect on the physical health of women at work.

3.6.4 When breaks are taken

More male (47.5 %) than female workers (41.0 %) are able to take a break when they wish to do so. Workers under 24, as well as those in the female-dominated health and Horeca sectors and in manufacturing are less often able to do so. Similar conditions can be found for plant and machine operators/assemblers, craft and related trade workers and service, shop and market sales workers, of which a high proportion are women (Eurofound, 2007a).

3.6.5 Influence over working hours

Working-time arrangements of women, mainly among those working part time, allow for better reconciliation between work and family duties than those of men (Eurofound, 2008e). As such, male workers appear to be less satisfied with their work–life balance than women (Eurofound, 2007a). However, when taking into account job and personal characteristics, gender does not have an effect on the satisfaction with work–life balance (Eurofound, 2008e). Working conditions with less flexible schedules can especially be found among workers under 24 and in the education, the manufacturing and mining, the electricity, gas and water supply sector, but also in the transport and communications and health sectors. In occupations such as the armed forces and plant and machine operators and assemblers, as well as craft and related trades workers and the elementary occupations, schedules can be described as particularly inflexible (Eurofound, 2007a). Especially in the elementary occupations, with a high proportion of part-timers, women working part time may be highly affected.

Female-dominated jobs in the Horeca sector, education and retail are characterised by a low influence on speed, task order, breaks and working methods. Especially in the elementary occupations, with a high proportion of part-timers, women may be highly affected.

3.6.6 Shift work and atypical hours

Overall, for both genders, night work seems to have decreased since 2000, while more women and men work shifts and on Sundays. Approximately as many women as men work on Saturdays, a little more than a quarter of all workers. Although women report less shift work and atypical hours, women in the Horeca and retail sectors, as well as workers in home services (care and cleaning), do work weekends, variable hours and evenings. Healthcare workers work shifts and nights.

According to EU figures, atypical working hours are increasing in the EU, while at the same time the gender gap seems to be decreasing slightly (Table 22).

Table 22: Working atypical hours: Share of persons working atypical hours* in the EU-27, employed persons aged 15–64

Atypical hours	2000		2007		2012	
	Men (%)	Women (%)	Men (%)	Women (%)	Men (%)	Women (%)
Shift	16.3	13.2	19.0	16.5	18.9	16.4
Saturday	27.6	27.1	27.5	27.3	27.2	26.7
Sunday	11.3	11.5	13.3	13.4	14.7	14.4
Night	9.3	5.3	9.4	5.3	8.3	4.7
Evening	19.4	15.6	21.6	18.1	19.2	16.1

Source: Eurostat, EU-LFS (2013)

This may affect women more because of their family and household responsibilities, as described above. If working time patterns are more irregular, their ability to reconcile their work and private life may be diminished. As an example, in the restaurant sector 28.6 % of workers reported long working days, only half (50.5 %) have fixed starting and finishing times, almost a third work shifts (29.9 %) and the mean working hours are among the highest. Accordingly, fewer workers in this sector reported caring for children, which is also consistent with the younger age of workers in hospitality.

As can be seen in Table 22, overall, for both genders, night work seems to have decreased since 2000, while more women and men work shifts and on Sundays. Approximately as many women as men work on Saturdays, a little more than a quarter of all workers.

Recently the Danish National Board of Industrial Injuries **recognised breast cancer as an industrial injury for women on night shifts** and Denmark became the first country to pay government compensation to women who developed breast cancer after long spells of working at night (Chustecka, 2009).

Of course, as with any aspect of research, there are differences between samples; for example, no evidence of breast cancer among a cohort of shift workers was found in the study by Schwartzbaum et al. (2007). Härmä (2008) proposes that for women there are at least three factors that could affect the discrepancy in the findings from different studies of shift work. These should be explored in more detail and include:

- differences in the shift systems studied;
- differences in home work and domestic responsibilities; and
- the variations in the possibilities to self-select and influence work hours.

In this respect, one study of mainly female nurses found that tiredness and tenseness were better predictors of lower job performance and higher job strain than different shift patterns (Gervais and Hockey, 2005a). Further, one recent Canadian study found that women and men had similar responses to shift work (Haines et al., 2008). Chapter 6 explores further the impact of shift work on women and prevention measures.

EWCS gender analysis

Key research findings

- Women have less autonomy at work, are more likely to work shifts and are paid less.
- Men work longer hours at workplaces, are exposed to more physical risks and are more likely to be contacted about work outside working hours.
- Three key factors contribute to the unequal position of women in the workplace:
 - the poor quality of part-time work;
 - the low pay and low status of female-dominated jobs; and
 - the under-representation of women in managerial positions.

Eurofound recommendations

To foster greater gender equality and a better work–life balance, the report recommends:

- creating strategies to encourage men to take parental leave;
- reducing long full-time working hours;
- finding ways to support workers with childcare and eldercare responsibilities; and
- monitoring the gender impact of rapid changes in the new Member States in order to avoid the risk of wider gender inequality.

3.7 Exposure to material and physical hazards

3.7.1 Loud and medium-level noise

On average, more male (39.1 %) than female workers (18.9 %) suffer from noise when at work. Younger men especially are reportedly exposed to noise at the workplace (Eurofund, 2007a).

EU-OSHA (2005b) reports similar results, stating that men are exposed to noise more than twice as often as women in the EU-15. This is mainly because male workers are traditionally employed in the sectors and occupations that are at high risk of noise exposure.

Generally, women appear to be more exposed to medium levels of noise, with the exception of known high-noise sectors such as the textile and food production sectors. Moreover, women are occasionally exposed to sudden and disturbing noise, which can be considerably higher than for male workers. This is particularly the case for the female-dominated education, health, Horeca and social sectors, as well as for jobs in call centres and other offices. Interestingly, the proportion of women reporting that they suffer from noise at work is higher in the new Member States than in the EU-15. However, noise levels may be high in some occupations, such as in nurseries and kindergartens, emergency wards of hospitals or school workshops, where noise levels may be above the permissible occupational exposure limits.

On average, more male than female workers suffer from noise when at work. Women appear to be more exposed to medium levels of noise, with the exception of known high-noise sectors such as the textile and food production. Women are occasionally exposed to sudden and disturbing noise, which can be considerably higher than for male workers, particularly in the female-dominated education, health, hotel, restaurant and catering and social sectors, as well as for jobs in call centres and other offices.

Generally, men suffer more from hearing problems than women. However, women report more cases of tinnitus and rates are increasing for both genders (EU-OSHA, 2005b). Noise-induced hearing loss is often accompanied by tinnitus, or ringing in the ears. Data on tinnitus are scarce. Research carried out in 2003 estimates that 170,000 people in the United Kingdom suffer from deafness, tinnitus or other ear conditions due to exposure to excessive noise at work. In 2001, on the basis of the risk estimates made and the prevalence of occupational noise exposure, it was estimated that 153,000 men and 26,000 women aged 35–64 years had severe difficulties of hearing attributable to noise at work, and about 266,000 men and 84,000 women in this age group had attributable persistent tinnitus. Recent research (HSE, 2010a) suggests that the prevalence of tinnitus in those with hearing loss appears to be greater, and the hearing thresholds in those with tinnitus are higher. There is also a suggestion from one 15-year longitudinal study that tinnitus may be an early indicator of risk of the development of noise-induced hearing loss. Medium-level noise may also lead to circulatory diseases and contribute to work-related stress.

Another health effect mentioned in the Schneider report is the increasing number of cases of voice disorders among workers in education. Statistics on occupational diseases in Poland, for example, highlighted voice disorders as an emerging health issue for workers. Workers in several Member States report that noise in education and voice disturbances have a significant impact on teachers' absenteeism rates. World Health Organization (WHO) guidelines recommend a noise level of 35 dB(A) for school classrooms during class to avoid disturbance of communication. Noise levels in schools frequently exceed these limits and can reach as much as 60–80 dB(A) in normal classes and can even go beyond limit values for workplaces in school workshops and sports areas.

Noise may combine with harmful chemicals to cause hearing loss or with stress to cause cardiovascular diseases. This may be relevant in manufacturing sectors with a high proportion of female workers, such as food production and textiles, but also in service sectors such as Horeca and healthcare or in industrial cleaning and maintenance.

Noise may also cause voice disorders.

The importance of the voice as an occupational tool is also growing with the development of voice-activated technology and the rise in the number of individuals working in call centres, where vocal demands are high.

Combined exposures of noise and chemicals may lead to neurotoxic effects. More information on this is available from an EU-OSHA literature review on combined exposures (EU-OSHA, 2009a). This may be relevant in manufacturing sectors with a high proportion of female workers, such as food production and textiles, but also in service sectors such as Horeca and healthcare or in industrial cleaning and maintenance.

Noise exposure among female musicians (Austria)

Research also shows that the assessment of the noise exposure in orchestral music has to be done in a gender-sensitive manner, as around 30 % of orchestral musicians in orchestras at European level are women. To ensure effective prevention and protection measures for musicians, the gender mainstreaming approach should be taken to analyse factors leading to work-related stress, diseases and accidents, as the traditional prevention approach underestimates the occupational hazards for female musicians.

In 2003, the Austrian labour inspectorate assessed conditions in concert halls and rehearsal rooms of orchestras and military bands. There were obvious deficiencies in risk assessments in Austrian orchestras. Although health surveillance (audiometrics) is obligatory, it had not been carried out. There were mixed feelings about this among the musicians, as they saw little chance of getting an occupational disease recognised or of having any positive effect on their working conditions. Especially among classical musicians there was a general belief that noise reduction measures contradict artistic requirements.

As early as 1991 doctors in the General Hospital of Vienna had examined classical musicians and found that 87 of 194 showed signs of noise-induced hearing loss. In addition, hearing loss was often paired with permanent tinnitus (Wolf, C. (1991), *Fakten, Daten, Empfehlungen. Belastung und Beanspruchung von Orchestermusikern*, Universitätsklinik für Arbeitsmedizin Wien, Vienna)

Table 23 outlines the typical exposure levels of musicians.

Table 23: Typical exposure levels of musicians

Instrument*	In a classical orchestra	As teachers
Brass, saxophone	95 dB(A), Lmax 120 dB	95 dB(A)
Percussion	90–105 dB(A), Lmax 120 dB	95 dB(A)
Clarinet, tuba, piccolo, flute, oboe, bassoon	90 dB(A)	86 dB
Violin, viola	90 dB(A), Lmax 104 dB	90 dB(A)
Cello, double bass	86 dB(A), Lmax 104 dB	83 dB(A)
Harp	90 dB(A)	86 dB(A)
Piano, organ, accordion	80 dB(A)	80 dB(A)
Piano, organ, and accordion with electronic amplifier in musicals	90 dB(A)	
Singer (solo)	95 dB(A)	
Choir	86 dB(A)	

*Average measurements by SUVA and AUVA

Labour inspectors visited 15 orchestras (769 male and 226 female musicians) and nine military bands (423 male and six female musicians) and used questionnaires (filled in by the employers) on the following topics:

- duration of performances and group rehearsals;
- whether and how the risk assessment had been done;
- state of information; and
- prevention measures concerning noise reduction and ergonomics.

The duration of daily rehearsals was found to be above 4 hours, irrespective of individual rehearsing. Noise levels were found to be high and frequently above recommended thresholds (Table 23).

Another aspect was the line-up of orchestras in concerts and rehearsals that led to higher exposures of female musicians. The gender allocation with regard to the musical instruments played shows that female musicians are represented in fewer than 15 % of 12 out of the 20 instrumental groups. Whereas male musicians can mainly be found playing brass instruments, contrabasses, percussions, drums and woodwinds (except flutes and oboes), female musicians mainly play harps, flutes and strings, in particularly second violin and viola. Thus, the traditional orchestral line-up and the gender-specific instrumentation lead to the higher and longer noise exposure of female violinists sitting in front of the male-dominated brass. Changes in seating can significantly reduce the exposure of female musicians to noise at work, which might — in combination with stress and environmental noise — lead to dysmenorrhoea, endocrine disorders and impaired fertility.

Other prevention measures proposed were absorbers and resonators on the walls and ceilings of rehearsal rooms; padded chairs and screens between groups of musicians, especially near drums; monitoring devices for sound intensity being made visible to the conductor and musicians, as well as sound engineers; and the implementation of regular noise breaks. It was also proposed to consider providing appropriately equipped rehearsal rooms, as concert halls are often more difficult to adapt. For musicians, special hearing protectors with flat attenuation are also available (Huber and Novak, 2005).

A similar approach was taken in the United Kingdom. Following the implementation of EU noise regulations in 2008, representatives from a wide range of music and entertainment sectors in the United Kingdom, including professional representatives of environmental health officers and the Health and Safety Executive, developed guidance for noise management in the entertainment sector. The purpose of the book, called *Sound Advice* (HSE, 2008), is to provide practical advice on developing noise-control strategies in the music and entertainment industries to prevent or minimise the risk of hearing damage from the performance of both live and recorded music. In the introduction to the brochure the authors state that:

Reducing noise risks in music and entertainment is about not destroying art, but protecting people — artists, performers and ancillary workers equally. The guidance suggests that the loudest pieces should be played less often, to allow the musicians recovery time in what is physically demanding work. The draft practical guide offers other suggestions regarding suitable venues, orchestra layouts and elevation of the brass section so that they can be heard without having to play through five rows of fellow musicians.

3.7.2 Vibrations from tools and machinery

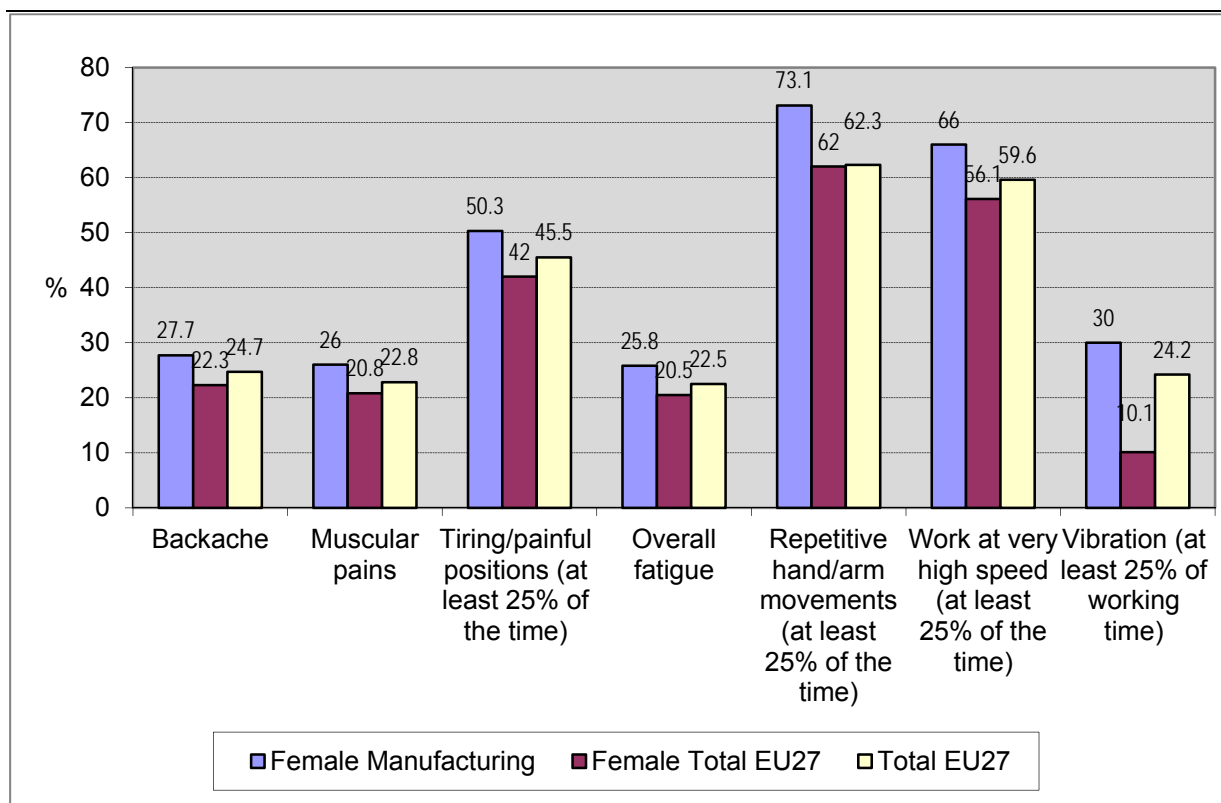
Compared with smaller proportions of female workers (10.1 %), around 1 in 3 male workers (35.6 %) is exposed to vibrations (Eurofound, 2007a). This might be because male workers with an intermediate or lower-level education use more machinery at work than their female counterparts (Eurofound, 2009d).

Generally, male workers seem to be more exposed to vibration than their female counterparts at first glance. However, as female workers are more segregated into fewer sectors and often perform different tasks from men, the data should be extracted by sectors and occupations. According to the data, 30 % of female workers in manufacturing are exposed to vibration (Figure 49). Accordingly, vibration should be regarded as a priority for prevention in women's workplaces in industry (EU-OSHA, 2010). Female workers may also be exposed to high noise levels and ergonomic risks in the

relevant sectors; for example, as mentioned previously, in agriculture, food production or the textile industry — sectors in which both noise and vibration levels are high and work is physically demanding.

Women in the manufacturing sector also report high rates of exposure to vibrations, a risk not normally associated with 'female workplaces'. Vibration should be regarded as a priority for prevention in women's workplaces in industry and agriculture.

Figure 49: Women in the manufacturing or other sector(s) reporting a specific health problem to a certain risk factor, EU-27, EWCS 2005 (%)



Source: EWCS2005

3.7.3 Extreme temperatures

Female workers are exposed less often to low temperatures (29.0 % for men vs. 13.3 % for women), as well as high temperatures (30.7 % for men vs. 17.5 % for women) at their workplace than their male counterparts, who are especially exposed to extreme temperatures when they are younger (Eurofound, 2007a). Nevertheless, exposures may be high for women in agriculture, Horeca, transport and manufacturing sectors.

Exposures to extreme temperatures may be high for women in agriculture, Horeca, transport and manufacturing sectors.

3.7.4 Dangerous products or substances

Generally, female workers are not thought to be exposed to dangerous substances, possibly with the exception of infectious agents, because of their more intense contact with people in service professions. However, women may be highly exposed to a wide variety of potentially dangerous substances at work. A few selected examples are presented in Table 24. Moreover, unintentional

exposures not directly linked to the occupation, such as asbestos or silica exposures from waste or dust, may affect workers in manufacturing or waste management, but be disregarded.

Table 24: Examples of potential exposures to dangerous substances for female workers

Substance	Source	Circumstances	Occupation, task
Solvents	Cleaning products	Cleaning	Manufacturing Leather industry Textile industry
	Fuels	Dry-cleaning of textiles	Cleaners and dry-cleaners
	Ambient air	Printing	Hairdressers
	Paints, inks, glues and varnishes	Laboratory work	Service workers on ships, trains, buses
	Cosmetics	Handling medication	Printing
	Resins and glues	Fabrication of dental and optometric devices	Laboratory work, pharmacists, chemists
	Drugs		
Disinfectants	Cleaning products	Cleaning work areas	Healthcare workers
	Healthcare products	Disinfection in healthcare	Cleaners Maintenance workers
Cosmetic products		Hairdressing	Hairdressers
		Domestic care	Healthcare workers
		Healthcare	
Dusts, particles	Dangerous goods		Textile workers
	Textile fibres (e.g. cotton)		Workers in
	Foodstuffs (grain dust, dust from stored foodstuffs)		Cleaners and dry-cleaners
			Maintenance workers
Pesticides and storage chemicals	Foodstuffs	Agriculture and farming	Farmers and agricultural workers
	Storage	Horticulture	Gardeners
	Plants	Workers who handle goods from containers and in storage areas	Retail
	Animals		Cleaners
Flammable and explosive substances	Solvents (see above)	Cleaning, dry-cleaning	Cleaners, dry cleaners
		Handling solvent-containing products	Manufacturing workers
	Fuels	Accidents and spills	
		Maintenance	Maintenance workers
	Refuelling		

Substance	Source	Circumstances	Occupation, task
Exhaust fumes Diesel exhaust and particles	Exhaust from combustion engine, including diesel and other engines on trucks, ships, trains and buses	Unintentional contact when loading and unloading	Maintenance workers Retail workers
		Maintenance	Drivers, delivery and cargo workers
		Refuelling	Workers on business trips
		Parking areas of vehicles	Transport workers
Sensitising substances	Foodstuffs, perishable goods		Catering, cooks Cargo workers
	Cleaning agents		Cleaners
Biological and infectious agents	Animals	Cleaning	Farmers and agricultural workers Cleaners
		Contact with foodstuffs	Service and maintenance workers
	Foodstuffs, perishable goods	Contact with infected clients and goods	Healthcare staff
	Insects and other vectors	Contact with animals	Hairdressers
	Contact with passengers, patients, clients	Cuts and stings	Catering staff
		Contact with infectious agents when travelling abroad	Teachers and nursery school workers Retail workers Home care
Lead and other metals	Manufacturing of electronic devices	Manufacturing of dental prostheses, spectacles, electronic devices	
	Dental care		
	Optometrists		
Carcinogenic substances			
Drugs	Cytostatic drugs		Healthcare
Asbestos	Insulation materials Waste management		Waste handlers Maintenance and cleaning workers
			Relatives of asbestos workers
Beryllium	Dental workers		Fabrication of dental prostheses
Ethylene oxide	Healthcare	Disinfection of medical devices	

Substance	Source	Circumstances	Occupation, task
Formaldehyde	Cosmetics Healthcare products		Hairdressers and associated professions Healthcare
Crystalline silica	Workers exposed to dust and ambient dust Sanding of manufactured textile and other products	Sanding of textiles Abrasive treatment of silica-generating materials, such as glass	Manufacturing Textile industry Cleaners, e.g. on construction sites or from contaminated clothing
Mineral fibres	Waste management Manufacture of glass and objects made of glass		
Radioactive substances	Healthcare laboratories		
Rubber constituents	Retail Manufacturing Healthcare		
Tobacco fumes	Hotels, restaurants and catering		
Carcinogenic solvents	Manufacturing, for example of shoes and leather products Laboratories	Use of paints and glues Use of organic solvents	Shoe and leather manufacturing Laboratory workers, chemists
Trichloroethylene	Cleaning, dry-cleaning Manufacturing		Cleaners and dry-cleaners Manufacturing
Carcinogenic dyes	Textile industry Hair dyes	Dyeing of hair and textiles	Textile industry Hairdressers
Carcinogenic soldering fumes	Manufacturing of electronic devices		
Diesel fumes	Vehicles, including in storage areas	Working in storage areas Workers driving and attending vehicles	Transport workers Retail workers Workers on business trips Cleaners in areas with high number of vehicles

Owing to the large number of female workers employed in the health and social work sector, more female (10.7 %) than male (8.1 %) workers are exposed to infectious materials including waste, bodily fluids and laboratory materials. However, more male workers are exposed to other dangerous substances. These OSH risks result from breathing in smoke, fumes, powder or dust (28.3 % for men vs. 7.6 % for women), breathing in vapours such as solvents and thinners (15.0 % for men vs. 6.5 % for women), handling chemical substances (16.9 % for men vs. 11.4 % for women) and radiation (6.2 % for men vs. 2.8 % for women). Last but not least, compared with 14.1 % of female workers 24.9 % of male workers are exposed to tobacco smoke for at least one-quarter of the time in Europe. The handling of chemical substances is most common in construction and in the female-dominated health sector and among craft-related trades workers and skilled agricultural and fishery workers. Similarly, and as already mentioned above, workers are mostly exposed to infectious materials in the female-dominated health sector, but also in occupations such as skilled agricultural and fishery jobs (Eurofound, 2007a).

Dangerous substances are often used in the cleaning sector, where, in 2003, women made up 77 % of the total workforce. Despite the predominance of women, more male than female workers suffer from occupational accidents in the cleaning sector. This is because of the gender distribution of the work, with men being involved in high-risk cleaning activities such as cleaning windows, industrial cleaning and refuse cleaning. Regardless of who does what, the work equipment should be designed according to the er

Ergonomic and safety needs of the cleaning workers, as overdosage, mixing different products or the incorrect use of products may lead to chemical reactions and release dangerous substances. Because of the atypical working hours of cleaning workers, ventilation/air-conditioning systems are often turned off at their workplaces. This may lead to a higher exposure to dangerous substances. Other dangerous substances to which cleaning workers are exposed include surfactants leading to skin problems; acid substances such as hydrochloric acids, which are corrosive to eyes and skin; corrosive strong bases; formaldehyde, which may have irritant and carcinogenic effects; complex agents causing skin or eye irritation; and volatile organic compounds, which may affect the indoor air quality. Additionally, propellants in aerosols and allergens in fragrances and perfumes are common in cleaning products and also put cleaning workers at risk. Besides the chemical compounds in cleaning products, cleaning workers are also exposed to biological agents such as micro-organisms (bacteria, viruses and moulds), fungal secretion products and bacterial endotoxins in dirt, dust, soot particles and aerosols (EU-OSHA, 2009b).

Dangerous substances are often used in the cleaning sector, where, in 2003, women made up 77 % of the total workforce. Because of the atypical working hours of cleaning workers, ventilation/air-conditioning systems are often turned off at their workplaces. This may lead to a higher exposure to dangerous substances. Cleaning workers are also exposed to biological agents such as micro-organisms (bacteria, viruses and moulds), fungal secretion products and bacterial endotoxins in dirt, dust, soot particles and aerosols.

According to EU-OSHA (2003b), the following sensitizers can cause work-related skin problems in the following female-dominated occupations. Hairdressers may come into contact with nickel, formaldehyde, fragrances, rubber chemicals and natural rubber latex proteins; healthcare workers have to be aware of formaldehyde, disinfectants, pharmaceuticals, rubber chemicals and natural rubber latex proteins; textile workers are at risk from formaldehyde, colourants/dyes; and cashiers are exposed to nickel. Beauticians are exposed to acrylates/methacrylates and preservatives, while florists are exposed to plants that may cause reactions. As already reported above, the female-dominated cleaning workforce is exposed to disinfectants and fragrances, which may lead to occupational skin diseases (EU-OSHA, 2003b).

Sectors related to cleaning, food and drink, cooking, catering, construction, healthcare, plastics and metal production, cosmetology and hairdressing, but also occupations related to animals, plants and printing, have high proportions of dermal exposures and skin diseases among their workers. This is certainly related to workers being exposed to dangerous chemical agents at work (EU-OSHA, 2008c).

In order to reduce workers' exposure to these dangerous substances, directives and related national laws in the European Member States request workers and employers to replace dangerous substances with non-dangerous or at least less dangerous substances (EU-OSHA, 2009d).

Women also represented the highest proportion of the workforce (54 %) in the Horeca sector in 2004, with the sector providing a high proportion of part-time jobs. These part-time jobs can especially be found in canteens, catering and fast-food restaurants. While female workers dominate in housekeeping, restaurant work and work in canteens, their male counterparts dominate in senior positions. Regarding OSH, workers in the Horeca sector are exposed to dangerous substances including oven and floor cleaners, disinfectants, soaps and detergents and pesticides. Ammonia and chlorine solutions may irritate the skin, eye and nose. Chefs, cooks, cleaners and waiting staff are most at risk of suffering from skin dermatitis and respiratory diseases. Biological agents such as allergens in food or natural products, but also prolonged and frequent use of water, are major reasons for occupational dermatitis among workers in the Horeca sector. Interestingly, women and young women are more affected than their male counterparts by work-related skin diseases, with the most common type being irritant contact dermatitis. As irritant contact dermatitis is often caused by prolonged and frequent wet work, the higher prevalence among women is probably because catering, hairdressing and cleaning activities involving wet work are female dominated. When preparing food, workers may be affected by bacteria spreading from food or by inadequate personal hygiene. Chambermaids and cleaners are at risk of being exposed to biological agents in waste or towels and bed linen during their work. Last, but not least, the toxic vapours of oven cleaners and the unwanted mixing of dangerous substances might produce toxic gases that could put cleaners in the female-dominated Horeca sector at risk (EU-OSHA, 2008d). Female transport workers abroad may also be exposed to biological agents and to diseases that may not be common in their home countries. However, these risks for female transport workers are often overlooked when their male counterparts are assessed. This is partly because administrative and restaurant workers on ships and trains and cleaners in public transport are not regarded as 'core staff' (EU-OSHA, 2011a).

Workers in the Horeca sector are exposed to dangerous substances including oven and floor cleaners, disinfectants, soaps and detergents and pesticides. Ammonia and chlorine solutions may irritate the skin, eyes and nose. Chefs, cooks, cleaners and waiting staff are most at risk of suffering from skin dermatitis and respiratory diseases. Biological agents such as allergens in food or natural products, but also prolonged and frequent use of water, are major reasons for occupational dermatitis among workers in the Horeca sector.

Many female workers in the agricultural sector are involved in jobs such as the mixing or application of harmful pesticides. Thereby, they are often not adequately protected and informed. As a result, they suffer from poisoning and in some cases even death (Karasek and Theorell, 1990).

Women are generally not considered to be exposed to carcinogens as men are, but may very well be so in specific occupations, for example dry-cleaners exposed to trichloroethylene, dental workers exposed to beryllium, healthcare workers exposed to the hepatitis virus or cytostatic drugs, manufacturing workers exposed to silica or mineral fibres or waste management workers exposed to asbestos.

The health effects of these exposures are explored in Chapter 6.

3.8 Exposure to ergonomic hazards

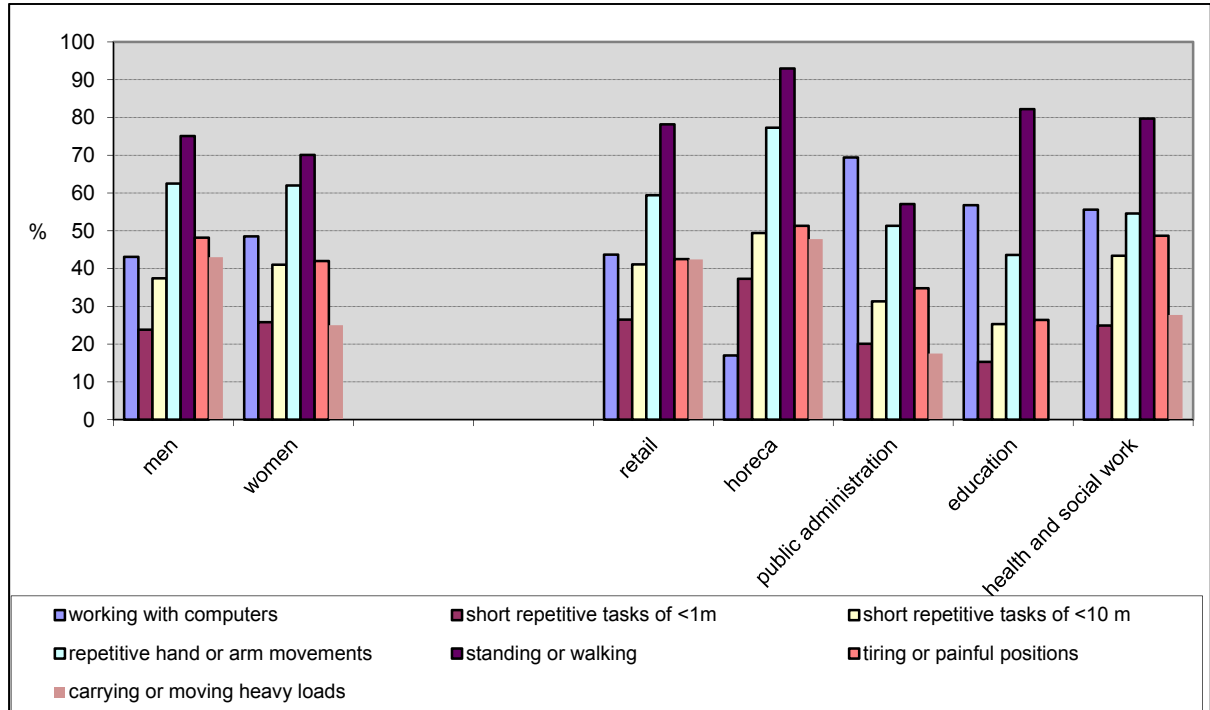
The following section cites data from the 2005 EWCS.

Figures 50 and 51 show the exposures that men and women reported in the 2005 EWCS regarding physical MSD risk factors and a selection of organisational risk factors.

While the comparison of average figures regarding gender may lead to the assessment that women are less exposed than men, it can be concluded from Figures 50 and 51 that women are exposed to several ergonomic risks at any one time, which may contribute in turn to the higher prevalence of MSDs among female than male workers. The different sectors show distinct patterns of exposures to different risk factors, but in all sectors several risk factors are much more prevalent than on average. As an example, while workers in the Horeca sector more often perform monotonous and repetitive tasks and carry heavy loads, while also being exposed to tiring postures, their counterparts in the healthcare sector reported complex tasks, frequent interruptions and working with computers. Both

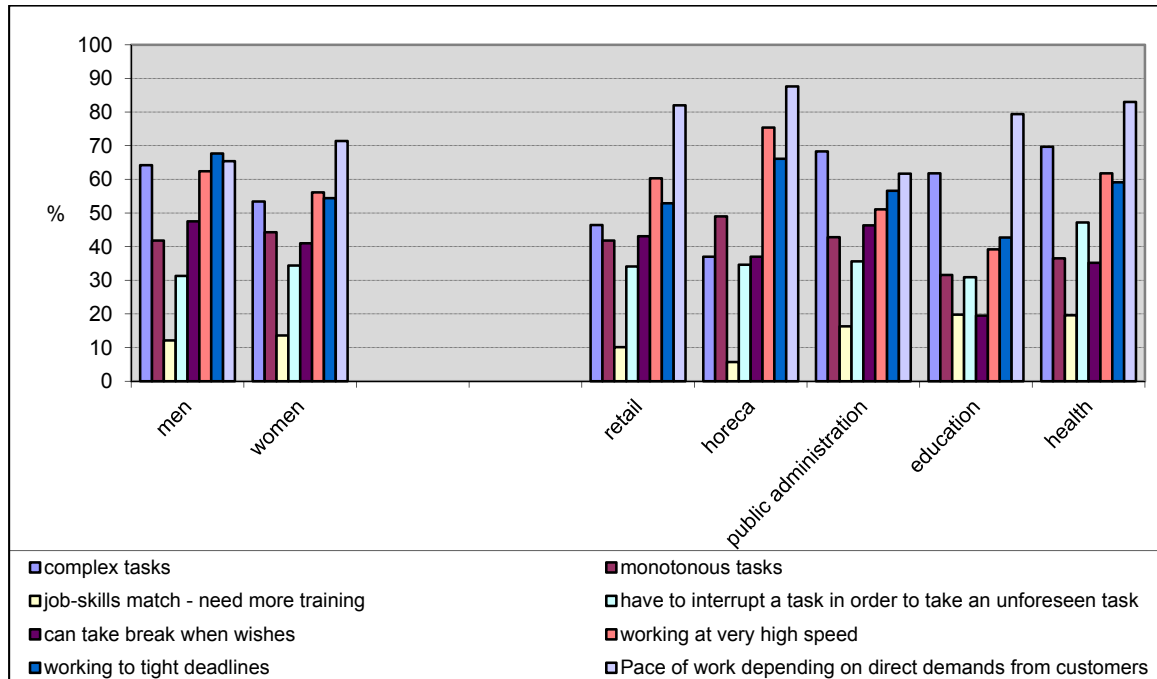
groups are highly exposed to prolonged standing and other multiple physical and organisational risk factors that may lead to MSDs.

Figure 50: Ergonomic hazards that may contribute to musculoskeletal disorders, by gender and in sectors where women predominate, EWCS 2005, percentage of workers



Source: EWCS 2005

Figure 51: Selected organisational factors, by gender and female-dominated sectors, EWCS 2005



Source: EWCS2005

Complex tasks go hand in hand with the need for more training in healthcare and education, while monotonous tasks are combined with high speed of work and tight deadlines in the Horeca sector. Common to all the service professions is the pace, which is dependent on customers and frequent interruptions.

Multiple exposures to physical and ergonomic risks may contribute to the high prevalence of MSDs among women in the service sectors. Different sectors show distinct patterns of exposures to the different risk factors.

3.8.1 Repetitive hand or arm movements

Similar proportions of female and male workers (62.0 % vs. 62.5 %) reported repetitive hand and arm movements at their workplace (Eurofound, 2007a).

According to EU-OSHA (2010), jobs with repetitive hand or arm movements can be found in many sectors of economic activity. These include 79.0 % of the workers in the agricultural sector, 77.3 % in the female-dominated Horeca sector and 54.6 % of the female-dominated health sector (EU-OSHA, 2010).

3.8.2 Painful or tiring positions

Fewer female workers (42.0 %) than their male counterparts (48.2 %) reported tiring or painful positions at their workplace (Eurofound, 2007a). Nevertheless, in industry, female workers represent a high proportion in export-processing zones. They therefore endure long hours at non-ergonomic workstations and often work with unprotected machinery. As industrial machinery is generally designed for male workers, the work is often tiring for smaller female and male workers (ILO, 2009a).

Working in tiring positions is required in many sectors of economic activity, and hence high proportions of workers in these sectors are exposed to risks arising from this. Sectors that are particularly affected are agriculture (in which 75.5 % of workers reported having to adopt tiring or painful positions at work) and construction (69.8 %), but also female-dominated sectors such as the Horeca (51.3 %) and health sectors (48.7 %) (EU-OSHA, 2010).

Gender-sensitive guide to evaluation of physical loads (Spain)

The specific characteristics of MSDs have not been considered in relation to the specificities of women, and much is still unknown about this area.

The following points are, however, known about when and how the symptoms of MSDs appear in women:

They are more likely to appear later than those of men.

The pain is frequently located in the upper back.

The origin is due to poor ergonomic positions, excessive reaching, holding the arms in a raised position and/or repetitive tasks.

In particular, it is necessary to consider:

1. The ergonomic conditions: type of task; interaction between the person and the task (e.g. size, manual forces); having to use greater force, due to their physical constitution; forced to adopt uncomfortable positions; and during pregnancy, the abdomen separates the body of the woman from the surface of work, forcing her to adopt awkward positions.

2. Hormonal factors themselves and/or in interaction with the conditions as well as the working time may increase the risk.

3. The perception of pain differs between men and women. It seems that the perception of 'pain by pressure' is more developed in women than in men, as well as the perception of heat or cold.

4. Women seem to have more interaction between psychosocial factors and physical factors. In repetitive work it is difficult to determine which factor is strongest: the position, the monotony or the fast-paced work.

This Spanish guide proposes two kinds of questionnaires for female workers to complete. First, their opinion is evaluated following the Borg scale, then a questionnaire gathers information related to physical annoyances experienced by the worker. The second questionnaire adds information regarding the positions that the worker is required to adopt in her job. These questionnaires provide one way of deciding whether there is a need to progress with further ergonomic studies.

Finally, the guide provides recommendations on how to assess the questionnaires, as well as giving a practical example.

3.8.3 Carrying or moving heavy loads

According to the fourth EWCS, on average substantially more male (43.0 %) than female (25.0 %) workers have to carry or move heavy loads at work. However, the exposure to jobs involving lifting or moving people is greater among female workers (11.1 %) than for the opposite sex (5.8 %). This is partly because of the segregation of the sexes in the health and social work sector (Eurofound, 2007a). The high proportion of back injuries of women working in the health sector is related to the nature of the work and the concentration of women workers in nursing (Forastieri, 2000). Additionally, due to women's limited work choices and because they are highly represented in the informal sector, most female workers end up doing work that can be heavy (Levy and Wegman, 1988).

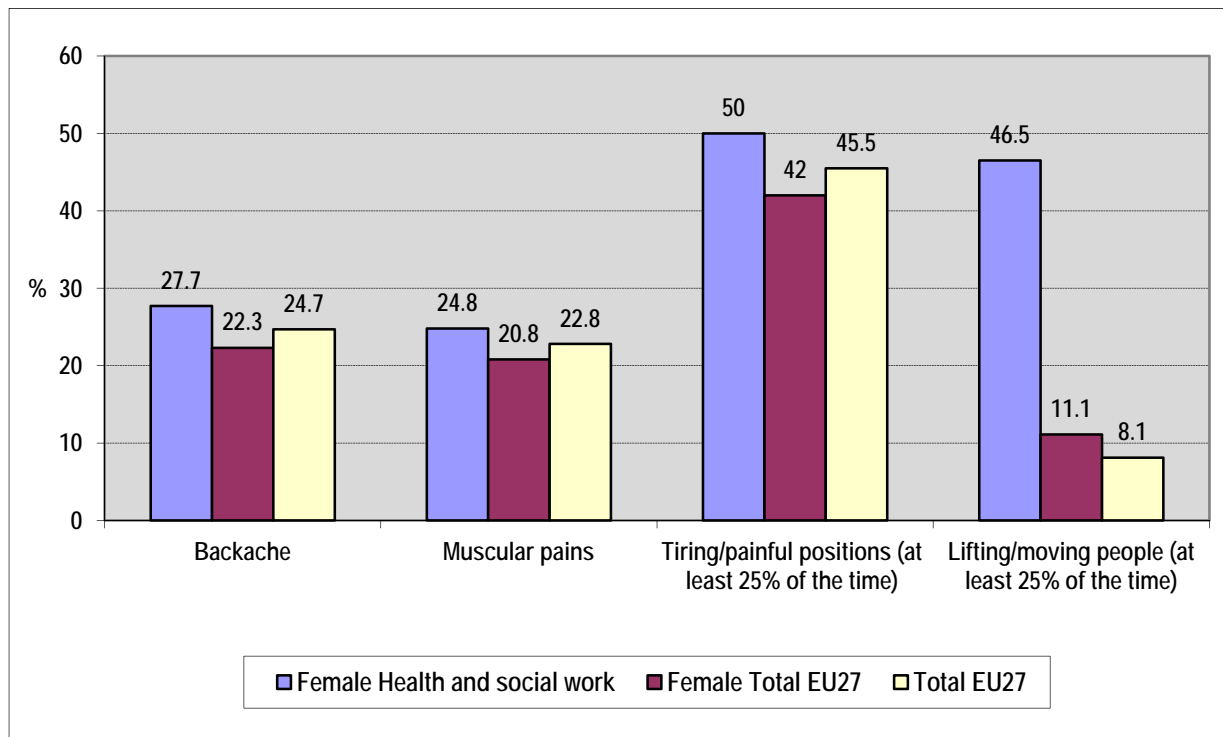
When extracting the data by sectors and occupations to find out whether women are exposed to specific risks, interesting results may be observed. Detailed data extraction and analysis is needed to identify groups at risk and gain an overview of the situation in specific industrial sectors. Data are otherwise hidden by general averaging, and risks for vulnerable groups such as women, young people, migrant and impaired workers are not addressed.

As an example, carrying or moving heavy loads affects an average of 5.8 % of workers, but in the female-dominated healthcare sector it affects almost half the working population (43.4 %), an effect suppressed by a general averaged appreciation of the situation. Considering that the main group in the healthcare sector is made up of middle-aged to older women, this highlights the need for them to be considered for prevention.

When extracting the data by sectors and occupations to find out whether women are exposed to specific risks, interesting results may be observed. Detailed data extraction and analysis is needed to identify groups at risk and gain an overview of the situation in specific industrial sectors. Data are otherwise hidden by general averaging, and risks for vulnerable groups such as women, young people, migrant and impaired workers are not addressed. While only 8.1 % of workers in the EU-27 reported that they are exposed to lifting/moving people at least 25 % of their time, 11.1 % of the female workers in the EU-27 reported that they do so. However, in the healthcare sector almost every second female worker (46.5 %) reported that she was exposed to such work (Figure 52). Similar results can be found for carrying or moving heavy loads. While only 5.8 % of workers in the EU-27 are affected by carrying or moving heavy loads, it can be shown that 43.4 % of workers in the female-dominated healthcare sector suffer from the risk. The need for prevention can be highlighted even further when considering the high proportion of middle-aged to older women in the healthcare sector (EU-OSHA, 2010). Section 2.7, on trends in employment, explores further the predominating professions among female workers of the different age groups.

In addition to the single risk factors, as demonstrated by a French study, multiple exposures to more than one risk factor related to MSDs are slightly more common among women than among their male counterparts (SUMER, 2003). Also, while exposures decrease with age for male workers, they increase for females.

Figure 52: Self-reported exposure to MSDs risk factors in the healthcare sector, EWCS 2005



Source: EWCS2005

About 3 % of the EU's working population (or 6.8 million workers) are women in the healthcare sector who have to lift or move people.

Targeted campaign in nursing homes (Austria)

In Europe, an increasing number of elderly people in need of care live in retirement and nursing homes. The Austrian labour inspectorate has targeted the sector with campaigns. The proportion of female workers in retirement and nursing homes is 82 %. They have an increased risk of disease, as well as an increased risk of having to leave the profession because of ill health. Accordingly, high absenteeism and turnover rates can be found in this sector. Nursing staff are exposed to dangerous substances such as disinfectants and cleaning products, as well as biological agents including germs, viruses and fungi. There is high absenteeism and turnover rates in this sector and the nursing staff are exposed to OSH risks including dangerous substances such as disinfectants and cleaning products, as well as biological agents including germs, viruses and fungi. Only about every second home for the elderly has measures in place to prevent skin exposure to these substances. Guidance for labour inspectors and for enterprises has been issued and specific inspection campaigns have helped raise awareness in this emerging sector.

Owing to the high number of lifting activities in elderly and nursing homes, the use of lifting aids and lifting techniques may protect workers from MSDs. Lifting aids and techniques seem to be increasingly used in the sector and training is increasingly provided to workers on how to use them.

In addition to physical risks, the workers are also exposed to psychosocial risks.

Whereas all workers — regardless of their sex — suffer from the risks listed above, only female workers have to suffer from violations against the maternity protection act, which provides for an employment ban and/or restriction after delivery.

Last, but not least, the workplace design and emergency procedure (fire protection) are often found to be inadequate in nursing homes. This is particularly the case in kitchens and laundry rooms. Female workers also suffer from violations against the maternity protection act.

Although the situation in retirement and nursing homes improved in Austria from 2004 to 2006, the Austrian labour inspectorate continues to inspect and offer advice to improve the OSH of workers in elderly and nursing homes (Huber and Jäger, 2007).

Healthcare workers carry more than construction workers (Germany)

A secondary analysis of the BIBB/BAuA survey regarding healthcare workers showed that:

- two in three have to carry heavy loads (compared with one in two for construction workers);
- 93.8 % have to do their work standing;
- 36 % have to work in unfavourable postures (e.g. kneeling, bending, squatting);
- 71 % have to do more than one task at a time;
- more than three-quarters (76 %) work shifts;
- more than half (51 %) work nights; and
- almost all work Saturdays (94 %), Sundays and holidays (91.5 %).

Consequently:

- 57 % of men and 64 % of women have back pain;
- 66 % of women and 54 % of men have pain in the neck and shoulders;
- 37 % of women have pain in the legs;
- 40 % suffer from high emotional load (compared with 11 % on average);
- more than one in four feel that they hardly cope (27 % vs. 16.6 %); and
- twice as many than the average have sleeping problems (37 % vs. 19 %).

3.8.4 Short repetitive tasks

In all age groups, female workers systematically reported more repetitive tasks than their male counterparts (Eurofound, 2007a) in the EWCS 2005 as in previous surveys. Generally, the variation in job tasks within jobs is methodically related to gender, with women performing more routine jobs than men of equal education. Autor and Handel (2009) also proposed that individuals self-select into jobs from which they can gain the most in earnings based on their skills. Based on these findings, the higher proportion of women doing repetitive tasks for a longer period than men may be because of the need to retain jobs in areas that suit their wider social needs (Autor and Handel, 2009). Whereas similar proportions of female (25.8 %) and male workers (23.8 %) do repetitive tasks of less than one minute's duration, the gender gap increases when it comes to repetitive tasks of less than 10 minutes' duration (41.0 % for women vs. 37.4 % for men) (Eurofound, 2007a).

3.9 Work and computers

3.9.1 Working with computers

Generally, computers were used progressively more and technology-free work and machinery became less common in the EU-27 between 1995 and 2005. This was true for both sexes in all age groups, except for the eastern European countries of Bulgaria and Romania (Eurofound, 2009d).

According to the fourth EWCS in 2005, more female workers (48.5 %) than their male counterparts (43.1 %) worked with computers. Furthermore, the female workers (38.0 %) use the Internet and e-mail more often at work than the opposite sex (34.5 %) (Eurofound, 2007a). Eurofound (2009d) also found these results, with women reporting a greater use of computers at work than men in all age groups.

In 2005, more female workers (48.5 %) than their male counterparts (43.1 %) worked with computers at their workplaces. More of them (38.0 %) used the Internet and e-mail more often than men at work.

Women (particularly those under 50) seem to use computers more than men in services and public administration. In the sector defined 'other services', male workers over 30 reported a higher rate of computer use than women of the same age (Eurofound, 2009d). Women predominate in health,

education, the public sector and clerical occupations, which can all be characterised by a greater use of IT (Eurofound, 2007a). According to Eurofound (2009d) computers are also used more frequently in sectors such as public administration and defence, real estate and financial intermediation.

The greater use of computers at work by women can only be partly explained by the fact that women and men have different occupations. In addition to occupational differences, the gender differences regarding computer use at work could also be because women and men work at different occupational levels. For higher educational levels gender differences in computer use are significantly smaller and even show that highly educated male white-collar workers over 30 work with computers more frequently than highly educated women of the same age. Accordingly, female workers with lower educational qualifications or intermediate educational levels seem to use computers at work more often than the opposite sex (Eurofound, 2009d).

The non-use of computers and machinery at work was rather common among women over 50 in 2005, and among workers doing unskilled work, service workers, shop and market sales workers and those working in micro-enterprises (Eurofound, 2009d).

How dynamic sitting and standing can improve health in the office (Germany)

To help address the health effects of a sedentary lifestyle, the German initiative New Quality of Work developed a brochure offering advice to workers who spend much of the day sitting for long stretches of time, to help get them up and moving often. Basic information is given on how to incorporate appropriate work organisation into the office workplace design, including 'dynamic' furniture to make it more motion friendly. It provides guidance on how workers can alternate work postures, and offers dynamic solutions for frequent movement to help workers stay healthy. The brochure is not intended to replace collective workplace measures and the provision of ergonomically working equipment.

Around 18 million people in Germany go to the office day after day. The average German office worker spends about 80,000 hours seated in the course of his or her working life. The consequences of this motion deficiency are well known; 80 % of those who work at the computer every day regularly suffer from health problems. Two-thirds suffer from tension and pain in the shoulders and neck, more than half have back problems and around 45 % suffer from eye problems and headaches.

The use of technology has changed the way we work and play. With computers and the use of email, many of the reasons people used to move around the office no longer exist. The everyday tasks that used to be a routine part of office work — hand-delivering documents, walking over to co-workers to discuss issues or share work — can now be accomplished with a simple mouse click. No movement is required.

Last, but not least, the proportion of women employed as computing professionals or as computer associate professionals is very small. In 2006, only 0.7 % of women in employment, compared with 2.6 % of their male counterparts, worked in the given field in the EU-25. Although these proportions remained almost unchanged between 2001 and 2006, the gender gap seemed to widen rather than narrow. Whereas the proportion of male workers in computing jobs increased by 0.3 %, the proportion of female workers remained the same at 0.7 %, and the difference was wider among young people than among the older generation. For the age group below 40, 3.5 % of men vs. 0.8 % of women were employed in computing occupations in Europe. For those aged over 40, the proportion of both women and men employed in computing jobs in the EU was smaller and the gap between the two groups was narrower, at 1.3 %. Despite varying gender gap differences, the proportion of male computing professionals or computer associate professionals is higher than the proportion of female workers in all EU Member States (Eurostat, 2007g).

3.9.2 Telework from home with a computer

Compared with male workers (9.5 %) in the EU-27, female workers (6.8 %) are slightly less likely to telework, in proportion to their working time (Eurofound, 2007a).

3.9.3 Consultation about work organisation and workplace health and safety protective measures

According to the fourth EWCS most of the male (84.2 %) and female (81.8 %) workers in the EU-27 in 2005 were informed about health and safety risks at their workplace (Eurofound, 2007a).

Survey on psychosocial and physical risk factors among women in atypical jobs

In Italy, the Istituto di Ricerche Economiche e Sociali (IRES) carried out a survey among women workers. The survey was specifically designed to take account of the risk factors faced by women and indicators were linked to wider discrimination by age, race, sexual orientation, religious orientation, political orientation, intimidation and physical violence. The research looked at gender differences in worker representation and found that women were significantly less represented. It also assessed the relationship between precariousness and perception of risks, and found a relationship between precariousness and denial of workplace risks.

3.10 Discussion

This chapter provided a snapshot of working conditions and information from detailed analysis that EU-OSHA has conducted based on the figures from the EWCS. These results should be considered together with the employment trends identified in Chapter 2 to explain the results. The sectors in which women work strongly determine the pattern of organisational and physical risks to which they are exposed in every profession. Together with the employment trends identified in Chapter 2, this chapter demonstrated that work carried out by women may be physically challenging and involve a number of organisational risks.

When comparing the results of Fagan and Burchell's (Eurofound, 2002a) report with more recent research, such as Parent-Thirion et al. (2007), similar results are seen regarding women at work. The overall trends seem to be the same, although there are increases in work intensity and tasks entailing ergonomic risks for women, such as the increasing use of computers at work, linked to the increasing number of women in public administration, financial and other services, and among professionals, but also observed in agriculture. The use of computers, at least in offices, has contributed to the increase in rates of static work and prolonged sitting.

The information gained on customer service and 'people' work reveals that a higher proportion of women still deal directly with members of the public, e.g. in the form of customers, than their male counterparts.

Regarding skills matching, similar proportions of female and male workers reported that their skill levels match their job demands well, and this was consistent over time. However, the higher educational attainment of younger women may have been compensated by the rise in elementary occupations.

3.10.1 Work organisation

Regarding work intensity, very few differences between Fagan and Burchell's (Eurofound, 2002a) results and newer findings could be found. Whereas women are still more likely to have their pace of work set by the demands of customers, male workers often depend on the demands of their colleagues, production targets or machine speed. The highest gender gap could be found regarding the pace of work set by automated equipment/machines, with the highest proportions in the construction, transport and communications and agriculture and fisheries sectors. However, with female employment catching up in agriculture and transport, these trends may change and women may also be highly affected.

Regarding opportunities for training and learning and the nature of tasks, the different female-dominated sectors show distinct patterns. In the hospitality and retail sectors, jobs tend to be more monotonous and repetitive, with fewer training needs and learning opportunities, whereas jobs in the health sector, public administration and education seem to be characterised by complex tasks and more training needs and learning opportunities. Teamwork and task rotation are quite common in the

health sector, while the education sector is characterised more by lone work. Public administration and education workers report that they have to solve problems more often than do workers on average. Moreover, more than two-thirds of female workers in the female-dominated Horeca and healthcare sectors have to work to tight deadlines. The booming real estate sector also displayed high rates.

Despite Fagan and Burchell (Eurofound, 2002a) not finding any gender differences with regard to working at very high speeds, newer scientific work showed that a slightly higher proportion of male workers have to do so. However, working at high speed is very common in the female-dominated Horeca sector, as well as in healthcare (EU-OSHA, 2010).

While female workers are less autonomous than the opposite sex (especially in the Horeca sector), more male than female workers are able to take a break when they wish to do so. Younger workers, as well as workers employed in the health, Horeca and manufacturing sectors can do so less often than workers in other age categories and sectors. Similar results are found with regard to choosing or changing the order of tasks, the methods of work or the speed of work. Younger workers as well as workers in manufacturing, transport and the female-dominated Horeca sector are less autonomous regarding these aspects.

In addition to direct demands from customers, female workers are dependent on colleagues setting the pace of work. In 2005, this was particularly the case in the hotels and restaurants (87.6 %), health (83.0 %) and wholesale and retail trade (82.0 %) sectors, education (79.4 %) and the financial intermediation sector (77.2 %).

The section on disruptive interruptions indicates, contrary to earlier findings that there was no gender difference, that slightly more women than men, a little more than one-third, have to interrupt a task in order to take on an unforeseen task. This is relevant to all of the female-dominated service professions, and in particular to the female-dominated healthcare sector (Eurofound, 2007a). Frequent interruptions are particularly relevant in the retail, Horeca, public administration and female-dominated health sectors (47.2 %). Recent research confirms that this significantly contributes to the high stress rates reported in these sectors.

Fewer female workers report being able to solve unforeseen problems on their own, which may also be a sign of more restricted autonomy of workers in the service sectors. In the hospitality sector, workers reported a low degree of influence over their own work and also experience low predictability of work (EU-OSHA, 2008a). The combination of low autonomy and lack of training may lead to considerable health and safety risks, especially for young workers (EU-OSHA, 2007b), who make up a considerable part of workers in this sector and are exposed to a high risk of accidents. Female-dominated jobs in the Horeca sector, education and retail are characterised by low influence on speed, task order, breaks and working methods. Especially in the elementary occupations, with a high proportion of part-timers, women may be highly affected.

According to EU figures, atypical working hours are increasing in the EU, while at the same time the gender gap seems to be decreasing slightly. Overall, for both genders, night work seems to have decreased since 2000, while more women and men work shifts and on Sundays. Approximately as many women as men work on Saturdays, a little more than a quarter of all workers. Although women report less shift work and atypical hours, women in the Horeca sector and retail, as well as workers in home services (care and cleaning), do work weekends, variable hours and evenings. Healthcare workers work shifts and nights. If working time patterns are more irregular, this may diminish their ability to reconcile their work and private life. As an example, in the restaurant sector 28.6 % of the workers reported long working days, only half (50.5 %) have fixed starting and finishing times, almost a third work shifts (29.9 %) and the mean working hours are among the highest. Accordingly, fewer workers in this sector reported caring for children, which is also consistent with the younger age of workers in hospitality.

It can be concluded that the definite conditions of work, regarding not only physical but also organisational risks, need to be considered when risk assessment is carried out. The differences in patterns of work organisational features between sectors are more marked than the differences that can be found on average between gender groups.

Avoiding assumptions is key to putting in place the appropriate prevention measures and providing the many female workers in these sectors with appropriate training and support.

3.10.2 *Physical risks*

The section on material and physical hazards reveals quite similar results. Compared with their female counterparts, male workers are more often exposed to noise, vibrations, extreme temperatures and dangerous substances such as smoke, dust, powder, vapours and radiation, as well as other chemical substances, at work. However, because female workers are more segregated into fewer sectors and often perform different tasks from men, it is important to extract the data by sector and occupations. After data extraction, it shows that women are highly exposed to noise in the textile and food production sectors. Moreover, sudden and disturbing noise can be considerably more common for female workers in the education, health, hotel, restaurant and catering and the social sectors, as well as in call centres or other offices (EU-OSHA, 2005b). In education, noise can be above limits in recreational areas and school workshops, and causes voice disorders in teachers. As teaching practices have changed and pupils participate more in class, noise levels have risen and teachers have to raise their voices more often. One study illustrative of gender-sensitive workplace risk assessment found that female musicians might be exposed to high noise levels due to the traditional orchestral line-up (Huber and Novak, 2005). Noise may also interact with ototoxic chemicals, distract workers and interfere with safety measures, such as acoustic signals, thereby causing increased accident risks. Medium-level noise has been shown to cause cardiovascular diseases in environmental studies. Together with increased stress, this may also impact on female workers' health. These data reflect what was found in 2003 (EU-OSHA, 2003a): that women are affected by noise in certain sectors and that this should be taken into account when reviewing noise as an occupational hazard. Tinnitus, in addition to hearing loss, should be considered when screening for health problems, as national surveys show that it may affect a notable proportion of female workers.

With regard to vibration, similar results were found. Although at first glance male workers seem to be more exposed to vibration than their female counterparts, a high proportion of female workers (30 %) in the manufacturing sector are exposed to vibration, which may cause specific MSDs (EU-OSHA, 2010).

Additionally, the fourth EWCS revealed that female workers are more often exposed to infectious materials such as waste, bodily fluids and laboratory materials at work (Eurofound, 2007a). Among the exposures to dangerous substances, handling chemical substances and infectious materials is most common in the female-dominated health sector, but also in other service occupations. These exposures are often overlooked. Moreover, workers in service sectors, such as healthcare, hairdressing and cosmetology may also be exposed to dangerous carcinogens at work. In 'green jobs' in waste management women may be exposed to asbestos and silica dusts, as well as to a variety of chemical substances and biological agents. Exposures in these occupations, but also in other tasks such as cleaning, may be varied and are often unpredictable. This is why it is crucial to avoid assumptions about what women are exposed to and to apply the same principles of risk assessment, substitution and elimination, and the hierarchy of prevention measures as defined in the EU prevention approach for other workers. Consultation of female workers is also key, as is appropriate training.

In addition to dangerous chemical substances, the prolonged and frequent use of water or the contact with food and animals may also lead to skin dermatitis among cleaners, hairdressers, cooks and catering workers, and in agriculture and gardening (EU-OSHA, 2008d).

Higher proportions of women than men can be expected to experience repetitive movements at work in the female-dominated Horeca sector, as well as the healthcare sector (EU-OSHA, 2010). When extracting the data by sector and occupations, 43.4 % of workers are exposed to carrying/moving heavy loads in the female-dominated healthcare sector (EU-OSHA, 2010). Similarly, female workers lift and move people more than their male counterparts. This is in particular true for the healthcare sector, in which 46.5 % of the female workers are exposed to lifting/moving people.

Extracting data by sector and occupation is plausible, as women work in fewer specific sectors and perform different tasks than their male counterparts. While workers in the Horeca sector more often perform monotonous and repetitive tasks and carry heavy loads, while also being exposed to tiring postures, their counterparts in the healthcare sector reported complex tasks, frequent interruptions and working with computers. Both groups are highly exposed to prolonged standing and other multiple physical and organisational risk factors that may lead to MSDs.

Higher proportions of women than men can be expected to report tiring and painful positions at work in the female-dominated Horeca sector, as well as the healthcare sector (EU-OSHA, 2010). Although the

occupational disease figures do not reflect these findings, the female-dominated service professions are exposed to risk factors related to MSDs. Female-dominated occupations, such as electronic equipment assemblers, cashiers in supermarkets and textile and sewing workers, as well as typists and computer workers, are at risk of musculoskeletal pain in the neck and shoulders because of repetitive movements of the upper limbs. Moreover, carpal tunnel syndrome appears to affect more female than male workers (EU-OSHA, 2010). MSDs remain an occupational concern for women as they continue to be employed in jobs that involve 'awkward postures, monotonous and repetitive tasks, inappropriate work methods and work organisation ... and heavy lifting' (EU-OSHA, 2003a: 40).

Finally, according to the fourth EWCS, in 2005, more female workers (48.5 %) than their male counterparts (43.1 %) worked with computers. However, for higher educational levels, the gender differences were significantly smaller. Furthermore, female workers used the Internet and e-mail more often at work than the opposite sex. These increases can partly be explained by the increasing number of female workers in public administration.

3.10.3 Training, consultation and information

A comparison of the two EWCS reports seems to agree upon working-time arrangements of women working part time, which makes it easier to reconcile work and family duties compared with those of men. However, as mentioned before, these advantages may be outweighed by the increase in non-standard working patterns (evening work and shift work, irregular working days) and less access to training, OSH services and consultation.

Although the managerial responsibilities of women have certainly also increased, they are still under-represented in this area, as highlighted previously (see EU-OSHA, 2003a). This may impact on their opportunities to voice their concerns and influence their conditions actively, as well as ensuring access to OSH services.

With regard to workers' job content, on average female workers continue to have fewer training opportunities and carry out more monotonous work, and their work involves team work less often than for their male counterparts. Female workers, in particular those in the oldest age groups, with lower qualifications and in blue-collar occupations, receive fewer opportunities for learning and training.

The results on consultations about work organisation and workplace health and safety protective measures consistently reveal that the majority of workers believe they are effectively consulted with regard to health and safety risks at their workplaces. Nevertheless, women are still highly represented in the informal sector, which can often be characterised by poor working conditions. This will be explored further in Chapter 7. These workers are less likely to have adequate protection. They may be more vulnerable to exploitation and discrimination, as well as less covered by inspection and prevention services. Consultation of these workers, as well as the implementation of preventive measures at their clients' premises, are a particular challenge for their employers, but also for the OSH authorities who have to ensure that they are adequately protected. Also, it may be assumed that these workers, as well as those in part-time schemes, may not have been well covered by the surveys consulted for our research. Being difficult to reach, they may generally be excluded from the considerations.

All in all, to ensure that adequate measures have been taken when improving conditions, the tasks and working conditions of female workers should be analysed in a gender-sensitive manner, in order to improve their health and safety at work. Assumptions about the risks and hazards they may be exposed to should be avoided. Consulting women at work is key to an effective risk assessment.

3.10.4 Findings and recommendations

Main points — trends and policy-relevant messages

- As the previous chapters have shown, women still do the bulk of childcare and housework. When introducing flexible work schemes, women's need to reconcile private and working life should be considered, if detrimental effects on their health and safety at work are to be avoided. The increase in non-standard working schemes and shift work may have contributed to female workers' higher stress levels and higher prevalence of MSDs.
- Lack of education and training for women could result in negative outcomes. Jobs in the service sectors, such as the hospitality industry or healthcare, also involve multiple accident risks that may lead to serious health impairments. As opposed to the general decreasing trend, national accident figures are stagnating or even increasing in these sectors.
- Employment in public administration, customer services and use of computers may have contributed to the higher rate of static work and prolonged sitting, as well as increasing rates of some MSDs. Equally, rising employment in services, particularly in education, retail and healthcare, contributes to higher rates of prolonged standing.
- MSDs remain an occupational concern for women as they continue to be employed in jobs that involve awkward postures, monotonous and repetitive tasks, inappropriate work methods and work organisation and heavy lifting.
- Interestingly, the exposure to multiple risks, for example related to MSD risk factors, is increasing. In recent years the increase in work intensity has been greatest for female workers, with women working longer hours in unpaid activities, including housework and caring for children and adult dependants. Gender-specific research should be enhanced, in order to be able to assess the workplace hazards and develop gender-specific measures that include both female and male workers. Work organisational as well as physical risks should be considered together when assessing the ergonomic risks to women.
- At first glance, male workers often seem to be more exposed to specific risks than their female counterparts. However, because female workers are segregated to a greater extent into fewer sectors and often perform different tasks from men, they may be even more exposed in some instances than their male colleagues, as could be demonstrated for the Horeca, healthcare and cleaning sectors, and also in the traditional sectors of agriculture, manufacturing and transport. Data regarding OSH risks should be extracted by gender and sector/occupations. These types of extractions may reveal high exposures and specific risks to women, especially for female-dominated service sectors.
- Tinnitus, together with hearing loss and voice disorders, should be considered when screening for health problems of female workers in the service sectors.
- With a higher number of female workers working as technicians, professionals and in sectors such as transport and agriculture, risk factors traditionally regarded as affecting male workers should also be considered when assessing risks to the many women now working in these professions. Noise, vibration and working with machinery are relevant to women in many of these jobs.
- There is also a rise in elementary occupations, which may impact on the overall rates of exposure to ergonomic and work organisational risk factors. While highly exposed to physically strenuous work combined with low control, these workers are often part-timers who may not have been reached by surveys, OSH services, training schemes or qualification measures.
- When carrying out a risk assessment, assumptions of what workers are exposed to should be avoided. The specific conditions should be assessed and women should be consulted about their risks. In the assessment, risk factors should be included that are traditionally attributed to male workers, such as noise, vibration or physically strenuous work.

Recommendations for research, monitoring and OSH enhancement

- In order to ensure effective prevention and avoid gender bias, a gender-sensitive approach to OSH should generally be taken. In order to strengthen the awareness of the need for such an approach, stakeholders should discuss OSH activities with regard to female workers.
- In order to improve the working conditions and organisation, so that they are suited to women and men, more training opportunities and other preventive measures should be offered to women. This should be done especially with regard to older female workers, including those in blue-collar occupations, and to women working part time who receive fewer opportunities for both training and learning new things at work. Lack of training is more common among women.
- It is of utmost importance to protect female workers from risks related to dangerous substances, which are often used in female-dominated sectors such as the healthcare and cleaning sectors, while exposures often remain unassessed. Women may also be exposed to carcinogenic substances in manufacturing, agriculture and service occupations. These exposures may be unpredictable and unintentional when they clean or handle waste. Therefore, directives requesting employers to replace dangerous substances, as well as the hierarchy of control measures set by the EU prevention approach, should be effectively enforced at enterprise level and by labour inspectors. It is important that the actual tasks and work contexts experienced by female workers are examined in order to enable successful prevention, as well as research and monitoring.
- When assessing risks for female workers, multiple exposures should be taken into account. Multiple lower level exposures may add up. Many female jobs involve multiple ergonomic, physical and organisational risks that remain unassessed. Little is known about their cumulative effects. Research, monitoring and prevention need to address the multiplicity of risk factors in a holistic approach.
- Workplace risk assessment of exposures for female workers should therefore be conducted with a wider approach that includes the wider societal context and their specific living conditions. Worker consultation is crucial to assess the needs and constraints of female workers in every enterprise.
- Female workers on business trips or workers who have to work at their clients' or patients' premises may not be covered by the usual OSH structures, such as OSH preventive services and inspections by authorities. These workers may be more vulnerable and dependent on their clients, while at the same time have limited scope for adapting their working conditions. They may also work for several employers and in several jobs. Policy, research and prevention should address the risks that female workers on farms, in homes (home care, cleaners, childcare), driving vehicles for work or at clients' premises may incur.

4 Exposure to violence, intimidation and discrimination at the workplace

4.1 Overview

This chapter focuses on trends in violence and harassment. As the two are interrelated, the discussion will reflect this. These two topics are much more relevant for women than they are for men. Violence and sexual harassment have been described as daily occurrences for women who work (Crull, 1982) and violence against women is described as an issue that is not well understood (Shaw, no date). It is therefore essential to consider them when assessing exposures and risks that impact on women.

International surveys have found that between 40 % and 90 % of women suffer some form of violence and harassment during the course of their working lives (ILO, 2008). Bullying, harassment, violence and threats, along with different kinds of discrimination, have been found to contribute to psychological ill health and stress (Leka et al., 2008).

Although violence and sexual harassment are not sector or industry specific, Polychronakis et al. (2008) highlight that women are more likely to encounter the workplace hazards of violence and harassment in the sectors and types of jobs that women occupy, that is in the health service sector, cleaning industry, hospitality services, call centres and computer workstations, among office employees and in agriculture and livestock farming.

Although violence and harassment are not specific to one sector or industry, they are more likely to happen in large organisations and have been identified as a rising concern that poses a psychological risk factor within organisations (Eurostat, 2010a). Further, together with time pressure or overload of work, they are the main factors that could adversely affect mental or physical well-being (Eurostat, 2009a).

Psychosocial Risks Permanent Observatory of Unión General de Trabajadores (Spain)

The General Union of Workers of Spain (Unión General de Trabajadores, UGT) has set up the Psychosocial Risks Permanent Observatory to compile analytical tools, research, policies and good practice. It aims to provide a space for exchange of ideas and best experiences. The observatory has published three annual monographs compiling studies, models and experiences on psychosocial risks at work from Europe and the Americas, and regarding policy initiatives in Europe. The latest monograph outlines labour inspection actions to tackle psychosocial risks at work.

There are substantial differences in the working lives of women and men, and this affects their health, according to a report by the Psychosocial Risks Permanent Observatory of UGT. Women are less likely to have planning responsibilities in their jobs, more likely to be exposed to monotonous tasks, less likely to work in jobs involving problem-solving and learning, more likely to have their work interrupted to deal with unforeseen tasks and less likely to receive training. Women in professional jobs also have lower work autonomy than male professionals.

However, women may be disproportionately exposed to these factors because of job segregation and their greater caring and home responsibilities. In addition, sexual harassment, discrimination, blocked career advancement and disrespectful treatment are stressors more common in women's working lives than in men's. Additional stressors for women in professional or managerial jobs include organisational politics, overload, roles and expectations concerning social–sexual behaviour and reconciliation of work and home.

Psychosocial risks have been considered as emerging risks in the field of OSH, owing to changes in society, work organisation and production methods. These risks demand new solutions, such as:

- taking a gender-sensitive approach to risk assessment and ensuring that information and training on gender issues in OSH are provided;
- facilitating the participation of women in OSH consultation, decision-making activities and safety committees;
- promoting research into risks or jobs of particular relevance to women, where these have been neglected; and
- developing new OSH policies in a gender-sensitive way.

The observatory provides manuals of good practice to tackle third-party violence in the female-dominated sector of Horeca and retail, education and transport.

Violence and harassment are work stressors and may contribute to how successful women are at maintaining their psychological and physical well-being at the workplace. Most importantly, they influence intention to quit and of course actually leaving jobs, which has a negative impact on women's economic security (Crull, 1982). As outlined in other chapters in this report, many women work in jobs that are low paid, part time or temporary and do not receive pay that is the equal to what men receive for doing the same work. These factors may therefore contribute to those that influence why women, more than men, have less disposable income as they age.

4.2 Violence, harassment and female workers

Violence can originate either from workers within an organisation or from individuals external to the organisation. When it is external to the organisation, it may include 'insults, threats, or physical or psychological aggression exerted by people from outside the organisation, including customers and clients, against a person at work that endangers their health, safety or well-being. There may be a racial or sexual dimension to the violence' (EU-OSHA, 2002a). However, the threat of violence is more common than actual physical violence (Eurostat, 2010a).

Women encounter more violence than men when at work (Table 25). In the EU in 2000, 6.4 % of female workers and 4.7 % of male workers reported experiencing physical violence when at work. This violence was more likely to be instigated by individuals external to the workplace, for example clients (4.5 % and 3.5 %, for men and women respectively) than from work colleagues (1.9 % and 1.2 %, respectively). This violence was highest among health and social care workers (13 %), with this sector also reporting the highest rate of intimidation (15.7 %). Overall, 10.2 % of female workers and 7.3 % of male workers reported having been subjected to intimidation at work during 2000. Also, 3.5 % of female workers reported experiencing unwanted sexual attention.

Table 25: Violence, intimidation and discrimination in the workplace in the EU-15 in 2000

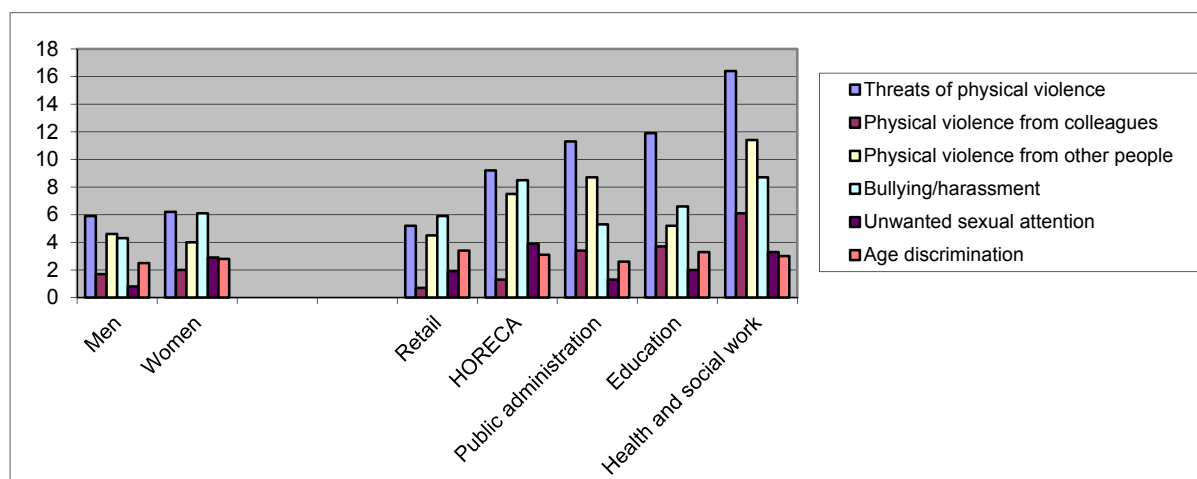
Workers subjected to	Female (%)	Male (%)
Physical violence by people from the workplace	1.9	1.2
Physical violence by other people	4.5	3.5
Intimidation	10.2	7.3
Gender discrimination	3.1	0.8
Unwanted sexual attention	3.5	0.9
Age discrimination	3.0	2.8

Source: EWCS 2000, European Foundation for the Improvement of Living and Working Conditions

Female (6.2 %) and male (5.9 %) workers can experience threats of physical violence in similar proportions. The risk of violence was especially high for women in white-collar professional and managerial positions and for men in white-collar clerical positions. Whereas physical violence from colleagues is seldom experienced (2.0 % for female vs. 1.7 % for male workers), physical violence from other people occurred more often (4.0 % for female vs. 4.6 % for male workers) (Eurofound, 2007a). In particular, young men with less working experience seem to have a higher than an average risk for third-party violence. Generally, male workers seem to have a higher risk of being physically assaulted (EU-OSHA, 2011b).

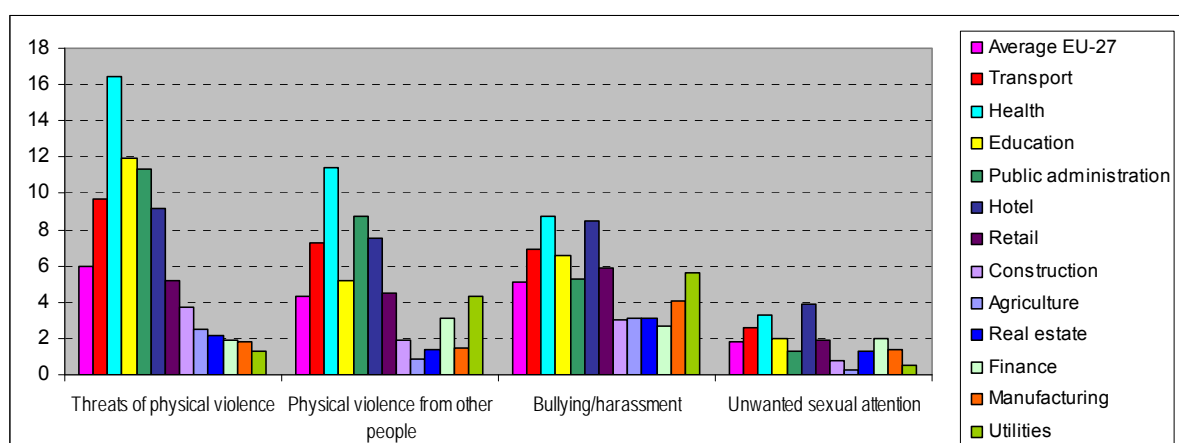
In general, the risk of experiencing both threats of violence and violence are greatest in the healthcare sector, public administration and defence (Leka et al., 2009). Similar estimates, as compared with the European figures, can be observed in the British Crime Survey 2008/09 (HSE, 2009a), which indicates that 1.5 % of men and 1.3 % of women were victims of violence in the previous 12 months. The highest-risk age groups were ages 35–44 and 55–64 for women and ages 25–34 and 35–44 for men. Some occupations are seeing an increase in violence. One of these is teaching, in which women make up 70 % of the profession and one in which one-third of the six million teachers in the EU are over the age of 50 (Hingel et al., 2009). Violence in school can emanate from several sources –pupils, pupils’ parents and other teachers. However, this is not a well-researched area and more research needs to be done into the causes and consequences, and to generate possible solutions to address violence in schools (ETUCE, 1999) (Figures 53 and 54).

Figure 53: Violence and harassment by gender and in female-dominated sectors, EWCS 2005



Source: EWCS2005

Figure 54: Overview, percentage of workers reporting violence, harassment and discrimination, by sector, EWCS 2005



Source: EWCS2005

There are considerable differences between the various Member States; these differences may be due to under-reporting in some countries and greater awareness in others. For example, in northern Europe the occurrence of physical violence at work was highest, averaging at about 8 %. It was particularly severe in the United Kingdom and the Republic of Ireland. However, in southern Europe the incidence was much lower, averaging at around 3 % in countries such as Spain, Italy and Portugal. There was a higher incidence of women exposed to unwanted sexual attention in the Czech Republic (10 %), Norway (7 %), Turkey, Croatia (6 %), Denmark, Sweden, Lithuania and the United

Kingdom (5 %), but a lower incidence (1 %) in some southern European countries (Italy, Spain, Malta and Cyprus). What constitutes an act of violence can vary from one country to another according to sensitivity to and awareness of the issue, so these percentages do not necessarily reflect the real extent of the problem (Eurofound, 2007a).

Research shows that 62 % of Europeans think that action to combat violence against women should be a priority, while the majority of the Member States do regard it as a priority issue (EC, 2010e).

While the risk of workplace violence is low, in the United Kingdom 24 % of those who did experience violent acts at work in 2008/09 were subjected to three or more incidents (RoSPA, 2010). Women might experience violence both at home and at work. For those who experience violence at the hands of a husband or partner, they are more likely to have poor general health and problems with walking and doing daily activities, pain, memory loss, dizziness and vaginal discharge (Garcia-Moreno et al., 2005). The impact of this non-work violence will extend into the working environment and may adversely affect the effectiveness of how women work. In addition, women who are abused are more prone to emotional distress, to have considered or attempted suicide and are likely to be affected with physical and mental symptoms for a lengthy period after the end of the violence (Garcia-Moreno et al., 2005). External workplace violence increases the likelihood of women reporting work-related fatigue (Verdonk et al., 2010).

Special features of work and work environment and structural and situational factors increase the risk of violent assaults at work (see NIOSH, 1996; Chappell and di Martino, 2000, 2006). These risk features include:

- handling money or valuables (cashiers, transport workers, bank and post office staff, shop assistants);
- guarding valuable property or objects;
- dealing with the public;
- providing care, advice, education and training (nurses, ambulance staff, social workers, teachers);
- working at social functions;
- carrying out inspection or enforcement duties (police and traffic wardens, ticket inspectors);
- working with the mentally disturbed, drunk or potentially violent people (prison officers, bar staff, mental health workers);
- working alone (home visitors, taxi drivers, domestic workers, small shops, cleaning, maintenance and repair);
- working in a mobile workplace;
- working at night or early in the morning; and
- working in a high-crime area.

The definition of violence in the workplace is diverse and might range from the use of language or actions to make an individual feel a level of discomfort in the workplace to threats and harassment, as well as actual physical harm (Quick et al., 2004). Workplace violence is more likely to occur when engaging with the public, exchanging money or delivering goods and services (Quick et al., 2004). Homicide is the leading cause of occupational death among women in the USA (Quick et al., 2004; Anderson et al., 2005), and violence is a leading cause of accidents for women in the EU.

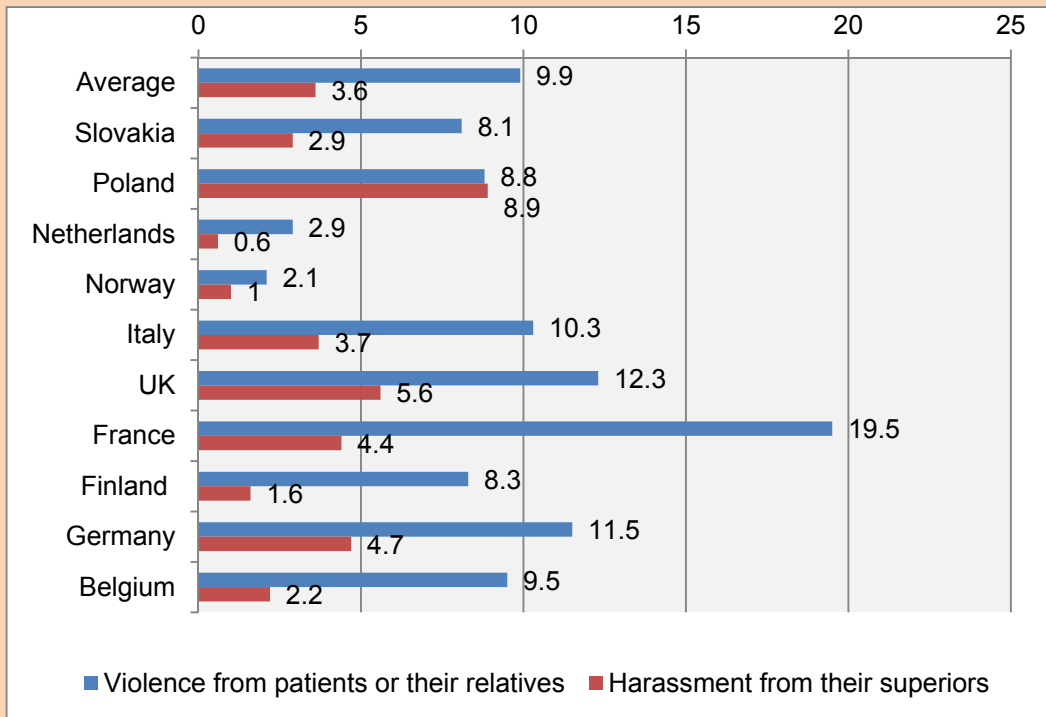
Preventing violence in retail — Germany (EU-OSHA, 2007b: 49)

Half of the fatal accidents reported by BG Einzelhandel (the professional association for the retail trade) in Germany in 2001 were related to physical violence. In 2005, 112 cases of newly compensated workplace injuries were related to violence. This is why BG Einzelhandel has issued guidance for the prevention of shoplifting and for the handling of shoplifters, the handling of cash and prevention of robberies and what to do after an attack. It includes brochures, technical guidance and audiovisual training materials. BG Einzelhandel has also included the issue of robberies in guidance for petrol stations.

NEXT — premature departure of nurses from their professions

A European project, NEXT, on premature departure from the nursing profession (NEXT, no date) involved 10 EU countries. The results (Estryn-Behar et al., 2008) showed that exposure to frequent violent events was highest among nurses from France (39 %), the United Kingdom (29 %) and Germany (28 %). In Norway (9 %) and the Netherlands (10 %) nurses were less exposed to frequent violent events. The results were similar when violence from patients/their relatives was examined (Figure 55).

Figure 55: NEXT project percentage of nurses who often (at least once a week) encounter violence from patients or their relatives or harassment by their superiors



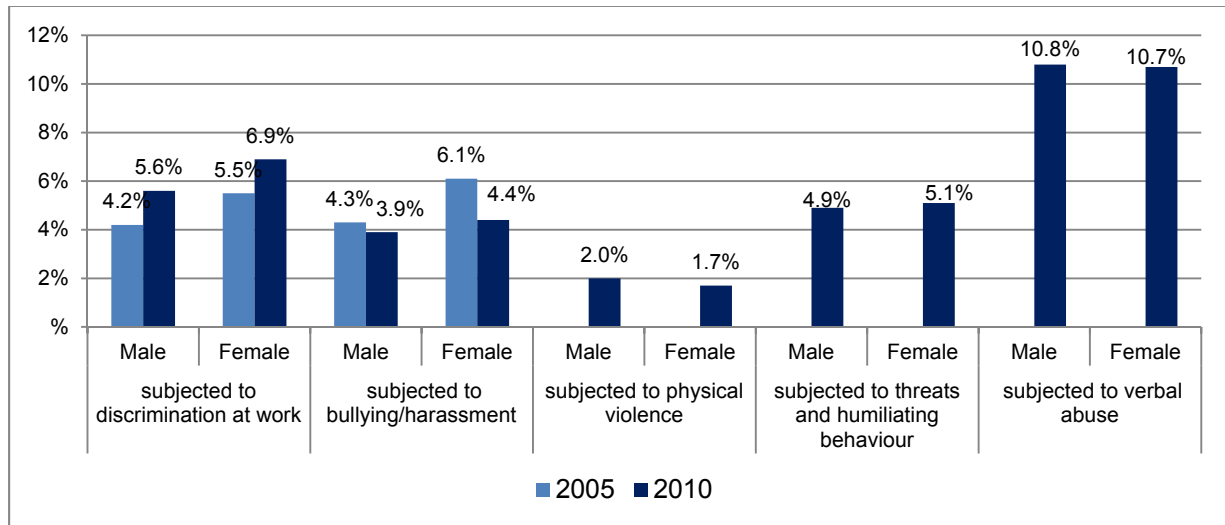
Source: NEXT Study, 2003–2005

Around 8.9 % of nurses in Poland were exposed to bullying by their superiors, which is a much higher proportion than their counterparts from other EU countries (average 3.6 %). The lowest risk of experiencing harassment from management was found in the Scandinavian countries, namely Norway and Finland, as well as the Netherlands and Belgium (Figure 55).

No significant gender differences were observed in terms of physical violence or threats of physical violence in the data collected through the fourth EWCS. Burchell and colleagues (Eurofound, 2007f) conducted a secondary analysis of the survey and found that, among women, the overall risk of threats of violence rises for part-time workers, while the risk of violence from people other than colleagues was higher among full-time workers. The risk of workplace violence from other people (e.g. clients, customers, patients) was particularly high for women in white-collar managerial and professional positions and for men in white-collar clerical roles and blue-collar operating and labouring manual workers.

It is important to note that certain groups of women are particularly vulnerable to violence. These include women belonging to minority groups, indigenous women, refugee women, migrant women, women living in rural or remote communities, destitute women, women in institutions or in detention, female children, women with disabilities, elderly women and women in situations of armed conflict (United Nations Division for the Advancement of Women, 2005).

Figure 56: Self-reported discrimination at work, threats, violence and harassment, by gender, 2010 (%)

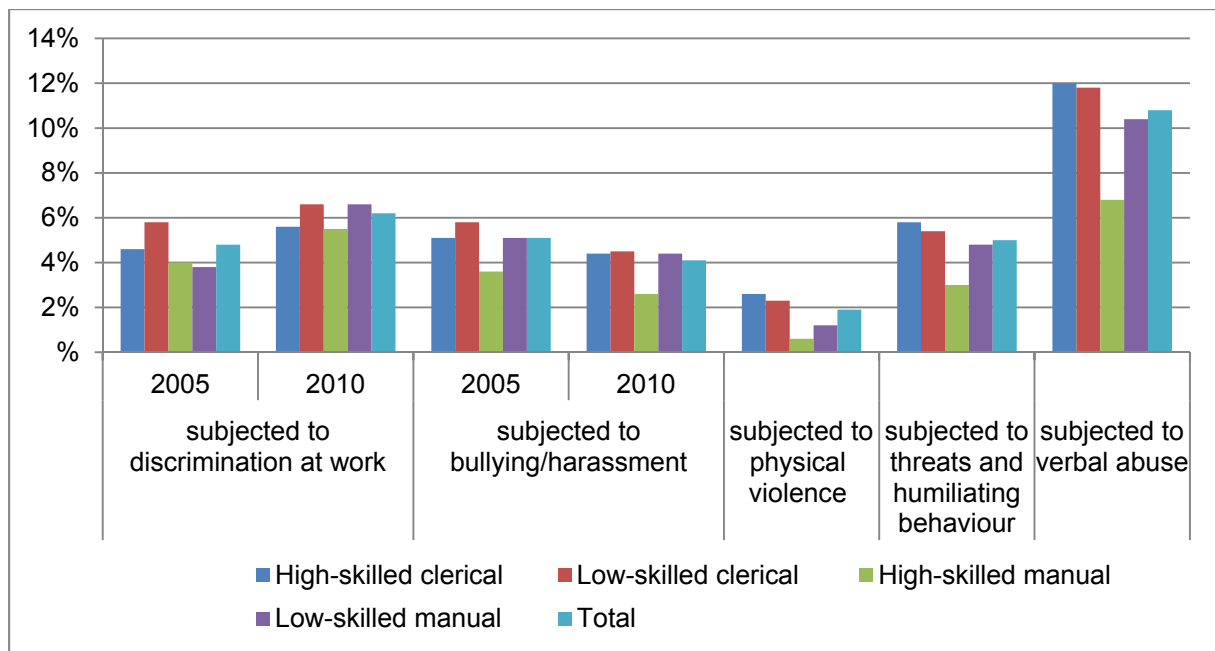


Source: EWCS 2010

According to the latest round of the EWCS in 2010, although a detailed analysis by gender is not available, similar issues can be identified as before:

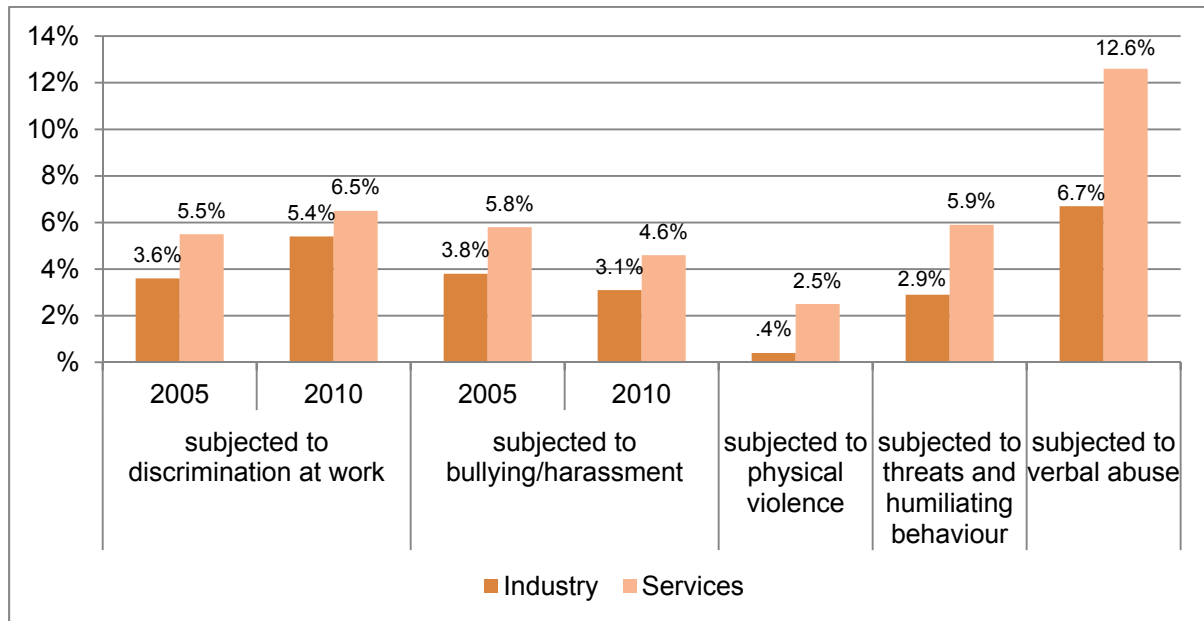
- a high number of workers report being exposed to verbal abuse;
- women report being more exposed to discrimination at work;
- workers in highly qualified clerical positions report more verbal abuse, threats and humiliating behaviour, but workers in blue-collar occupations are catching up on discrimination at work; and
- the service sectors are much more exposed to all forms of discrimination, harassment, violence and verbal abuse (figures 57 and 58).

Figure 57: Self-reported discrimination at work, threats, violence and harassment, by occupation, 2010 (%)



Source: EWCS 2010

Figure 58: Self-reported discrimination at work, threats, violence and harassment, industry and services, 2010 (%)



Source: EWCS 2010

Bullying and harassment accounted for the highest proportion of discrimination at work; 4.3 % of male workers and 6.1 % of their female counterparts suffered from bullying and harassment, with women under 30 at the greatest risk (8 %). Interestingly, the sectors in which women constitute the majority of the workforce, including education, healthcare and social work, and hotels and restaurants sectors, reported a higher than average number of incidents of bullying and harassment (Eurofound, 2007a) (Figures 53 and 54).

4.3 Harassment

Harassment can take various forms in the workplace, from bullying (mobbing or moral harassment) to harassment to sexual harassment. They all adversely affect the mental well-being of workers, and may be covert or overt, subtle or obvious.

In terms of definitions, ‘workplace bullying is repeated, unreasonable behaviour directed towards an employee, or group of workers, that creates a risk to health and safety’ (EU-OSHA, 2002b).

Salin (2003) contends that this could include repeated and persistent negative acts, such as social isolation, silent treatment, rumours, attacking a victim’s private life or attitudes, excessive criticism or monitoring, withholding information, depriving responsibility and verbal aggression.

In more recent years cyber-harassment or cyber-bullying has come to the forefront with the more widespread use of the Internet in homes and businesses as an established work tool.

Harassment is, according to the EU equal treatment Directive 76/207, ‘where an unwanted conduct related to the sex of a person occurs with the purpose or effect of violating the dignity of a person, and of creating an intimidating, hostile, degrading, humiliating or offensive environment’ (Council of the European Union, 2002) .

Sexual harassment is defined as ‘where any form of unwanted verbal, non-verbal or physical conduct of a sexual nature occurs, with the purpose or effect of violating the dignity of a person, in particular when creating an intimidating, hostile, degrading, humiliating or offensive environment’ (Article 2(2) of Directive 76/207/EEC — FGS Consulting and McGolgan, 2004: 2).

More importantly, harassment and sexual harassment are both acknowledged as forms of discrimination on the grounds of sex and fall outside the established principle of equal treatment between men and women (FGS Consulting and McGolgan, 2004).

4.3.1 Workplace bullying (mobbing or moral harassment)

It has been proposed that the majority of bullying is ‘top down’ in nature, and as such may be increased within organisations with a culture of workplace disadvantage (Kelly, 2006) and in those with cultures and climates that indirectly support such behaviours (Hodgins, 2008). The same has been proposed for harassment in general (Raver and Nishii, 2010). The workplace culture and leadership behaviours therefore are linked to whether or not bullying (Crothers et al., 2009), or harassment in general (Raver and Nishii, 2010), occurs.

Several researchers (Rayner, 1998; McAvoy and Murtagh, 2003; Salin, 2003) have drawn attention to the factors that hinder or advance bullying within organisations, which include:

- power balances/imbbalances;
- satisfaction/dissatisfaction;
- perceived costs of bullying;
- internal competition;
- nature and extent of workplace changes;
- culture of tough/inclusive management;
- absence/presence of management ownership, especially by chief executive officers;
- transparency and openness;
- effectiveness of policies and procedures to deal with bullying; and
- level of access to external forms of support and grievance processes.

Bullying is considered as a form of violence and is accepted as detrimental to the well-being of workers (Crothers et al., 2009) as it contributes to poorer health (Hodgins, 2008). It is important to note that bullying against women is not only as a result from harassment from men; women also bully women. However, women are more likely to use relational aggression, such as social exclusion, social isolation and social alienation, when they bully (Crothers et al., 2009).

ETUCE Second Survey on Cyber-Harassment of Teachers (EU)

The European Trade Union Committee for Education (ETUCE/CSEE) has published the results of a second survey of its member organisations on the topic of cyber-harassment. The survey explored national teacher unions’ actions and strategies to gather ideas for further development and improvement of anti-cyber-harassment measures at national union level. The survey was also used to gather good practices to revise the ETUCE Action Plan on Violence and Harassment in Schools and include cyber-harassment. The most frequently cited cause of cyber-harassment was gender, followed by racial or ethnic origin, sexual orientation, age, disability, religion and belief. More than half of the respondents referred to other causes of cyber-harassment. These include teacher appearance; teacher qualifications; pupil–teacher relations; personal dislike; intimidating, harassing or ridiculing teachers; aggressive behaviour; and body image or size. The most frequently cited media type used for cyber-harassment was mobile phones, followed by e-mail, social networking sites, websites, blogs, text messages, instant messaging and chat room. The survey report shows that an increasing number of national teachers’ unions have established or are developing strategies to prevent cyber-harassment against teachers and school staff. The survey contributions show a wide range of interesting approaches of how teacher unions can tackle cyber-harassment.

Cyber-harassment, as a relatively new form of bullying, is prevalent among teachers, and should be thought of as a psychosocial hazard within their working environment, ‘as it can deeply affect the personality, dignity and integrity of the victim’ (ETUCE, 2010: 7).

Cyber-harassment could be considered as the use of information and communication technologies for repeatedly deliberate and hostile behaviour by an individual or a group, with the intention to harm others. It ranges from, for example, continuous e-mail sending, threats and subjecting the victim to ridicule in forums to posting false statements. The motives range from emotional reasons to personal dislike and conflict of interests at work. Other motives can be prejudices on the grounds of gender, racial or ethnic origin, religion and belief, disability, age, sexual orientation and body image. Cyber-harassment against teachers can threaten teachers’ current and future employment opportunities and their professional reputation.

4.3.2 Sexual harassment

Another gender difference can be found regarding unwanted sexual attention. Generally, unwanted sexual attention is rare (reported by 2.9 % of female vs. 0.8 % of male workers in 2005). However, sexual harassment is reported more often by female than by male workers in Europe (three times more often in 2005). The gender difference is even clearer when results are viewed at the country level. Young women aged below 30, and women in white-collar occupations — particularly in management — are especially at risk of unwanted sexual attention. Moreover, women on fixed-term contracts or temporary agency workers (5 %) reported higher levels than those on indefinite contracts (2 %) (Eurofound, 2007a). When sexual harassment occurred, male colleagues or supervisors more often harassed their fellow female colleagues, while female colleagues or supervisors less often harassed female colleagues. Interestingly, in one study, among women in subordinate positions, such as secretaries, waitresses and sales assistants, more than half of the subjects of passive sexual violence had been exposed to crude jokes, cynical allusions or had been touched and molested. Some women had been obliged to leave their job (Minnesota Advocates for Human Rights, 1999).

In the EWCS, unwanted sexual attention was most often reported in the Horeca sector (4 %) (Eurofound, 2007a). The Work and Health Survey in Finland mirrored this result (Perkiö-Mäkelä et al., 2006).

Women aged between 15 and 29 reported sexual harassment more often than older women. The rate of sexual harassment was higher for employed workers than for the self-employed. Women on fixed-term contracts or temporary agency workers reported higher levels of sexual harassment than those on indefinite contracts.

Sexual harassment is on the agenda of Member States, and Directive 2002/73/EC states that 'Member States shall designate and make the necessary arrangements for a body for the promotion, analysis, monitoring and support of Equal Treatment of all persons without discrimination on the grounds of sex'.

According to a 2004 study, 25 countries within the EU had facilities to address complaints in connection with sexual harassment/harassment based on sex. Twenty-three countries were able to support complainants in bringing complaints in connection with sexual harassment. The support procedures included the employment of preventive consultants (Belgium) and 'trust persons' (the Netherlands) to provide support and advice. Trade unions and other specialist organisations were also described as providing legal advice and other support to victims. The following 19 countries had been involved in initiatives designed to reduce the incidence of sexual harassment/harassment based on sex (Austria, Belgium, Cyprus, Denmark, Estonia, Finland, France, Hungary, Ireland, Italy, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovenia, Spain, Sweden and the United Kingdom). In addition, six countries noted that research on sexual harassment was a priority and was conducted on a regular basis (Austria, Finland, Italy, Malta, the Netherlands and Sweden). However, none of the countries/organisations surveyed had dedicated research personnel in place to examine or monitor the issue on an ongoing basis (FGS Consulting and McGolgan, 2004).

Although it is proposed that a culture or climate that is intolerant of sexual harassment should make it easier for women to address any such action, in reality women's coping strategy is to use a less direct and forceful approach (Fitzgerald et al., 1995). Some of the ways by which women cope are to avoid the person harassing them or to try to placate the offender (Schneider et al., 1997).

4.4 Women in male-dominated professions

Women in male-dominated professions generally tend not to be accepted into the environment and are made to feel unwanted, experience gender harassment and discrimination and feel pressured to prove they can work as well as men. This harassment is even more severe for women belonging to racial or ethnic minorities (McIlwee, 1982; Quinn and Woskie, 1988; Marshall, 1990).

Women employed in male-dominated environments might be subjected to sexual language and crude jokes, and made to feel as 'different' as possible (Watts, 2009b). Further, Watts (2009b) highlighted that within the construction industry individuals who are newly appointed managers and decide to take

advantage of part-time or flexible working are not seen as fully committed to the job. Women managers also need to break down the stereotypical view of what a manager is and of what women and men can achieve. Women within construction are also very 'visible' and what they do and how they do it is under constant scrutiny (Watts, 2009b). These views are especially relevant for women who may choose to use different work patterns to better cope with home and family commitments. This increased visibility of female managers then makes them vulnerable targets subjected to prejudice and hostile behaviours, and increases the pressures on them to meet the demands of their dual work-specific roles, i.e. as women and managers (Watts, 2009b).

Sexual harassment is also common in the police force. In Finland, about one in three female police officers were subjected to sexist language from colleagues or supervisors, and about half from clients. Twelve per cent had experienced sexual harassment from inside the workplace and 21 % from outside the workplace. Among men, 15 % had met with sexist language and 2 % sexual harassment inside the workplace, with 23 % experiencing sexist language and 12 % sexual harassment outside the workplace (Sainio et al., 2007).

One of the occupations that have seen a dramatic increase in female workers, at least in the USA, is long-haul truckers, and women currently account for between 6 % and 10 % of all truckers (Anderson et al., 2005). Anderson et al. (2005) found that 42 % of the 51 women they surveyed had experienced at least one type of workplace violence while working as a long-haul trucker. Further, 67 % had feared for their personal safety, with many of the women taking measures such as self-defence classes to protect themselves. A similar occupation, taxi drivers, shows that women in this field, in addition to experiencing general violence at the hands of customers, are more likely to be sexually assaulted and wish to leave on account of violence than their male colleagues (Westmarland and Anderson, 2001).

In the transport sector, workers were often found to be at the forefront of reorganisation and having to communicate organisational changes to clients, and therefore exposed to harassment. The report therefore recommended that reporting procedures be implemented and improved, and that the prevention of violent incidents and harassment by customers be included in general OSH management.

Recent EU-OSHA research on the transport sector (EU-OSHA, 2011a) had similar findings. While workers were increasingly exposed to violence, the possibilities for reporting and tackling violent incidents were limited. Workers were often found to be at the forefront of reorganisation and having to communicate organisational changes to clients, and therefore exposed to harassment. The report therefore recommended that reporting procedures be implemented and improved, and that the prevention of violent incidents and harassment by customers be included in general OSH management. It also recommended that workers be offered more support. Regarding female workers, the report found a lack of adaptation of physical and organisational conditions to female workers and recommended urgent implementation of changes. One study referenced in the report found double (racial and gender) discrimination against female public transport staff. Transport jobs with an increasing proportion of female workers were school bus drivers, and workers in public transport, taxi and courier services. Additionally, while often exposed to similar risks, support and administrative female staff were often overlooked. Typical examples are cleaners and office workers in the transport sector, but also hospitality workers on ships or trains.

4.5 Discrimination (sex, age, nationality, ethnic background, disability, sexual orientation)

Almost 42 % of the females who reported experiencing age discrimination also cited acts of bullying or harassment at the workplace, and almost 23 % of women who experienced age discrimination also reported gender discrimination.

Generally, the level of discrimination based on sex (c. 1 %) can be regarded as low at European workplaces. However, 2 % of women and 4 % of the female workforce under 30 years of age were affected by it in 2005 (Eurofound, 2007a). Recently, more women and men, including in manual jobs, report discrimination. Female workers returning to work from caring responsibilities, but also older ethnic minorities, as well as older disabled people, face multiple forms of discrimination. The

manifestations of discrimination among females returning to work from caring responsibilities include limiting their job responsibilities, unfair work allocation and denying them access to specific tasks. However, discrimination can be manifested in a less subtle way, for example by excluding older workers from training and hiring possibilities (Eurofound, 2008e).

Interestingly, almost 42 % of the females who reported experiencing age discrimination also cited acts of bullying or harassment at the workplace. This proportion can be compared with an overall average incidence of bullying or harassment of about 6 % among female workers. Moreover, almost 23 % of women who experienced age discrimination also reported gender discrimination, compared with about 2 % of female workers overall (Eurofound, 2008e).

Single Equality Scheme for the Health and Safety Executive, 2010–2013 (United Kingdom)

The United Kingdom's Health and Safety Executive (HSE) reviewed progress against existing equality schemes (for disability and gender 2006–9 and for race 2008–11) and the diversity action plan for 2008–9 covers all strands, that is race, disability, gender, sexual orientation, religion or belief and transgender, in particular:

- to promote equality of opportunity between men and women;
- to promote equality between persons of different racial groups and between disabled persons and other persons;
- to eliminate unlawful discrimination and harassment; and
- to promote good relations between people of different racial groups.

The scheme explains how HSE plans to meet its statutory duties to promote equality for all groups in society. Some of the actions highlighted include:

- Assessing functions and policies for their relevance to equality duties and prioritise them for future action, covering both the agency's public duties and those to staff. Policy-makers, operational staff, facility management managers, staff networks and trade union representatives were involved.
- A Diversity Steering Group (DSG) meets three times a year to monitor progress. It consists of a senior management team that includes trade unions and staff networks. External stakeholders are involved in the review.

A web-based tool to carry out equality impact assessments and assess human resources policies and functions. The tool involves a two-stage process:

- an initial screening to assess whether the proposed policy, service, project or procedure has potential equality implications for different groups; and
- a full assessment with detailed evidence analysis, stakeholder engagement and consideration of alternative approaches. The tool does not assume that, because a service is generally available to all, all will have equal access.

The Diversity Steering Group monitors its use in terms of the difference to service provision it has made:

- Internal consultation of trade unions and the staff networks for race, gender, sexual orientation, gender identity and disability. Use staff surveys as part of the reviewing progress.
- To research and develop options for a career development scheme for staff in under-represented groups to help them to compete for senior positions.
- Training and providing staff with a communications toolkit and key briefs on the website and intranet. Internal training courses for frontline staff are designed to help them deal with diversity issues that may arise, for example during a visit to an employer or when dealing with a member of the public.
- Engaging and involving external stakeholders. Reaching out to people and organisations with a particular understanding of diversity, to improve HSE policies and delivery and to ensure advice and information is widely accessible.

Regarding gender:

- Identify sectors where women and/or men are particularly at risk and ensure that example risk assessments for these areas include gender occupational health and safety issues.
- To promote gender-specific messages about risks to health in the workplace on the website.
- Address issues in relation to correct face-fit of respiratory protective equipment, particularly in relation to female face size/shape.
- Research into the reported association of shift work and breast cancer and other major diseases.
- Agriculture and food sector scoping study on respiratory disease in the bakery industry to include diversity issues of gender, age and race.
- Research the risk of mesothelioma in females as well as males.
- Continuation of research to estimate the occupational cancer burden in the United Kingdom, including breast and prostate cancer.
- Encourage more involvement of women in health and safety decision-making.

4.6 Health effects of violence at work, bullying and harassment

Workers who experience violence or bullying at the workplace have more work-related health problems than those who do not (Rogers and Kelloway, 1997). Wieclaw et al. (2006) examined the risk of depression and stress associated with exposure to violence and threats in the workplace. In total, 14,166 hospital inpatients and outpatients aged 18–65 treated for psychological or stress-related disorders during 1995–1998 were selected from the Danish Psychiatric Central Research Register, and 58,060 controls matched for age, sex and time, drawn from Statistics Denmark’s Integrated Database for Labour Market Research. The potential exposure to occupational violence was found to be associated with a significant increase in the potential risk of both depression and stress-related disorders in both women and men. The relative risk was found to increase incrementally with increasing prevalence of violence and threats.

Additionally, an above-average number of those exposed to bullying and harassment take time off work for work-related health problems (23 % vs. 7 %) (Eurofound, 2007a) and tend also to take longer sick leave. A report by the World Health Organization indicates that violence and harassment at work has immediate effects on women, including a lack of motivation, loss of confidence and reduced self-esteem, depression and anger, anxiety and irritability. Over time, these symptoms are likely to develop into physical illness, mental disorders and an increase in risk behaviours such as tobacco, alcohol and drug abuse, and may culminate in an increased risk of occupational accidents, invalidity and even suicide (di Martino, 2003).

Sexist discrimination, such as sexual harassment, has been found to adversely affect women’s work performance and even physically affect women, manifested in various ill health symptoms such as nausea, vomiting, fatigue, depression, headaches and drastic weight change (Quinn and Woskie, 1988; Kasinsky, 1992; Goldenhar et al., 1998).

One study of Icelandic female flight attendants, teachers and nurses found that, across all of the groups, repeated exposure to sexual harassment, bullying and violence or threats at work led to poorer physical and psychological well-being (Gunnarsdottir et al., 2006). Further, women in geriatric care (e.g. nurse attendants, cleaners) are exposed to multiple risk factors (mental exhaustion, harassment, violence, threats at work) and these contribute to MSDs (Gunnarsdottir et al., 2003). In addition, women who noted that they suffered from back pain were subjected to negative attitudes and told either that they were working incorrectly or that the condition was a natural part of the job (USDAW, 2002).

Violence can affect physical and mental health (Landrine et al., 1995; Gunnarsdottir et al., 2006) and has been described as an occupational health hazard for women (Kasinsky, 1992). A sample of working women in both traditional and non-traditional roles showed differences in outcomes between those who experienced sexual harassment and those who did not (Schneider et al., 1997). The women who were harassed had poorer levels of psychological well-being and more negative job attitudes and work behaviours. These findings were regardless of the level of intensity of the

harassment, so even women who were not harassed extensively showed poorer psychological well-being and other negative outcomes.

Further, women who are sexually harassed are more likely to have lower job satisfaction (Crull, 1982), suffer from a loss of self-esteem (Crull, 1982), have lower work performance (Crull, 1982; Quinn et al., 2000), experience physical force (Crull, 1982), be more nervous, fearful, angry and unable to sleep (Crull, 1979), prone to headaches, nausea and weight changes (Crull, 1979) and need therapeutic help (Crull, 1979).

The impact of workplace violence, bullying and harassment on the individual and the organisation (EU) (Eurofound, 2002)

- 40 % of workers exposed to physical violence experience stress.
- 47 % of workers exposed to bullying experience stress.
- 46 % of workers exposed to sexual harassment experience stress.
- Health-related absenteeism increases with violence at work (Eurofound, 2007a):
- 15 % of workers exposed to physical violence have been absent from work because of work-related health problems over the past 12 months.
- 23 % of workers exposed to bullying have been absent from work because of work-related health problems over the past 12 months.

The EU average for absence from work as a result of work-related health problems over the past 12 months is just 6 %.

This behaviour not only affects women, but is also detrimental to the business. Quinn et al. (2000) report higher rates of job turnover and sick leave and lower productivity, as well as the cost of legal claims due to this issue. They note that, in 1988, the US government spent \$189 million dealing with the issues of sexual harassment, with one-third of the 500 largest US companies spending \$6.7 million a year to address this issue.

4.7 Discussion

This chapter addressed the exposures of violence and harassment that may lead to poorer psychological well-being, as well as poorer mental and physical health. Although the actual rates of violence and harassment are not high, they are exposures that impact more negatively on women than men. As outlined in 2003 (EU-OSHA, 2003a), violence, while not a naturally occurring event at the workplace, remains of concern for workers, and more so for women. This higher incidence rate for women has continued as women remain in jobs that are service driven, as discussed in 2003 (EU-OSHA, 2003a) and as shown in this report.

Regarding exposure to intimidation and discrimination at the workplace, the research consistently showed that bullying and harassment, as well as unwanted sexual attention, are reported more often by female workers than their male counterparts. This is consistent with the data from 2003 (EU-OSHA, 2003a). However, whereas Fagan and Burchell (Eurofound, 2002a) stated that women are more likely than men to suffer from physical violence, female and male workers experience physical violence to a similar extent, according to the fourth EWCS (Eurofound, 2007a). Violence is a particular issue in service sectors, and is increasing. Additionally, new forms of harassment, such as cyber-harassment, are an emerging issue in some sectors, such as education.

In addition, as both the 2003 report (EU-OSHA, 2003a) and this report have highlighted, sexual harassment is a work stressor for women. More importantly, cultural beliefs affect how women respond to sexual harassment, as they feel that they are the ones responsible for controlling both their own and male sexual behaviour (Crull, 1982) so should be the ones who have to 'fix' the problem. This then results in the woman blaming herself when sexual harassment occurs (Crull, 1982). These mindsets will not assist in how women choose to address this particular work stressor.

To promote good health among workers, employers and researchers need to consider physical, moral and social well-being issues (such as intimidation and violence in the workplace). These issues

influence work quality and productivity, so a strategic health and safety policy is essential to ensure the well-being of Europe's workers and to boost competitiveness (Eurostat, 2010a).

4.8 What can be done

In order to reduce violence, intimidation and bullying at work, it is important to carry out an adequate risk assessment. On the basis of the risk assessment, preventive actions should be developed. To help with this, EU-OSHA has published checklists aimed at preventing violence (EU-OSHA, 2003c).

Checklist 1: Prevention of violence to staff (schools)

Environmental design

- ✓ Can visibility and lighting be improved where there is a risk of violence?
- ✓ Can access to the workplace be better controlled, and visibility of entrances improved, to allow visitor checks?
- ✓ Can tools, implements, equipment and furniture that could be used as weapons be replaced?
- ✓ Can physical security measures be improved (e.g. alarms)?
- ✓ Can a positive physical environment be provided (e.g. colours, climate control)?

Administrative controls

- ✓ Can the anti-violence policy be improved and better displayed?
- ✓ Are staff, parents and students informed of their rights and responsibilities?
- ✓ Is there a safety committee in existence that can consider the issue of violence?
- ✓ Are there suitable procedures in place for when an incident occurs? When were they last reviewed?
Is the record-keeping process adequate, and are records reviewed to identify patterns or risks?
- ✓ Can communication on the issue of violence between workers and management be improved?
- ✓ Is there suitable coverage of the issue of violence in the risk assessment?
- ✓ Have safer work practices been adopted (e.g. escorting co-workers, late-night working, and the supervision of pupils by two members of staff where possible)?
- ✓ Are staffing levels in relation to the number of pupils sufficient to ensure the safety of staff?
- ✓ Can staff cooperate to develop their own working methods?
- ✓ Are support structures (e.g. counselling services) in place?
- ✓ Is there provision of educational psychological services for advice and counselling?
- ✓ How are visitors supervised on the school premises?

Behavioural strategies

- ✓ Are workers and students trained in non-violent response and conflict resolution?
- ✓ Is there training on the recognition of the early signs and potential for acts of violence?
- ✓ Are students and parents involved in developing a zero-tolerance policy to violence, discriminatory language and behaviour and bullying and harassment?
- ✓ Is a sense of community and cooperation encouraged to develop?

Awareness-raising and partnerships

- ✓ Are the enforcing authorities involved in relevant national awareness-raising programmes?
- ✓ Is there cooperation between school staff, governors, parents, students, enforcing authorities and trade unions?
- ✓ Are positive attitudes, tolerance and respect to others encouraged?
- ✓ Is good practice information disseminated?

Checklist 2: Minimising harm after violent incidents

It is important to have well-known procedures to follow in the case of any violent incident with the purpose of preventing further harm to the victim and limiting the damage suffered. In this framework, it is important that:

- ✓ the person who has been a victim of violence, or witnessed an act of violence, is not left alone in the hours following the events;
- ✓ senior management should become involved, be sympathetic and support the victim;
- ✓ psychological support is provided to the victim both immediately and later on in the event of post-traumatic stress;
- ✓ the victim receives support in carrying out the necessary administrative and legal procedures (e.g. how to report the incident);
- ✓ other workers are informed; and
- ✓ risk assessments are reviewed to identify what additional measures are necessary.

4.9 Recommendations

The Council of the European Union (2010, p. 5) proposed certain actions that Member States could adopt to deal with violence against women, including improving their capacity to deal with violence, providing protection and support to the victims and, most importantly, ‘facilitating the interaction and rapid information exchange between the competent authorities thus ensuring a comprehensive response’. It is also essential to have women on representative bodies to provide support to those women who experience sexual harassment (EC, 2007a).

Main points — trends and policy-relevant messages:

- Women are much more likely to be in contact with people from the public and clients or patients. Prevention measures and training need to be targeted at the prevention of risks that they may incur.
- Furthermore, women who work at their clients’ premises may be particularly vulnerable to attack, either physically or psychologically. The scope for adapting their conditions may be limited and they may work in several jobs and for several employers. Policy and prevention needs to address the specific situation of these women and identify ways for enforcing the principles of OSH legislation for them and demonstrate how they could be better protected. Reaching these workers and consulting them about their specific situation may be a particular challenge for inspection and prevention services.
- As could be demonstrated in the transport sector, violence, bullying and harassment go largely under-reported in many jobs, and thus they persist and become more serious. Reasons for the lack of reporting are mainly the lack of confidence that the cases will be adequately dealt with, limited procedures for reporting incidents and fear of the consequences on their job and career.
- Awareness raising and a targeted policy to prevent and address violence should be implemented in transport organisations. When incidents occur, risk assessment and prevention measures should be revised.
- Younger women are especially at risk of threats of physical violence, bullying and unwanted sexual attention. This is especially true as women increasingly move into the service sector and deal directly with customers. Thus, preventive actions and adequate risk assessment should be implemented by employers.

- Measures to tackle violence and harassment at work should be targeted to the specific needs of the sector and group considered. EU-OSHA has produced multilingual guidance for some sectors (education, healthcare, hospitality). There are new forms of violence and bullying, such as cyber-bullying in the education sector, that need to be addressed.
- Efficient reporting systems should be put in place to address under-reporting. These systems need to be linked to quick measures for action, whether to provide immediate support to workers in case of an event or counselling after the event.
- Women who work part time, shifts or non-standard working times may be left out of the equation. Make sure that work practices, such as monitoring, prevention and training, cover them.
- Moreover, women returning to work from caring responsibilities often have to suffer from discrimination such as finding only limited job responsibilities, unfair work allocation and/or denying them access to specific tasks.
- Women in informal work and women who work at clients' homes and premises are more vulnerable to violence and harassment and may be less informed about their rights. They are also less reachable by preventive OSH services. Specific measures should therefore be developed to monitor, assess and prevent the risks to which they are exposed.
- Research has shown that women may be particularly vulnerable to multiple discrimination due to age, gender, ethnic background, disability and sexual orientation. Specific measures need to be drawn up to protect female workers who may be subjected to multiple discrimination as they are also many times more likely to be exposed to violence and harassment.
- Family-related violence may spill over into working life, as women may be harassed at work by the perpetrators of domestic violence. Some countries have produced guidance for employers that could serve as a basis for prevention measures.
- Managers and workers need training to know how they can most effectively address violence.
- Effective violence management also includes information to the customers and wider public.
- Lone workers' safety systems are applied in other areas of industry. They could be adapted to the specific needs of female-dominated service sectors.

5 Gender aspects of health and safety at work statistics

5.1 Accidents at work data, 1998–2006

Women are less likely than men to suffer accidents at work. In 2006, the incidence rate of severe accidents at work (accidents that caused more than 3 days' absence from work) was 1,524 per 100,000 employees for women and 3,856 for men in the EU-15. Interestingly, both incidence rates have declined since 1998, when 1,890 women and 5,268 men per 100,000 employees suffered severe accidents in the EU-15. Since 2008, the data are collected in a slightly different manner, as coding by industrial sector was changed to reflect the move from industry to services (changes in NACE industrial sector codes). For 2010, the latest figures are 973 and 2,089 serious accidents per 100,000 female and male workers, respectively, in the EU-27.

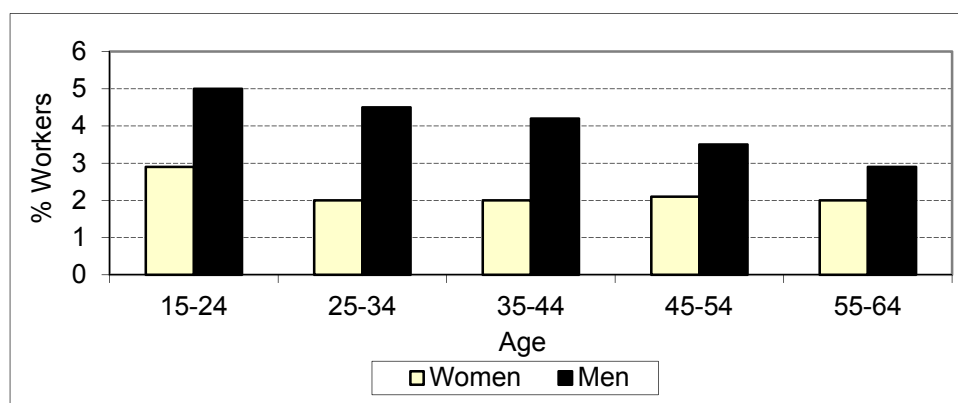
This gender difference is even more pronounced when it comes to fatal accidents. In 1998, in the EU-15, 345 women died as the result of an accident at work. This number fell to 135 in 2006. For male workers the respective numbers were 5,022 and 3,580 (Eurostat, 2009d). For 2010, there are no figures by gender.

In 2007, according to a special OSH module of the labour force survey, an estimated 3.2 % of workers in the EU-27 reported having an accident at work, which corresponds to an estimated seven million workers (Eurostat, 2009a). Of these self-reported accidents, 10 % were due to a road traffic accident in the course of work. Among those workers who reported having an accident, 73 % reported lost work days following the most recent accident and 22 % reported time off that lasted at least one month (Eurostat, 2009a).

Some workplace accidents can be particularly damaging, causing injury and long periods of absence. An estimated 0.7 % of all workers in the EU27 have taken sick leave for at least 1 month. The highest number of accidents requiring an absence of more than 1 month occurred in individuals aged 35–44 (0.75 %) and 45–54 (0.74 %).

De Norre (Eurostat, 2009a) reports that there was nearly no influence of age on the percentage of female workers who suffered an accident in 2007, whereas the percentage declined with increasing age for male workers (Figure 59) (Eurostat, 2009a: 2).

Figure 59: Accidents at work in the past 12 months, by age group and gender



Source: Eurostat (2009a: 2).

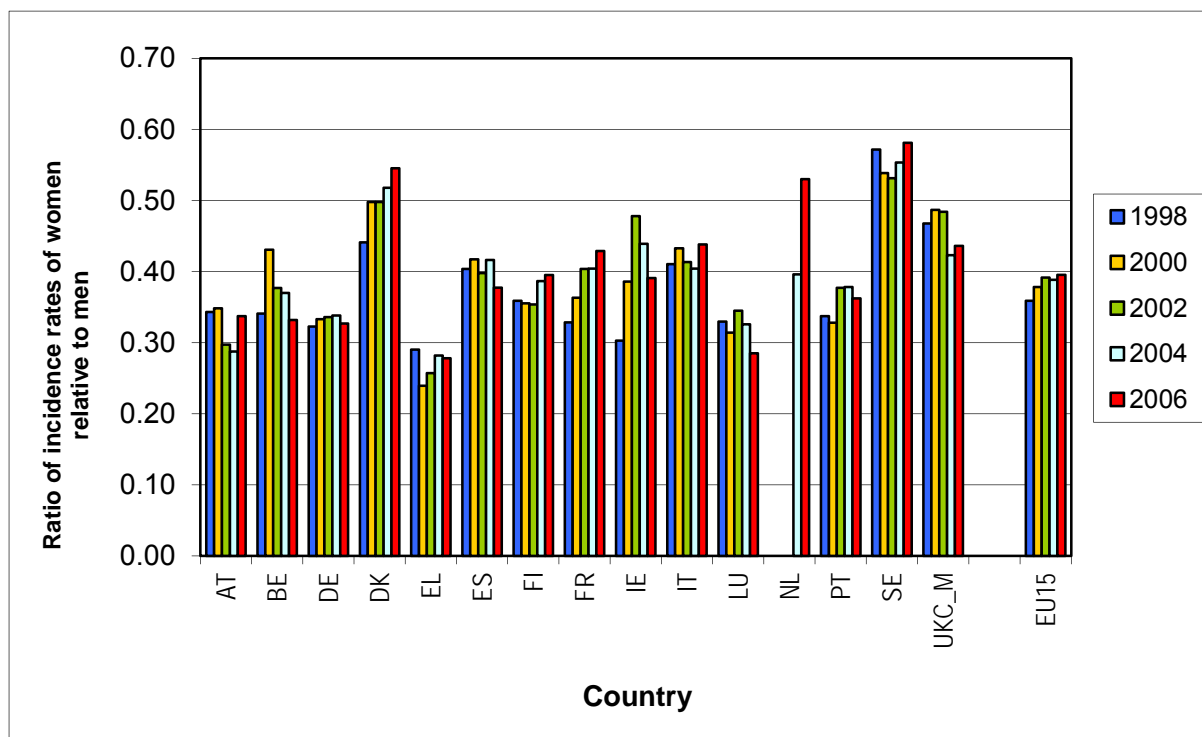
Data from the United Kingdom have found that young men, aged 16–24, continue to face a 40 % higher relative risk of all workplace injury, in comparison with men aged 45–54 even after allowing for occupations and other job characteristics (HSE, 2000); this may be explained by greater risk-taking behaviour among younger men. Byrnes et al. (1999) conducted a meta-analysis of 150 studies to systematically compare the risk-taking tendencies of male and female participants. The study found that, on average, men, in comparison with women, were more likely to have higher risk-taking tendencies on 14 of 16 risk-taking behaviours. Additionally, the authors found that the size of this gender gap seems to reduce over time (Byrnes et al., 1999). In contrast, among women there is no substantial variation in risk of injury between age groups. McNamee and Kemmlert (1997) investigated

injuries from falls at work in the United Kingdom and Sweden, especially those incurred by women over 45. They found that older women were more likely to experience fractures when they fell and recommended that hazards should be minimised in all occupational sectors, especially those employing women.

Between 1998 and 2006, the ratio of the incidence rates for severe accidents between women and men was about 0.4 (Figure 60), which means that women suffered less than half as many accidents at work as men. For the EU-15 this ratio increased slightly from 0.36 to 0.40 between 1998 and 2006. Women (4 %) also reported fewer occupational injuries within the EWCS in 2000 than men (10 %) (Eurofound, 2001).

Countries with a higher share of accidents than 0.4 for women from 1998 to 2006 were Denmark, Sweden, Italy and the United Kingdom. In Belgium, Spain, France, Ireland and the Netherlands, the ratio was above 0.4 in some years but lower in other years (Figure 60).

Figure 60: Ratio of incidence rates (per 100,000 employed) of accidents at work with more than 3 days' absence (severe accidents) suffered by women in relation to men, standardised for sectoral structure



AT, Austria; BE, Belgium; DE, Germany; DK, Denmark; EL, Greece; ES, Spain; FI, Finland; FR, France; IE, Ireland; IT, Italy; LU, Luxembourg; NL, Netherlands; PT, Portugal; SE, Sweden; UKC_M; United Kingdom except Northern Ireland; EU-15, mean value for these 15 countries, 1998–2002, without Netherlands.

Source: Eurostat (2009d)

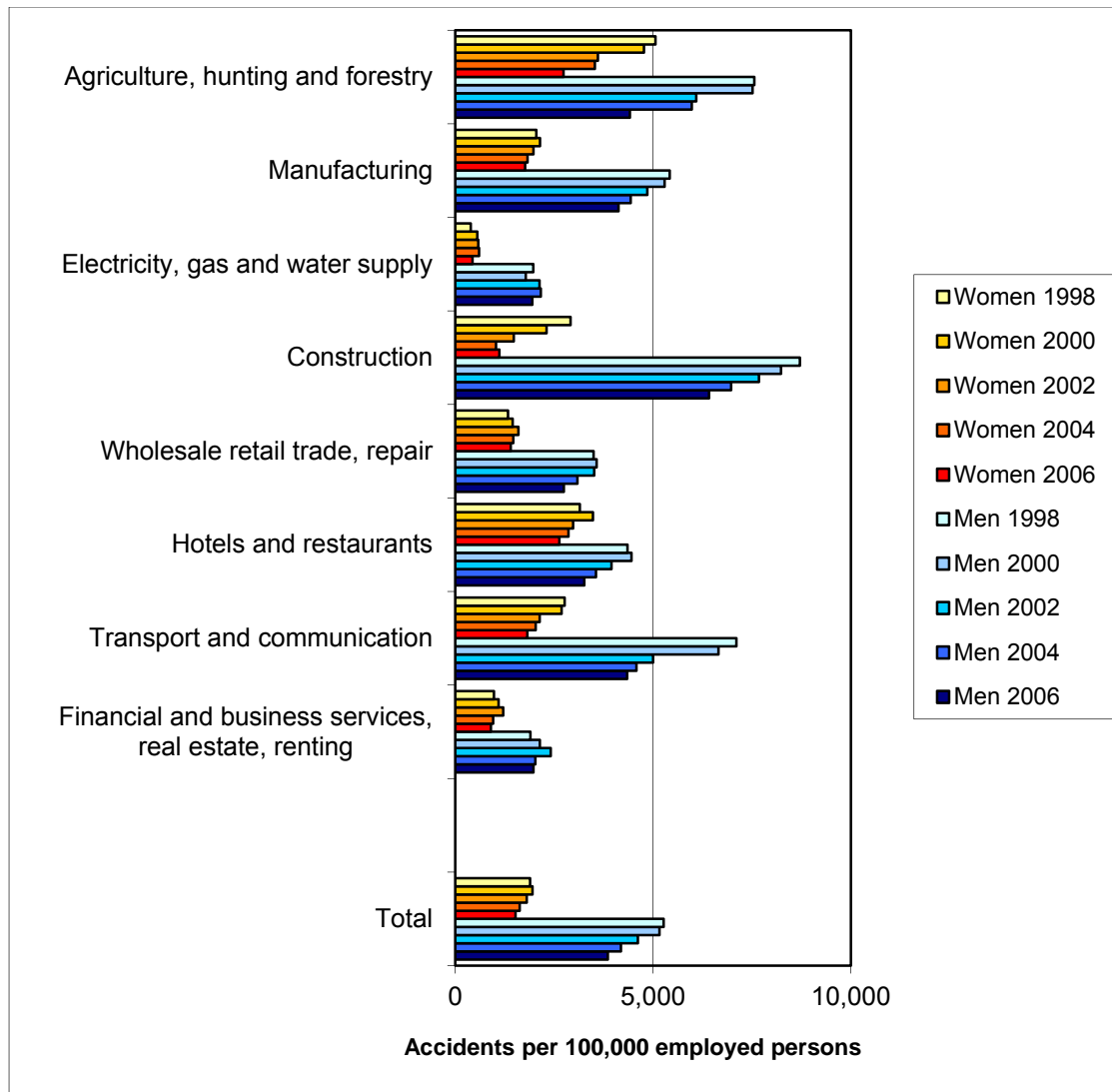
Between 1998 and 2006 the incidence rate of accidents with more than 3 days' absence per 100,000 employed persons declined for women and men in most sectors of activity (Figure 61). Overall, across the EU-15 the incidence rate of accidents was lower for women than for men in all sectors of activity.

The highest incidence rates for women occurred in the 'agriculture, hunting and forestry' sector, with 5,061 accidents per 100,000 employees in 1998 and 2,738 in 2006 (Figure 61). The second highest sets of incidence rates for women occurred in 'hotels and restaurants', with 3,149 accidents in 1998 and 2,633 in 2006 (Figure 61).

Eurostat (2009d) did not publish incidence rates for accidents in public administration, education, health and other services (NACE L-P). This is regrettable because over 45 % of employed women work in these sectors (contrary to incidence rates, Eurostat (2009d) provided absolute numbers of

accidents for the sectors of public administration, education, health and other services (NACE L-P) (cf. Figure 61).

Figure 61: Standardised incidence rates (per 100,000 employed) of accidents at work with more than 3 days' absence for women and men by sector in the EU-15



Note: There are no data available from the Netherlands from 1998 to 2002.

Source: Eurostat (2009c)

However, this has been corrected in the new Eurostat methodology for data collection (European Statistics on Accidents at Work methodology) and figures are presented in Table 26. Unfortunately, however, incidence rates for fatal accidents, or an overall rate for all industrial sectors, are not available by gender.

Table 26: Ratio of incidence rates (per 100,000 employed) of accidents at work with more than 3 days' absence, comparing women with men by sector and country

Sector/Year	AT	BE	DE	DK	EL	ES	FI	FR	IE	IT	LU	NL	PT	SE	UKC_M	EU15
Agriculture, hunting & forestry																
1998	0.43	0.46	0.53	0.69	0.23	0.76	0.36	0.53	0.27	0.71	0.89		0.28	0.89	0.39	0.67
2002	0.46	0.85	0.49	0.86	0.14	0.74	0.67	0.47	1.03	0.76	0.81		0.27	0.77	0.58	0.59
2006	0.46	0.46	0.5	1.31	0.42	0.74	0.82	0.68	2.45	0.68	0.36	0.37	0.33	0.87	0.44	0.62
Manufacturing																
1998	0.34	0.34	0.41	0.51	0.4	0.39	0.4	0.4	0.54	0.31	0.64		0.25	0.62	0.43	0.38
2002	0.39	0.38	0.4	0.57	0.32	0.42	0.44	0.47	0.54	0.32	0.48		0.34	0.6	0.44	0.41
2006	0.36	0.37	0.41	0.61	0.32	0.5	0.4	0.51	0.53	0.34	0.52	0.33	0.34	0.65	0.37	0.43
Electricity, gas & water supply																
1998	0.43	0.39	0.04	0.26	0.11	0.29	0.15	0.18	0.12	0.29	0.22		1.4	0.26	0.1	0.2
2002	0.36	0.48	0.22	0.88	0.23	0.18	0.18	0.23	0.11	0.59			0.85	0.24	0.19	0.27
2006	0.08	0.21	0.22	0.28		0.21	0.2	0.09		0.66			0.27	0.5	0.2	0.22
Construction																
1998	0.11	0.1	0.32	0.2	0.38	0.34	0.26	0.07	0.63	0.13	0.02		0.24	0.21	0.15	0.33
2002	0.11	0.14	0.18	0.28	0.18	0.39	0.21	0.08	0.36	0.17	0.07		0.33	0.2	0.13	0.19
2006	0.08	0.16	0.23	0.3	0.14	0.22	0.35	0.09	0.84	0.2	0.04		0.35	0.31	0.08	0.17
Wholesale retail trade, repair																
1998	0.35	0.35	0.28	0.51	0.46	0.43	0.52	0.41	0.38	0.36	0.39		0.29	0.75	0.63	0.38
2002	0.37	0.32	0.33	0.6	0.43	0.45	0.45	0.52	0.52	0.48	0.34		0.46	0.61	0.6	0.45

New risks and trends in the safety and health of women at work

Sector/Year	AT	BE	DE	DK	EL	ES	FI	FR	IE	IT	LU	NL	PT	SE	UKC_M	EU15
2006	0.38	0.4	0.38	0.59	0.39	0.47	0.48	0.59	0.53	0.53	0.41	1.12	0.43	0.67	0.61	0.51
Hotels & Restaurants																
1998	0.64	1	0.73	0.68	0.65	0.83	0.56	0.78	1.25	1.36	0.93		0.12	1.17	0.75	0.72
2002	0.52	0.9	0.59	1.1	0.73	0.87	0.55	0.91	1.56	1.13	0.78		0.88	1.05	0.67	0.75
2006	0.53	0.86	0.53	1.23	0.93	0.85	0.76	0.83	1.28	1.15	1.15	0.89	0.82	1.21	0.75	0.81
Transport & Communication																
1998	0.32	0.31	0.37	0.71	0.24	0.31	0.38	0.29	0.17	0.47	0.22		0.79	0.63	0.37	0.39
2002	0.28	0.4	0.41	0.67	0.21	0.33	0.37	0.41	0.32	0.56	0.27		0.53	0.63	0.35	0.43
2006	0.3	0.41	0.2	0.71	0.33	0.43	0.43	0.48	0.74	0.59	0.27	0.51	0.41	0.68	0.37	0.42
Financial & business services,real estate, renting																
1998	0.29	0.34	1.17	0.72	0.32	0.67	0.49	0.33	0.62	0.62	0.37		0.21	0.7	0.64	0.51
2002	0.27	0.42	0.32	0.86	0.5	0.65	0.5	0.39	0.36	0.68	0.31		0.59	0.95	0.67	0.5
2006	0.25	0.39	0.27	0.88	0.58	0.59	0.47	0.37	0.43	0.75	0.37	1.01	0.56	0.88	0.43	0.46
Total																
1998	0.34	0.34	0.32	0.44	0.29	0.4	0.36	0.33	0.3	0.41	0.33		0.34	0.57	0.47	0.36
2002	0.3	0.38	0.34	0.5	0.26	0.4	0.35	0.4	0.48	0.41	0.34		0.38	0.53	0.48	0.39
2006	0.34	0.33	0.33	0.55	0.28	0.38	0.4	0.43	0.39	0.44	0.29	0.53	0.36	0.58	0.44	0.4

AT, Austria; BE, Belgium; DE, Germany; DK, Denmark; EL, Greece; ES, Spain; FI, Finland; FR, France; IE, Ireland; IT, Italy; LU, Luxembourg; NL, Netherlands; PT, Portugal; SE, Sweden; UKC_M, United Kingdom except Northern Ireland; EU-15, mean value for these 15 countries, 1998–2002, without Netherlands.

Ratios above 0.80 and 1.0 are indicated in yellow and orange, respectively.

Source: Eurostat (2009c)

Analysing data from the 2007 Labour Force Survey OSH module, De Norre (Eurostat, 2009a) also reports high accident rates for women in 'agriculture, hunting and forestry' and in 'hotels and restaurants'. Furthermore, within the Labour Force Survey, accidents in 'education' and 'health and social work' were analysed. In the 'health and social work' sector the accident rate for women was as high as in the 'hotels and restaurants' sector, while the accident rate in the 'education' sector was nearly as low as in the 'financial and business services, real estate, renting' sector.

Forastieri (2000) states that women employed in agriculture, like other rural workers, not only suffer from a high incidence of injuries and diseases, but also are insufficiently reached by health services. One reason may be that women's role in agriculture has been traditionally underestimated. Some studies have shown that the physical workload of traditional 'female' tasks (e.g. sowing, picking and clearing) is a little higher than the physical workload of male workers because the latter are assisted by mechanical means during irrigation, ridging and farming (Forastieri, 2000). It is not clear, however, if these studies were carried out in Europe or in countries with more traditional agriculture practices.

Kines et al. (2006) compared the frequency of hospital-treated work-related injuries in women and men for 58 industrial sectors in Denmark. For the following five sectors they found significantly higher standardised hospital treatment ratios for women: 'cleaning, laundries and dry cleaning', 'transport of passengers', 'hotels and restaurants', 'hospitals' and 'transport of goods'. They proposed that, for injury prevention programmes to be better focused, more gender-sensitive analysis is required.

A characteristic of the cleaning sector in Europe is the dominance of women, in particular mature women. This group is known to be especially at risk of slip and trip injuries (Norddeutsche Metall BG, 2000). Studies have shown that women in this age group are more likely to fall because of a slip or trip and that the injuries they sustain as a result are more likely to be serious. However, age is not the only reason for high accident rates. Cleaners have to work with and on dirty floors, wet floors, different floor coverings and changes from wet to dry areas. Owing to these conditions, cleaners are at an increased risk of suffering from slip injury. Moreover, cleaners working at night or early in the morning are at greater risk of slip and trip injuries, as their reactions and concentration levels decline at night. Generally, cleaners can seldom influence the orderliness of a workplace. Thus, the risk of a trip caused by objects dropped on the floor is quite high (EU-OSHA, 2008e).

The cleaning industry also employs a high proportion of workers from ethnic minorities and many migrant workers (Krause et al., 2010). The latter may work without adequately understanding the instructions of the trainer or employer. Above all, there is a tendency to ignore health and safety elements in low-paid jobs such as cleaning (EU-OSHA, 2008e).

For 1998, Dupré (Eurostat, 2002) found that the difference between women and men was smaller when incidence rates were calculated on a full-time equivalent basis, because women worked part time more often than men and were therefore exposed to the risk of accidents for shorter times. If the incidence rates were additionally standardised for the different occupations in which women and men work, they were nearly equal in Denmark, Ireland and United Kingdom (Eurostat, 2002). Unfortunately, these standardised data are not available from Eurostat for other years. Messing (1998) highlighted another problem: of 15 papers analysing a comparison of accident rates, it was found that only three controlled for age and seniority in the post and only five controlled for hours worked, despite the fact that women do three-quarters of part-time work. They concluded that the omissions tend to mislead to one believing that rates are comparable; however, this is problematic, especially when it is done at enterprise level. When examining the data for compensation, they found that accidents were compensated more often in sectors in which men predominate (Messing 1998).

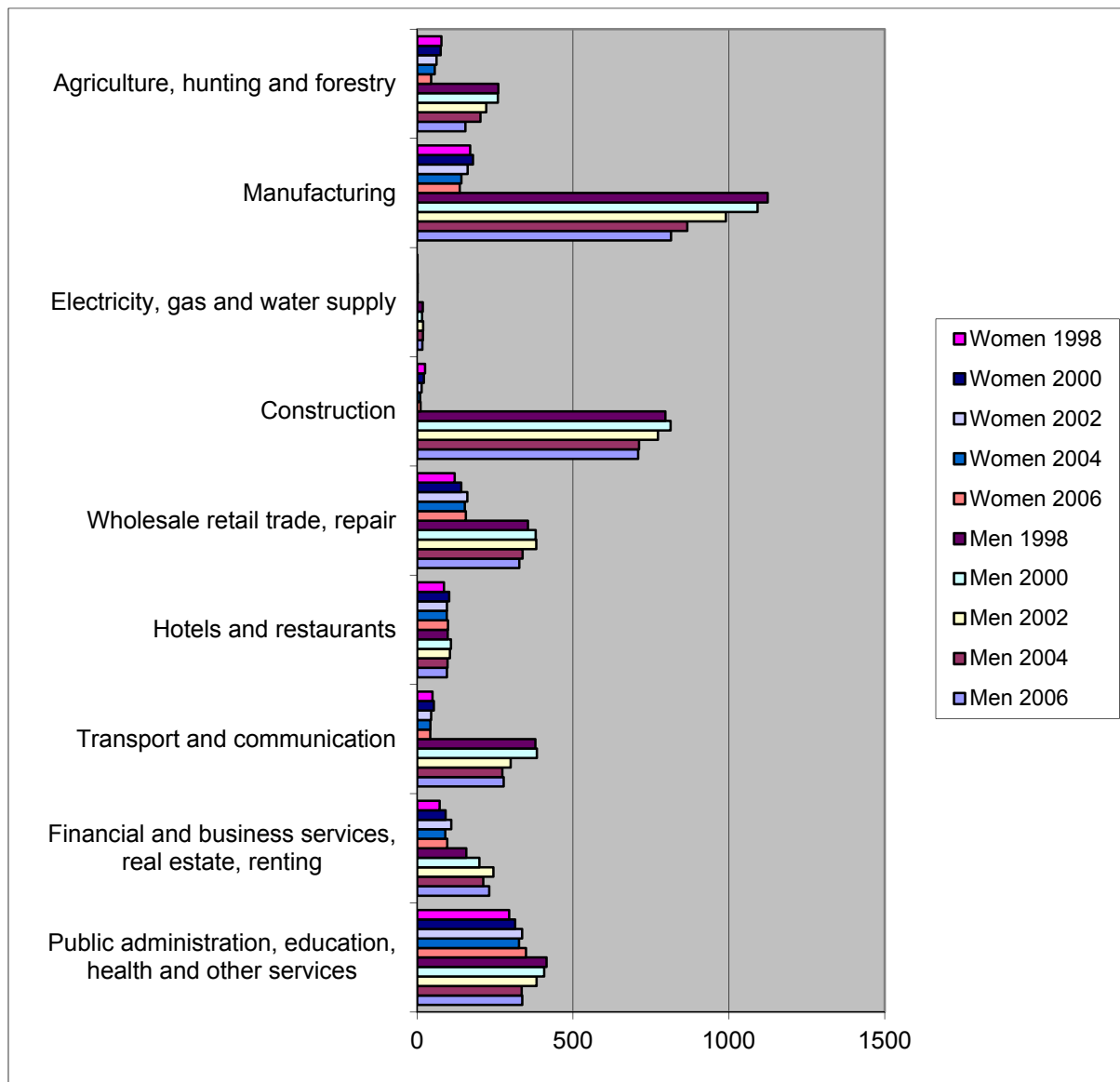
When accident rates were calculated on a full-time equivalent basis, and were additionally standardised for the different occupations of women and men, the incidence rates were nearly equal for both genders in some countries.

In 2006, the incidence rates for women in agriculture, hunting and forestry, hotels, restaurants and catering, transport and communication and manufacturing were higher than the average for all the sectors. With this in mind, from a prevention point of view it may be necessary to target women to a greater extent in these sectors. The construction sector saw incidence rates for women that were nearly as high as for hotels and restaurants in 1998, but between 1998 and 2006 the incidence rate declined by 62 %, in comparison with a 16 % decline for hotels and restaurants.

As with incidence rates, the absolute number of severe accidents over all sectors (NACE A, D-P) was lower for women (938,000) than for men (2,965,000) in 2006 in the EU-15 (Eurostat, 2009d). While for men the number of accidents fell between 1998 and 2006, it rose for women. As Figure 61 shows a fall in the incidence rates for women and men between 1998 and 2006, the increase in absolute numbers must be caused by a rise in the number of employed women between 1998 and 2006.

The increase in absolute numbers of accidents can especially be seen in the sectors ‘public administration, education, health and other services’ (NACE L-P) and ‘wholesale retail trade, repair’ (Figure 61). As can be expected, because over 45 % of employed women work in public administration, education, health and other services, the absolute number of severe accidents sustained by women was highest in these sectors and reached 350,000 in 2006. Two sectors that also showed high numbers of accidents were ‘wholesale retail trade, repair’ (156,000 accidents in 2006) and ‘manufacturing’ (137,000 accidents in 2006) (Figure 62).

Figure 62: Number of accidents at work with more than 3 days’ absence for women and men (thousands) by sector in the EU-15



Note: No data are available from the Netherlands from 1998 to 2000.

Source: Eurostat (2009d)

As shown in Table 26, the ratio of incidence rates for women and men was below 0.5 in most sectors in most countries. Independent of the country, high ratios were found predominantly in the two sectors with the highest incidence rates for women: 'hotels, restaurants and catering' and 'agriculture, hunting and forestry'. For the EU-15 as a whole, the ratio reached around 0.6 in 'agriculture, hunting and forestry' and around 0.8 in 'hotels and restaurants'. In 2006, ratios above 1.0 were found only in the 'hotels and restaurants' sector for Denmark, Ireland, Italy, Luxembourg and Portugal; the 'agriculture, hunting and forestry' sector in Denmark and Ireland; and the 'wholesale retail trade, repair' and 'financial and business services, real estate, renting' sectors in the Netherlands.

Between 1998 and 2006 the ratio increased substantially in Ireland in the 'agriculture, hunting and forestry' sector and in Portugal in the 'hotels and restaurants' sector. In order to understand these changes it is important to look not only at the ratios, but also at the original incidence rates (Table 23). In both cases, the incidence rates for women increased and, at the same time, the incidence rate for men decreased (Table 27).

Similar to the findings looking at the ratios, the incidence rates show that the two sectors in which women experienced the most accidents were 'agriculture, hunting and forestry' and 'hotels and restaurants' (compare Tables 26 and 27).

Table 27: Incidence rates (per 100,000 employed) of accidents at work with more than 3 days' absence comparing women with men by sector and country, EU-15

Sector	Sex	AT	BE	DE	DK	EL	ES	FI	FR	IE	IT	LU	NL	PT	SE	UK	EU-15
Year																	
Agriculture, hunting and forestry																	
1998	F	7,066	3,677	7,552	897	942	2,585	343	2,929	1,765	7,379	6,975		2,279	1,325	972	5,061
	M	16,448	8,023	14,310	1,295	4,183	3423	963	5,532	6,640	10,355	7,856		8,186	1,489	2,480	7,557
2002	F	6,232	3,298	7,756	1,423	351	1,953	4,010	2,413	1,593	5,118	8,128		384	1,380	1,317	3,606
	M	13,481	3,863	15,851	1,664	2,510	2,643	5,958	5,082	1,543	6,774	9,979		1,403	1,791	2,255	6,091
2006	F	4,948	1,739	5,074	1,806	634	1,970	4,731	50	2,309	4,552	2,581	1,289	457	1,249	784	2,738
	M	10,645	3,750	10,122	1,374	1,524	2,650	5,746	73	943	6,690	7,218	3,462	1,406	1,428	1,777	4,414
Manufacturing																	
1998	F	1,530	1,910	2,344	3,566	1,864	3,523	2,264	2,155	1,044	1,925	3,497		2,217	1,157	849	2,049
	M	4,563	5,623	5,715	6,978	4714	9,001	5,644	5,427	1,924	6,309	5,453		8,970	1,872	1,980	5,421
2002	F	1,489	1,803	1,785	2,942	1,585	4,283	1,750	2,533	825	1,678	2,598		2,726	1,217	868	1,975
	M	3,780	4,684	4,419	5,167	4,943	10,233	4,008	5,403	1,535	5,167	5,460		8,107	2,022	1,968	4,855
2006	F	1,144	1,368	1,550	2,868	995	4,884	1,595	2,153	1,172	1,454	1,797	1,327	2,610	1,053	475	1,767
	M	3,145	3,649	3,765	4,727	3,129	9,794	4,035	4,197	2,192	4,310	3,431	4,037	7,661	1,615	1,275	4,128
Electricity, gas and water supply																	
1998	F	938	400	17	3,489	495	1,298	293	425	1,011	652	758		2,630	326	108	391
	M	2,202	1,031	437	13,386	4,521	4,518	1,975	2,342	8,284	2,274	3,455		1,875	1,255	1,101	1,973
2002	F	634	297	540	2,122	806	791	287	463	153	1,675			1,561	254	147	582
	M	1,773	616	2,407	2,412	3,542	4,495	1,584	2,002	1,450	2,851	2,941		1,840	1,065	758	2,131
2006	F	140	133	406	737		1,189	344	89		1598			1,034	342	163	436
	M	1,738	622	1,840	2,640	1,969	5,612	1,742	963	787	2,412	2,956	2,868	3,851	686	816	1,949
Construction																	
1998	F	791	905	3,437	835	2,626	4,940	2,049	934	1,217	908	187		2,545	512	391	2,916
	M	6,912	9,218	10,734	4,222	6,826	14,717	7,916	13,260	1,935	6,802	10,896		10,494	2,399	2,648	8,711

New risks and trends in the safety and health of women at work

Sector	Sex	AT	BE	DE	DK	EL	ES	FI	FR	IE	IT	LU	NL	PT	SE	UK	EU-15
Year																	
2002	F	604	1,011	1,549	1,133	953	5,717	1,453	885	858	919	808		2,296	491	386	1,480
	M	5,503	7,207	8,474	4,096	5,299	14,726	7,044	11,773	2,392	5,546	12,381		7,053	2,457	2,867	7,676
2006	F	432	1,030	1,609	1,360	468	2,394	2,324	976	2,293	950	415		2,691	570	202	1,115
	M	5,125	6,379	7,028	4,585	3,401	11,111	6,574	10,298	2,743	4,733	10,225	5,271	7,599	1,837	2,382	6,415
Wholesale, retail, trade, repair																	
1998	F	791	2,113	1,099	766	1,282	2,577	1,458	2,065	207	926	1,717		1,959	808	997	1,334
	M	2,266	6,002	3,898	1,493	2,762	6,035	2,794	5,079	552	2,560	4,419		6,791	1,082	1,580	3,495
2002	F	792	1,693	1,265	933	912	3,075	1,062	2,670	638	1,014	1,777		1,945	621	1,213	1,596
	M	2,152	5,226	3,802	1,553	2,116	6,807	2,384	5,179	1219	2,133	5,239		4,234	1,012	2,028	3,511
2006	F	807	1,239	1,068	1,135	628	2,564	1,168	2,388	347	1,014	1,488	1,954	2,127	526	802	1,402
	M	2,104	3,074	2,795	1,939	1,623	5,441	2,448	4,067	650	1,908	3,648	1,738	4,925	780	1,315	2,744
Hotels and restaurants																	
1998	F	977	4,035	4,786	1,185	833	5,174	2,121	4,639	471	3,818	3,740		907	1,073	1,371	3,149
	M	1,533	4,053	6,560	1,739	1,277	6,256	3,774	5,939	377	2,805	4,034		7,612	917	1,829	4,352
2002	F	893	2,958	3,189	1,915	809	5,490	1,367	4,976	1,578	2,739	4,067		2,201	820	1,671	2,979
	M	1,725	3,287	5,420	1,740	1,105	6,331	2,470	5,487	1,010	2,422	5,246		2,503	780	2,498	3,947
2006	F	909	1,625	3,045	2,081	823	4,499	1,939	3,799	404	2,282	3,478	2,454	2,863	697	1,337	2,633
	M	1,707	1,898	5,719	1,689	885	5,287	2,539	4,553	316	1,988	3,025	2,745	3,485	577	1,775	3,262
Transport and communication																	
1998	F	1,031	2,000	5,223	2,614	567	2,263	1,676	2,142	434	2,882	950		3,481	1,090	774	2,763
	M	3,227	6,467	14,233	3,691	2,388	7,269	4,430	7,504	2,499	6,153	4,375		4,414	1,720	2,081	7,105
2002	F	821	1,929	2,497	2,435	530	2,514	1,560	2,916	609	3,156	1,489		2,136	1,131	765	2,134
	M	2,961	4,778	6,153	3,636	2,498	7,582	4,188	7,157	1,878	5,622	5,568		4,024	1,809	2,181	4,998
2006	F	602	2,570	925	3,127	634	3,094	1,997	3,579	2,744	2,978	1,213	2,739	1,617	1,126	561	1,824
	M	2,001	6,285	4,538	4,427	1,913	7,229	4,599	7,425	3,695	5,055	4,500	5,412	3,960	1,646	1,513	4,343

New risks and trends in the safety and health of women at work

Sector	Sex	AT	BE	DE	DK	EL	ES	FI	FR	IE	IT	LU	NL	PT	SE	UK	EU-15
Financial and business services, real estate, enting																	
1998	F	509	1,890	503	694	273	2,915	986	1,254	313	1,263	954		1,272	478	489	978
	M	1,739	5,578	430	959	865	4,338	2,002	3,765	503	2,023	2,594		6,149	685	760	1,900
2002	F	470	1,019	858	877	251	2,724	810	1,666	234	1,466	959		1,862	648	564	1,214
	M	1,769	2,428	2,684	1,020	505	4,174	1,615	4,319	642	2,162	3,114		3,156	683	847	2,412
2006	F	507	1,121	746	1,007	236	1,174	1,011	1,419	73	1,002	825	1,396	1,937	556	284	900
	M	2,066	2,866	2,797	1,144	406	1,978	2,156	3,805	170	1,332	2,213	1,379	3,429	635	657	1,975
Total																	
1998	F	1,512	2,201	2,123	1,745	1,110	3,217	1,586	2,146	594	2,047	1,967		2,477	882	873	1,890
	M	4,408	6,455	6,578	3,956	3,826	7,968	4,418	6,532	1,961	4,987	5,969		7,343	1,543	1,867	5,268
2002	F	1,134	1,765	1,844	1,599	847	3,368	1,348	2,509	708	1,754	2,282		2,053	849	958	1,807
	M	3,817	4,684	5,491	3,213	3,295	8,465	3,811	6,217	1,481	4,244	6,616		5,443	1,598	1,979	4,616
2006	F	1,088	1,352	1,438	1,732	605	2,700	1,517	2,204	632	1,507	1,382	1,800	2,014	731	620	1,524
	M	3,226	4,073	4,400	3,177	2,175	7,154	3,839	5,138	1,617	3,439	4,848	3,396	5,558	1,258	1,422	3,856

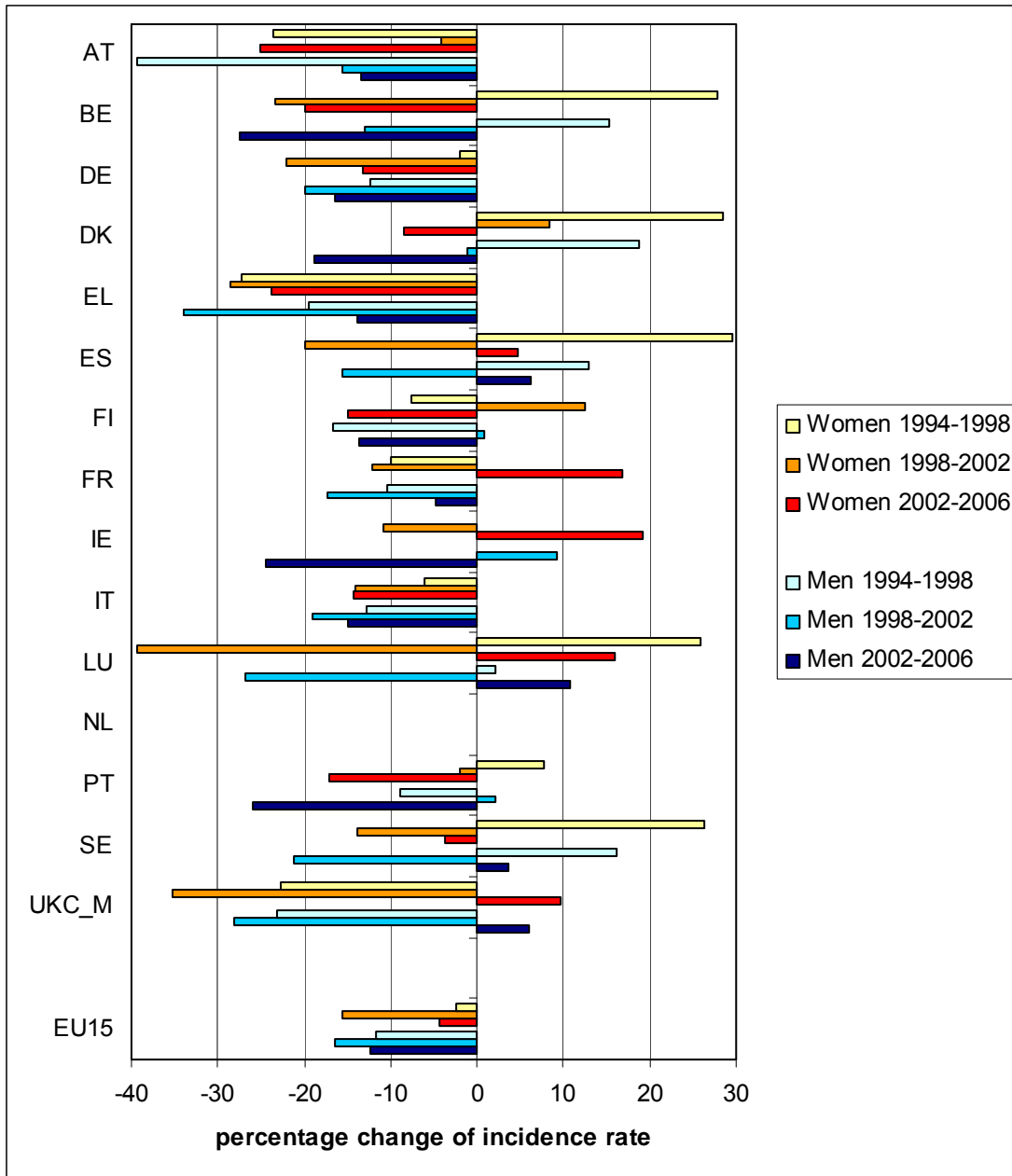
AT, Austria; BE, Belgium; DE, Germany; DK, Denmark; EL, Greece; ES, Spain; FI, Finland; FR, France; IE, Ireland; IT, Italy; LU, Luxembourg; NL, Netherlands; PT, Portugal; SE, Sweden; UKC_M, United Kingdom except Northern Ireland; EU-15, mean value for these 15 countries, 1998–2002, without Netherlands.

For female workers incidence rates above 1,750 (i.e. the mean incidence rate over all countries and years for women) are indicated in yellow; incidence rates above 3,500 are indicated in orange.

Source: Eurostat (2009d)

On average, in the EU-15, the incidence rates for women and men declined between 1994 and 2006 (Figure 63). The decline is consistent for the entire period, and for each of the 4-year periods assessed.

Figure 63: Change in standardised incidence rates (per 100,000 employed) of accidents at work with more than 3 days' absence, standardised for sectoral structure



AT, Austria; BE, Belgium; DE, Germany; DK, Denmark; EL, Greece; ES, Spain; FI, Finland; FR, France; IE, Ireland; IT, Italy; LU, Luxembourg; NL, Netherlands (no data available); PT, Portugal; SE, Sweden; UKC_M, United Kingdom except Northern Ireland; EU-15, mean value for these 15 countries, without Netherlands.

Source: Eurostat (2009d)

5.2 Accidents at work in a service economy

In 2008, there was a break in the data. As a result, figures will now be made available for all Member States and with a sectoral distribution that is more likely to reflect female jobs because the new industrial NACE coding further differentiates within the service sectors. Table 28 provides accident rates for male and female workers. The latest available figures are from 2010 (Eurostat, 2012b).

Although figures are available for only 3 years, the data seem to confirm trends identified earlier, and reflect the move from industry to services. In addition to healthcare and the hospitality sector, as well as retail and manufacturing, accident rates for female workers are high in sectors such as ‘arts, entertainment and recreation’ and ‘administrative and support activities’. They also seem to be stagnating in female-dominated sectors, such as healthcare on the one hand and education on the other.

Table 28: Incidence rates of non-fatal accidents, by 100,000 workers, by gender, EU-27

Sector	Gender	Year		
		2008	2009	2010
Total - All NACE activities	Males	1,169	2,169	2,089
	Females	1,096	1,024	973
Agriculture; industry & construction ; services of the business economy	Males	1,197	2,314	2,209
	Females	1,227	1,052	955
Agriculture, forestry & fishing	Males	2,265	1,556	1,640
	Females	1,138	689	716
Mining & quarrying	Males	2,328	2,064	2,571
	Females	339	404	271
Manufacturing	Males	3,465	2,624	2,699
	Females	1,425	1,194	1,176
Electricity, gas, steam & air conditioning supply	Males	861	697	930
	Females	327	293	275
Water supply; sewerage, waste management & remediation	Males	4,133	3,873	4,033
	Females	1,490	1,399	1,448
Construction	Males	4,300	3,741	3,283
	Females	692	644	540
Wholesale & retail trade; repair of motor vehicles & motorcycles	Males	2,372	1,938	1,850
	Females	1,177	1,072	958
Transportation & storage	Males	3,451	3,075	3,056
	Females	2,095	1,979	1,868
Accommodation & food service activities	Males	2,377	2,086	1,663
	Females	2,041	1,849	1,547
Information & communication	Males	516	411	435
	Females	423	406	437
Financial & insurance activities	Males	345	289	299
	Females	384	336	341
Real estate activities	Males	1,841	1,554	1,375
	Females	774	770	653
Professional, scientific & technical activities	Males	593	505	413
	Females	386	336	257

Sector	Gender	Year		
		2008	2009	2010
Administrative & support service activities	Males	4,485	3,281	2,909
	Females	1,719	1,652	1,256
Public administration & defence; compulsory social security	Males	1,351	1,143	1,496
	Females	892	773	880
Education	Males	734	802	762
	Females	513	544	601
Human health & social work activities	Males	1,915	1,612	1,530
	Females	1,473	1,315	1,367
Arts, entertainment & recreation	Males	2,402	2,320	2,115
	Females	1,078	1,079	978
Other service activities	Males	1,149	1,007	971
	Females	631	604	562
Activities of households as employers	Males	1,744	3,917	777
	Females	127	502	201
Activities of extraterritorial organisations & bodies	Males	788	533	635
	Females	486	443	714

Source: Eurostat database (2013)

5.3 Causes and circumstances of accidents at work

5.3.1 Methodology

In 1990 work began at European level to harmonise the criteria and the methodologies used to record data on accidents at work. Phases I and II of the European Statistics on Accidents at Work project have been implemented since 1993 and 1996, respectively.

Three types of basic information are required to correctly codify an accident:

- Information to identify where the accident occurred and who was injured, i.e. the economic activity of the employer; the victim's occupation, occupational status, sex, age and nationality; the geographical location and size of the enterprise's local unit; and the working environment and the working process.
- Information to show how the accident occurred, in what circumstances and how the injuries came about, i.e. the event broken down into three parts (the specific physical activity, the deviation, and the contact — mode of injury) with their respective associated material agents.
- Information on the nature and seriousness of the injuries and the consequences of the accident, i.e. the body part injured, the type of injury and the number of days lost.

The harmonised data collection (ESAW) has been implemented in three phases. Phase I covers variables that seek to identify the economic activity of the employer; the profession, age and sex of the victim; the nature of the injury and the part of the body injured; and the geographical location, date and time of the accident. Phase II supplements these initial data with information on the size of the enterprise and the nationality of the victim and his or her employment status, as well as the consequences of the accident in terms of the number of days lost, permanent incapacity or death. Phase III of the methodology aimed to describe the causes and circumstances of the accident to provide input for prevention.

Descriptions of the methodology development have been published, and a first analysis of a subset of accidents coded for by causes and circumstances is also available (EC, 2008a).

Data presented here were obtained from the Eurostat database and are from a pilot exercise in a restricted number of Member States. However, they do illustrate the need for accident prevention and provide hints on which area to focus prevention. More data will become available as the compulsory data collection on accidents at work will be implemented in Member States. The data on causes and circumstances of accidents are expected to help explain the accident trends previously identified.

Parameters not presented here include the:

- working environment: the workplace, work premises or general environment where the accident happened;
- working process: the main type of work being performed by the victim at the time of the accident. It is not the victim's occupation, nor his or her precise specific physical activity at the moment of the accident. It is the description of the type of work and the task, in broad terms, undertaken by the victim during a period of time ending at the instant of the accident;
- specific physical activity: the victim's exact specific physical activity at the instant of the accident, i.e. precisely what the victim was doing at the exact time of the accident. It covers only a short period of time;
- material agent of the specific physical activity: the material agent associated with the specific physical activity describes the tool, object, or instrument being used by the victim when the accident happened. The material agent may or may not be implicated in the accident;
- contact — mode of injury: how the victim was hurt (physical or mental trauma) by the material agent that caused the injury. If there are several contact — modes of injury, the one causing the most serious injury must be recorded; and
- the material agent associated with the contact — mode of injury refers to the object, tool or instrument with which the victim came into contact or the psychological mode of injury. If several material agents are associated with the injury, the material agent linked with the most serious injury must be recorded.

5.3.2 Pilot data

Looking at the causes and circumstances of accidents, Figure 64 shows the percentage distribution of the type of deviation that led to accidents in some countries of the EU in 2005, and Table 29 additionally shows the incidence rates. **The deviation is the last event deviating from normality and leading to the accident.**

Table 29: Incidence rates (per 100,000 employed) of accidents at work with more than 3 days' absence for women and men by type of deviation leading to accidents in the EU (22 countries included*) in 2005

Gender	Females		Males		Total	
	Incidence rate	%	Incidence rate	%	Incidence rate	%
D1: Deviation due to electrical problems, explosion, fire	3.5	0.4	19.3	0.7	12.3	0.6
D2: Deviation by overflow, overturn, leak, flow, vaporisation, emission	19.3	1.9	58.0	2.2	40.7	2.1
D3: Breakage, bursting, splitting, slipping, fall, collapse of material agent	63.2	6.3	278.9	10.4	182.5	9.4
D4: Loss of control (total or partial) of machine, means of transport or handling equipment, handheld tool, object, animal	199.3	19.9	738.5	27.5	497.6	25.8

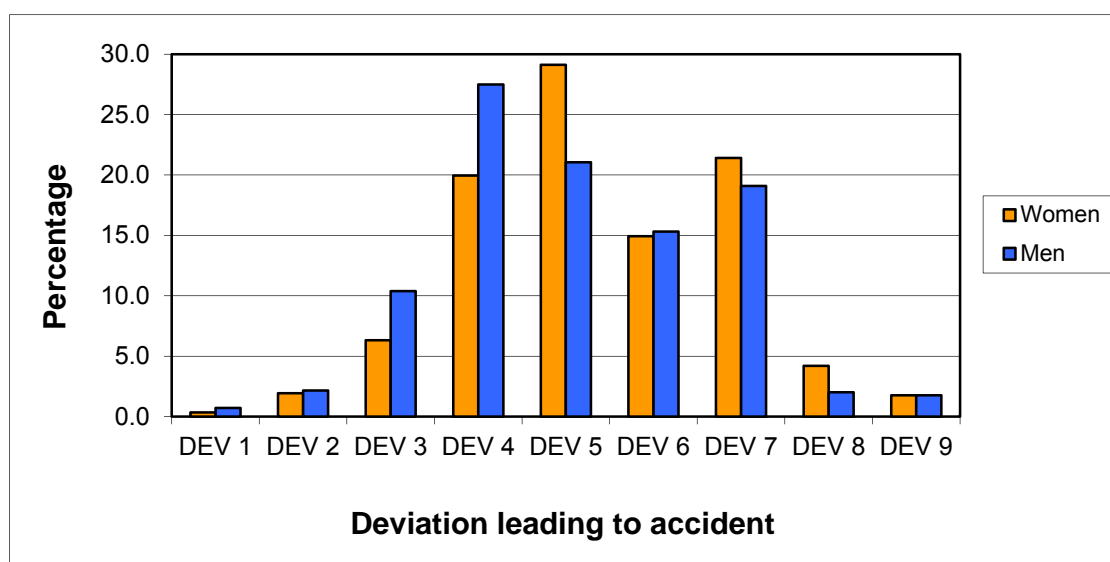
Gender	Females		Males		Total	
Type of deviation	Incidence rate	%	Incidence rate	%	Incidence rate	%
D5: Slipping — stumbling and falling — fall of persons	291.0	29.1	565.5	21.1	442.9	22.9
D6: Body movement without any physical stress (generally leading to an external injury)	149.2	14.9	411.5	15.3	294.4	15.2
D7: Body movement under or with physical stress (generally leading to an internal injury)	213.9	21.4	512.8	19.1	379.2	19.6
D8: Shock, fright, violence, aggression, threat, presence	42.0	4.2	54.0	2.0	48.7	2.5
D9: Other deviations not listed above in this classification	17.6	1.8	47.4	1.8	34.1	1.8
Total	999.1	100.0	2,686.0	100.0	1,932.4	100.0

*Data included from Austria (partially), Belgium, Bulgaria, Cyprus, Czech Republic, Germany, Estonia, Finland, Hungary, Ireland, Italy, Lithuania, Latvia, Luxembourg, Malta, Poland, Romania, Slovakia, Spain, Sweden, United Kingdom and Switzerland.

For female workers the four most frequent deviations are indicated in light orange; for male workers the four most frequent deviations are indicated in light blue.

Source: Eurostat (2009d)

Figure 64: Percentage distribution of accidents at work with more than 3 days' absence for women and men by type of deviation leading to accidents in the EU (22 countries included*) in 2005



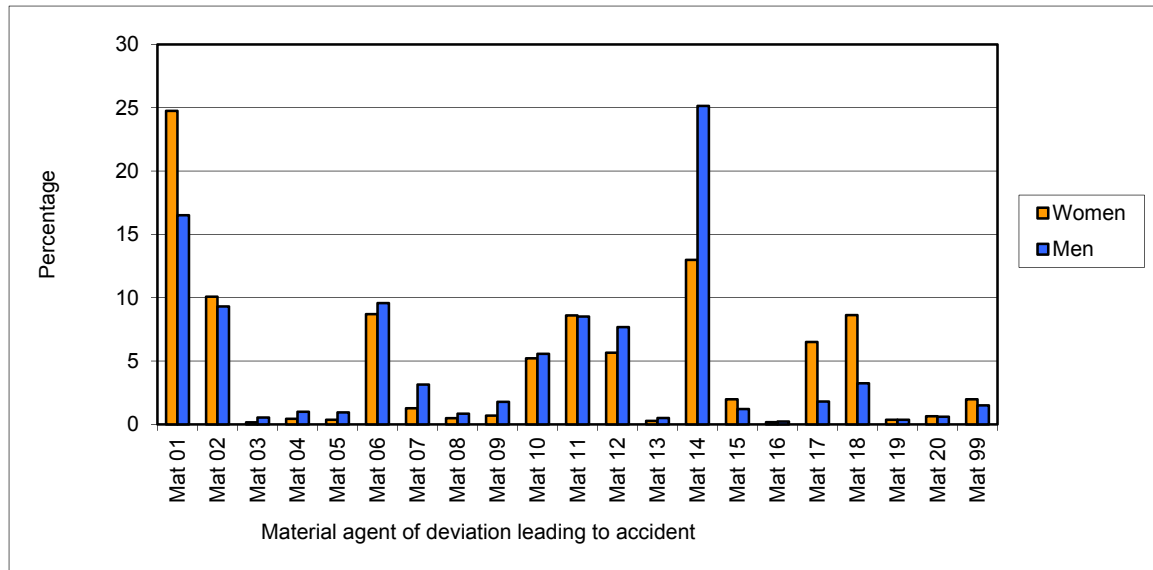
*Data included from Austria (partially), Belgium, Bulgaria, Cyprus, Czech Republic, Germany, Estonia, Finland, Hungary, Ireland, Italy, Lithuania, Latvia, Luxembourg, Malta, Poland, Romania, Slovakia, Spain, Sweden, United Kingdom and Switzerland. For an explanation of DEV 1 to DEV 9 see Table 29. Source: Eurostat (2009d)

The most frequent types of deviation in women were 'slipping, stumbling and falling', causing 29 % of severe accidents in 2005; 'body movement under or with physical stress', with 21 %; 'loss of control of machine, means of transport or handling equipment, hand-held tool, object, animal', with 20 %; and 'body movement without any physical stress', with 15 % (Figure 64 and Table 29). These were also the types of deviation that caused most accidents in men. For women and men, these four deviations

caused over 80 % of all severe accidents. For the type of deviation no further differentiation is available from Eurostat, either between countries or between industrial sectors combined with gender.

Figure 65 shows the percentage distribution of the material agent of deviation that led to accidents in some countries of the EU in 2005, and Table 30 shows the incidence rates. **The material agent of deviation is the tool, object or instrument involved in the abnormal event.** If several material agents are associated with the (last) deviation, the last material agent involved should be recorded, that is the one closest in time to the injuring contact.

Figure 65: Percentage distribution of accidents at work with more than 3 days' absence for women and men by material agent of deviation leading to accidents in the EU (22 countries included*) in 2005



*Data included from Austria (partially), Belgium, Bulgaria, Czech Republic, Germany, Estonia, Hungary, Italy, Malta, Poland, Romania, Slovakia, Spain, Sweden and Switzerland. For an explanation of MAT 01 to MAT 99 see Table 30. Source: Eurostat (2009d)

By far the most frequent material agent of deviation in women was MAT01, 'buildings, structures, surfaces — at ground level', causing 25 % of severe accidents in 2005 (Table 30). This corresponds with the high percentage of accidents that were caused by 'slipping, stumbling and falling' (Table 30). In contrast, this was only the second most important material for men (Figure 65 and Table 30). For both genders, MAT02, 'buildings, structures, surfaces — above ground level', caused a further 10 % of all accidents.

Table 30: Incidence rates (per 100,000 employed) of accidents at work with more than 3 days' absence for women and men by material agent of deviation leading to accidents in the EU (22 countries included*) in 2005

Gender Material agent of deviation	Females		Males		Total	
	Incidence rate	%	Incidence rate	%	Incidence rate	%
MAT01: Buildings, structures, surfaces — at ground level (indoor or outdoor, fixed or mobile, temporary or not) — not specified	247.8	24.8	457.6	16.5	365.2	18.3
MAT02: Buildings, structures, surfaces — above ground level (indoor or outdoor) — not specified	100.9	10.1	257.9	9.3	188.8	9.5

New risks and trends in the safety and health of women at work

Gender Material agent of deviation	Females		Males		Total	
	Incidence rate	%	Incidence rate	%	Incidence rate	%
MAT03: Buildings, structures, surfaces — below ground level (indoor or outdoor) — not specified	1.6	0.2	15.1	0.5	9.1	0.5
MAT04: Systems for the supply and distribution of materials, pipe networks — not specified	4.4	0.4	27.6	1.0	17.4	0.9
MAT05: Motors, systems for energy transmission and storage — not specified	3.6	0.4	26.3	0.9	16.3	0.8
MAT06: Hand tools, not powered — not specified	87.1	8.7	265.2	9.6	186.8	9.4
MAT07: Hand-held or hand-guided tools, mechanical — not specified	12.8	1.3	87.1	3.1	54.3	2.7
MAT08: Hand tools — without specification of power source — not specified	4.9	0.5	23.3	0.8	15.2	0.8
MAT09: Machines and equipment — portable or mobile — not specified	7	0.7	49.2	1.8	30.6	1.5
MAT10: Machines and equipment — fixed — not specified	52.2	5.2	154.3	5.6	109.3	5.5
MAT11: Conveying, transport and storage systems — not specified	86.1	8.6	236.1	8.5	170	8.5
MAT12: Land vehicles — not specified	56.7	5.7	212.8	7.7	144	7.2
MAT13: Other transport vehicles- not specified	2.8	0.3	14.1	0.5	9.1	0.5
MAT14: Materials, objects, products, machine components, debris, dust — not specified	130	13.0	696.7	25.1	446.9	22.4
MAT15: Chemical, explosive, radioactive, biological substances — not specified	19.8	2.0	33.6	1.2	27.5	1.4
MAT16: Safety devices and equipment — not specified	1.7	0.2	6.1	0.2	4.1	0.2
MAT17: Office, personal, sports equipment, weapons, domestic appliances — not specified	65.1	6.5	50	1.8	56.8	2.9
MAT18: Living organisms and human beings — not specified	86.4	8.6	89.8	3.2	88.3	4.4
MAT19: Bulk waste — not specified	3.7	0.4	10.1	0.4	7.3	0.4
MAT20: Physical phenomena and natural elements — not specified	6.4	0.6	16.7	0.6	12.1	0.6

Gender Material agent of deviation	Females		Males		Total	
	Incidence rate	%	Incidence rate	%	Incidence rate	%
MAT99: Other material agents not listed in this classification	19.9	2.0	41.5	1.5	32	1.6
Total	1,001	100.0	2,770.9	100.0	1,991.1	100.0

Source: Eurostat (2009d)

*Data included from Austria (partially), Belgium, Bulgaria, Czech Republic, Germany, Estonia, Hungary, Italy, Malta, Poland, Romania, Slovakia, Spain, Sweden and Switzerland.

For female workers the six most frequent material agents of deviation are indicated in light orange; for male workers the six most frequent material agents of deviation are indicated in light blue.

In the last two groups, MAT17 and MAT18, percentages were considerably higher for women than for men (Figure 65), whereas they were similar across the other groups of material agents of deviation.

The second most important material agent, causing 13 % of accidents in women, was MAT14, 'materials, objects, products, machine components, debris, dust'. This group caused most accidents in men (25 %) (Table 30). Six other material agents caused between 5 % and 10 % of accidents in women: MAT06, 'hand tools, not powered'; MAT10, 'machines and equipment — fixed'; MAT11, 'conveying, transport and storage systems'; MAT12, 'land vehicles'; MAT17, 'office equipment, personal equipment, sports equipment, weapons and domestic applicants'; and MAT18, 'living organisms and human beings'.

5.4 Illnesses and complaints associated with working

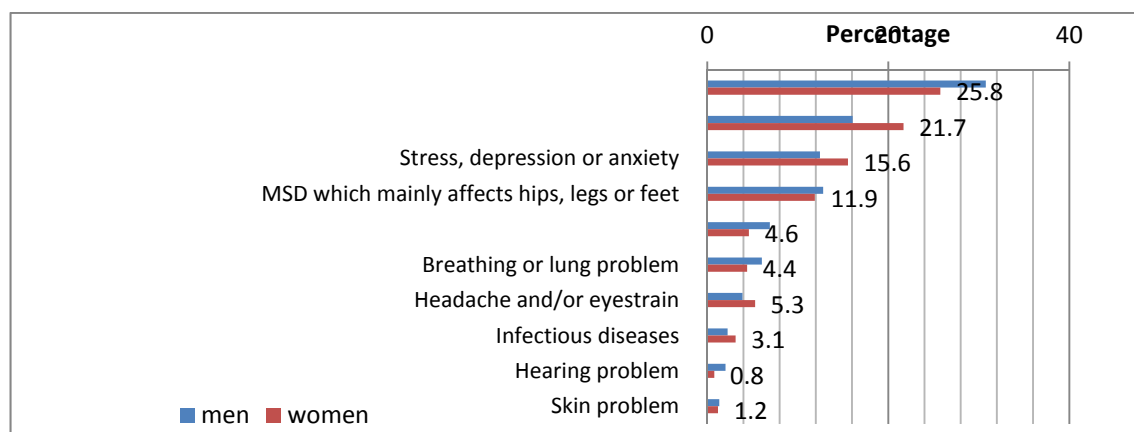
De Norre (Eurostat, 2009a) presents results from the Labour Force Survey 2007 ad hoc module on accidents at work and work-related health problems. Unfortunately, this publication does not differentiate the results by country. In total, 8.6 % of workers in the EU-27 (excluding France) reported one or more work-related health problems during the 12-month period before the survey. Rates were similar for female and male workers. This is in contrast to the findings of Dupré (Eurostat, 2002), who reported a prevalence ratio of 0.6 for male workers in relation to female workers in 1999. The main reason for this difference is probably that Dupré (Eurostat, 2002) used prevalence rates that were standardised to full-time employment. As women work part time more often than men, this correction increases the prevalence rates for women in relation to the prevalence rates for men. It should be discussed if this correction is appropriate for deriving guidance for prevention.

According to Figure 66, female workers reported infectious diseases, stress, depression and anxiety, and headache and eyestrain more often.

The prevalence of work-related health problems increased with age for both genders from approximately 3 % in the age group 15–24 to nearly 12 % in the age group 55–64 (Eurostat, 2009a). This is in contrast to the frequency of accidents at work, which remained almost constant in women and declined with age in men.

The distribution of health problems is also different among both genders. The proportion of stress, depression and anxiety, headache and eyestrain is higher among women.

Figure 66: Work-related health problems experienced in the past 12 months (%) (France not included, EU-27 figures reflect EU-27 without France)



Source: Eurostat, EU-LFS (2007)

In most sectors, between 6 % and 8 % of female workers reported work-related health problems (Table 31 and Figure 67). The percentage was higher in ‘agriculture, hunting and forestry’, ‘health and social work’ and ‘education’ (Eurostat, 2009a). This means that in the ‘agriculture, hunting and forestry’ sector and in the ‘health and social work’ sector we find both a high accident rate and a high prevalence of work-related health problems.

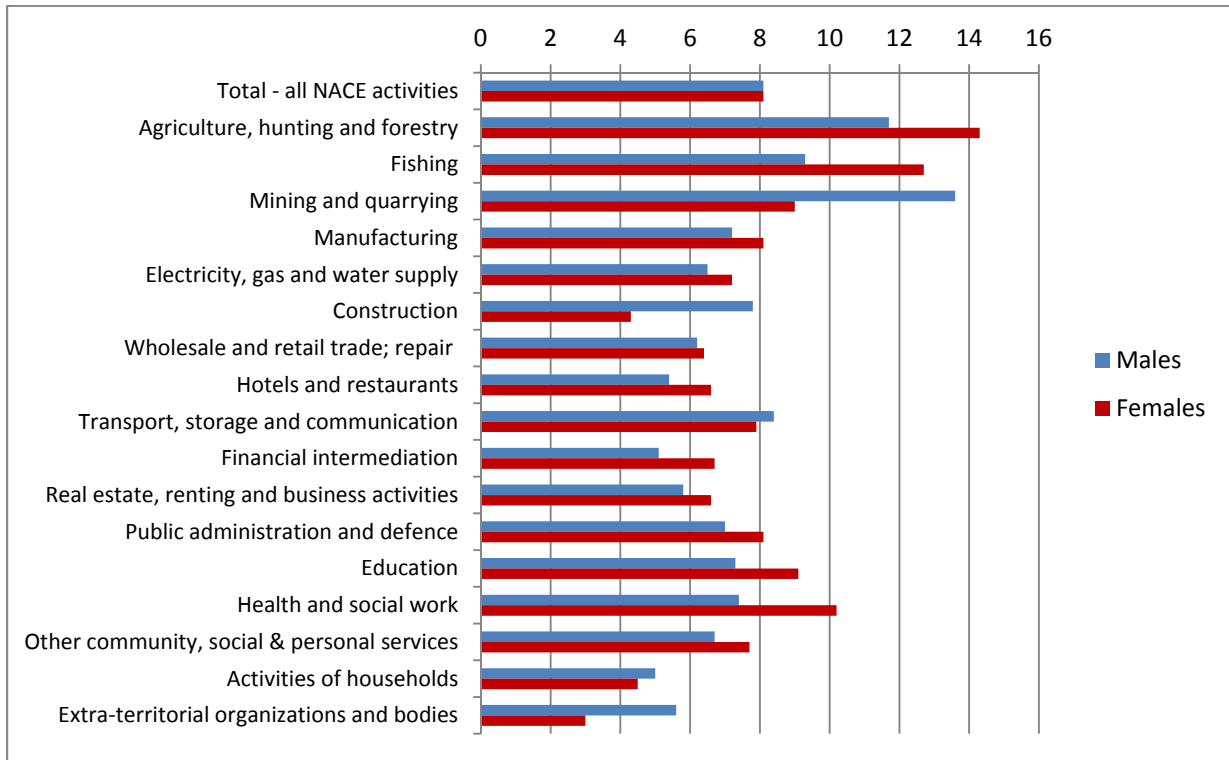
These findings are more important considering the fact that, in 2006, 21 % of all female workers worked in these two sectors and 11 % worked in the education sector. Combining these numbers with the figure of approximately 94 million women working in the EU-27 in 2006 (Eurostat, 2009e), it can be estimated that in these three high-risk sectors about three million women suffered from work-related health problems in the EU-27. As Dupré (Eurostat, 2002) does not differentiate between sectors, it is not possible to look for time trends in sectors.

Table 31: Persons reporting their most serious work-related health problem in the past 12 months, type of problem, percentage of all, EU-27 (without France)

Diagnosis	Male (%)	Female (%)
Cardiovascular disorders	7.1	4.8
Hearing disorders	2.0	0.8
Pulmonary disorders	5.9	4.2
Musculoskeletal disorders	60.1	59.5
Infectious diseases	2.1	2.9
Stress, depression and anxiety	12.1	15.4
Skin problems	1.3	1.2
Headache and eyestrain	3.6	5.1
Other, not mentioned elsewhere	5.8	6.1

Source: Eurostat, EU-LFS (2007)

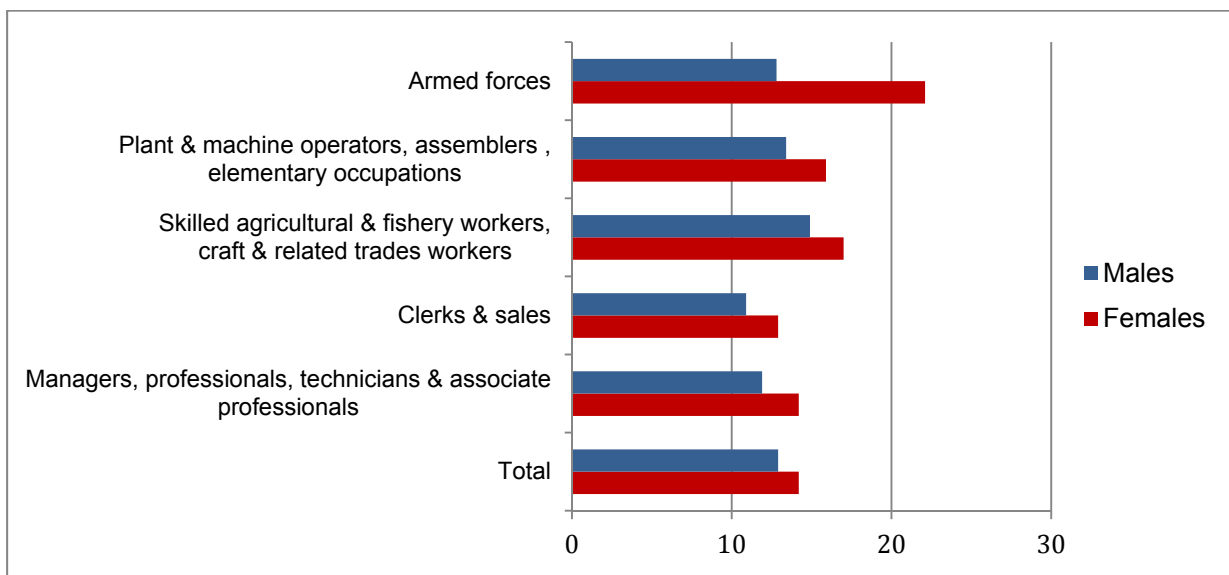
Figure 67: Persons reporting one or more work-related health problems in the past 12 months, by gender and economic activity sector (%)



Source: Eurostat, EU-LFS (2007)

Both female and male skilled manual workers reported the highest prevalences of work-related health problems (11 % vs. 8 %) (Eurostat, 2009a). Within the other occupational groups considered (highly skilled non-manual, low-skilled non-manual and elementary occupation), 7–8 % of women and 5–6 % of men suffered from health problems (Figure 68 and Table 32).

Figure 68: Persons reporting one or more work-related health problems in the past 12 months, by gender and occupation (%)



Source: Eurostat, EU-LFS (2007)

In most age groups, female workers report more health problems than male workers do.

Table 32: Proportion of persons reporting one or more work-related health problems in the past 12 months, by gender, age and occupation, EU-26 (EU-27 without France) (%)

AGE	Gender/ Occupation (ISCO88)	Total	Managers, professionals, technicians and associate professionals	Clerks and sales	Skilled agricultural and fishery workers, craft and related trades workers	Plant and machine operators and assemblers and elementary occupations	Armed forces
Total	Males	12.9	11.9	10.9	14.9	13.4	12.8
Total	Females	14.2	14.2	12.9	17.0	15.9	22.1
15-24	Males	6.5	6.9	5.5	7.1	6.1	10.5
15-24	Females	7.6	8.3	7.7	6.3	6.0	20.4
25-34	Males	10.7	10.4	8.9	11.5	11.7	11.0
25-34	Females	11.9	12.5	11.1	10.2	12.5	29.1
35-44	Males	13.6	11.9	12.8	15.5	14.7	14.1
35-44	Females	14.3	14.2	13.4	16.2	15.6	12.0
45-54	Males	15.9	13.6	14.8	19.3	16.6	15.8
45-54	Females	17.8	17.1	16.7	22.1	19.9	13.5
55-64	Males	15.0	12.9	12.6	19.5	14.6	19.7
55-64	Females	17.1	15.4	15.9	23.5	19.4	:

Source: Eurostat, EU-LFS (2007)

In the following section, some of the health problems experienced in the workplace are discussed.

A German representative employee survey of 20,000 individuals found that for most physical hazards (e.g. carrying or moving heavy loads; strong vibration; noise; low or hot temperatures; exposure to chemicals, smoke, fumes, oil and tobacco smoke) men were more often exposed than women. Only the handling of microbiological substances and a high frequency of repetitive work were more frequent for women (Beese, 2009). However, these trends need to be put in perspective and differentiated by age and sectors in which women work. As could be shown in the first chapters of this report, women of different ages tend to work in different sectors, with very distinct conditions. Averaging over all sectors may lead to an underestimation of the true extent of exposure and disease in a specific sector or a female-dominated occupation. In spite of the higher exposures of men in general, there are occupations within the health and social sector, such as nursing, which are dominated by women and which are characterised by the carrying of heavy loads, tiring postures, handling chemical and biological agents, unsocial working times and emotionally demanding situations; therefore, women constitute a significant proportion of workers subjected to exposures. Nicot (Eurofound, 2008h) concludes that the high proportion of women in these jobs is one reason for the higher frequency of MSDs in women.

Additionally, misconceptions of what is regarded as 'hard work' may have an impact on monitoring of health effects and compensation of diseases. Last, but not least, women are highly represented in informal employment, and employment is increasing in home care and households, which can be characterised by poor working conditions and a lack of protection (ILO, 2007b), as well as not being accessible to monitoring or the usual prevention mechanisms (labour inspection and prevention services). For more information on women working in the informal sector, see Chapter 7.

5.4.1 Musculoskeletal disorders

Work-related MSDs include all MSDs that are induced or aggravated by work and the circumstances of its performance; both physical and psychosocial risks have been demonstrated to play an aetiological role in their development (Leka et al., 2009). MSDs are the most commonly reported cause of occupational illness (Kumar, 2001; Eurofound, 2007a), with 22.8 % of European workers

reporting muscular pain and 24.7 % reporting back pain in 2005 (Eurofound, 2007a). Studies from a number of different countries indicate that women are more likely than men to experience MSDs and pain, and that their incidence, and sometimes their severity, increases with age (see Doyal and Payne, 2006 for a review). These high levels of disability may be the result of accidental injuries or more chronic problems resulting from repeated damage over the years to a particular area of the body.

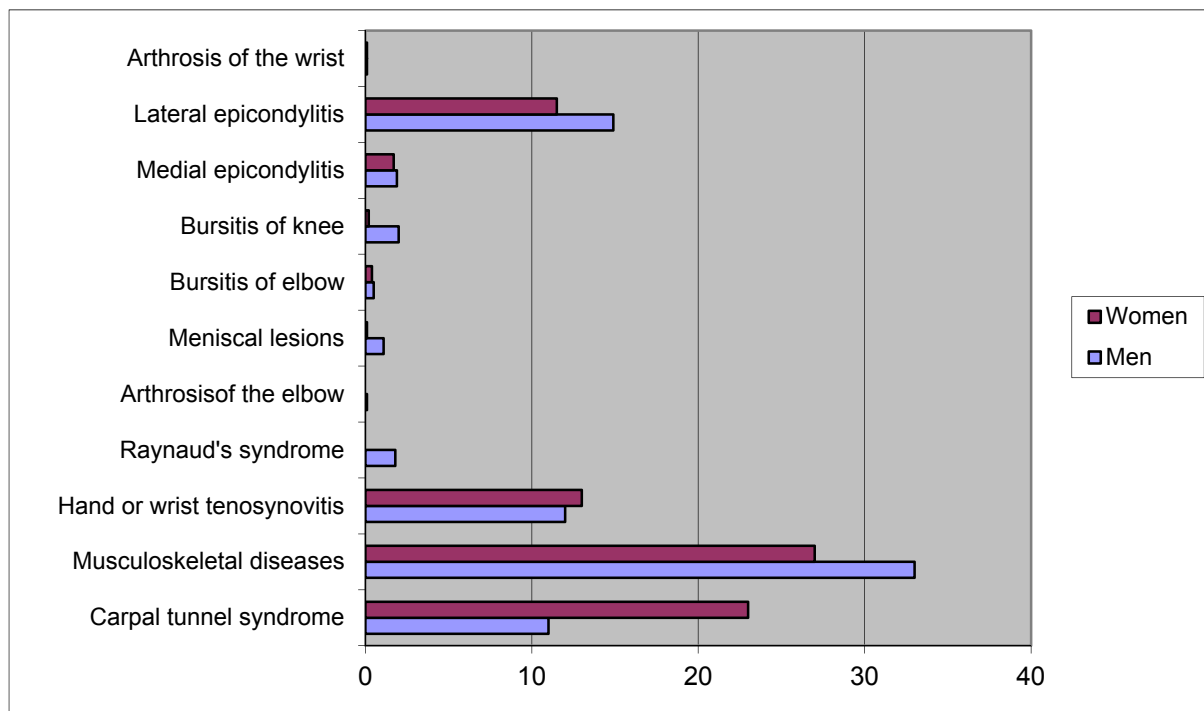
In the LFS ad hoc module 2007, musculoskeletal problems occurred most often as the main work-related health problem in workers with manual work, whereas the proportion of workers with musculoskeletal problems was lowest among highly skilled non-manual workers. In both small (< 10 persons) and larger firms, musculoskeletal health problems contributed importantly to work related health problem. In agreement, the EWCS 2005 showed that backache and muscular pain were more often reported by manual workers compared to non-manual workers.

Within the group of female workers with a work-related health problem, MSDs were the most prevalent health problem: 26 % reported a bone, joint or muscle problem that mainly affects the back; 22 % a problem that mainly affects the neck, shoulder, arms or hands; and 12 % a problem that mainly affects the hips, legs or feet, resulting in an overall percentage of up to 60 % in total for MSDs (Eurostat, 2009a).

In the official European statistics of recognised diseases, the incidence rate of MSDs is lower in female than in male workers with the exception of carpal tunnel syndrome and hand and wrist tenosynovitis (Figure 69). However, looking at all occupational diseases, MSDs make up a much higher proportion of all recognised occupational diseases among female workers than male workers. Several studies have found that upper-limb disorders, including repetitive strain injuries, cumulative trauma disorders and occupational overuse syndrome, are more common among women (Doyal and Payne, 2006). In general, employed women are two to five times more likely than men to report these sorts of problems (Ariens et al., 1999, as cited in Strazdins and Bammer, 2004).

Zetterberg and Öfverholm (1999) studied carpal tunnel syndrome and other wrist and hand symptoms in male and female car assembly workers in Sweden and found that women are **more susceptible than men to joint, tendon and especially nerve-related problems of the wrist and hand when doing assembly work.**

Figure 69: Incidence rate (per 100,000 workers) of non-fatal occupational musculoskeletal diseases, European Occupational Diseases Statistics obligatory list (by gender), EU-15, except Germany, Greece and Ireland, 2005



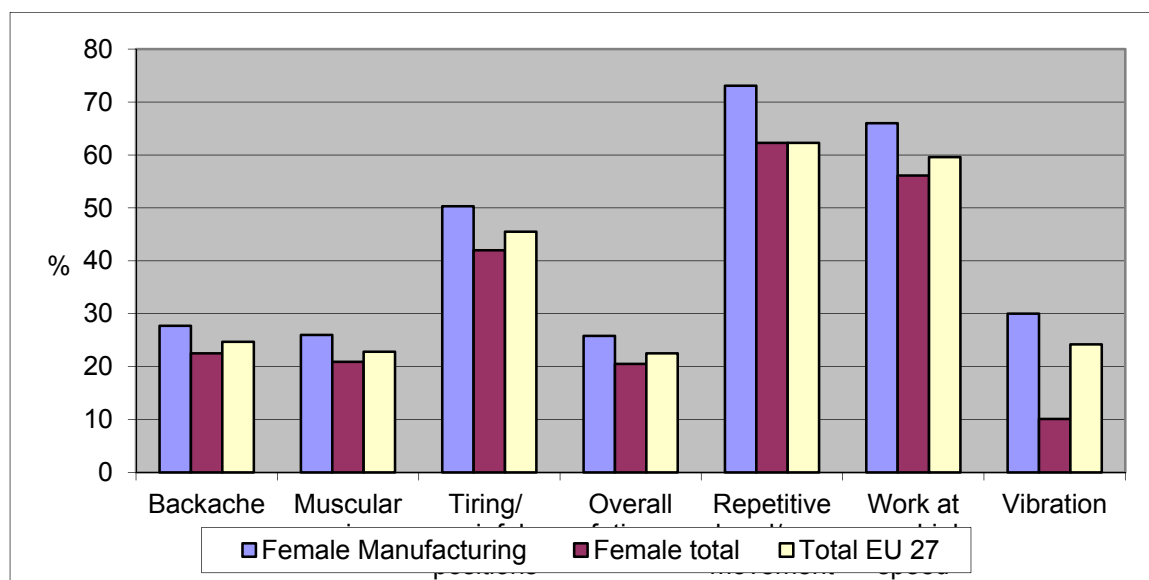
Source: European Occupational Diseases Statistics (2005)

In general, there are different patterns of MSDs among men and women, most likely a reflection of their segregation in different occupational sectors and jobs and, in turn, the differential taxonomy of their exposure to occupational risks. Despite the common assumption that women do 'light work' that involves limited physical strain, 28 % of female workers in the United Kingdom spend more than a quarter of their working day moving heavy loads (TUC, 1999, as cited in Doyal and Payne, 2006). Women are also more likely than men to be engaged in work that requires the performance of repetitive tasks, and many of those who work in factories or offices are operating with a very short work cycle paired with repetitive bodily movements and tasks (Sjøgaard et al., 2006, as cited in Doyal and Payne, 2006). In Sweden, Ohlsson et al. (1994) used a cross-sectional study with an active sample and a control group to evaluate the association between personal factors and physical and psychological work environment factors and any disorders of the neck or upper limbs among women who work in the fish processing industry. The results showed that the women in the active group were more at risk of developing MSDs of the neck and upper limbs. The authors note that work in the fish processing industry is done without pauses and involves repetitive wrist movements. Other studies have revealed the links between repetitive movement and upper limb disorders in women in Sweden (see Hansson et al., 2000; Karlqvista et al., 2002) and in Australia (Strazdins and Bammer, 2004).

Data from the third EWCS found that women, on average, were more exposed to repetitive hand or arm movements and lifting or moving people than men (Eurofound, 2007b). This can have a severe impact on particular parts of the body and can result in chronic wear and tear on the body, especially in the neck, shoulders, arms and wrists. Many of the MSD problems experienced by women workers can be exacerbated when work equipment (such as desks, chairs and factory benches) are designed to meet the ergonomic needs of the average male (Messing and Stellman, 2006). Carter and Banister (1994) found that gender insensitivity to the way in which work and workplaces are designed could contribute to high rates of repetitive strain injury among female workers.

The prevalence and incidence of different MSDs differ by occupational sector among women. Figure 70 shows the proportion of women in the manufacturing sector who reported a specific health problem or are exposed to certain risk factors in the EU-27 in 2005. For example, 27.7 % women in this occupational sector reported that they experience backache; this is 5.4 % above the female average and 3 % above the EU-27 average. Approximately 26 % of women in the manufacturing sector report experiencing muscular pains; this is 5.2 percentage points above the average for women as a whole and 3.2 % above the EU-27 average (Eurofound, 2007a).

Figure 70: Percentage of women in the manufacturing sector reporting a specific health problem or exposed to a certain risk factor, EU-27, EWCS 2005



Source: Parent-Thirion et al. (2007)

▪ **Musculoskeletal disorders increasing in young workers**

Information derived from the 2008/2009 United Kingdom Labour Force Survey found that self-reported work-related MSDs vary with respect to age and sex. The highest prevalence rates were observed among middle-aged workers (specifically individuals aged 35–54) for both males and females (HSE, 2010b). Thus, when considering women’s health in relation to MSDs it is important to consider the respective contributory role of age. Interestingly, when comparing the 2008/2009 data with that of the previous survey (2007/2008), a trend for increasing prevalence within a younger age group for both men and women was observed (HSE, 2010b). It is not clear why this trend is occurring, although it may be the changing nature and content of work among younger workers that has resulted in a greater exposure to occupational risks that can result in the development of MSDs. However, this is consistent with findings in the EU-OSHA analysis on young workers, which identified a rising trend in MSDs among young workers, and at the same time a lack of access to rehabilitation services for them, which means that they may drop out of work altogether.

A gender-focused approach to raising awareness of risks within organisations (Austria)

Working group 3 of the Ministry of Work, Social Affairs, and Consumer Protection (BMASK), Austria, aims not only to reduce the number of diseases, MSDs and mental illnesses (and combined effects thereof), but also to change perceptions and increase awareness of these among companies and stakeholders in specific sectors. The group takes into account gender issues and demographic change, as well as the culture of the sector and the company itself.

Some recent projects include:

- ‘Prima Klima’ (2009–2010). An educational game on prevention that aims to tackle work-related risks related to musculoskeletal and mental strains by motivating stakeholders and make them aware at work. It takes account of gender and age.
- ‘Manual handling of loads in the health and transport sector’ (2007–2012). This project focuses on roadwork, as well as on the retail and construction sectors. It collects qualitative and quantitative data related to load handling, suggests improvements and makes companies aware of examples of best practice. The project also assesses the suitability of the assessment methodology and raises awareness among inspectors in the relevant sectors. Generally, the project tries to reduce work-related diseases linked to the manual handling of loads.
- ‘AUVAfit’ (2007–2010), which aimed to increase awareness in the workplace of the correlations between mental, physical and social risks, work motivation, absenteeism and workplace accidents. The AUVA supported companies in implementing adequate strategies and developed good-practice examples with them. From 2011, the project is to be integrated in the routine operation of the advisory service of the AUVA.

5.4.2 Lower limb disorders

French researchers found that certain jobs were linked to an increased risk of osteoarthritis in the knees, hips and hands; the workers found to be most at risk were female cleaners (EU-OSHA, 2008f), women in the clothing industry, male masons and other construction workers, and male and female agriculture workers (Rossignol et al., 2005). Women employed as housekeepers are also at risk for developing osteoarthritis (Rossignol et al., 2003).

As workload and feminine gender are among the factors that lead to the development of knee osteoarthritis, Holmberg et al. (2004) investigated these factors in Sweden. The results revealed that women who had worked for 11–30 years in the farming industry were more at risk of developing knee osteoarthritis than men. Other risk factors were excess weight, heredity and previous knee injuries. Other studies from Sweden have reflected the likelihood of women farmers developing knee osteoarthritis, as well as those women who care for the elderly or disabled at home (Sandmark et al., 2000).

Lower limb disorders are also amongst the disorders leading to the highest rates of long absences and limitations in day-to-day activities at work or outside work, according to the 2007 Labour Force Survey. Differences in the consequences of disease existed between the different types of musculoskeletal health problems. In particular, workers with hip, leg or foot problems, that is lower limb problems, more

often experienced considerable limitations (19 %) and longstanding sick leave (25 %). In a recent EU-OSHA (2010) report it was described that gender differences exist in the type and frequency of lower limb disorders. It was suggested that, because women are significantly exposed to prolonged standing and walking, they might be strongly affected by lower limb disorders that are currently not recognised. The authors also report that some Member States record static work and lower limb disorders in their worker surveys, and found an increasing trend. Unfortunately, the Labour Force Survey data are not available by gender, so a further in-depth analysis was not possible.

The European schedule of occupational diseases takes as little account of lower limb disorders relevant to women as do the national lists of occupational diseases. This is a gap that needs to be filled. However, the American Medical Association has publicly announced its recognition of prolonged sitting as a cause for health problems and encouraged employers to provide alternatives to sitting, such as standing workstations and isometric balls (AMA, 2013).

In a recent European survey, lower limb disorders were found to be the MSDs leading to the highest rates of long-term absences and limitations in day-to-day activities at work. As women are highly affected by lower limb disorders, prolonged standing and sitting, this should be addressed in monitoring, prevention and rehabilitation.

- **Work–life balance plays a role**

In addition to understanding the role of work-related risk factors for MSDs faced by women workers, it is also important to identify and understand the nature of risk factors faced by women at home and how these contribute or interact with those risk factors in the workplace. There is a growing body of literature to indicate that domestic hazards may play a role in MSD development, but the evidence remains limited, as there have been few studies in this area. One study, conducted by Strazdins and Bammer (2004), involved a self-report survey to public service workers in Australia. In total, 737 individuals responded (73 % women), with 81 % of respondents listing some form of upper body syndrome, and of these 20 % reported severe and continuous upper body pain. In general, within the surveyed sample upper body musculoskeletal symptoms were found to be more prevalent and severe among women. Risk factors at work (repetitive work and poor ergonomic equipment) and factors at home (having less opportunity to relax and exercise outside of work) explained the observed gender difference in symptom severity. Interestingly, parenthood was found to exacerbate this gender difference, with mothers reporting the least amount of time devoted to relaxation or exercise. It is important to highlight that this study collected information from only one point in time and from a particular sample of individuals. Therefore, caution should be taken in generalising these findings to other samples, and the causal nature of these identified factors cannot be determined. However, this study does highlight the importance of considering factors outside the working environment when seeking to understand women's work-related health.

Research from the USA, conducted by Lipscomb and colleagues (2007, 2008), on women employed in poultry processing found that women new to the industry were more likely to experience early musculoskeletal problems, and their risk increased the longer they were exposed to that environment. In addition, women with second jobs were more likely to have symptoms, as were women who were overweight, depressed or concerned about job security. This highlights the fact that, as for work accidents, it is important to consider the context of data. This is important because psychosocial factors at work can increase exposure to MSD risks.

5.4.3 Mental health and stress

- **Mental health**

Across the EU there is an observed trend of increasing absenteeism and early retirement as a result of mental health problems, particularly in relation to stress and depression (McDaid et al., 2005). An estimated 20 % of the working population will experience some form of mental health problems during their working lives (STAKES, 1999), costing an estimated 3–4 % of the European gross national product (McDaid et al., 2005). An estimated 73 million adult women worldwide report suffering from a major depressive episode each year (WHO, 2009). Although women are less likely than men to suffer from alcohol and drug use disorders, they are more susceptible to depression and anxiety Eurofound, 2009e, WHO, 2009). One in four women (compared with 1 in 10 men) are likely to seek treatment for

depression (WHO, 2009). Women are also twice as likely as men to experience anxiety. The Mental Health Foundation (2007) suggests that women are particularly exposed to certain factors that may increase the relative risk of poor mental health because of the role and status that they typically have in society. Some of the key social factors that may affect women's mental health include the following:

- More women than men act as the main carer for their children and they may also care for other dependent relatives — intensive caring can affect emotional health, physical health, social activities and finances.
- Women often juggle multiple roles — they may be mothers, partners and carers, as well as doing paid work and running a household.
- Women are over-represented in low-income, low-status jobs (often part time) and are more likely than men to live in poverty.
- Poverty, working mainly in the home on housework and concerns about personal safety can make women particularly isolated.

Data collected in the United Kingdom from 2006 to 2008 indicate that the highest number of mental ill health cases reported to psychiatrists and occupational physicians were seen in the health and social work sector: 2,244 cases. The occupational sector with the second highest figure was public administration and defence, with 898 cases. Of the reported 2,244 cases from the health and social work sector, 558 were related to bullying and sexual harassment in the workplace. In general, as in previous reports, women reported the majority of mental ill health cases. The most commonly reported mental health problems were anxiety and depression (2,798 cases), with more females (1,532) than males (1,266) afflicted. The second highest reported mental health problem was work-related stress (2,014 females and 767 males). Between 2006 and 2008, the highest number of days lost (34,506), as well as the greatest average number of days lost per case (26.8), was associated with mental ill health. Many of the factors that were reported to be linked to cases of mental ill health were found to relate to job characteristics and the working environment, including workload, demand and pressure of work, poorly defined role, low control, perceived lack of social support, poor management and bullying and sexual harassment (HSE, 2009b). Organisational inequity (i.e. the extent to which workers are treated fairly at work) has been shown to increase psychiatric disorders among female workers (Kivimäki et al., 2003).

Stansfeld and Candy (2006) conducted a meta-analysis of longitudinal studies examining work-related psychosocial risks and common mental health disorders such as depression and anxiety. The review observed job strain and reward–effort imbalance as key risk factors for depression and anxiety. Interestingly, the impact of these psychosocial risks on mental health was found to differ between men and women. A cross-sectional study of 7,484 full-time workers conducted in Canada found similar results, with psychosocial risks having a different impact on men and women. Women more frequently reported high-strain jobs, although this did not translate into an increased incidence of psychological distress. Interestingly, negative psychosocial work characteristics demonstrated a stronger association with psychological distress among men (Vermeulen and Mustard, 2000).

Emslie and colleagues (2002) examined the distribution of minor psychiatric morbidity among men and women working in similar jobs within three white-collar organisations from the private and public sector, after controlling for domestic and socioeconomic circumstances. Self-reported data were collected from a bank ($n = 2,176$), a university ($n = 1,647$) and the civil service ($n = 6,171$). The gender difference between minor psychiatric morbidity in white-collar workers was found to differ from that observed in the general population; in addition, it was found to vary between the three organisations and within occupational grades. Across the three organisations, women reported a higher prevalence of minor psychiatric morbidity; however, this trend was observed as significantly different between men and women in only one organisation: the civil service. Interestingly, within both high and middle occupational grades there was a significantly higher prevalence of psychiatric morbidity among women. The researchers found that the characteristics of the women in the higher occupational grades were categorically different from their male colleagues across all three organisations. Women in the top grades were less likely than men to be married/co-habiting or a parent, and were on average younger and better educated than their male peers. The authors concluded that gender differences in minor psychiatric morbidity might vary according to social context. Studies examining the role of gender in work and health need to be aware of the role of context and be sensitive to the particular occupational setting.

- **Stress**

One risk that is increasing for women is work-related stress. The HSE in the United Kingdom defines stress as the adverse reaction people have to excessive pressures or other types of demands placed on them. This can occur at work, at home or a combination of the two. Further, stress has a positive association with sickness absence patterns, which may have negative consequences in the workplace. This issue is relevant to women as they tend to report more occupational ill health and take more sick leave than men (Alexanderson et al., 2005; Holmgren et al., 2009).

In the Labour Force Survey ad hoc module 2007, after musculoskeletal health problems, stress, depression and anxiety constituted the second most frequently reported main work-related health problem. The occurrence of stress, depression and anxiety as the main work-related health problem differed among sectors. The proportion of stress, depression or anxiety was highest in the sectors 'education' (27 %), 'financial intermediation' (25 %), 'public administration and defence' (24 %), and 'real estate, renting and business activities' (22 %). The age group most affected are those between 25 and 44 years old. Unfortunately these data are not available by gender, so gender differences cannot be assessed. Stress was also the health problem leading to the highest rates of long-term sick leave (more than 1 month). To assess the financial and societal impact of these absences and target prevention, these figures would be needed to be differentiated by gender and by the sectors and occupations in which women predominantly work.

Using data collected from the most recent EWCS in 2005. Parent-Thirion et al. (Eurofound 2007a) observed that men reported work-related stress slightly more frequently than women (23 % and 20 %, respectively). In previous surveys the differences between men and women in terms of self-reported stress were marginal. In 1995, 28 % of men and 27 % of women reported experiencing work-related stress, while in 2000 the figures were 27 % and 29 %, respectively (Eurofound, 2007a). Data from Eurostat (1999, as cited in EU-OSHA, 2010) indicate that clear gender differences across EU Member States do not exist. Eurostat data from 1999, covering nine EU Member States, found that 20 % of women and 16 % of men reported stress, depression and anxiety. It is important to highlight that no distinction was made between these symptoms. The indicators were highest in the United Kingdom (36.5 % for men and 30.5 % for women) and lowest in Spain (8.7 % and 7.3 %). Portugal showed the largest observed discrepancy in indicators: 34.3 % for men and 15.2 % for women. The EU Member State with the smallest difference was Finland: 11.5 % for men and 11.2 % for women (EU-OSHA, 2010).

- **Different stressors for men and women**

Within the non-traditional construction industry, although men generally reported higher levels of work-related stress, the specific stressors differed by gender. Women were more likely to be affected by opportunities for personal development, rates of pay, keeping up with new ideas, business travel and the cumulative effect of minor tasks, whereas men found risk taking, disciplinary matters and the implications of mistakes, redundancy and career progression more stressful (Loosemore and Waters, 2004).

Holmgren et al. (2009) researched the prevalence of work-related stress, and its association with self-perceived health and sick leave, in a population of employed Swedish women. They noted that high perceived stress levels, owing to organisational conflicts and having low influence at work, were significantly associated with sick leave and illness symptoms. In Denmark, Lund et al. (2006) found that women were more likely to develop long-term sickness patterns if they experienced simultaneous exposure to two work conditions of poor physical work factors and poor psychosocial work factors. These were bending or twisting of the neck or back combined with high emotional demands, and lifting or carrying loads combined with role conflicts.

In one Swedish study that explored musculoskeletal symptoms among male and female visual display unit operators it was found that, in addition to the overall higher prevalence of symptoms among women than men, women were more likely to have higher levels of job strain and time pressure associated with their symptoms (Karlqvista et al., 2002).

Other research in the USA showed that cosmetologists might be at a higher risk of depression and other reproductive health problems because of their work, which involves sustained chemical exposures during their reproductive lifespan (Gallicchio et al., 2007). Sanne et al. (2005) tested the strain, isostrain, interaction and buffer theories of the job demand-control-support model and their

impact on anxiety and depression. Their results supported the model and showed that the Norwegian men and women surveyed were affected differently by high-strain work. Men and women were more likely to experience depression and anxiety, respectively. Further, women with low support were more likely to experience anxiety and depression, and the authors recommended that men and women should be examined separately in order to better gauge the impact of stressors on either gender.

- **Higher skilled workers at risk**

The occurrence of stress, anxiety or depression was related to educational level. The proportion of persons with stress, anxiety or depression as the main work-related health problem was highest among those with a high educational level (26 %), followed by those with an intermediate educational level (12 %), and a low educational level (10 %).

Recent research in one of the NMSs, Slovenia, shows that female managers are more likely than their male colleagues to report stress-related symptoms (Meško et al., 2009). Some of the symptoms included anxiety, depression, fatigue, intention to quit and poor concentration. This highlights that working conditions in the NMS and acceding states may facilitate similar hazards and risks as those in the older EU Member States. Also, among doctors in the United Kingdom, women rather than men had an increased risk of suicide, which may be linked to work-related stress (Hawton et al., 2001). Interestingly, similar results were found among doctors in the USA (Schernhammer and Colditz, 2004).

Whereas women in a typical 'female' job displayed lower levels of work-related stress (Tung, 1980), when women in managerial positions were assessed they showed higher levels of work-related stress than men, especially those in junior and middle managerial positions (Davidson and Cooper, 1984). Further, one study from Sweden showed women had a higher risk for long-term sick leave than men. This was especially in active jobs with high control and high psychological demands and more so in the private than the public sector (Lidwall and Marklund, 2006).

- **The effect of domestic responsibilities**

One study (Hall, 1992), in noting that not much is known on how work affects women, examined the combined exposure of home responsibilities and the psychosocial work environment on psychosomatic strain on a mixed-gender working sample in Sweden. The results showed that, although an overall non-significant effect was realised when work and home characteristics were controlled, women were more likely, in 52 of 60 combined effects, to express psychosomatic strain. Hall (1992) further outlined that the home stress variable displayed the greatest sex differences, with women who work more than 20 hours a week with low control showing the most strain. She expressed surprise at the findings in view of the fact that Sweden is one of the most liberated countries for women and has made it easier for women to enter and remain in the workforce.

In China, women who work form a vulnerable group as they are often restricted to jobs requiring very low skills, which may result in stressful experiences at work, as well as remaining responsible for all of the domestic work, including educating children (Xu et al., 2004). In this respect, Xu et al. (2004) investigated job and family stress in Chinese women who work. They concluded that the double exposure of effort–reward imbalance at work and experiencing family stress is associated with a significant increase in systolic blood pressure and recurrent sleeping problems.

Some years after Hall's (1992) study, Krantz and Östergren (2001) evaluated the impact of the double exposure of domestic responsibility and job strain on common physical and mental symptoms (e.g. heartburn, stomach pain, depression, irritability and muscular tension) in Swedish women. Most of the working women (65 %) stated that they were responsible for 50 % or more of all domestic responsibilities, with 27 % fully responsible, 4 % responsible for less than half and only 2 % stating that they shared the responsibility equally with their spouse. Other results showed that either exposure, that is domestic responsibility or job strain, increased common symptoms, with a greater effect for those subjected to double exposure. These effects were also observed in Canada, where the unpaid hours that women spend on maintaining a household, especially those they spend on eldercare and housework, led to women experiencing more stress than men (MacDonald et al., 2005).

As mentioned before, another factor that may account for an increased risk for women is when they engage in presenteeism (going to work when ill) at the workplace. Quinn and Woskie (1988) note that

women who work are more likely to use their sick leave allowances for child or elder care, which then results in them needing to work when ill themselves. Presenteeism contributes to higher sick leave rates, as well as lower productivity (Hillier et al., 2005).

Finally, Hall et al. (1993), in assessing the relationship between occupational class, occupational exposures and the risk of cardiovascular morbidity and mortality among working Swedish women, found that women from a lower occupational class who worked in adverse conditions were at increased risk for cardiovascular morbidity and mortality.

5.4.4 Heart disease

Cardiovascular disease (CVD) and heart disease is the leading cause of death and disability in most countries (Everson-Rose and Lewis, 2005). Each year CVD causes over 4.3 million deaths in Europe and over two million deaths in the EU (European cardiovascular disease statistics, 2008). CVD is the main cause of death in women in all countries of Europe and the main cause of death in men in all countries except France, the Netherlands and Spain (European cardiovascular disease statistics, 2008). The male excess in coronary heart disease (CHD) is well recognised. Nevertheless, CHD is the leading cause of death in women, as well as men, in most industrialised countries (European cardiovascular disease statistics, 2008). An estimated 21 % of deaths among women in Europe were linked to CVD (European Cardiovascular Disease Statistics, 2008). In the United Kingdom in 2002, CHD accounted for approximately 22 % of deaths in men and 17 % of deaths in women at all ages (Office for National Statistics, 2002; WHO, 2004; Khaw, 2006). However, despite these statistics, the data specific to their causes in women are lacking (see Brezinka and Kittel, 1996 for a review).

The rates of CHD have been observed to vary markedly across occupations, more than can be accounted for by conventional risk factors, suggesting that elements of work or working conditions might be of aetiological importance (Hemingway and Marmot, 1999). A growing body of evidence from a diversity of disciplines suggests that both lifestyle factors and aspects of the working environment play a key role in the aetiology of heart disease (Landsbergis et al., 2001). Chandola and colleagues (2008) examined longitudinal data collected through the Whitehall study. The primary aim of this study was to examine the biological and behavioural mechanisms linking CHD with work-related stress. The results of the study demonstrated that chronic work stress was strongly associated with CHD and this relationship was demonstrated to be strong among participants under 50. The observed relationship between stress and CHD was influenced through the indirect effects of health behaviours (low physical activity and poor diet in particular) and the direct effects of neuroendocrine stress pathways. These two mediating factors accounted for an overwhelming 32 % of the variance of the relationship between cumulative stress and CHD.

Environmental influences far outweigh the impact of any biological differences between men and women: women in countries with high heart disease rates have over six times the rate among men living in countries with low heart disease rates. Women who suffer with CHD are less likely to return to work when their health improves, and doctors tend not to recommend rehabilitation into work to women because of their age, low income or care responsibilities.

Allesøe and colleagues (2010) investigated the effect of work pressure and job influence on the development of heart disease in women. In their study, the effect of work pressure and job influence on the 15-year incidence of ischaemic heart disease (IHD) in women participating in the Danish Nurse Cohort Study was prospectively studied. In total, 12,116 participants aged 45–64 were examined in 1993 using a questionnaire and were followed by individual linkage in the National Register of Hospital Discharges to the beginning of 2008. Work pressure, job influence, occupational characteristics, demographic factors and known biological and behavioural risk factors for heart disease were collected at baseline. Results showed that, during follow-up, 580 participants were hospitalised with heart disease. In the fully adjusted model, nurses who reported work pressure as too high had a 1.4-fold increased risk of incident IHD (95 % confidence interval (CI) 1.04 to 1.81) compared with nurses who reported work pressure to be manageable. A tendency towards a dose–response effect was found. Age-stratified analysis showed that this effect was significant only among the younger nurses (below 51 years old at baseline). No association was found between job influence and IHD. It can be concluded that excessive work pressure is a significant risk factor for IHD in female workers under 51. The results should be taken into account in the planning of primary prevention. These findings held

true even after taking account of other risk factors such as a family history of heart disease, diabetes, menopausal status, body mass index, smoking, alcohol consumption and the amount of exercise done.

However, while being employed does protect women from CHD, there is some evidence that the combination of working and a family may increase CHD incidence in women (Brezinka and Kittel, 1996).

The international variations and time trends in CHD rates in women indicate that a substantial proportion of CHD in women can be prevented. Rates in women closely correlate with rates in men, suggesting that the environmental and lifestyle factors that lead to high CHD rates in men also lead to high rates in women. The observation that women in countries with high CHD rates have over six times the rate in men living in countries with low CHD rates indicates that environmental influences far outweigh the impact of any biological differences between men and women to CHD susceptibility. Although women have lower rates of CHD than men, CHD is the leading cause of mortality in women, as well as men, in most industrialised countries. Preventive interventions need to be targeted at both men and women (European Cardiovascular Disease Statistics, 2008).

Women who suffer from CHD are less likely to return to work when their health improves. This is influenced by fewer incentives available to them and by being encouraged by doctors not to return to work. Moreover, doctors tend not to recommend rehabilitation programmes to women, with their lower participation rates encouraged also by their age, lower income and caring for dependants. Chapter 6 explores rehabilitation more fully. However, women who do return to work can benefit from lower emotional distress and greater well-being, with women who retire experiencing the opposite (Brezinka and Kittel, 1996).

Women's Heart Programme (Finland)

The Women's Red Heart campaign is part of the Finnish Heart Association Women's Heart Programme and the World Heart Organization's 'Go Red for Women' campaign. The Finnish Heart Association launched the campaign in 2007 to help improve young women's lifestyles to protect their cardiovascular health.

The campaign is based on lifestyle management and improving the quality of life of women. It aims to encourage women to improve the health of their heart by making small changes in their life. The campaign challenges women to evaluate their own lifestyle and to maintain good and healthy habits, and identify and change unhealthy behaviours. It is aimed particularly at women aged between 30 and 45 who lead very busy lives.

5.5 Safety and health risks for women in emerging occupations

Some studies have shown that sexual harassment and rape are very relevant issues for women in military occupations, (DeRoma et al., 2003; Murdoch et al., 2007). However, rape is not usually considered an OSH issue. This may be because of the myths about rape that continue to exist. For example, women tend to be believed more that they were raped if they were overpowered or threatened with a weapon and if they report the attack directly to the police without washing away the forensic evidence (Horvath and Brown, 2010). Moreover, as the majority of women tend not to be believed when they report a rape, it is estimated that as many as 95 % of rapes are not reported (Horvath and Brown, 2010).

One study examined the health effects of combat exposure on women. Pierce (2005) gathered data through a longitudinal study on women in the USA who were deployed to the Gulf War on active duty. She determined that, after an extended period after the war, these women were more likely to have a prevalence of general health problems (e.g. cough, headache and memory problems) than a control group of women who were deployed elsewhere and unexposed to war over the same period of time.

Although medicine is not an emerging profession for women, more women than before are entering this field (a 6 % increase across the EU-27 from 1996 to 2006) (Eurostat, 2009f) and research shows that female doctors in the United Kingdom and the USA are more at risk of suicide — an OSH issue that needs to be monitored (Hawton et al., 2001; Schernhammer and Colditz, 2004). Boxer and

Burnett (1995), in noting the higher suicide rates among women physicians, proposed that this might be linked to work stress and less access to support. In 2010, 45 % of physicians in the EU-27 were women, compared with 38 % in 2001. In 2010, the highest proportions were found in the Baltic states of Estonia and Latvia (both 74 %), Lithuania (70 %) and Romania (69 %), and the lowest in Luxembourg (30 % in 2011), Belgium (36 %) and Italy and Malta (both 37 %) (Eurostat, 2013b).

Women also dominate the teaching profession, particularly in primary education. There are significantly more female than male teachers at primary education level in all Member States. In 2011, 85 % of primary education teachers in the EU-27 were women. In 2011, the proportion of female teachers at upper secondary level was 59 %. Consequently, and because education is a growing sector, health and safety risks in this sector need to be addressed.

More women are working in agricultural settings and, as outlined, it is a sector with a high accident and fatality rate for both men and women. In view of this, owing to the increasing number of women in this sector it may be necessary to monitor whether this rate will transfer across the genders. In the USA, Meeker et al. (2002) found that women on farms are very involved in aspects of management, and farm work, which exposes them to potential health hazards that could result in chronic illness, debilitation or even death. Further, they found that women tended to work on their own or with one family member, and those who worked 20 hours or fewer each week were less likely to wear personal protective equipment than those who worked more than 20 hours each week.

Gender Equality Observatory of the Spanish armed forces (Observatorio de la Mujer) (Spain)

In 2005, the Observatorio de la Mujer was created in the Spanish armed forces as an advisory administrative body to analyse and promote the integration and permanence of women in the military. It channels information about women in the armed forces, suggests measures to improve their integration and to ensure effective equality of both genders. It hopes to boost the application of gender perspective in the security and defence policies.

Female workers in the agricultural sector are involved in jobs such as mixing or applying harmful pesticides. They are often not adequately protected and informed, and, as a result, suffer from poisoning or, in some cases, die (Karasek and Theorell, 1990). Additionally, although women employed in agriculture, like other rural workers, suffer from a high incidence of injuries and diseases, they are insufficiently reached by health services (Forastieri, 2000).

Last, but not least, women are highly represented in informal employment, which can be characterised by poor working conditions and a lack of protection (ILO, 2007b). However, the Scandinavian countries contradict these findings, as they report an increasing number of workers benefiting from an improved consultation and information about OSH risks. However, the authors did not discuss gender differences (Eurofound, 2009f).

The ergonomic risks for women working in office jobs and administrative occupations have already been addressed in previous chapters. Increasingly static work affects these workers, and it is combined with interruptions and a lack of influence over how work is carried out and when breaks can be taken. The effects of these risk factors need to be monitored, and it is important that they are reflected in the official statistics and in the research methodologies in particular.

5.6 Discussion

This chapter presented trend data on women's incidence rates of accidents at work and work-related health problems, taken from the Eurostat database 'Health and safety at work'. Data on work-related health problems are cited from De Norre (Eurostat, 2009a), who presents results from the Labour Force Survey 2007 ad hoc module on accidents at work and work-related health problems. Published results on work-related illnesses and complaints were also used.

It is established that women are less likely to suffer accidents at work than men. In 2006, the incidence rate of accidents that caused more than 3 days' absence from work was 1,524 per 100,000 workers for women and 3,856 for men. Both incidence rates have declined since 1998 — by about 19 % for women and 27 % for men. This reflects the finding in EU-OSHA (2003a) that men were more likely to suffer fewer accidents, but that the rate for men was falling faster than for women. However, it is not clear to what extent rates are adjusted for hours worked. There may very well be an underestimation

of rates, because a high proportion of women work part time, and this proportion is increasing. Additionally, accidents specific to female jobs may go unreported because either the awareness of the specific accidents is low (accidents linked to violence) or the awareness within the sector is low, for example in the hospitality sector or in retail. Women working at their clients' premises and under temporary contracts, for example in home care or as cleaners, may not report accidents at all, because they know little about their rights at work.

Economic sectors with the highest incidence rates of accidents for women were agriculture, hunting and forestry, hotels and restaurants and health and social work. This higher incidence rate was found in most of the EU-15 countries. Looking at the causes and circumstances of accidents the most frequent types of deviation (the event just before the accident) in women, in the 2005 pilot figures, were 'slipping, stumbling and falling', which caused 29 % of severe accidents, 'body movement under or with physical stress' (21 %), 'loss of control of machine, means of transport or handling equipment, hand-held tool, object, animal' (20 %) and 'body movement without any physical stress' (15 %). By far the most frequent material agent of deviation in women was 'buildings, structures, surfaces — at ground level', causing 25 % of severe accidents in 2005. This corresponds with the high percentage of accidents that were caused by 'slipping, stumbling and falling'. In contrast, this was only the second most important material agent for men. For both genders, 'buildings, structures, surfaces — above ground level' caused another 10 % of all accidents. The second most important material agent, causing 13 % of accidents in women, was 'materials, objects, products, machine components, debris, dust'. This group caused most accidents in men (25 %).

Within the Labour Force Survey 2007 ad hoc module on accidents at work and work-related health problems 8.6 % of workers in the EU-27 (excluding France) reported one or more work-related health problem during the 12-month period before the survey. Rates were similar for female and male workers. The prevalence of work-related health problems increased with age for both genders from approximately 3 % in the age group 15–24 to nearly 12 % in the age group 55–64. This is in contrast to the frequency of accidents at work, which remained nearly constant in women and declined with age in men. Overall, the data have not changed substantially in how women and men are affected by work conditions, as men have more work-related accidents; however, both women and men show similar rates of work-related health problems (as shown in EU-OSHA, 2003a).

Within the group of female workers with a work-related health problem, 60 % reported MSDs. Stress, depression and anxiety were reported by 16 % of the women and headache and/or eyestrain by 6 %. All other illnesses or complaints were reported by fewer than 5 % of the women. MSDs and work-related stress remain more of a concern for women than for men (as shown previously in EU-OSHA, 2003a). In 2005, the last year for which harmonised European figures were available (from a selection of the EU-15 countries), although the incidence rate for MSDs is higher for male than for female workers, MSDs make up a much higher proportion of all occupational diseases for women. Furthermore, the rate of MSDs was increasing more rapidly among women. The number of cases of MSDs and carpal tunnel syndrome increased by 39 % for women from 2002 to 2005, as is outlined in section 5.4. These conditions account for 85 % of all self-assessed occupational diseases among women. In addition, women also suffer more from lower limb disorders owing to prolonged standing (which can especially be found in the growing retail, education and healthcare sectors) and more walking than their male counterparts, as a high proportion of female workers can be found in the healthcare, hotel and catering, cleaning, education and retail sectors.

In most sectors, between 6 % and 8 % of female workers reported work-related health problems. The percentage was higher only in agriculture, hunting and forestry (13 %), health and social work (10 %) and education (9 %). This means that these sectors have both a high accident rate and a high prevalence of work-related health problems. These findings are more important considering that, in 2006, 21 % of all female workers worked in the first two sectors mentioned above and 11 % in education. Combining these numbers with the figure of around 94 million women working in the EU-27 in 2006, it can be estimated that in these three high-risk sectors about three million women suffered from work-related health problems. Given that an increasing number of women work in agriculture, transport and services, the health problems linked to these occupations should receive more attention. For example, many of these occupations involve prolonged standing or sitting, but this is hardly reflected in the surveys or in recognition and compensation practice. The latest Labour Force Survey figures provide evidence that lower limb disorders are a major issue: the most likely among all MSDs to lead to long absences from work.

In spite of the higher exposures of men in general, there are occupations in the health and social sector, such as nursing, that are dominated by women and are characterised by the carrying of heavy loads, tiring postures, handling of chemical and biological agents, unsocial working hours and emotionally demanding situations. Nicot (Eurofound, 2008h) concludes that the high proportion of women in these jobs is one reason for the higher frequency of MSDs in women. Similarly, women are more susceptible to depression and anxiety than men, and their poorer mental health may be linked to the multiple roles they perform every day. These data should be assessed in the context of CHD as the leading cause of death in EU countries.

Main points — trends and policy-relevant messages

- Women are less likely than men to suffer accidents at work. Accident rates have declined since 1998 for both women and men. In some sectors, however, accident rates seem to be stagnating or increasing. This is especially the case in sectors with rather low rates, such as education or public administration, but also in the hospitality industry. However, rates are normally not adjusted for hours worked. As women make up a high proportion of the part-timers, this may lead to a significant underestimation of the real situation.
- Economic sectors with the highest incidence rates of accidents for women were 'agriculture, hunting and forestry', 'hotels and restaurants' and 'health and social work'. Owing to the high percentage of women working in services, the highest absolute numbers were found in the sector 'public administration, education, health and other services'.
- Looking at pilot figures on the causes and circumstances of accidents, the most frequent types in women were linked to 'slipping, stumbling and falling', 'body movement under or with physical stress', 'loss of control of machine, means of transport or handling equipment, hand-held tool, object, animal' and 'body movement without any physical stress'.
- The new categorisation of industrial sectors (revised NACE), which takes into account the move from industry to services, should support the better identification of accidents and health problems relevant to female workers.
- In contrast with the accident rates for women and men, rates for work-related health problems are increasing in both genders. In 2007, 8.6 % of workers in the EU-27 reported one or more work-related health problems during the previous year. However, women reported more MSDs.
- The prevalence of work-related health problems increased with age for both genders (Labour Force Survey figures range from approximately 3 % in the age group 15–24 to nearly 12 % in the age group 55–64). This is in contrast to the frequency of accidents at work, which remained nearly constant in women and declined with age in men.
- MSDs are the most serious hazard that women face within the working environment.
- Women are more likely to suffer from psychosomatic symptoms at work, and this may be linked to poor psychosocial work factors, such as low control of jobs.
- A high proportion of female workers (60 % with a work-related health problem in the EU-LFS) report MSDs, followed by stress, depression and anxiety and headache and/or eyestrain (6 %). MSDs and stress among women lead to long sickness absences and their prevalence is increasing among all age groups. In most sectors between 6 % and 8 % of the female workers reported work-related health problems. The percentage was higher only in 'agriculture, hunting and forestry' (13 %), 'health and social work' (10 %) and 'education' (9 %). This means that in both these sectors we find both a high accident rate and a high prevalence of work-related health problems.
- Stress at work specifically affects highly trained female workers and women in managerial positions, who often work at intermediate hierarchical levels. It also has a high impact on their life biographies as they are either more affected because they have domestic responsibilities to cope with or do not have a family at all.
- Domestic responsibilities have a high impact on stress and MSD levels in female workers, much in contrast with their male counterparts.

Recommendations for research, monitoring and OSH enhancement

- The prevention of accidents affecting female workers should concentrate on the sectors with high incidence rates (agriculture, hunting and forestry, hotels and restaurants and health and social work) or high absolute numbers (public administration, education, health and other services).
- Additionally, at enterprise level, women and men tend to occupy different posts with different levels of responsibility, different tasks and different work experience. This needs to be considered when preparing accident reports and compiling statistics, as well as when comparing rates by gender, especially at the enterprise level.
- More attention should be devoted to those accidents that may be more relevant for women (e.g. accidents due to violence) or accidents occurring at clients' premises. As transport accidents also seem to be increasing among women, the specific nature of commuting and transport accidents in women should also be explored.
- Preventive campaigns for accidents should focus on those factors that contribute most to accidents in women workers: slips, trips and falls, and accidents linked to stress and violence. They should also be targeted at the sectors in which an increasing number of women work and awareness is low, for example transport, retail and agriculture, activities of households, home care and financial services.
- There are indications that rates of MSDs are increasing among young women. More intervention research is needed to target prevention at these workers. Considering that rehabilitation is not readily available to young workers (as previously reported by EU-OSHA), high drop-out rates may be the consequence. In an ageing society, workability of young women should be better preserved.
- Monitoring tools aimed at the identification of health problems and diseases need to be gender-sensitive and also allow for a differentiation for age and occupation, if they are to support and guide prevention. Prevalence rates need to be adjusted for hours worked to reflect the high proportion of part-time workers among women. In singling out specific health problems or single causes of accidents, these tools may also fail to address the multifactorial nature of women's health problems and the accidents they incur.
- Monitoring tools should also take account of the differences of female and male jobs and cover all issues relevant for women (e.g. health problems linked to inadequate equipment designed for male workers, commuting accidents for women who take their children to school, agricultural accidents of family workers, home work).
- Women of different ages tend to work predominantly in different sectors. Whereas young women work more in retail and hospitality, the working population in healthcare and education is ageing. Preventive campaigns should concentrate on specific age groups relative to the type of prevention, that is accident prevention or prevention of work-related health problems.
- Health problems reported more frequently by female workers need to be taken account of in prevention and rehabilitation. There is an urgent need for assessment of health problems linked to stress, mental health issues and specific types of MSDs, such as lower limb problems, and risk factors causing eyestrain should be assessed. There is also an urgent need for return to work programmes for women affected by heart disease.
- The analysis of research needs to be gender specific to take account of the differences of roles at the workplace.

6 Exposures, risks and health problems

6.1 Introduction

The previous four chapters presented information on where women are employed, their working conditions and how these impact on the accidents and illnesses to which they are susceptible. This chapter aims to move that discussion forward by highlighting the effect of combined exposures of women who work.

Over the past few decades there have been many changes within the working environment, including the technological revolution, an increased number of women in the workforce, an increased use of chemical substances, and an influx of hazardous procedures within industry. These changes have impacted on the nature and types of occupational hazards to which workers are exposed and on the relationship between work and health (Mergler, 1999). The changes also impact on each other, especially in the context of the ever-increasing female presence in jobs.

Although more women are working than ever before, the proportions of women in the workforce are generally at lower levels in organisations in comparison with male workers (Siddall et al., 1994). Moreover, Tisdale and Sofge (1998), citing research from the USA, stated that most women work in clerical services, professional specialities, executive/managerial roles and sales. Despite this, overall, women report more occupational ill health than men (Holmgren et al., 2009), and this may be because of their contact with combined exposures.

Regardless of how and where women work, they are exposed to a combination of issues, substances and hazards. Occupational exposures at work have changed in recent times and the EU is becoming increasingly interested in women's health in relation to combined exposures. As workers, regardless of gender, may be exposed to a variety of, for example, pollutants, chemicals and excessive demands that might then impact on their health, it is useful to assess their impact. Workers may be exposed to only one or a combination of these. A combination is generally accepted as more detrimental than exposure to a single hazard or risk (Klaassen et al., 2001).

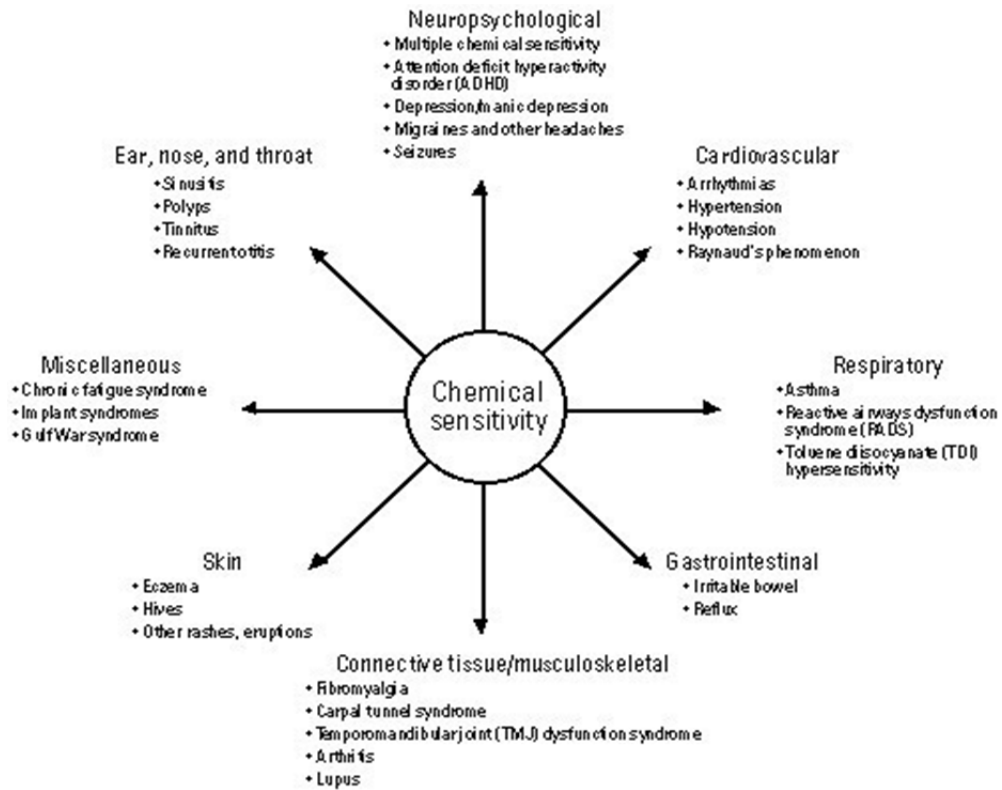
Combined exposures cover a variety of substances, elements and risk factors and can include exposure to chemicals, which Klaassen et al. (2001: 17) state can have either an additive or a synergistic effect: an *additive* effect occurs when the combined effect of two chemicals is equal to the sum of the effects of each agent given alone (example: $2 + 3 = 5$), whereas a *synergistic* effect occurs when the combined effects of two chemicals are much greater than the sum of the effects of each agent given alone (example: $2 + 2 = 20$). Alternatively, the combination of noise and chemicals (see Morata, 2002) or the combination of work- and family-related stress (Xu et al., 2004).

The links between illness and exposure to chemicals are ongoing and, as outlined in Figure 71, some individuals may react negatively when they have acute or chronic exposure to a diverse range of environmental agents including various pesticides, solvents, drugs and air contaminants from 'sick' buildings.

This review explores some of these exposures and the resulting effects, especially as Tisdale and Sofge (1998) have highlighted that, in relation to women at work, and although often overlooked, the workplace can have a profound impact on a worker's health; ranging from cancer in factory workers to carpal tunnel syndrome in computer users.

As outlined in a review by Polychronakis et al. (2008), gender does influence the impact of exposures. Women on average have smaller body dimensions than men, which equates to a smaller surface area for chemical exposure through the skin (Eurofound, 2007e, as cited in Polychronakis et al., 2008). However, despite this smaller surface area their organ blood flow is relatively higher, thereby increasing the rate at which chemical substances circulating in the blood reach the tissues, and their renal clearance is slower than men's, which reduces their capacity to emit toxic compounds (Gandhi et al., 2004, as cited in Polychronakis et al., 2008). As such, the gender perspective in exposure is most relevant.

Figure 71: Conditions that have been attributed to chemical sensitivity



Source: Miller (1997). Reproduced with permission from *Environmental Health Perspectives*.

6.2 Exposures and their effects

Table 33 shows examples of typical risks and hazards that can be found in female-dominated occupations (EU-OSHA, 2003a) and may contribute to diseases.

Table 33: Examples of hazards and risks found in female-dominated occupations

Work area	Risk factors and health problems			
	Biological	Physical	Chemical	Psychosocial
Healthcare	Infectious diseases –bloodborne, respiratory, etc.	Manual handling and strenuous postures; ionising radiation	Cleaning, sterilising and disinfecting agents; drugs; anaesthetic gases	'Emotionally demanding work'; shift and night work; violence from clients and the public
Nursery workers	Infectious diseases, particularly respiratory	Manual handling; strenuous postures		'Emotional work'
Cleaning	Infectious diseases; dermatitis	Manual handling; strenuous postures; slips and falls; wet hands	Cleaning agents	Unsocial hours; violence, e.g. if working in isolation or late

Work area	Risk factors and health problems			
	Biological	Physical	Chemical	Psychosocial
Food production	Infectious diseases, e.g. animal-borne and from mould spores; organic dusts	Repetitive movements, e.g. in packing jobs or abattoirs; knife wounds; cold temperatures; noise	Pesticide residues; sterilising agents; sensitising spices and additives	Stress associated with repetitive assembly-line work
Catering and restaurant work	Dermatitis	Manual handling; repetitive chopping; cuts from knives; burns; slips and falls; heat; cleaning agents	Passive smoking; cleaning agents	Stress from hectic work, dealing with the public, violence and harassment
Textiles and clothing	Organic dusts	Noise; repetitive movements and awkward postures; needle injuries	Dyes and other chemicals, including formaldehyde in permanent presses and stain removal solvents; dust	Stress associated with repetitive assembly-line work
Laundries	Infected linen, e.g. in hospitals	Manual handling and strenuous postures; heat	Dry-cleaning solvents	Stress associated with repetitive and fast-paced work
Ceramics sector		Repetitive movements; manual handling	Glazes, lead, silica dust	Stress associated with repetitive assembly-line work
'Light' manufacturing		Repetitive movements, e.g. in assembly work; awkward postures; manual handling	Chemicals in micro-electronics	Stress associated with repetitive assembly-line work
Call centres		Voice problems associated with talking; awkward postures; excessive sitting	Poor indoor air quality	Stress associated with dealing with clients, pace of work and repetitive work
Education	Infectious diseases, e.g. respiratory, measles	Prolonged standing; voice problems	Poor indoor air quality	'Emotionally demanding work', violence

Source: EU-OSHA (2003a), pp. 12–13.

6.2.1 Reproductive health

Although some research exists on women's reproductive health, as Stellman (2000) notes, there is not a great deal of information about the relationship between women's reproductive health and working conditions. Baranski (1993) states further that the literature that exists on the negative outcomes of occupational factors on fertility and reproduction is weakened, for example by the small sample sizes used, the insensitive measures of effect, the selection, recall and observation bias and the inadequate statistical analyses. This is interesting as, according to Chamberlain (1985, as cited in McAbee et al., 1993) and Kotch et al. (1984, as cited in McAbee et al., 1993), two-thirds of the pregnant women in the world are employed during some part, if not for the entire time, of their pregnancies. The range of occupational hazards that could have adverse impacts on reproduction includes radiation, chemotherapeutic agents, and solvents. (McAbee et al., 1993).

Chemical, biological, physical and psychosocial risks have been linked to detrimental consequences to both women's and men's reproductive health. Exposure to certain hazardous substances or hazardous work conditions can affect all phases of a women's reproductive cycle (Doyal and Payne, 2006). More specifically, scientific evidence increasingly shows that some industrial chemicals, known as endocrine-disrupting compounds (EDCs), or hormone disruptors, can throw off this balance, particularly if exposure occurs during fetal development. Other stages of rapid development are also vulnerable to hormone disruption. With exposure, women and girls are at greater risk for developing reproductive health problems such as early puberty, infertility and breast cancer (Crain et al., 2008). With the increasing labour force participation among women in Western countries, many women will work during their reproductive years. This will increase the likelihood that women during pregnancy will be exposed to a variety of chemical, physical and psychosocial factors at work. Occupational exposure may directly affect pregnancies, resulting in, for example, spontaneous abortion, stillbirth, preterm birth, small for gestational age infants and low birth weight. Occupational exposure may also interact with fetal development, resulting in health effects in the offspring that can include congenital birth defects, neurobehavioural disorders at a young age and even cancer in older age. However, the interpretation of an association between an occupational exposure and a reproductive health effect is almost always hampered by the fact that many adverse outcomes may be caused by multiple (work-related) factors, making it extremely difficult to attribute a particular outcome to a specific occupational exposure (ILO, no date).

Some occupational hazards, particularly certain chemicals and radiation, can seriously affect a developing embryo or fetus. Table 34 gives examples of occupational risks that are known to have negative effects on sexual behaviour and reproduction. To date, most chemical substances and work situations have not been studied for their potential to damage the human reproductive system. Despite the lack of information about possible reproductive health effects, many substances are still used in a variety of workplaces (ILO, no date). Moreover, occupation needs to be included as a distinct variable when women's health risks are researched, especially when assessing workplace exposures (Harlow et al., 1999).

Table 34: Qualitative summary of the potentially adverse effects of occupational exposure on the female and male reproductive system

Occupational risk factor	Pregnancy outcomes (maternal exposure)	Birth defects (maternal exposure)	Semen quality (paternal exposure)
Physical factors			
Ionising radiation	Spontaneous abortion	Congenital defects	Reduced sperm count Azoospermia
Noise (>90 dBA)	Spontaneous abortion, low birth weight, preterm birth		
Heat			Reduced sperm count

Occupational risk factor	Pregnancy outcomes (maternal exposure)	Birth defects (maternal exposure)	Semen quality (paternal exposure)
Chemical agents			
Lead	Low birth weight	Neural tube defects	Reduced sperm count
Mercury	, Spontaneous abortion		
Organic solvents	Spontaneous abortion		
Mercury	, Spontaneous abortion	Cleft lip/palate	
Tetrachloroethylene	Spontaneous abortion		
Glycol ethers	Spontaneous abortion		Reduced semen quality
Dibromopropan	Menstrual disturbances, spontaneous abortion	Neural tube defects	Reduced semen quality
Ethylene oxide	Preterm birth, spontaneous abortion	Cleft lip/palate	
Anaesthetic gases	Spontaneous abortion		
Antineoplastic drugs	Spontaneous abortion		
Pesticides			Reduced sperm count Azoospermia
Ethylenedibromide		Neural tube defects, cleft lip/palate	Reduced sperm count
Carbon sulphide			Reduced sperm count
Specific types of welding			Reduced sperm count
Psychosocial factors			
Irregular work hours	Spontaneous abortion, menstrual disturbances		
Stress	Spontaneous abortion, pre-term birth		
Physical load			
Heavy physical work (high energy expenditure)	Spontaneous abortion, low birth weight		
Frequent heavy lifting	Preterm birth, spontaneous abortion		
Prolonged standing	Low birth weight, preterm birth, spontaneous abortion		

Source: Burdorf et al. (2006: 517)

An in-depth review (Figà-Talamanca, 2006) summarised and interpreted the available epidemiological evidence (studies published in the international scientific literature between 1990 and 2005) on the relationship between occupational exposure and negative outcome among women workers. In relation to ergonomic risk factors, heavy physical work by the woman might increase the risk of negative pregnancy outcome, especially among women with other risk factors (e.g. with previous fetal losses) or in the presence of other work-related risks. French researchers found that hospital auxiliaries who performed heavier tasks, experienced more negative outcomes, including uterine contractions during pregnancy, preterm births and low birth weight (LBW) infants (Saurel-Cubizolles et al., 1985). Dutch women performing activities that required high energy expenditure and intensity (more than three times the basal metabolic rate per day) experienced a reduction in fertility (Florack et al., 1994), while those with a high mechanical load (frequent bending and lifting) had an increased risk of spontaneous abortion (Florack et al., 1993). Lifting of heavy weights (especially patient transfers) was also significantly associated with spontaneous abortion in a study of Finnish physiotherapists (Taskinen et al., 1990). Marbury (1992) stated that although no single ergonomic stressor seems to be strongly associated with birth weight and gestational age, most studies found an effect when several ergonomic stressors were combined. The data from later studies on various occupational categories found small-for-gestational-age infants, for example, were significantly more frequent among women who worked more than 50 hours a week, worked standing for more than 7 hours a day and took no antenatal leave from work (Cerón-Mireles et al., 1996).

In reviewing the evidence of shift work, it appears that irregular work hours may be associated with a slight increase in the risk of spontaneous abortion and reduced fertility. Regular night work does not seem to have the same effect, suggesting that the regularity of the work schedule may be a more important factor for reproductive outcome. The mechanisms involved in the process may include changes in circadian rhythm with accompanying changes in hormonal concentrations, affecting both the conception and the normal development of the fetus. This is suggested by several studies examining hormonal effects of shift work and night work (Miyachi et al., 1992; Yamauchi et al., 2001). A prospective analysis of two cohorts of the Nurses' Health Study showed significantly increased levels of oestradiol and decreased excretion of melatonin after many years of night work (Schernhammer et al., 2004).

Urinary incontinence and the resulting damage from pregnancy and vaginal birth is an under-researched area of women's health (Harlow et al., 1999), and while women may 'hide' such conditions because of the social stigmas attached to them, it is necessary to explore them to gauge how they affect the activity and patterns of working women.

Research from the USA shows that unintentional occupational exposure to radiation potentially poses serious risks of adverse pregnancy outcomes, such as stillbirths and miscarriages (McAbee et al., 1993). Ford et al. (1994) also found a greater risk of miscarriage for women in Australia exposed to abdominal X-rays, but that women who work did not have a greater risk of miscarriage than those women who did not work. One study in the USA, by Moore et al. (1993), highlighted the various occupational hazards to which veterinarians are exposed, including exposure to ionising radiation, injury, infectious agents and chemicals, and noted that these are particularly hazardous to women, especially when they are pregnant, and impact on their reproductive health.

Saurel-Cubizolles et al. (1994) investigated French nurses who work in operating theatres and their pregnancy outcomes. The rate of birth defects rose for nurses exposed to formol and to antineoplastic drugs during the term of their pregnancies. The researchers concluded that effective ventilation should be installed in operating rooms, and that women of childbearing age should take special precautions when working in operating rooms. Research by Perera et al. (2005) in the USA assessed the impact of prenatal exposure to common toxicants on fetal growth, early neurodevelopment and respiratory health. They found that exposure to pesticides contributed to a decreased head circumference of babies, as well as low birth weight and birth length, and concluded that exposure to environmental tobacco smoke, air pollution and pesticides negatively influences fetal growth and children's neurodevelopment.

Seat belts for pregnant women (Spain)

In Spain, traffic accidents are the main cause of traumatic interruptions of pregnancies, according to a report by the RACE (Real Automóvil Club de España). This report is based on 40 studies of safety in the automobile related to pregnancy, published over the last 35 years.

Spanish law states that pregnant women have to use seat belts and leave the airbag switched on. It may not be comfortable, but it is safer for both the mother and the unborn baby: it has been calculated that wearing a seat belt reduces the injury risk to an unborn baby by up to 70 %.

For maximum comfort and safety, it is recommended that the front seat is moved as far back as possible and the lap strap is then pulled across the hips and fitted comfortably under the bump. The lap strap should go from hipbone to hipbone, as low as possible. It is also necessary to place the diagonal strap between the breasts and around the bump.

In 2009 Mutuاليا (a mutual insurance agency in Spain) introduced a special cushion to help pregnant workers. The cushion is easily fitted to a standard car seat to ensure that the lap portion of the seat belt remains over the hips and under the bump, so that pressure is diverted from the unborn baby. Pregnant women can borrow the cushion and then return it after the birth so that other mothers can use it.

Chen et al. (2000) studied combined exposures on a Chinese population of working women. They assessed the interaction between birth weight, exposure to benzene, work stress and occupational and environmental hazards, such as exposure to noise, physical exertion at work and passive smoking. They found that the interaction of a low-level exposure to benzene and work stress led to reduced birth weight in babies, after adjustment for environmental and occupational exposures and personal variables. Therefore, work-related stressors affect women's health, as well as affecting the growth and development of their babies.

Further, Takser et al. (2005) investigated thyroid hormone levels in pregnancy for women exposed to organochlorine compounds and mercury in Canada. They found that even low levels of exposure during pregnancy could interfere with thyroid levels in women. Finally, Gallicchio et al. (2007) found that cosmetologists in the USA, who spend most of their working lives exposed to chemicals, had a greater chance of premature ovarian failure.

In the USA, Gwinn et al. (2007) examined gene expression profiling of di-*n*-butyl phthalate in normal human mammary epithelial cells and found that 57 genes were altered after exposure to di-*n*-butyl phthalate treatment. These altered genes included those concerned with fertility, immune response and antioxidant status. The researchers suggested that the results support previous studies that found that exposure to di-*n*-butyl phthalate influences reproductive toxicity.

Another area that is rarely considered as a health concern for women is premenstrual syndrome (PMS). Although many women who work suffer from PMS, it is rarely included in best practice workplace conditions (Daley, 2002). However, research has shown that women who experience PMS are more likely to have higher job strain (Collins, 1991; Derry et al., 1997; Gervais and Hockey, 2005b). Further, more research is needed to explore the links, if any, between reproductive cycling (e.g. menstrual phase, reproductive status) and neurohormonal arousal and the connection with blood pressure, heart rate and other biological pathways that lead from stress to CVD (Hall, 1989).

The reasons for long menstrual cycles have been heavily researched. One set of these studies (Hsieh et al., 2005) concluded that exposure to multiple chemicals, particularly ethylene glycol ethers and isopropyl alcohol, was associated with long menstrual cycles among female fabrication workers in the semiconductor industry in Taiwan after adjusting for other risk factors and over time to pregnancy. The authors note that one potential limitation of the study is that menstrual cycle characteristics may not be sensitive indicators of change or disturbances in hormonal function that result from occupational and environmental exposure. However, the National Institute for Occupational Safety and Health (NIOSH) has established that women frequently encounter chemical and physical exposures risks that affect their pregnancies or menstrual cycles (Tisdale and Sofge, 1998). Russell et al. (2000) researched common occupational exposures in relation to nurses' reproductive health in Australia and noted that difficulties with conception increased when exposure to ultrasound was more frequent.

There is a growing, albeit limited in nature, body of research that is beginning to systematically investigate menopause as an occupational health issue (Reynolds, 1997, 1999). Preliminary research

has found that menopausal symptomatology is not solely a function of physical or biological parameters, but is also moderated by a psychosocial context (Reynolds, 1999). Reynolds (1999) conducted a survey of 29 employed menopausal women with the aim of exploring those characteristics of the working environment that were linked to increased menopausal symptomatology. This study found that women high in self-rated perceived control tended to describe more numerous coping strategies to manage both the physical and socio-emotional discomfort of flush episodes. Those women who reported low psychological control tended to report a higher number of flushes. This preliminary study demonstrated the importance of further enquiry into the role of psychological interventions to enhance strategies to cope with hot flushes. Other research has noted that investigations into environmental chemical exposures both at home and at work and their effects on women's health are lacking, especially in identifying the risk factors that impact on the timing and health consequences of menopause (Harlow et al., 1999).

6.2.2 Infectious disease and skin diseases

In 2005, approximately 1 in 10 workers in the EU reported being exposed to infectious material in the workplace (such as waste, bodily fluids and laboratory materials) at least 25 % of the time. Exposure to infectious materials has been linked to infectious diseases and skin disorders or allergens (Eurofound, 2007a). In general, more women (5 %) than men (2 %) report a high level of such exposure. In total, 8 % of EU-27 workers reported handling chemical products at least half of the time. In general, women (8 %) and men (9 %) workers report being exposed to chemical products to a similar degree; albeit that women who work part time (7 %) are slightly more exposed than their male counterparts (5 %). In relation to being exposed to infectious fluids and bodily waste, women workers are significantly more exposed than their male counterparts: the figures are 8 % and 4 %, respectively (see Table 35 for more detailed information). This may be attributable in large part to the higher proportion of women, as compared with men, working in the most exposed occupational sectors, that is health and social work. Within all occupational sectors an estimated 23 % of workers report being exposed all or nearly all of the time to infectious materials (Eurofound, 2007a).

Table 35: Ambient risk factors (chemical, fluids) at least half of the time by gender and employment status across EU-27, EWCS 2005

Exposure	Men			Women			Total (%)
	Total (%)	Full time (%)	Part time (%)	Total (%)	Full time (%)	Part time (%)	
Handling chemical products	9	9	5	8	8	7	8
Infectious fluids, bodily waste	4	4	4	8	6	8	6

Source: Eurofound (2007b: 30)

6.2.3 Infectious disease

Infections at work are the result of exposure to harmful micro-organisms (such as bacteria, fungi, viruses, internal parasites and other infectious proteins known as 'prions'). These are often referred to as 'biological agents' in health and safety legislation. Although micro-organisms can be found throughout the natural environment, the workplace is the common setting in which exposure to infectious materials and micro-organisms takes place (HSE, 2010c). The main infectious diseases at work included hepatitis (hepatitis A, hepatitis B, hepatitis C), HIV/AIDS, tuberculosis, leptospirosis (Weil disease), Legionnaires' disease, and zoonoses (HSE, 2010c). The healthcare sector is one of the most at-risk occupational sectors in relation to exposure to infectious materials, in which women make up almost 80 % of the workforce (EU-OSHA, 2010). An occupation that is often overlooked in the research that is highly exposed to infectious diseases are sex workers, who are often prone to sexually transmitted diseases such as HIV/AIDS (Kane, 1999).

The Nordic Occupational Cancer Study (NOCCA) study, a large retrospective study covering 15 million workers in the Nordic countries, found little information on exposure to hepatitis and other infectious diseases that may cause cancer, specifically liver cancer. These risk factors were excluded from considerations, based on the assumption that exposure was low. However, information on the true extent of exposure and infection is scarce, as could be demonstrated in the preparatory phase of the recent EU agreement on needlestick injuries. There were very few studies on level of exposure and underestimation even of the injuries due to needlesticks was commonly assumed. Reporting discipline in the healthcare sector remains insufficient in many countries, and implementation is difficult, especially in the private sector.

Assessment of dangerous substances use in small and medium-sized enterprises (Austria)

The 'Arbeitsstoffevaluierung in KMU' [Evaluation of dangerous substances in small and medium enterprises] 2010–2011 is an initiative implemented by the working group of Austria's Ministry of Work, Social Affairs and Consumer Protection. Its aim is to increase the effectiveness of the evaluation of dangerous substances through greater involvement of workers in affected companies, the use of good-practice examples and increasing the competencies of health experts in companies so that they can systematically address various occupational hazards. The initiative takes into account quantitative and qualitative data on the risks, the measures to be carried out to avert them, potentials for improvement and consideration of the workers concerned (differentiated by age and gender), as well as the suitability for daily use of the methods used in the SME. Short guidance and a list of questions guide the enterprises.

(<http://www.arbeitsinspektion.gv.at/Al/Arbeitsstoffe/Arbeitsstoffevaluierung/arbeitsstoffevaluierung010.htm#Einwirkung>)

▪ **Skin disorders**

In the EU-27, in 2005, an estimated 7 % of workers reported experiencing skin problems as a result of work. In total, 8 % of men (8 % full time and 5 % part time) and 6 % of women (7 % full time and 3 % part time) reported experiencing skin problems because of work exposures (Eurofound, 2007a). In 2008, the most commonly reported skin disease was contact dermatitis, caused by exposure to irritants or allergens. The disorder was closely related to associate professionals and technical operators, skilled trade occupations and personal service occupations. More women than men reported this disorder. This could be related to the chemicals used in cleaning, hairdressing and personal service. Nurses also showed high instances of contact dermatitis, and the complex workplace environment may explain this, as there is the potential for health nurses to be exposed to many irritants and allergens. Males, in general, showed high instances of skin cancer, whereas women did not. Skin allergies have also been seen in agricultural trades, as women who work as fish processors and fruit pickers also have a high prevalence of skin allergies (Kane, 1999).

▪ **Dermatitis**

In general, women are seen as more at risk of developing contact dermatitis than men. This has been substantiated in several EU studies, for example in Sweden (Meding et al., 2005), Finland (Kanerva et al., 1994), Denmark (Halkier-Sørensen, 1998), Poland (Spiewak, 2003) and Germany (Dickel et al., 2002). This risk is especially relevant for women who work in the informal sector, who are migrants and who do domestic work as their main job. More information on these areas is presented in Chapter 7.

The NOCCA study, a large retrospective study covering 15 million workers in the Nordic countries, found little information on exposure to hepatitis and other infectious diseases that may cause cancer, specifically liver cancer. These risk factors were excluded from considerations, based on the assumption that exposure was low. However, information on the true extent of exposure and infection is scarce, as could be demonstrated in the preparatory phase of the recent EU agreement on needlestick injuries. There were very few studies on level of exposure and underestimation even of the injuries due to needlesticks was commonly assumed.

6.2.4 Asthma and other respiratory disorders

▪ Respiratory illnesses

Across the EU-27, in the 2005 EWCS 5 % of workers reported respiratory difficulties. Among male workers, 6 % reported respiratory difficulties associated with work (6 % full time and 5 % part-time occupational status). In contrast, only 3 % of women reported respiratory difficulties associated with work (4 % full time and 2 % part-time occupational status) (Eurofound, 2007b). This gender difference may be partially explained by the differential exposure taxonomy experienced by male and female workers. Table 36 presents the percentage of workers in the EU-27 by gender and employment status who report breathing in smoke and fumes, breathing in vapours or being exposed to tobacco smoke. On average, men are more exposed than their female counterparts to such ambient risk factors (Eurofound, 2007b). It is important to note that, across the EU-27, there are substantial differences between countries in the rate of exposure to ambient risks, for example exposure to tobacco smoke. This may be the direct result of different national legislation, for example many countries have implemented a smoking ban (Eurofound, 2007a). Those EU countries found to be most exposed to tobacco smoke are (percentage exposed one-quarter of the time or more at work): Greece (37.2 %), Portugal (29 %), Latvia (28.9 %), Spain (28.2 %) and Denmark (27.5 %). Those EU countries least exposed to tobacco smoke included Finland (11.3 %), Italy (9.1 %), Sweden (6.7 %) and Ireland (5.8 %) (Eurofound, 2007a). Burchell and colleagues (Eurofound, 2007b) found that the factors that decrease the risk of poor ambient working environment were being a man in a white-collar occupation or a woman in any occupation.

Table 36: Ambient risk factors (e.g. smoke, fumes) at least half of the time by gender and employment status across EU-27, EWCS 2005

Exposure	Total (%)	Men		Women			Total (%)
		Full time (%)	Part time (%)	Total (%)	Full time (%)	Part time (%)	
Tobacco smoke	15	16	11	9	10	7	13
Breathing in vapours	8	9	5	4	4	2	6
Breathing in smoke, fumes, powders and dust	19	20	10	5	6	3	13

Source: Eurofound (2007b)

In both women and men, increased age appears to be related to a rising rate of respiratory illnesses. Burchell and colleagues (Eurofound, 2007b) found that older age was one of the risk factors associated with an increased risk of poor ambient environment.

Figures on respiratory diseases in women are rather disparate. However, national figures such as those provided by the HSE in the UK may give hints about possible causes of respiratory diseases in women: textile fibres, leather, food and animal dusts, infectious biological agents, asbestos, sensitising chemicals and latex-contaminated dust, flour or hairdressing products. In the hospitality industry, women have been exposed to tobacco smoke and this may have contributed to the increasing rate of lung cancer. However, this risk has decreased with tobacco bans in many countries. Consequently, fewer workers reported such exposures in the EWCS.

The occupations in the healthcare sector, some manufacturing sectors (leather, food, textile) and services such as the hospitality industry and retail expose women to dusts from natural products, textile fibres and food (e.g. vegetables, spices, flour, coffee). Women also report infectious respiratory diseases far more often than men. A remarkable number of asbestos-related diseases in women have been observed.

The Health and Safety Executive provides the following figures on respiratory diseases in women: a disproportionate number of cases of malignant mesothelioma (69 % of men, 85 % of women), benign pleural disease (thickening patches of pleural membrane on the interior side of the lung, which is associated with asbestos exposure; 98 % of women, 79 % of men), pneumoconiosis (often caused by inhalation of dust; 98 % of women, 79 % of men) occurs in workers 65 and over. Aside from a few isolated incidents, no cases of the aforementioned disorders occurred in men or women below the age of 45. Between 35 and 54, women tend to show higher instances of allergic alveolitis (often associated with inhalation of animal and vegetable dusts) than men (35–44: men 27 %, women 43 %; 45–54: men 16 %, women 43 %). After the age of 55, women's cases drop off, whereas men's increase (to 45 %). Between the ages of 25 and 34, far more women (33 %) than men (1 %) report bronchitis and emphysema, as well as infectious disease (14 % at 16–24 and 55 % at 25–34). Men's rates rise after the age of 34, with their highest rates seen between 45 and 54 (46 %). Inhalation accidents were much higher in men between 45 and 54 (50 % vs. women's 0 %); interestingly, these statistics reverse between the ages of 55 and 64. Women aged 45–54 showed the highest instances of lung cancer (86 %, vs. men 2 %), possibly because of the inhalation of chemicals or smoke in personal service and nursing industries. Between 2005 and 2007, 5,311 males and 949 females died of mesothelioma. In men, the number of deaths progresses steadily until the age of 64, then increases sharply. Women show a much slower, steady rise in mesothelioma deaths. In addition to mesothelioma, men most often died of pneumoconiosis (not related to asbestos or silica), with 479 deaths between 2005 and 2007, as opposed to only three deaths among women. In women, byssinosis (or brown lung disease, often found in yarn or fabric manufacturing) was the leading non-mesothelioma cause of respiratory death (58 cases) (HSE, 2009c).

▪ Occupational asthma

Occupational asthma is a major occupational health problem that is caused by isocyanates (e.g. two-pack spray paints), flour dust, grain dust, glutaraldehyde, wood dust, latex (powdered natural rubber latex gloves), rosin-cored solder fume, laboratory animals or glues and resins (HSE, 2006a). It predominates in several occupations, of which close to half tend to be dominated by women, such as bakeries and food processing companies, beauty services, cleaning services and healthcare services (HSE, 2006a).

Mendonça et al. (2003) reviewed the occurrence of occupational asthma by gender in São Paulo, Brazil. They found differences between the sexes, with women having shorter exposure duration and a higher prevalence of previous atopy. As expected, the women reported more exposures to cleaning products, biological agents and textile fibres. Wang and Christiani (2003), using a sample of newly hired female cotton textile workers in China who were all non-smokers and had not been exposed to any occupational dust, examined lung function and airway reactivity to cotton dust. They found that the participants' exposure to cotton dust was responsible for acute and longitudinal declines in lung function, as well as for slightly increased airway reactivity.

Industrial asthma (United Kingdom)

In the United Kingdom, a woman who developed occupational asthma within weeks of starting work at a factory making electric generators received £20,000 compensation from her employer.

The 42-year-old woman was diagnosed after she was exposed to soldering fumes at Turbo Power Systems Ltd for up to six hours a day. She worked with rosin-based soldering wire — a known trigger for occupational asthma — but was never given any training or warning by her employer about the risks of such work. The work took place in an enclosed space with inadequate extraction, according to the solicitors who pursued the case on her behalf. The company was also fined £3,000 after the HSE brought a prosecution for unlawfully exposing workers to soldering flux fumes. Rosin-based solder flux fumes are a well-known cause of asthma, and employers need to have rigorous measures in place to ensure that workers are not exposed to the risk of developing the condition as a result of any work practices.

6.2.5 Health impacts of shift work

Shift work within the EU is regulated by directives, policies and legislation, and should have in place 'minimum daily rest periods, maximum daily working hours, minimum rest periods during working hours, weekly rest periods, and maximum weekly hours'. These are the practical elements of trying to minimise some of the risk factors associated with such work patterns, as it is established that shift work may adversely affect the employee. In view of this, two factors must be taken into account when organising shifts: the general principle of adaptation of work to the worker (the 'humanisation of work'); and health and safety requirements. Studies show that shiftwork and shifts with extended hours can have significant adverse effects on health, workplace accident rates, absenteeism and a worker's personal life.

Despite the implementation of these practices, research shows that the short-term effects of shift work include increased fatigue, decreased quality of life and an increased risk of injury (Parkes, 2007; Fritschi, 2009; Institute for Work and Health, 2010). However, the more long-term effects of such work patterns, such as adverse pregnancy outcomes, CHD, gastrointestinal disturbances and mental health disorders (Fritschi, 2009), as well as cancers, are not as easily established (Aguirre and Moore-Ede, 2007).

Research has highlighted the physical and mental strains that women experience when they engage in shift work. For telephone operators these include somatic anxiety when on night shifts, visual strain for those on rotating and night shifts and back-related complaints for those on evening and night shifts (Nag and Nag, 2004). In addition to the physical and psychological conditions that are present for shift workers, other research among a sample of female nurses has shown that shift work could increase poorer health habits such as smoking and being overweight, which in turn may increase health-related problems, including of CHD (Kivimäki et al., 2001).

In addition to symptoms and habits, research on a large Danish sample has shown that women working night shifts are an enhanced group at risk for breast cancer (Hansen, 2001). However, O'Connell and Buttimer (2001) cautioned that the study needed to take account of other risks to which women are exposed when doing night work, such as cosmic radiation for flight attendants. Despite this caution, other studies have shown a relationship between night shifts, this time rotating shifts, and breast cancer (see Schernhammer et al., 2001). Further, Schernhammer et al. (2001) have highlighted that after extended periods of working rotating night shifts, including at least three nights per month, women seem to have a moderately increased risk of breast cancer. Other assessments of this issue showed that 54 % of cancer registrations (breast cancer) in women are attributable to shift work (Rushton et al., 2010). Light exposure at night when engaged in shift work has also been linked to the enhanced risk of breast cancer among women (Snedeker, 2006). Women who work in the informal sector are more likely to engage in shift work and 'non-regular' work patterns in order to secure a job (see Chapter 7).

Other ill health concerns for female shift workers, especially those on rotating night shifts, are CHD (Kawachi, 1995), fatigue and menstrual irregularity (Miyachi et al., 1992, as cited in Lohstroh et al., 2003; Yoshida et al., 2000; Lohstroh et al., 2003) and poorer bone health (Lohstroh et al., 2003).

6.2.6 Work-related cancers

▪ Overview

Statistics from the USA estimate that 20,000 cancer deaths and 40,000 new cases of cancer each year are attributable to the working environment. In general, men perform the majority of hazardous jobs, and therefore suffer 80 % of work-related deaths (Safety in Numbers, 2003). This may be partially explained by the fact that men, on average, tend to work in occupational sectors and industries that are more commonly exposed to physical and biological/chemical risks (Punnett et al., 2005). In 2005, estimates from the United Kingdom indicated that 5.3 % of deaths due to cancer were attributable to occupation (men 8.2 %, women 2.3 %). The type of cancer most strongly linked to occupation and the working environment is mesothelioma, with 80–90 % of cases or death among men being linked to occupational exposure to asbestos; in contrast, a much smaller proportion of mesotheliomas (20–40 %) are attributable to occupational asbestos exposure among women (Hodgson et al., 2005; IARC, 2007) (Table 37). The second most strongly linked occupational cancer is that of the nasal cavity and sinuses. Estimates indicate that up to 34 % of deaths or cases of nasal

cavity and sinus cancer in men are caused by occupational exposures. Information derived from studies conducted in France and the United Kingdom suggests that about 7 % and 11 % of deaths from nasal cavity and sinus cancer in women, respectively, were caused by occupational exposures. Important workplace exposures for this cancer are leather dust, wood dusts and metals (Dreyer et al., 1997; IARC, 2007).

Lung cancer also has also been demonstrated to have a strong occupational component, with up to 17 % of deaths in men and 5 % in women caused by workplace exposures, according to a study conducted in the United Kingdom (Rushton et al., 2010). The proportion of lung cancer deaths/cases in women caused by occupation is calculated as 4 % and less than 1 % in the French and Nordic studies, respectively (Dreyer et al., 1997; IARC, 2007; Rushton et al., 2010). The major causes of occupation-related lung cancer are metals, asbestos, radon, arsenic and polycyclic aromatic hydrocarbons (PAHs).

Table 37: Estimated annual average number of deaths attributable to occupational exposure to hazardous substances

Cause of death	Number of deaths		Estimated percentage attributed to hazardous substances		Number of deaths attributed to hazardous substances
	Men	Women	Men	Women	
Cancer (total)					314,939
Lung cancer and mesothelioma	996,000	333,000	15	5	166,050
Liver cancer	509,000	188,000	4	1	22,240
Bladder cancer	128,000	42,000	10	5	14,900
Leukaemia	117,000	98,000	10	5	16,600
Prostate cancer	253,000		1		2,530
Cancer of mouth	250,000	127,000	1	0.5	3,135
Cancer of oesophagus	336,000	157,000	1	0.5	3,517
Stomach cancer	649,000	360,000	1	0.5	8,290
Colorectal cancer	308,000	282,000	1	0.5	4,490
Skin cancer	30,000	28,000	10	2	3,560
Pancreatic cancer	129,000	99,000	1	0.5	1,785
Other and unspecified cancer	819,000	1,350,000	6.8	1.2	71,892

Source: Takala (2005: 43)

In general, women appeared to be less vulnerable to work-related exposure to carcinogenic factors, probably because a lower proportion of women work in occupations with the highest risk of exposure. However, one ongoing French study found similar rates of occupational cancer occurring in both genders from exposures to at least three different carcinogens (men: 74 % of 107 participants;

women: 70 % of 20 participants) (Thébaud-Mony, 2006). In addition, an increased risk of developing lung cancer was found among female painters and decorators, motor and engine operators and for some female-dominated occupations such as hairdressers and textile workers. An increased risk of work-related mesothelioma was not found among female workers (Pukkala et al., 2009). A study by Labreche and colleagues (2010) found that occupational exposure to certain chemicals and pollutants before a woman reaches her mid-30s could treble her risk of developing cancer after the menopause. Women exposed to synthetic fibres and petroleum products at work seem most at risk (Labreche et al., 2010).

GISCOP 93 study — assessing the real extent of work-related cancer

Between 1987 and 2000, a strong increase in cancers became apparent in a suburb of Paris, Seine-Saint-Denis, especially cancers of the lung, larynx, bladder and digestive tract, and among blue-collar workers. The suburb was the location of many car, chemical and metallurgical plants and is now essentially the place for subcontracting companies engaged in construction, maintenance, cleaning and car repair. A group of researchers at the University of Paris began researching the occupational components of the disease. Since March 2002 the GISCOP (Le Groupement d'Intérêt Scientifique sur les Cancers d'Origine Professionnelle) network has registered all patients in three Seine-Saint-Denis hospitals admitted for lung, pleural, sinus, laryngeal, ethmoid or urinary tract cancers, mesothelioma or leukaemia. Sociologists interviewed patients to record their job history and obtain a detailed description of working conditions involved in every position. Occupational carcinogens in the job history were identified by experts based on IARC (International Agency for Research on Cancer) lists and French regulations. The most important results were multi-exposures: more than half of the patients had been exposed to three or more substances. They also found that exposures were high in construction maintenance, car repairs and metal works, partly as a result of outsourcing by large companies and the difference in exposure between automated and confined processes.

A relatively small number of exposed patients were compensated because of the difficulty in demonstrating occupational exposure according to existing procedures (identifying the main cause/chemical for the disease). Numbers were even lower for female workers, as their exposures were hardly recognised, even by themselves. Jobs most at risk included maintenance and repair, construction workplaces, with a variety of tasks including demolition and renovation and different jobs (plumbers, electricians, etc.), and cleaning and waste management (Table 38).

Table 38: Proportion of exposed jobs by economic sector (GISCOP)

Economic sector	Exposed jobs (%)
Construction	86.3
Metal industry and tools manufacture	79.0
Car business and repair	75.9
Printing, chemistry and rubber industry	70.8
Clothing and textile industry	47.7
Other industries (tobacco, food, wood, furniture, electricity, ...)	43.4
Transport and communications	42.5
Services to companies	38.0
Health, education, public administration	31.0

Source: Walters et al. (2011)

Occupational groups often share similarities in lifestyle, which may be linked to their professions. Male and female waiters have a significantly higher risk of developing lung cancer. A larger proportion of daily smokers can be found among waiters than among the general population. Women in occupations that require a high level of education (e.g. scientists, executive managers) were found to have an elevated incidence of breast cancer (Pukkala et al., 2009).

The Nordic Occupational Cancer Study

The Nordic Occupational Cancer Study (NOCCA) presents up to 45 years of cancer incidence data by occupational category for the Nordic populations. The study covers the 15 million people aged 30–64 years in the 1960, 1970, 1980/1981 and 1990 censuses in Denmark, Finland, Iceland, Norway and Sweden, and the 2.8 million incident cancer cases diagnosed in these people in a follow-up until about 2005. Exposure is characterised by estimates of the prevalence and level of exposure, and compiled in a job–exposure matrix, with the aim of going beyond occupational titles by converting them to quantitative exposure estimates of 28 agents. There were many major challenges:

- Very few measurement data were available for the earliest period (1945–59) and information on the use of chemicals in different processes and occupations was scarce.
- Further, if measurements were available, they often concerned industries and tasks rather than specific occupations that were used in the census data.
- Another challenge was the lack of information linked to available measurement data. The assessment of the representativeness and reliability of data was often not possible because of the lack of accurate documentation. A further difficulty was estimating the prevalence of exposures.
- There were very few data or accurate documentation available on prevalence, and most of them had to be assessed based on the experience and knowledge of national experts.
- The prevalence estimates are also highly sensitive to the minimum criteria of exposure (definition of being exposed).

The types of cancers that women experience differ from those of men. In the United Kingdom, women are more likely to have breast cancer, followed by lung cancer, non-melanoma skin cancer, mesothelioma, bladder cancer, non-Hodgkin lymphoma and ovarian, sinonasal and oesophageal cancers (Rushton et al., 2010). Some of these may be occupation related and this is explored to a limited extent below.

In a large study on cancer in the Nordic countries (NOCCA), exposures below 20 hours a week were excluded. This may exclude a number of female-dominated jobs from the assessment, as women more often work part time and on temporary contracts.

▪ Breast cancer

The rate of breast cancer among women is linked to environmental factors, with some individuals experiencing multiple chemical sensitivity, which entails having a severe reaction to chemicals (National Institute of Environmental Health Sciences, 1997), which may then transform into cancerous cells, including breast cancer. However, although it is accepted that chemicals do contribute to cancer, neither the aetiology of breast cancer nor the role of occupational exposures is well understood in breast carcinogenesis (Peplonska et al., 2007). Snedeker (2006) notes that, although breast cancer rates are highest in western nations with much of what is known about chemicals and breast cancer risk coming from the occupational cancer literature, most occupational cancer studies involve men. This needs to change as most cases of breast cancer occur among women (Snedeker, 2006). Garcia (2003) has also highlighted the prevalent use of men in epidemiological and cohort exposure studies and has advocated the use of more women in research.

Ballard et al. (2000) conducted a meta-analysis to explore the health risks of exposure to cosmic radiation and other physical and or chemical agents. They found that female flight attendants were at an increased risk of developing all cancers, and of melanoma and breast cancer. Two meta-analyses, one by Osamu et al. (2006) and the other by Buja et al. (2006), using European-specific data supported the findings of Ballard et al. (2000), as their results showed that female flight attendants have a heightened risk of developing malignant melanoma and breast cancer. Haldorsen et al. (2001) found associated elevated risks for both Norwegian male and female cabin attendants for malignant melanoma and non-melanoma skin cancer, but did not find a greater incidence of breast cancer among the female cabin attendants.

Further, there is research that identifies that exposure to organic solvents, metals, acid mists, sterilising agents (ethylene oxide), some pesticides, light at night (shift work) and tobacco smoke increases the risk of breast cancer among women in occupational settings (Snedeker, 2006). One recent study in the United Kingdom shows that shift work has a strong relationship with breast cancer, illustrated by 54 % of cancer registrations in women being attributable to shift work (Rushton et al., 2010).

Mohan et al. (2003) explored the relationship between low-dose ionising radiation and work characteristics in a sample of radiology technologists in the USA (73 % female) and found that the risks for breast cancer rose for those hired before 1950, implying that longer exposure may have negative impacts on women's health. Band et al. (2000) examined occupational cancer risks in British Columbia and suggested that women were more likely to develop breast cancer if they worked in jobs or industries that involved exposures to solvents, low-frequency electromagnetic fields and pesticides. Garcia (2003) also noted the impact of organochlorine pesticide for post-menopausal women developing breast cancer.

In Poland, a population-based case-control study realised higher breast cancer rates for women employed as engineers, economists, retail and other sales occupations and special trade contractors, in the electronic and electrical equipment manufacturing industry and in public administration/general government (Peplonska et al., 2007).

Thompson et al. (2005) examined exposure to metalworking fluids among a cohort of female car workers in the USA, as metalworking fluids have been linked to breast cancer. They found a weak positive association between lifetime cumulative exposure to soluble metalworking fluids and breast cancer risk. However, they did find a strong association for soluble metalworking fluids in the 10-year period prior to diagnosis. Another study by Silver et al. (2009) evaluated the risk of breast cancer in relation to polychlorinated biphenyls exposure, but did not find that women acquired breast cancer at a higher rate after exposure. However, they noted that a small subsample of non-white women did have an elevated risk that was exposure related and proposed that further research was required to explore this finding.

Finally, Snedeker (2006), in an overview of the association and risks between women and breast cancer, stated that the same types of occupations linked with the occurrence of higher breast cancer risk in North America and Scandinavia were also relevant to urban Chinese workers.

- **Night shift work is associated with breast cancer**

Growing evidence suggests that night shift work is associated with breast cancer. Shift workers suffer from a disruption of the sleep-wake rhythm, insomnia and a lack of melatonin. These factors might trigger the development of breast cancer in female shift workers. Exposure to light at night, including a disturbance of the circadian rhythm, possibly mediated via the melatonin synthesis and clock genes, has been suggested as a contributing cause of breast cancer. Since shift and night-time work are prevalent and increasing in modern societies, persons who engage in night shift work may exhibit altered night-time melatonin levels and reproductive hormone profiles that could increase the risk of hormone-related diseases, including breast cancer.

According to the NOCCA study, the link between night shift work and breast cancer could also be established for male workers affected by breast cancer (Pukkala et al. 2009).

Wise (2009) reports that women in Denmark who developed breast cancer after many years of working night shifts have received compensation. The ruling could have implications for compensation claims elsewhere in the world. Out of 78 cases notified to the national board of industrial injuries in

Denmark, 38 have received compensation through their employers' insurance schemes. All of the women had worked night shift patterns for at least 20 years and were otherwise at low risk, for example they had low alcohol consumption and no family history of breast cancer. The Danish decision was based on a ruling by the International Agency for Research on Cancer (IARC) in December 2007. The agency, which is part of the World Health Organization, classed shift work as a group 2A cancer risk. The IARC has recently classified 'shiftwork that involves circadian disruption' as 'probably carcinogenic to humans' (Group 2A) on the basis of 'limited evidence in humans for the carcinogenicity of shift-work that involves nightwork', and 'sufficient evidence in experimental animals for the carcinogenicity of light during the daily dark period (biological night)' (Costa, 2010). (WHO/IARC 2010).

The epidemiological evidence of a relationship between shift and night work and breast cancer in women is based upon nine studies, six of which suggest that the risk of developing breast cancer is moderately increased by prolonged exposure to shift and night work.

Shift work takes place in industries that require ongoing and continuous service such as healthcare, manufacturing, transportation, customs and immigration and many hospitality sectors. It has been suggested that nurses who frequently attend night shifts should undergo strict and periodical breast cancer screening, as the risk is significantly increased for them.

In a Danish case-control study with over 18,000 female military employees born between 1929 and 1968, Hansen and Lassen (2012) documented 218 cases of breast cancer (1990–2003). Information on shift work, sun exposure habits, diurnal preference and other potential confounders was obtained from a structured questionnaire. Odds ratios were estimated by multivariate conditional logistic regression to investigate the risk for breast cancer after night shift work and to explore the role of leisure-time sun exposure and diurnal preference. The results indicate that frequent night shift work increases the risk for breast cancer and suggest a higher risk is associated with a longer duration of intense night shifts. Women with a morning preference who worked on night shifts tended to have a higher risk than those with an evening preference (Hansen and Lassen, 2012). Grundy et al. (2013) found that long-term night shift work in a diverse mix of occupations is associated with increased breast cancer risk and not limited to nurses, as in most previous studies.

How to address the health risks of shift work

Several possible strategies could be adopted to improve sleep and performance. These include (1) appropriate scheduling of shift work, (2) proper consideration of the speed of shift rotation, (3) strategies for sleep and napping, (4) installing appropriate lighting at the workplace and (5) the use of sleeping pills/hypnotics such as melatonin and melatonin agonists. The typical countermeasures, such as caffeine, naps and melatonin (for its sleep-promoting effect), along with education about sleep and circadian rhythms, are the components of most fatigue risk management plans. Eastman and Smith (2012) contend that these are not enough because they do not address the underlying cause of the problems, which is circadian misalignment. They explain how to reset (phase shift) the circadian clock to partially align with the night-work-day-sleep schedule, and thus reduce circadian misalignment while preserving sleep and functioning on days off. This involves controlling light and dark using outdoor light exposure, sunglasses, sleeping in the dark and little bright light during night work. The authors present a diagram of a sleep-and-light schedule to reduce circadian misalignment in permanent night work, or a rotation between evenings and nights, and give practical advice on how to implement this type of plan (Eastman and Smith, 2012).

The Canadian Cancer Research Centre has published a large number of intervention studies and organised a seminar in 2012 looking at shift work interventions at company level. Resources on the best policies and effects on shift workers in different sectors have been made available on their website (Demers, 2012). These include the following:

- Optimising the design of the shift schedule is the most effective way of reducing health and safety problems. Satisfaction with a particular shift system is the result of a complicated balancing act that is the best compromise for personal, psychological, social and medical concerns.
- It is recommended that shifts rotate forward from day to afternoon to night because circadian rhythms adjust better when moving ahead than moving backwards.

- The provision of certain facilities can help the shift worker cope better. For example, good lighting and ventilation are important on all shifts. Workstations should be kept close together to allow workers at night to remain in contact with one another.
- Rest facilities should be provided where possible. Whenever a person must remain at work after a night shift to attend a meeting or a training session, the provision of rest facilities is advisable. When a night worker is 'on call' and must remain in the building, it is advantageous for this person to be well rested rather than tired.
- Healthy cafeteria services should be provided so a balanced diet can be maintained. Nutritional needs differ between day shifts and other shifts because of circadian rhythms. Educational and awareness materials on the benefits of eating a balanced meal should be provided.
- Employers should consider offering facilities for social activities with the needs of the shift worker in mind. Recreational opportunities are often minimal for workers on 'non-day/night' shifts.
- Access to quality day-care for shift workers' children should be considered to alleviate some strain on all family members.
- Other measures include training on alertness strategies, safe driving, nutrition, physical activity, coping with stress and listening to the experiences of other companies with new shift systems.
- The importance of training managers and engaging them in prevention activities was also highlighted, as well as on-the-job training for shift workers that includes health promotion aspects and the interface between work and private life.

The HSE has commissioned research to investigate the disruption caused to people's body clocks by lifestyle and working patterns. The research, expected to be completed by the end of 2015, will include information from the Million Women Study, a national study of over-50s funded by Cancer Research UK and the Medical Research Council, as well as the HSE and Epic, the UK arm of a Europe-wide study into diet and cancer risk.

Other cancers to which female night shift workers are more predisposed include colorectal (owing to exposure to light at night which suppresses the production of melatonin hormone that slows the growth of intestinal cancers; Schernhammer et al., 2003) and endometrial (Viswanathan et al., 2007).

▪ **Leukaemia, multiple myeloma and non-Hodgkin lymphoma in women**

The previously mentioned study by Mohan et al. (2003), in examining the causes of mortality among radiological technologists in the USA, found that the risk for the combined category of acute lymphocytic, acute myeloid and chronic myeloid leukaemia intensified for those individuals who worked before 1950. Information on a cohort of men and women working in the agricultural industry in Norway was assessed to investigate cancer risk factors in this sector (Kristensen et al., 1996). The researchers found that women employed in dairy farming were more likely to develop acute leukaemia. In addition, although the results were not significant, there was evidence to suggest that contact with pesticides led to multiple myeloma in both men and women, especially for those involved in potato cultivation. The researchers concluded that the results added weight to the relationships between animal contact and acute leukaemia and between multiple myeloma and potato cultivation.

In the USA, Zahm et al. (1995) focused on a mixed-gender sample of individuals who either lived or worked on farms to determine the impact of handling pesticides. They found that the women who handled insecticides or used herbicides had a greater risk for multiple myeloma. The authors concluded that women who had ever lived or worked on a farm and who used most classes of pesticides had an increased risk of developing multiple myeloma.

Kato et al. (2005) examined personal and occupational exposure to organic solvents and the risk of non-Hodgkin lymphoma among women in the USA. While a history of exposure to organic solvents was not associated with the risk of non-Hodgkin lymphoma, the researchers found increased risk for those who were exposed occupationally before 1970, and for those exposed both at home and at work. They concluded that exposure to organic solvents contributes to the development of non-Hodgkin lymphoma among women.

▪ **Pancreatic cancer**

Li et al. (2006) and Veyalkin and Milyutin (2003) investigated the relationship between occupational dust and chemical exposure and the occurrence of pancreatic cancer. Li et al. (2006) researched the impact of exposure to dust and chemicals in a cohort of women in the Shanghai textile industry on the risk of pancreatic cancer. Their focus on this industry was the result of employee exposure to several dusts, such as cotton, wool, silk and synthetic fibres, as well as chemicals including dyes, inks, formaldehyde and benzene, and these subsequent links to pancreatic cancer. Their data showed that those continuously exposed to cotton dust and endotoxin over a 20-year period had a decreased risk of pancreatic cancer; however, they suggested that more research was needed to confirm their findings. Veyalkin and Milyutin (2003) examined cancer mortality among a cohort of workers in the Belarussian tanning industry. The results suggest that women employed in the tannery were more at risk, of pancreatic cancer. The women were also more likely to experience cervical and corpus uterine cancers, melanoma and kidney cancers.

Links between hazardous substances and cancer (USA)

In the USA, NIOSH continues to study the linkages between the following hazardous substances and cancer in women (especially breast and cervical).

- Ethylene oxide: Ethylene oxide is used to sterilise medical supplies, and, in 2001, it was estimated that more than 100,000 women in US workplaces were exposed to this substance.
- PCBs: Polychlorinated biphenyls are compounds previously used in the electrical industry and banned since 1977. However, products made with this compound remain in the workplace and in the environment, so workers are still exposed to it.
- Perchloroethylene: Women who work in the dry-cleaning industry are exposed to perchloroethylene as it is the main solvent used in this industry.

▪ **Ovarian cancer**

In order to contribute to the aetiology of ovarian cancer, Langseth and Kjærheim (2004) examined a small sample of Norwegian pulp and paper workers to check for associations between exposure to asbestos, talc and total dust and ovarian cancer. Although non-significant relationships were observed, the researchers noted the non-representativeness of their small sample and the fact that only a small fraction of the women workers were directly occupationally exposed to asbestos. As a result, they concluded that women's exposure to substances in the work environment may lead to an increased risk of cancer.

▪ **Thyroid, lung and brain cancer**

In Sweden, Wingren et al. (1995) found an increased risk of female papillary thyroid cancer among women who had worked as dentist/dental assistants, teachers, shoemakers or warehouse workers, and who were exposed occupationally to undefined chemicals, or X-rays or video display terminals.

Kurahashi et al. (2008) explored the high occurrence of lung cancer among Japanese non-smoking women. They found that passive exposure from tobacco smoke from their husbands, at the workplace and during childhood and the combined exposure from smoke from their husbands and the workplace led to increased risks of lung cancer. McElvenny et al. (2001) found a higher than expected incidence rate of breast, lung and stomach cancers among female workers in the United Kingdom in exploring whether or not a cluster of cancers existed in the semiconductor industry. Fisher (2002) outlined various studies that realised the links between chemicals and brain cancer in the semiconductor industry, including an increased risk of dying from this illness.

6.2.7 Noise and neurological disorders

▪ Noise

Melamed et al. (2004) examined the combined effect of noise exposure and job complexity on distress and injury risk among a mixed sample in Israel. They found that women who worked in an environment with loud noise and a high job complexity were at a higher risk of injury than men, especially in the context of workload, noise annoyance and post-work irritability.

Noise is a contributing factor to increased fatigue and stress, sleep disturbance and cardiovascular effects, and when it dampens warning sounds and communication the risk of accidents at work may intensify (EU-OSHA, 2009b). However, noise is detrimental not only at high levels, as any noise-induced damage, even those previously thought as temporary, may leave longer-lasting, more permanent damage than previously thought (Kujawa and Liberman, 2009).

▪ Neurological disorders

Parkinson et al. (1990) examined the effects of long-term solvent exposure among women in blue-collar occupations at a micro-electronics site in the USA. The results showed that women who were exposed to multiple solvents for most of their working day tended to disclose a greater range of neurological and somatic symptoms. These results were consistent even when risk factors that could influence poor health were controlled.

6.2.8 Discussion

This review has outlined the negative effects that combined exposures can have on women's health and well-being. These effects range from respiratory disorders to various cancers and, most significantly, on reproductive health. As women tend to be concentrated in certain industries for reasons relating to child- and eldercare, they are continuously exposed to pesticides, chemicals, stressors and dusts, and for the most part do not have adequate procedures in place to control these exposures. The reasons for this are varied and include the gender bias, the need to work and the low influence or control that most women have at the workplace.

In exploring the available information on Canadian women's occupational health, Le Jeune et al. (2008: 58), drew attention to three areas they felt were responsible for women experiencing negative effects from work. These were a 'lack of clear requirements, multidimensional constraints and isolation in terms of women's labour relationships and coping strategies'. These factors are relevant also in the work carried out by women in the EU and help to explain some of the effects seen in this chapter.

Further, the pervasiveness of gender segregation in the labour market has resulted in significant gender differences in both job content and working conditions (Messing et al., 1998, 2003; EU-OSHA, 2003a), resulting in differential exposure rates and taxonomy of workplace hazards (such as toxic chemicals, ergonomic demands, risk of accidents and psychosocial risks; Messing, 1998), and, in turn, different patterns of occupational disease and illness between men and women. The current literature review has demonstrated the nature of some of the common occupational diseases and work-related illnesses among European working women, with a particular emphasis placed on occupational cancers skin and infectious diseases.

Although comprehensive studies have been conducted in the area of occupational exposures affecting women at work, researchers have highlighted the need for further exploration of occupational exposures and women. Biddle and Blanciforti (1999), in noting the increase of women in non-traditional occupations, called for a refocus on public health research to more adequately reflect the distinctive characteristics of women's exposure in the workplace. They noted that, at present, the standards reflect male characteristics that do not take account of the physical and physiological differences of women. They proposed, as others have done, the need to redesign jobs and workstations, in addition to concentrating on establishing standards and regulations that accommodate women's needs at the workplace. Organisations that do not provide adequate and flexible systems to protect the health and well-being of pregnant women and their unborn children are indirectly discriminating against this group (Hodgkinson, 2003).

As raised in 2003 (EU-OSHA, 2003a), and as the lack of research continues to highlight, reproductive issues in respect of overall conditions need to be better focused in the research agenda. More importantly, although there is some research on pregnant women and new mothers, there is far less research on women's other life experiences, such as menstruation and menopause. As the previous chapters in this review have shown, older women are more likely to enter the workforce than in the past, and are a much-needed group because of the overall ageing population across Europe. In this respect any research and preventive measures that could be undertaken to ensure a more productive working environment should be explored.

Snedeker (2006) emphasised the links between countries and the occurrence of breast cancer for similar jobs. Although more data on occupational exposures in the EU are needed, the evidence on the impact of combined exposures using samples or populations from non-EU countries are useful for an initial understanding. However, as noted in 2003 (EU-OSHA, 2003a), men are more likely to experience cancer than women, and the type of cancer that they develop differs. Also, in 2003 (EU-OSHA, 2003a) the point was made that research in respect of cancer mainly involved men, and this situation has not changed, as shown in this review, over the medium term.

Therefore, as research in this area increases, it will highlight more areas where females are exposed to occupational hazards or prone to increased risks of illnesses or diseases. It will be useful for organisations to take note of the gender differences in the workforce in relation to occupational exposures.

6.2.9 Recommendations

These recommendations continue to stress the reasons to assess the impact that combined exposures have on the health and well-being of women who choose to work, and those who may be subjected to secondary exposure, even when not at the workplace.

There is a greater need to focus on the importance of women as childbearers and as workers who may wish to, or have to, work to facilitate economic and/or social needs and should be protected while engaged within the work environment. It is already established that work is good for individuals, but procedures should be in place to protect women, their fertility and any potential unborn children. For example, the importance of continuing to minimise nurses' exposures to radiation and the importance of monitoring radiation exposure (McAbee et al., 1993) has been raised, and is essential to ensure a safe work environment. Overall, female workers of reproductive age should be safeguarded based on a thorough assessment of potential impacts of environmental and occupational factors on sexuality and fertility (Baranski, 1993). These factors include chemicals, physical agents (ionising radiation, electromagnetic fields, noise, vibration, ambient temperature), biological organisms (bacteria, viruses), physical load and position at work.

As is usually proposed, research should be longitudinal in nature, with a greater focus on physiological sex differences, as well as behavioural responses to chemical exposures (Keitt et al., 2004). In addition to being longitudinal, interdisciplinary, hypothesis-driven research is essential to advance the work in environmental health to better understand the reasons for differences between the sexes (Keitt et al., 2004). Research cannot be one dimensional, especially when trying to determine how and why reactions occur in women, and the differences between the genders.

Women are working to a greater degree in 'dangerous' jobs and, as this trend continues to increase, the 'norm' of fitting the worker to what has worked in the past cannot continue to exist if health promotion is to succeed. Additionally, in family businesses, work carried out by women may not be recognised as occupational. The NOCCA study on occupational cancer in the Nordic countries (a large retrospective study covering 15 million people aged 30–64 years in the 1960, 1970, 1980/1981 and/or 1990 censuses in Denmark, Finland, Iceland, Norway and Sweden) reported that female farmers or women working in family shops had not been not regarded as workers and therefore dropped out of the figures. Similarly, women with contracts of fewer than 20 hours and workers with an unclear work biography were not included in the statistics. Such criteria may exclude a significant proportion of female workers, for example in cleaning or maintenance or even in the healthcare sector.

The official recognition and compensation systems for occupational diseases need to address misconceptions with regard to work-related health problems in female workers. As demonstrated in an EU-OSHA report on MSDs in the EU, the obligation to identify the main cause for an occupational

disease to obtain compensation is a major obstacle to women; because many of their exposures are multifactorial, their health problems are not recognised as occupational and the diseases are not recognised or compensated. This is very well illustrated by figures published in a recent European Trade Union Institute (ETUI) report on occupational diseases in women: in the largest EU country, Germany, the female-to-male ratio of notifications of occupational diseases is under 30 % for women to over 70 % for men. Recognition rates are considerably lower for women than for men (Tieves, 2011).

Main points — trends and policy-relevant messages

- In addition to CVD and mental health disorders caused by stress, and MSDs, there is a range of diseases relevant to women at work.
- More information, and therefore research, is required to explore the links between women's reproductive health and the conditions under which they work. Combined exposures of chemicals, stress and low control at work have been observed to cause a wide range of reproductive disorders, including transgenerational effects. More research is needed to explore the linkages, if any, between reproductive cycling (e.g. menstrual phase, reproductive status) and the connection with blood pressure, heart rate and other biological pathways that lead from stress to CVD.
- In general, women appeared to be less vulnerable to work-related exposure to carcinogenic factors, probably because a lower proportion of women work in occupations that are regarded as being at the highest risk of exposure. However, one ongoing French study found similar rates of occupational cancer occurring in both genders from exposures to at least three different carcinogens. It also found that women were more prone to multiple exposures and that monitoring may be difficult in professions such as cleaning and maintenance work. Also, in 2003 (EU-OSHA, 2003a) the point was made that research in respect of cancer mainly involved men, and this situation has not changed, as shown in this review, over the medium term, although more information on cancer in traditional female jobs has become available.
- Causes of respiratory diseases in women are textile fibres, leather, food and animal dusts, infectious biological agents, asbestos and sensitising chemicals such as latex-contaminated dust or hairdressing products. The occupations in the healthcare sector, some manufacturing sectors (leather, food, textile) and services such as the hospitality industry and retail expose women to dusts from natural products, textile fibres and food (e.g. vegetables, spices, flour, coffee). Women also report infectious respiratory diseases far more often than men. Although less prevalent than in men, a remarkable number of asbestos-related diseases have been observed in women in some countries. Exposures to tobacco smoke have decreased as a result of smoking bans, especially in the hospitality industry.
- Combined exposure to noise and chemicals is relevant to female workers in the manufacturing sector, for example in the food, leather and textile industries, but also in agriculture. Health effects need to be assessed for women in these professions. As more women than men report tinnitus as a result of noise exposure, research on this health effect should be conducted.
- An increasing prevalence of voice disorders has been observed in professions such as childcare, education and some emerging service professions (e.g. call centres).
- Additionally, many women complain of eyestrain. This may very well be due to their higher representation in office jobs and the use of computers at work.
- The development of cancers has been linked to environmental factors and working conditions and more research is needed to further explore these connections. Recently, work organisational factors have been added to the list of issues to consider. Shift work has been recognised as a causal factor for breast cancer, and possibly also ovarian and digestive cancers.
- In general, women are seen as more at risk of developing contact dermatitis than men. This has been substantiated in several EU studies. This risk is especially relevant for women who work in the informal sector, who are migrants and who do domestic work as their main job.
- Sedentary work has been recognised as a risk factor for digestive cancers. This should be considered when researching the occupational background of workers exposed to increasingly static work (e.g. in offices and other similar service jobs).

- Exposure assessment fails to address jobs at clients' premises, part-time jobs and many service occupations. Family workers, for example in farms and small family jobs may also be excluded from the assessments, as may part-timers, subcontracted workers and workers with multiple jobs. Resources need to be consciously devoted to improve exposure assessment for the women performing these jobs.
- Notification and recognition rates for work-related diseases in female workers are still low, even for those diseases that are more frequent in women than in men. This is probably linked not only to the lack of knowledge on exposures, but also to the multifactorial nature of many of these diseases.

Recommendations for research, monitoring and OSH enhancement

- More men than women are used in epidemiological and cohort exposure studies, and this proportion needs to decrease as the findings may be applied for both genders, which may then reduce their impact on women. It influences the results of comparative studies between genders, for example on attributable risk for cancer, as for many female professions data on exposure and health effects are not readily available. Awareness of potential exposures is low in many service sectors, as could be demonstrated in the previous chapters for dangerous substances and work organisational factors.
- As outlined in a review, gender does influence the impact of exposures. Women on average have smaller body dimensions than men, which equates to a smaller surface area for chemical exposure through the skin. However, despite this smaller surface their organ blood flow is relatively higher, thereby increasing the rate at which chemical substances circulating in the blood reach the tissues, and their renal clearance is slower than men's, which reduces their capacity to emit toxic compounds. As such, the gender perspective in exposure is therefore most relevant and warrants further gender-sensitive research. In light of the fact that more women move into traditionally 'male' professions, the differences need to be taken into account when assessing health effects.
- The approach of a large study on occupations (NOCCA study) is promising: it highlighted that lifestyle factors, often related to the way work in which is organised and the cultural norms of the sector, may have a high influence on the development of some cancers. Static work has been linked to digestive cancer and also abnormal drinking and nutrition patterns in the hospitality sector. For women, the constraints linked to domestic responsibilities may add to the risk, as they cause higher distress but also limit the possibilities for adapting conditions.
- Consequently, the availability of facilities and healthy food may be important prevention measures. Intervention programmes directed at shift work need to consider the specific conditions of women regarding their domestic responsibilities. Health promotion programmes should include rest facilities, possibilities for exercise, childcare and nutrition.
- Research on female reproductive disorders and cancers should therefore also take into account wider factors if it is intended to give an adequate picture of all influential factors and provide input for effective prevention measures. One of the recommendations for shift workers was to provide appropriate childcare and rest facilities and take the private context into account to prevent sleep disturbances and allow for adaptation.
- Avoid assumptions on who may be exposed to carcinogenic risks and analyse the real risks to which women at work are exposed. Workplace measurements should be refocused to cover the many emerging female occupations and the traditional and the non-traditional jobs women do. Family workers and women working in small family businesses should be included. Include services delivered at the client's premises, cleaning, maintenance and personal services.
- Other tools are needed to identify health problems and the occurrence of occupational diseases in women. They need to take into account the nature of the combined risk factors to which they are exposed and the multifactorial nature of many diseases, including MSDs, work-related cancer and reproductive disorders. More gender-sensitive data collection and analysis is required to better focus injury prevention programmes.
- Proper coverage of infectious diseases and assessment of exposure to biological agents and endotoxins for female workers is needed to guide prevention, including the prevention of occupational cancer.

- Include part-timers and women with a varied work biography in research on work-related diseases. Studies such as the GISCOP study in France, which combine information from surveys, measurements and in-depth assessments of exposures (e.g. through interviews with workers), may help guide this research and provide input to job–exposure matrices.
- Policies and OSH-related practices need to take more account of both exposures that are women specific and multiple exposures.

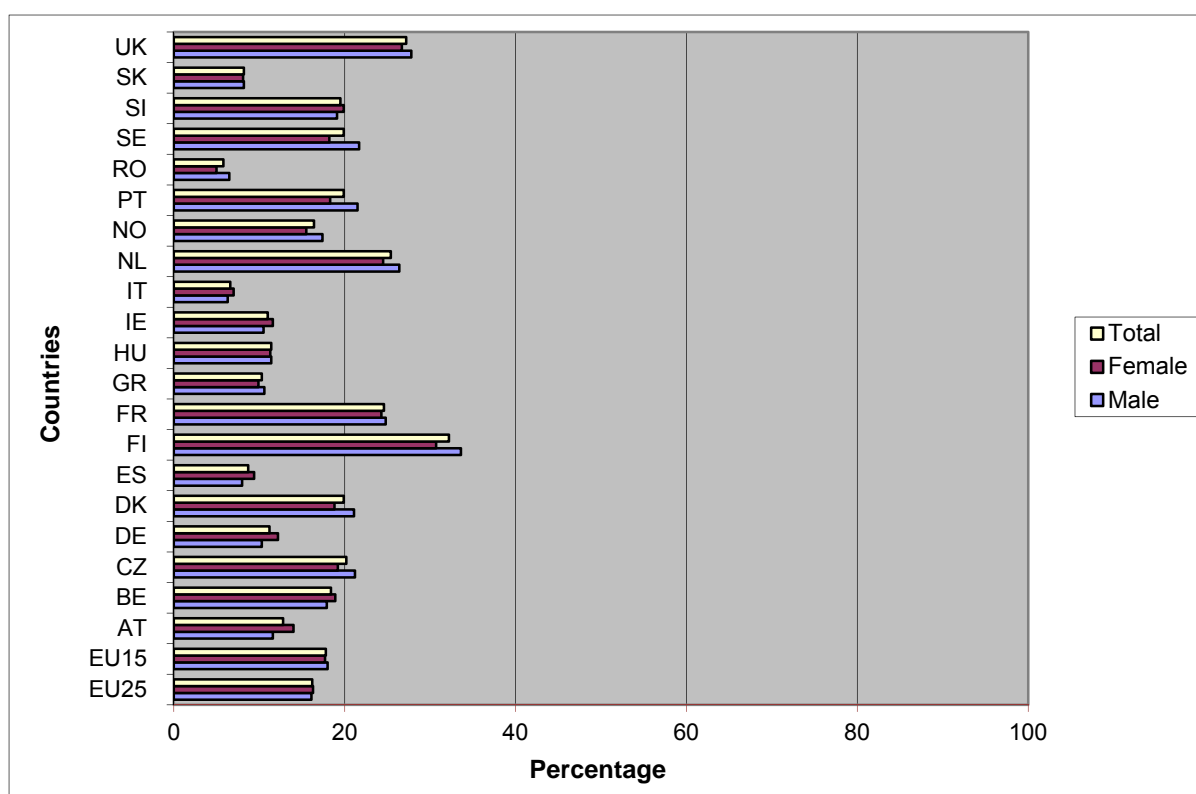
6.3 Accessing rehabilitation and disability issues — a gender OSH perspective

6.3.1 Introduction

In the EU, there are 44.6 million people aged between 16 and 64 who consider themselves to have a longstanding health problem or disability (LSHPD) (Figure 72) (EC, 2005a). This adds up to 16 % of the overall EU working-age population (EC, 2005a). Further, only 40 % of disabled people are employed, whereas this rate increases to 64.2 % for those who are non-disabled (EC, 2005a). The EC notes that, as one in six of the EU working-age population has a disability and is within a group with a low employment rate, that by increasing the employment rate of disabled people, this will work towards achieving the Lisbon objective of a 70 % employment rate by 2010 (EC, 2005b). It states further that individuals with disabilities make up a very underused source of labour that could contribute to overall economic growth (EC, 2005b).

The proportion of women and men in most countries in the EU who consider themselves to have an LSHPD is similar (EC, 2007b), as shown in Figure 72. In the EU-25, these figures are 16.3 % of females and 16.1 % of males, and in the EU-15 they are 17.7 % of females and 18 % of males (Eurostat, 2009g). Generally, women with disabilities tend to be fewer in number in the majority of the EU Member States, with the exception of Slovenia, Italy, Ireland, Spain, Germany, Belgium and Austria.

Figure 72: EU prevalence percentages of disability by gender



Source: Eurostat (2009g)

In 2005, the European Commission noted that it is difficult to adequately assess the situation of disabled people in Europe. It highlighted that individual Member States use different definitions and criteria for disability, which vary according to policy objectives, legislation and administrative standards, and even though population surveys provide subjective data, these are affected by differing cultural perceptions (EC, 2005c). To further compound the lack of information, research has shown that the employment data for individuals with disabilities are rarely analysed by gender (Walsh, 2000). This makes it problematic to decide how best to progress with increasing the number of individuals, particularly women, with disabilities in the workforce.

Another aspect of researching individuals with disabilities is that recent and/or reliable data are not readily available from several European countries (Greve, 2009). As Greve (2009) further highlighted, when reliable data are available they are dated, for example from 2002, and are not likely to present an accurate overview of the present position of individuals with disabilities, especially when the EU expansion is taken into account.

There is, at present, a tendency in European policy regarding disability to move away from work disability (or incapacity) towards work ability, that is assessing what individuals are able to do, rather than what they are not able to do, and providing the necessary support based on this evaluation (Greve, 2009). In this respect, the majority of EU states have developed labour market policies that are designed to encourage employment opportunities for women with disabilities. These include social security benefit, vocational rehabilitation and equal opportunity measures. However, as the population is getting older, which reduces the size of the workforce, policies on increasing employment rates should focus on individuals with disabilities who are searching actively for a job, as well as individuals with disabilities who are no longer searching (EC, 2005b). Because of the position of women in the workforce, policy-makers and labour organisations should be aware that women with disabilities are at risk of double or multiple discriminations and therefore require special attention, and policies with a focus on gender policies should take note of this issue in order to reinforce guidelines for disability mainstreaming (EC, 2005b; Greve, 2009), especially as women with disabilities are discriminated against more than men with disabilities (Jones et al., 2006).

6.3.2 Review of the literature

▪ Prevalence within disabilities

As more women are entering the workforce, it is becoming increasingly important to identify the occupational hazards to their health. Lucas (1991, as cited in Guthrie and Jansz, 2006) suggested that research into occupational health and safety has been concerned mainly with industrial accidents in male-dominated industries. As occupational health has focused predominantly on male employment, methodologies may not appropriately take account of women's work or of the biological differences between males and females (Messing et al., 1993).

Research shows that women with disabilities, when employed, tend to have jobs in specific sectors, including within the service, clerical and administrative fields (Slappo and Katz, 1989). This segregation of women into certain industries leads to exposure to particular OSH issues. Further, as women with disabilities are limited in their choice of occupation, many women undertake work that is repetitive and can be more hazardous because the workstations, machinery and equipment they use are often designed for men.

Although men and women can both experience the same disability, there are disabilities that are more prevalent in women, for example repetitive strain injury (RSI) (Meekosha and Jakubowicz, 1986). A number of factors could contribute to women experiencing RSI more frequently than men. Some researchers have suggested that a woman's dual role of employment and home work, the oppressive relationship of the medical profession to women, limited access to vocational rehabilitation and the disregard of women's OSH needs have contributed (Meekosha and Jakubowicz, 1986). Calvey and Jansz (2005) supported these findings as they highlight that women continue to bear the brunt of domestic responsibilities, despite working outside the home. Domestic work, especially for those with children, leads to women having more time constraints than men; this in turn means they opt for more casual, low-skilled jobs (Webster, 1996) in which monotonous and repetitive work is more likely.

For women suffering from RSI the likelihood of staying or returning to employment is limited. Meekosha and Jakubowicz (1986) found that women suffering from RSI either lose their jobs or, if they return to work, eventually leave because of the pain they suffer if accommodations are not made for their condition. Overall, employed women are two to five times more likely to report musculoskeletal problems than men (Unruh, 1996; Ariens et al., 1999; LeResche, 1999, as cited in Strazdins and Bammer, 2004). Strazdins and Bammer (2004) looked at why women are more likely to experience MSDs than men. The factors affecting this were that women experienced more risk factors, such as repetitive work and poor ergonomics, and the gender imbalance in domestic work reduced the opportunity for women to relax and exercise outside work. It is known that mothers invest more time looking after children and doing household chores than their partners (Bird, 1999). This additional task on top of paid employment results in women having less time for relaxation and exercise (Firestone and Shelton, 1988; Ross and Bird, 1994; Lundberg, 1999; Hildebrandt et al., 2000). This loss of leisure time means limited access to activities that protect against or help alleviate MSDs.

According to the latest (2007) Labour Force Survey ad hoc module on health and safety at work (Eurostat, 2010a), about half of those employed and faced with MSDs as their main health problem faced some limitations due to work-related health problems, while more than 15 % had considerable limitations in day-to-day activities at work or outside work. Differences in the consequences of disease existed between the different types of musculoskeletal health problems. In particular, workers with problems of the hips, legs or feet, that is lower limb problems, more often experienced considerable limitations (19 %) and long-term sick leave (25 %). Unfortunately, the Eurostat data do not differentiate by gender. As women are more exposed to prolonged standing and sitting and tend to report more lower limb problems, it can be assumed that a considerable proportion may experience notable limitations. However, lower limb problems are rarely considered. Consequently, women with lower limb disorders may drop out of work without social benefits in the form of compensation, and have difficulties in obtaining appropriate rehabilitation, workplace adaptation and retraining. Also, as opposed to men, in employed women the proportion of women with musculoskeletal health problems as the main work-related health problem increased with age.

Stress, depression or anxiety as the main work-related health problem occurred more often in employed women (17 %) than in employed men (13 %) in the 2007 Labour Force Survey ad hoc module (Eurostat, 2010a). The proportion of workers who identified stress, depression or anxiety as their main work-related health problem was highest between the ages of 25 and 44 years. It was highest among those with a high educational level (26 %) and skilled non-manual workers (26 %). The proportion of stress, depression or anxiety was highest in the sectors 'education' (27 %), 'financial intermediation' (25 %), 'public administration and defence' (24 %), and 'real estate, renting and business activities' (22 %). It was also high in the health and social services. Persons with stress, depression or anxiety as the main work-related health problem were more likely to experience long-term sick leave than persons with musculoskeletal problems (32 % vs. 26 %). Again, unfortunately, figures that differentiate by gender and age are not available, but it can be assumed that, because these sectors are female-dominated, women, especially younger women, may be more affected by long-term sick leave linked to stress experienced at work.

For both stress and MSDs, respondents on average report longer sick leave or higher prevalence of health problems than employed persons, which might be an indication of the 'healthy worker effect', meaning that sick workers drop out of work.

In addition, when considering the LFS data, it needs to be taken into account that respondents were asked only about their main health problem, the main obstacle to take into consideration, the specific pattern and multiple risk factors to which they are exposed. For example, the statistics may inadequately reflect the situation of the average older working women in the health and social sector, who may be equally affected by both MSDs and stress.

▪ **Careers, choices and limitations**

The participation of women with disabilities in employment is restricted by both social and environmental factors. These women, in general, experience discrimination when trying to obtain employment, as they are relegated to careers which are deemed to be appropriate for their sex, such as secretaries or waitresses. Brown (1981) found that women with disabilities, as they are seen as asexual, are denied even this type of employment, with employers regarding them as incapable of

performing even basic job functions. They do find it difficult to gain employment (Willis, 1987, as cited in Burke, 1999; Scott and Baun, 1992), and, as they are limited within the job market as to what is deemed *suitable* for them, advancing in a chosen career could be challenging. This is further compounded as individuals with disabilities, because of their physical and/or psychological impairments, are seen as unable to achieve and maintain a suitable standard of living (Barnes, 1992). Social stigma, such as the negative perceptions and attitudes that individuals have towards women with disabilities, continues to be perceived as an obstacle to their careers (Slappo and Katz, 1989). In addition, women with disabilities have to deal with negative social attitudes that they are 'ill, ignorant, without emotion, asexual, pitiful, and incapable of employment' (Perduta-Fulginiti, 1996: 298). People with disabilities continue to be victims of stigma, low status, prejudice, indifference, neglect or fear. Women with disabilities in particular experience fewer opportunities and have lower aspirations (Stace, 1987).

Women with disabilities and lower educational attainments, and therefore fewer skills, tend to find it more difficult to gain employment than non-disabled women (Stace, 1987). Disabled girls experience a limited range of educational opportunities, as both professionals and parents have lower educational expectations for them. Perry (1984, as cited in Stace, 1987) found that women with disabilities who had been through the ordinary school system had an improved chance of obtaining and staying in employment as opposed to those attending schools for disabled individuals.

In assessing the employment prospects of women with disabilities in the USA, Yelin (1993) noted that this group benefited from the growth of the service industry in that more jobs were available to them. However, this was not without consequence, as the jobs were mainly part time, offered less job security, had few benefits and poor working conditions and the workers were released from employment if and when difficulties arose within the organisation. In noting that the proportion of persons with disabilities who are employed varies with the overall level of employment, Yelin (1993) projected that declines in employment may result in women with disabilities losing their jobs at a higher rate than other workers.

One aspect that could influence how women with disabilities view work is their self-esteem. Nosek et al. (2003) conducted a study examining the self-esteem of women with physical disabilities. In relation to the findings on employment, they identified that women with disabilities with higher self-esteem were more likely to be more employed than those with lower self-esteem. Further analysis found that women with disabilities who had higher levels of education than women without disabilities had lower rates of salaried employment. They concluded that there could be a benefit to increasing awareness and availability of job accommodations, as well as increasing the employability of women with disabilities. When individuals with disabilities do find work it is generally poorly paid, low skilled and low status, which is both unrewarding and undemanding. Walker (1982) refers to these types of jobs as underemployment. This may be one reason why women with disabilities have more negative experiences of work than non-disabled women.

While most women may experience challenges in retaining a healthy lifestyle, these challenges may increase among women who have disabilities, as they may not have ready access to health promotion information (Persaud, 2000; Jones and Bell, 2004). As Jones and Bell (2004) outlined, health promotional material is generally not targeted at those with restricted movements; for example, it may suggest exercises that need to be performed from a standing position, which are clearly not feasible for women in wheelchairs or who may need assistance in keeping their balance. Similarly, the use of pictures and graphics is inappropriate for women with visual impairments. They further noted that these materials might not be readily available in another format, such as large print, audiotape or Braille. As adverse health behaviours can have an impact on employment, there is a need for healthcare professionals to try to improve the quality of life for women with disabilities in order to enhance their well-being and gain employment.

Burke (1999) looked at the experiences of women in Ontario working predominantly as healthcare workers, teachers, childcare workers and sales and advertising managers, and identified that women with disabilities reported work experiences as more negative than those of non-disabled women. Women with disabilities reported lower satisfaction and poorer psychological health, as well as higher levels of job insecurity, a more demanding and hazardous workplace and higher levels of harassment. They also listed their lower levels of education as a possible cause of them being unable to obtain better or higher status jobs. Slappo and Katz (1989) explored the experiences of women with disabilities in non-traditional careers, such as accountancy and law. The positive findings were that this group of women received good salaries, high satisfaction and intellectual stimulation. The women

in the study displayed a high motivation to obtain a career; this is a significant finding as very few women with disabilities are encouraged to pursue a career. The biggest obstacle to their career was people's attitudes towards women with disabilities. The women felt they constantly had to prove themselves on the job. They received very limited accommodations within their job and, when they did, it was most often the removal of architectural barriers.

It is also necessary to ensure that women with disabilities are compensated adequately for their services. The information on this aspect of employment for individuals with disabilities, including women, tends to be consistent. One assessment of adults with developmental disabilities illustrated that, in addition to high unemployment among this group, they had a limited income, including their earnings and the benefits accrued from governmental income support programmes (Yamaki and Fujiura, 2002). Other studies have supported the inequality in compensation to workers with disabilities (Balsler, 2000; EC, 2007b) and specifically for women (Baldwin and Johnson, 1995; O'Hara, 2004), and for women in the United Kingdom using data from the 2002 Labour Force Survey (Jones et al., 2003).

Women with disabilities have a number of barriers to overcome before they choose a career; some of these barriers are low educational attainment, adverse health behaviours, societal perceptions and self-esteem. Moreover, when they gain employment, women with disabilities still have barriers to overcome, such as their perception of their job, underemployment, lack of accommodations and employers' attitudes.

▪ Health and well-being

Women with disabilities are regarded as one of the most disadvantaged groups, which may lead them to experience more health-related problems than either men with disabilities or women without disabilities (Thierry, 1998). Thierry (1998) also notes that, when women with disabilities seek healthcare, care providers may concentrate on the 'disability' rather than other conditions, so that primary healthcare issues may not be considered in the assessment. To compound the issue, Tighe (2001) stressed that women who have physical disabilities could spend a large proportion of their time in searching for accessible places within their communities, in order to facilitate their health and other daily needs. This limits the time and energy that they can then devote to other activities, such as seeking employment.

In 1998, Shackelford et al. raised the point that, although women account for close to 20 % of all spinal cord injuries, the research does not reflect that statistic, focusing rather on their ability to reproduce or become depressed. In addition, they stated that women with such injuries find it difficult to obtain information about their conditions, and with people living longer it is to be expected that they will experience other medical conditions in addition to their injury or disability.

One way to improve workers' well-being, especially those with disabilities, is to improve their work ability (Sandqvist et al., 2008). In a study assessing the well-being of women with limited systemic sclerosis, Sandqvist et al. (2008) found that women with an increased working ability were better able to do work, as well as home tasks, and were more satisfied with their jobs and experienced better overall health.

▪ Rehabilitation and disability

The European Commission (2005c) promotes the idea that reasonable accommodation is at the centre of fighting discrimination on the grounds of disability, as it should not be viewed as a positive action left to the discretion of public or private operators, but rather as an obligation whose failure can constitute unfair discrimination. It is acknowledged that *reasonable* accommodation does vary from individual to individual, and depends on the situation and the funding available at the time (EC, 2008b). In 2005, Moore raised the issue that counselling and rehabilitation research and practice continues to be influenced by the traditional medical model. This, then, can limit a cohesive approach to facilitating workers with disabilities in the workplace. Saleebey (1997, as cited in Moore, 2005) supports this argument in proposing that the focus on the medical model restricts the person's ability to be regarded as whole and to self-actualise and grow.

One issue that affected how women overcame problems was assistance at work, but this was most influenced by whether or not the disability was visible. Slappo and Katz (1989) reported that women

with 'visible' disabilities, such as amputations, artificial limbs and the use of canes and guide dogs, were more likely to state that they received assistance than those whose disabilities were not as pronounced. Again, this is influenced by the perceptions and attitudes of the average individual without disabilities. However, research has shown that for some women the benefits of supported employment were not always realised (Siporin and Lysack, 2004). Accommodation is a crucial aspect of women's ability to progress in their careers and protect them from OSH risks.

Menz et al. (1989), in reviewing the literature, notes that the advice and recommendations that vocational rehabilitation counsellors provided differed according to gender, with women more likely to have their employment prospects limited.

Attempts have been made to improve access to employment for disabled people through vocational rehabilitation, quotas and incentives for employers. However, many factors impact adversely on women and on their disabilities, for example their extremely restricted access to vocational rehabilitation and the lack of compensation received.

▪ **Rehabilitation into work**

While a disability can be either physical or mental, it tends to a certain degree to be viewed as an illness within society (Hanson, 2002), which is expected to be addressed outside public view (Rioux, 1985). The onus is placed on the individual to deal with his or her disability, which thereby perpetuates a lack of interest in accommodating the needs of individuals with disabilities (Rioux, 1985). However, Stace (1987) found evidence that while employers are interested in promoting employment opportunities for the disabled, there is a paucity of information specifically on women with disabilities. There is evidence that employers have provided workers who have become disabled while in work with vocational rehabilitation, but again it is not known how far this has benefited women, as women with disabilities are less likely to be employed and are more dependent on employers employing workers with disabilities. As little recognition is given to the employment needs of women with disabilities, they have limited access to employment and vocational rehabilitation.

This is evidenced in research undertaken by Parker (1984, as cited in Stace, 1987). He found that in the United Kingdom young women have access to vocational rehabilitation schemes via employment rehabilitation centres (ERCs). The ERCs cover attitudes to work and prepare individuals for work through job counselling, job placement services and skills training. However, Parker found that their facilities are not used to great effect and do not appear to improve job opportunities. Further research by Perry (1984) and Somerville (1980, both cited in Stace, 1987) highlighted that only a small number of women were attracted to join the vocational rehabilitation programmes in the United Kingdom. The women who opted to attend were predominantly young, single women with no family commitments. Older women were much less likely to take up the opportunity of vocational rehabilitation (Stace, 1987). The studies showed that the training was biased towards industry rather than the service and public sectors, in which women mainly work. Further, the vocational rehabilitation schemes operate on the assumption that employment will be full time, so they fail to take into account the working patterns that may be more suitable for women workers. As so few women choose to attend the ERCs, there is no pressure on the centres to change their schemes to accommodate them.

Within the ERCs, those women with disabilities were found to be offered a reduced range of skills training and, as young women with disabilities have fewer educational qualifications and less work experience, their chances of obtaining gainful employment is reduced to a greater degree. At the end of the rehabilitation scheme the work aspirations of disabled women were lower than those of disabled men. From 6 April 2010, in the UK, the format of the Medical Statement (also known as the Doctor's Certificate or the 'Sick Note') changed and became a Statement of Fitness for Work.

Since these findings, while guides for occupational health professionals, workers and general practitioners involved strategically in attendance management and in clinical care have been produced, they are not gender-specific or tailored to the specific occupations or conditions of work of for example part-time workers. Persistent inequality in attendance, for example to cardiac rehabilitation, is not expected to be altered by such general guidance.

In an evaluation of the most recent programme for insertion, the "Jobcentre Plus Offer", a first evaluation (Coulter et al. 2012) outlined that "advisers could vary the format of meetings, with the use of telephone calls and home visits, as well as standard face-to-face office meetings. This use of flexibility was applied, in particular, to appointment arrangements for claimants who were less able to

attend Jobcentre Plus meetings because of health conditions and childcare arrangements.” Only a minority of claimants with children said they were offered information or help with childcare. Claimants also discussed a lack of specific support or job brokerage in contacting employers who offered more flexible employment opportunities for people with disabilities and health conditions. Advisers also felt that there was limited support that they could offer, especially around mental health issues. Claimants were often referred to Disability Employment Advisers who are responsible for providing support to customers who, due to their disability or health condition, may need additional help in finding and retaining work and supporting development. Work Clubs, which provide claimants with a place to meet, exchange and develop skills, share experiences, source employment opportunities, make contacts and get support to help them in their return to work were particularly appreciated by people with a long-term absence from work or long standing illness affecting their physical abilities: the attendance rate was higher for those with a long-standing illness, and was particularly high among those who said their condition affects their ability to work (47 % of this group who had information about a Work Club actually attended one). The attendance rate was also high among those with a mental health condition (38 %).

Within the EU-27, the amount spent on supported employment and rehabilitation fell between 2005 and 2009 (Table 39). However, this is not symptomatic of the amount spent on these services, as in many EU-27 countries public expenditure in this area has been increasing.

New risks and trends in the safety and health of women at work

Table 39: Public expenditure on supported employment and rehabilitation (in €million)

Country	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
EU-27	:	:	:	:	:	:	9,844.267	7,664.985	7,969.235	9,182.426	9,438.119
EU-15	:	:	:	:	:	9,777.582	9,376.857	7,130.080	7,279.748	8,303.235	8,650.270
BE	:	286.816	291.809	317.698	330.909	342.357	362.922	361.384	393.095	430.034	467.368
BG	:	:	:	:	:	1.648	1.884	2.084	1.717	1.968	1.533
CZ	:	:	:	27.323	27.782	28.658	34.991	60.712	87.032	101.430	97.363
DK	662.067	786.123	859.073	1,032.192	1,055.392	1,096.749	1,157.412	1,361.196	1,352.764	1,519.944	1,628.025
DE	2,413.952	2,605.130	2,863.379	3,063.686	3,254.413	3,190.379	2,769.563	186.385	173.158	834.063	864.035
EE	:	:	:	:	:	:	:	:	:	:	:
IE	2.059	1.847	8.495	10.446	10.977	11.551	11.460	14.376	15.864	18.002	18.781
EL	2.763	2.718	2.935	2.935	0.065	0.306	:	0.100	0.154	0.200	:
ES	138.346	167.401	190.123	230.442	244.424	267.321	173.961	207.955	223.428	268.252	288.321
FR	837.636	862.846	914.723	984.003	1,041.552	1,060.519	1,128.168	1,196.406	1,253.064	1,338.239	1,428.718
IT	:	:	:	:	:	:	:	:	:	:	:
CY	:	:	:	:	:	:	:	0.716	0.975	1.441	0.863
LV	:	:	:	:	:	:	:	0.002	0.076	0.094	:
LT	:	:	:	:	:	:	0.016	1.217	14.106	11.715	10.238
LUX	0.249	0.275	0.314	1.671	1.325	2.227	2.758	2.999	3.011	3.540	3.728

New risks and trends in the safety and health of women at work

Country	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
HU	:	:	:	:	:	:	:	:	:	:	:
MT	:	:	:	:	:	:	:	:	:	:	:
NL	2,181.916	2,310.303	2,619.500	2,807.887	2,805.970	2,727.930	2,695.701	2,661.081	2,658.451	2,787.909	2,848.238
AT	33.664	52.915	66.646	69.548	63.438	85.543	85.523	92.208	92.497	115.465	113.799
PL	:	:	:	:	:	:	423.704	465.033	578.162	751.992	661.053
PT	9.036	35.830	49.669	53.303	59.134	58.578	56.942	57.194	60.223	47.195	71.398
RO	:	:	:	:	:	:	:	:	:	:	:
SV	:	:	:	:	:	:	3.460	:	:	:	:
SK	:	:	:	:	:	0.585	3.356	5.139	7.419	10.551	16.798
SF	96.856	104.559	123.540	137.403	144.018	149.223	152.591	159.676	159.941	159.343	161.598
SE	721.885	737.934	596.536	615.647	587.997	617.691	608.584	614.086	606.035	645.956	650.903
UK	159.395	:	:	:	:	167.208	171.271	215.035	288.063	135.093	105.359

., not available; -, 'not applicable' or 'real zero' or 'zero by default'; s, Eurostat estimate; e, estimated value; n, not significant.

Source: Eurostat (2009h, 2013)

One of the most influential factors in returning to work is gender (Oleinick et al., 1996; Ahlgren and Hammarström, 1999, 2000). This may be because men are given rehabilitation earlier and to a greater extent, whereas women's rehabilitation is seen as more complicated (Bäckström, 1997, as cited in Ahlgren and Hammarström, 2000). The prevalence of women in marginal, low-paid jobs may act as an influencing factor for them not receiving higher levels of rehabilitation, as well as being subjected to uncompensated wage losses (Makarushka, 1977). Also, some health practitioners, such as occupational health physicians, have proposed that rehabilitation into work was more important for men than for women, with employers who are more positive and active towards the rehabilitation of men supporting this (Vinke et al., 1999). Further, the unequal division of responsibilities and domestic work within a marriage has been shown to influence rehabilitation (Hamberg et al., 1997).

Once in work, a similar pattern of discrimination occurs. Ahlgren and Hammarström (2000) examined young people's experiences of rehabilitation and found that women were less likely to receive a specific diagnosis, experienced more distrust from doctors and insurance officers and had more negative outcomes of rehabilitation. An EU-OSHA (2007b) report found that young workers have very limited access to rehabilitation schemes. 'The 2007 Labour Force Survey found that stress, depression or anxiety frequently resulted in both limitations of normal day-to-day activities either at work or outside work and long sick leave. The contribution of stress, depression or anxiety substantially increased from 1999 to 2007 in the sectors 'hotels and restaurants', 'transport, storage and communication', 'financial intermediation' and 'public administration and defence'. A strong increase in both musculoskeletal health problems and in stress, depression or anxiety was observed in the sectors 'hotels and restaurants' and 'financial intermediation'. The top occupations affected are non-manual, low-skilled workers. These are either jobs in which a considerable number of young people, including young women, work or sectors with an increasing or high proportion of female workers. Young workers may drop out of these jobs at an early stage without any perspective for vocational retraining, rehabilitation or compensation. Considering that back-to-work schemes are scarce for service workers and for workers affected by MSDs and stress, there is an urgent need for action.

Other findings showed that, during consultation with their doctors, those men with symptoms that more easily fitted into a specific diagnosis experienced greater trust from the doctor, which led to an intensified vocational rehabilitation. Further, women were more likely to attribute their disability to the work task and to themselves, whereas men felt that employers were responsible in terms of both inadequate working conditions and measures to control the risk. This difference could be due to socialisation where demanding attitudes are more appropriate for men, whereas women tend to be more caring and helpful (Unger and Crawford, 1992, as cited in Ahlgren and Hammarström, 2000).

However, some research has shown that occupational health interventions can be advantageous. Twenty-one female hairdressers who undertook an occupationally orientated medical rehabilitation reported significant and long-lasting effects on their work techniques and subjective well-being (Arokoski et al., 1998).

Countries outside the EU are also engaged in positive action. Three times as many men as women use the Australian Commonwealth Rehabilitation Service (Stace, 1987). As a result, the government developed policy guidelines that looked at providing special support and information services for women injured at work, in particular looking at disabilities, such as RSI, that disproportionately affect women.

Incentives for employers to retrain workers who have become disabled, or to take on disabled workers through mechanisms such as a register for disabled workers or a quota system, have not been effective for workers with disabilities and even less so for women with disabilities (Stace, 1987). Some reasons offered for this ineffectiveness are that the purpose of the register is misunderstood and jobs are scarce, so women with disabilities do not obtain any direct benefits from the system.

- **Diseases that particularly affect female workers are not addressed by rehabilitation**

Some researchers have commented that vocational rehabilitation is unable to overcome the longstanding disadvantage of poor education and lack of skills experienced by women with disabilities (Schmidt and Semlinger, 1984, as cited in Stace, 1987). Young disabled workers who want to gain employment for the first time and older women with disabilities returning to work would particularly benefit from targeted vocational rehabilitation (Stace, 1987). Women in general, and particularly

women with disabilities, did not benefit from services designed to open up employment opportunities (Stace, 1987). These findings were confirmed by a 2009 study for the European Commission (EC, 2009e) which reiterated that vocational training is an area where women with disabilities face a particular disadvantage and have lower participation rates. The report recommends that Member states develop national strategies targeted specifically at women with disabilities.

An EU-OSHA report on back to work interventions with MSDs (2007c) found that reintegration and rehabilitation are often offered only to workers who have suffered occupational accidents or have recognised occupational diseases. Providing help only to the severely disabled tends to exclude individuals with less severe MSDs, many of whom could return to work after being given a little help or offered simple adjustments to their jobs. This can easily exclude young workers who normally do not have recognised MSDs, and workers with stress disorders, of which female workers are more affected.

Successful examples of integration of unemployed women were analysed in a UK study produced by the National Institute of Adult Continuing Education (NIACE) for the Skills Funding Agency under the European Social Funding scheme (Ward et al., 2011). Lack of confidence, often reinforced by poor self-esteem, is universally cited as the most significant barrier to women of all ages accessing and progressing in learning and work. Low confidence is particularly acute for women who experience multiple disadvantage and life challenges; depression and poor mental health; the study also finds that women furthest from learning, pre-employment training and work often experience multiple factors that together pose considerable challenges to accessing, sustaining and progressing in learning and work. Personalised approaches are usually most effective to support these women. The authors found that approaches that reach out to these groups in places where they live, work or socialise tend to be most effective. “Going out to women works better than expecting them to come to you”. They recommend working with frontline workers such as librarians, health visitors, youth workers, community workers, school and Children’s Centre staff to reach out to disadvantaged groups (e.g. women workers who have been disabled by an accident).

A successful return to work programme, the Redesigning Daily Occupations (ReDO) program, for women with stress-related disorders considered the relationship between women’s patterns of daily occupations and their health and experiences of stress (Eklund et al., 2013) as crucial for recovery and return to work.

The EU-OSHA study on back-to-work schemes for workers affected by MSDs also found that no literature exists on the effectiveness of work-related interventions and the rehabilitation of workers with lower limb disorders (EU-OSHA, 2007c). The evidence for the effectiveness of MSD back-to-work interventions is also limited regarding interventions aimed at upper limb symptoms. Both upper and especially lower limb disorders affect women more than men. The authors concluded that the rigorous schemes for scientific research (e.g. sample size and randomisation) are not adaptable to workplace interventions. Interventions are complex and aimed at a limited number of workers at a specific site. Other sets of criteria are needed to assess and promote workplace interventions. Employers should not be discouraged from implementing back-to-work policies because there is not yet scientific evidence to prove that these work. It is known that a multidisciplinary approach proves best and worker involvement is key.

▪ **Migrant women at a particular disadvantage**

Rehabilitation services for migrant workers are minimal (Meekosha and Jakubowicz, 1986). In Australia, one study became aware that migrant women had more compensation claims and were less likely to return to work than women from English-speaking backgrounds (Anonymous, 1993). One hundred migrant women who worked mainly as casual staff were asked about their experiences of occupational injury and rehabilitation, and the researchers found that musculoskeletal problems were a major hazard among migrant women. The study identified that many of the migrant women worked in jobs that were highly repetitive and had very little risk prevention. When injured, the women tended not to report it, as they were fearful of victimisation or dismissal. Rehabilitation was found to be lacking, as many doctors did not have a thorough understanding of MSDs, and therefore could not advise on the most effective way to return to work. Additionally, for immigrant workers, Carta et al. (2005) indicate that there is a clear deficiency in training and education practices on the subject of understanding immigrant culture for mental health professionals working with migrants, stress the necessity of urgent change in the training of professionals, the way mental health assessments are

made and the narrow eurocentric nature of therapy. Psychosocial problems can mislead health care staff not familiar with the process and impact of migration on psychological health.

An EU-OECD report (OECD, 2005) cites a Dutch return to work programme (Different) specifically targeting low-educated migrant women who were on disability insurance and had lost their jobs because of disability occurring through manual work such as cleaning. The women received training to enhance their language skills and capacities to do higher qualified jobs, every four to six weeks the women meet in groups of five or six, as a form of peer support. It was also crucial that the women had the same case manager throughout, to build up trust and to ensure that the person representing the project to her fully understands her situation. During the course, each participant attended a voluntary and unpaid work placement agreed with her and usually in workplaces such as in hospitals, childcare, eldercare – in a range of low-skilled work, such as kitchen work, but not cleaning. Husbands have been included from the onset and childcare was provided. Employing an official translator rather than using a family member has meant that participants, when interviewed (alone) had been able to be far more honest in their responses. About a quarter of the women in the first pilot group found employment. This example is illustrative of the preconditions needed for the successful reintegration of injured migrant women

- **Compensation for occupational injury and ill health**

A range of gender issues affect women's experiences in regards to workers' compensation. Some of these include different forms of work, differing injuries for women and men, lower pay and therefore lower bargaining power and poor return-to-work rates, particularly for women who work part time and do casual work (Bale, 1989a; Cameron, 1994; Quinlan, 1996; Shackleford et al., 1998; Cooper and Faulks, 1999, as cited in Guthrie and Jansz, 2006).

Guthrie and Jansz (2006) examined workers' compensation in Australia and found that women's experiences of the compensation system are different in a number of areas. The research identified that women received lower compensation than men, experienced inequality in the dispute process and experienced greater difficulty in returning to work. The participants in the study described their experiences, and women in particular felt that employers failed to provide accommodations and that the experience of claiming compensation was 'emotionally and physically exhausting'. Three-quarters of the women in the study resigned from their jobs, largely because of the lack of support received. This is supported by previous research by Casey and Charlesworth (1984, as cited in Guthrie and Jansz, 2006), who found that accommodations to work were limited: light duties were generally not made available, there were very few examples of modifications to the workplace and work hazards were often not removed or changed. One significant reason why rehabilitation schemes fail to account for the needs of women is that the compensation fails to account for childcare needs during the rehabilitation period (Meekosha and Jakubowicz, 1986).

A Swiss study found that there was a marked decrease in the declaration and, consequently, in the compensation of occupational MSDs in Switzerland between 1992 and 2010. While they represented almost half (45 %) of the insured workers, only a quarter of recognised MSDs were for female workers, and only 16 % of all compensated diseases. Three-quarters of the notifications were not for listed occupational diseases (compared with less than half for men) and the beliefs and practices of assessors, as well as the culture in the industrial sectors, had a high impact on notification, recognition and compensation rates (Probst, 2012). This is confirmed by other studies indicating the lack of recognition of MSDs specific to women, such as lower limb disorders (EU-OSHA, 2010) and, consequently, the lack of access to compensation and rehabilitation.

Regarding occupational cancer, research previously reported here (section 6.3.6) suggests that there is a considerable gap between the rules of compensation for occupational cancer and the reality of female patients' job histories. Because occupational cancers are mainly recognised in industrial jobs and construction, female workers are under-represented in the statistics. The GISCOP research group reports workplaces where exposure and disease may be underestimated: production processes involving subcontracting conditions where risks have not necessarily been evaluated (e.g. maintenance and repair functions); construction and building sites with a whole set of situations, such as demolition, renovation and reconstruction; and the cleaning and waste management sectors, where there are almost no studies and workers are subject to multiple carcinogen exposure. Although the female working population is almost the size of the male working population and has doubled since

1962, the recognition rates are still low for female workers, even when they have worked in industrial jobs and manufacturing; Council and Thébaud-Mony, 2012).

In a review of back-to-work strategies for workers affected by cancer, it was found that:

A significant number of cancer survivors, were found to experience social problems at the workplace such as lack of support and/or discrimination, and often also physical and emotional hurdles such as fatigue, pain, anxiety, depression, all of which are symptoms that may become chronic. These effects cause impairments and have an impact on employment. Cancer survivors were shown to be significantly more likely to be unemployed than healthy workers. The majority of studies have focused on identifying factors that are associated with employment and barriers of return to work. In the future, more emphasis should be put on factors that cause recurrent sick-leave and early departure from work life.

Taskila and Tamminga, 2012

Women with disabilities also have to deal with the negative perceptions of those responsible for compensation. Bäckström (1997, as cited in Ahlgren and Hammarström, 2000) found that social security offices regarded men as having more motivation to work. This could be because women's goals include both work and family. Other reasons for the disparity could be due to the nature of women's claims, as they tend to be more medically and legally complex, for example those involving RSI. Lippel (1995, as cited in Guthrie and Jansz, 2006) found that women were less likely to succeed before review boards, which may be because the review boards consist mainly of male members. Blackett-Smith and Rubinstein (1985, as cited in Guthrie and Jansz, 2006) identified that women receive significantly less compensation than men even when the circumstances were similar. Some researchers found that the lack of compensation claims by women is because of the belief that if they are injured at work they can always go back to the home full time.

The above-mentioned EC study on the situation of women with disabilities in light of the UN Convention for the Rights of Persons with Disabilities (EC, 2009e) confirms that women with disabilities experience unequal treatment regarding income and living standards, strongly linked to the lower benefits. Some data from the 2002 LFS ad hoc module on disability shows that, before social protection provision, the average income of women with a disability is only 63% of that of women without disabilities. However, there is a great variation between Member states.

In Sweden, one assessment of the relationship between sickness absence and disability pension in a cohort of 213 individuals found that, although more women than men were granted a disability pension due to their condition, more women were granted a part-time temporary disability pension and more men granted a permanent pension (Alexanderson et al., 2005). This is despite the women having a higher rate of long-term sick leave. Those authors suggest that, as men are more likely to work full time, there may be a cultural bias against giving them a partial pension. Also, they note that if women state that they are able to do housework, then they are rarely given a full-time disability pension. The need for women to consistently and constantly have to *justify* their right for compensation does not seem to have advanced far since the 1950s and 1960s when Bale (1989a,b) highlighted the difficulties that women encountered when seeking compensation for injuries and illnesses incurred while engaged in their jobs.

It appears that the rehabilitation system is designed to accommodate men more than women. Policy-makers and those responsible for implementing rehabilitation systems should consider gender issues and in particular the home life of women and how this affects their rehabilitation. Improving the employment status of all women will also benefit women with disabilities. Women and disabled workers should have access to flexible working arrangements, and vocational rehabilitation schemes need to be tailored to address their needs, particularly their social and economic needs.

6.3.3 Discussion

The research has shown that the relevant legislation, regulations and policies are in place to ensure that individuals with disabilities can be provided for within the working environment. However, the statistics do not reflect a larger percentage of individuals with disabilities in the workplace. Kruse and Schur (2003) proposed that individuals with disabilities experience low employment rates as they are offered low market wage rates due to the *perceived* lower levels of productivity and/or employer discrimination. So, in fact, disability affects employment and employment affects disability.

One way to engage more individuals with disabilities is by using reasonable accommodation. It has been stated that the cost of accommodating individuals with disabilities is rather low (Burke, 1999), and the benefits of retaining an employee will outweigh the deficits associated with the costs.

Improving the employment status of all women will also benefit women with disabilities. Women with disabilities should have access to support systems and networks before they embark on a career, as recommended in several studies (Crane and Fenton, 1981; Carrick and Bibb, 1982; Yoder and Adams, 1984, all cited in Slappo and Katz, 1989; OECD, 2005). Flexible working arrangements and vocational rehabilitation schemes need to be tailored to address the needs of women with disabilities, particularly their social and economic needs. Most importantly, they need to receive the correct medical management, rehabilitation and psychological support. Those responsible for implementing systems need to consider gender issues, and in particular the home life of women and how this affects their rehabilitation. Rehabilitation costs need to include both direct and indirect costs.

Crow and Foley (2002) provide a guide that women with disabilities could use to better negotiate job accommodations or workplace modifications. This is essential if this group of women is to become more confident in systematically addressing the work environment issues that function to reduce their effectiveness and efficiency. This is especially important in seeking rehabilitation back into work.

Overall, women still receive less compensation than men (as outlined in EU-OSHA, 2003a and this review), and for the same problems. In addition, there is a paucity of EU-specific research that addresses rehabilitation into work, and this remains an issue that was outlined in 2003 (EU-OSHA, 2003a). These issues need to be highlighted consistently and continuously to policy-makers.

Two major pieces of work in the EU looking at accommodations were not strongly gender specific (EC, 2008b,c) and illustrate the limitations of the present research, suggesting that a stronger focus on women is still in need of implementation. As raised in previous chapters in this review, this situation needs to be altered. They highlight the importance of support schemes, worker participation and management commitment. The case studies illustrate the need to involve co-workers from the onset of workplace adaptation, to avoid stigmatisation and feelings of unequal treatment.

The comparative analysis showed that Member States' policies were quite different, although common success factors could be identified.

EU-OSHA Factsheet 53 (available at: <https://osha.europa.eu/en/publications/factsheets/53>) provides recommendations for workplace adaptation. Measures cover workplace adaptation, work organisation and working hours, signposting, training and mentoring, access to health and safety information and emergency measures. This information is available in 20 languages.

6.3.4 Recommendations

Owing to the issues presented in this chapter, the following recommendations are aimed at promoting a more comprehensive approach to women, disabilities and rehabilitation. As outlined in a number of gender-specific studies, it is continuously proposed that improvements to flexible working arrangements should be implemented to allow for a better work–life balance. This will help women, especially those with disabilities, to cope better with work demands.

Although there are regulations to better facilitate the disabled at the workplace, more social and work policies should be designed to look at the specific needs of women with disabilities.

Unfortunately, social stigmas and discrimination against women with disability remain; a continuous effort to increase awareness will gradually improve these perceptions, as will the availability of job accommodations.

As women work in jobs with low control, the provision of special support and information services for women with disabilities before their career starts will assist them in gaining and retaining jobs over the long term, rather than as short-term options.

Women with disabilities need to have positive role models, particularly mentors who are also women with disabilities. This works to improve their comfort level in the workplace, as well as build their self-esteem, which should allow them to request appropriate accommodations and rehabilitation services to a greater extent.

It is important that vocational rehabilitation schemes are tailored to address women with disabilities' needs, particularly their social and economic needs.

Main points — trends and policy-relevant messages

- Women with disabilities tend to be at risk of double or triple discrimination, and tend to be discriminated against more than men with disabilities. Women with disabilities have a number of barriers to overcome before they choose a career; some of these barriers are low educational attainment, societal perceptions and self-esteem. Moreover, when they gain employment, women with disabilities have further barriers to overcome, such as the perception of their job, underemployment, lack of accommodations and employers' attitudes.
- Research on workers' compensation has demonstrated that women received lower compensation than men, experienced inequality in the dispute process and experienced greater difficulty in returning to work.
- Studies have shown that advice and recommendations that vocational rehabilitation counsellors provided differed according to gender, with the women more likely to have their employment prospects limited. Attempts have been made to improve access to employment for disabled people through vocational rehabilitation, quotas and incentives for employers.
- Studies also showed that vocational retraining was biased towards industry rather than the service and public sectors, in which women mainly work. Further, the vocational rehabilitation schemes operate on the assumption that employment will be full time, so fail to take into account the working patterns that may be more suitable for women workers.
- For female workers, work-related MSDs and stress are some of the major causes of long absences from work and work-related disability. However, compensation, disability management and return-to-work policies are not targeted at the MSDs typical for female jobs that cause most absences, such as lower limb disorders, and do not take psychosocial risks into account.
- Monitoring systems for disability and work-related sickness absences rarely take account of multiple exposures, which are particularly relevant for female workers.
- Young people are particularly affected by stress at work; whether or not this particularly affects young women needs to be assessed.
- The rate of MSD-related work incapacity increases with age for female workers, as opposed to their male counterparts. It can be concluded that focused MSD-related back-to-work policies are needed to ensure that the low employment rate of older women continues to increase as it has over the past 10 years.
- Health promotion programmes and materials are limited in scope and might not be provided in formats that meet the need of women with disabilities, such as large print, audiotape or Braille.
- Workplace accommodations for women tend to be basic or non-existent, but are necessary to ensure that women with disabilities progress in their careers.
- Rehabilitation schemes generally do not account for women's needs, as compensation fails to account for child- or eldercare needs during the rehabilitation period.
- Rehabilitation schemes are generally targeted at male and industrial jobs and fail to take into account typically female occupations and service jobs.
- Although reintegration schemes are lacking for all age groups, young women may be at particular risk of dropping out of work without compensation, rehabilitation and vocational retraining. The sectors in which they work are inadequately covered by rehabilitation schemes and, because they have a short work biography, their health problems may not be recognised as occupational. The risk factors that affect them most (MSDs, stress and violence) are known to lead to long absences with little help for returning back to work.
- In Sweden, disability pensions are more favourable to men, as a woman's ability to do housework is thought to equate to a higher level of well-being, although men are not assessed on this criterion.

- Because occupational cancers are mainly recognised in industrial jobs and construction, female workers are under-represented in the statistics. Consequently, rehabilitation and back-to-work policies are not in place.

Recommendations for research, monitoring and OSH enhancement

- There is a need for a gender-sensitive assessment of disabilities caused by work. Diseases and accidents more relevant for female workers, such as MSDs, stress and anxiety and slips, trips and falls or accidents caused by violence are some of the major issues that need to be better covered.
- Statistics of sickness absences should be corrected for hours worked and provided by gender, sector and age. There is an urgent need for the assessment of the multifactorial nature of the absences, taking into account the lack of workplace adaptation in service sectors and for part-time and shift workers.
- Compensation, disability management, rehabilitation and back-to-work policies need to be adapted to the changes in demographic structure of the working population, the employment patterns and the move from industry to the service sector.
- It appears that the rehabilitation system is designed to accommodate men more than women. Policy-makers and those responsible for implementing rehabilitation systems should consider gender issues and, in particular, the home life of women and how this affects their rehabilitation.
- Target employment agencies and people involved in vocational rehabilitation to raise awareness of the risks women incur in their jobs and their specific needs.
- There is an urgent need to put in place return-to-work policies for cancer for both genders, as workers affected by cancer are at high risk of unemployment. This may affect women more than men because of the nature of their contracts. With better treatment available, cancer has become more of a chronic than a terminal illness.
- Research on rehabilitation, back-to-work interventions and support schemes needs to be conducted in a gender- and age-sensitive way to provide an appropriate picture of the situation and in-depth knowledge of the context, success factors and obstacles.
- Notification, recognition and compensation of occupational diseases should be more targeted at the jobs women do and at the typical risks in the growing service sectors.
- An EU-wide definition of disability needs to be created to better facilitate policy objectives, legislation and the setting of standards.
- When systems are implemented, they need to consider gender issues, and in particular the home life of women and how this affects their rehabilitation; in other words, the rehabilitation costs should include both direct and indirect costs. Any flexible working arrangements and vocational rehabilitation schemes should take account of the needs of women with disabilities, particularly their social and economic needs.
- Women with disabilities need to receive the correct medical management, rehabilitation and psychological support.
- As most of the information comes from North America and Australia, more research is needed in the EU, and it should also take into account the specificities of workers' rehabilitation and compensation in EU Member States. Examples of good practice should be shared among countries. EU-OSHA could play a role here.
- The required regulations and legislation are in place but they do not take account of gender balance, and this needs to be addressed in the EU.
- There needs to be more research on women's rehabilitation and re-entry into work.

7 Women, work and choices

7.1 Women engaged in informal work in Europe

7.1.1 Background

The informal economy has been growing rapidly in almost every corner of the globe, including industrialised countries. As Ascoly (2004) has highlighted, ‘The bulk of new employment in recent years, particularly in developing and transition countries, has been in the informal economy’. Consequently, it is prudent to assess the impact of this growth on the groups that may be affected most.

The aim of this chapter is to provide an overview of the most important issues relating to the OSH of women who carry out informal work in Europe.

Special attention is paid to the following issues:

- the different definitions for informal work in some countries;
- the diverse forms of work and women workers in the informal economy;
- the main reasons for women to choose informal work;
- the main sectors dominated by women doing informal work; and
- the working conditions for women in informal work and the main OSH issues.

▪ Definition of formal work

The informal economy is a broad term that encompasses many diverse forms of work and workers. Owing to this broadness, at times the terminology used to describe the informal economy may focus on various issues including the different problems, needs and experiences of workers employed in varying situations. So, terms such as illegal, undeclared, unregulated, unprotected, excluded, atypical and precarious employment are often used interchangeably to describe the situation of workers in the informal economy.

By contrast, the ‘formal economy’ or ‘official economy’, as recognised by the government and based on paid employment, is work recorded in official statistics. However, meaningful new concepts are included by the ILO, such as ‘decent work’, which includes ‘safety’ (security), which, as we shall see, has been growing in importance in the definition of decent work, as well as ‘equity and human dignity’ (Somavia, 1999, 2000, 2007; ILO, 2000).

Each term brings with it slightly different meanings, and usually the choice of one or the other is political (Ascoly, 2004).

The term ‘informal sector’ was first used by the ILO in the early 1970s and is still commonly used, but is now seen as misleading because it masks the diversity and complexity of these work arrangements and processes. It seems to imply (incorrectly) that such processes are limited to one sector or industry. The concept of a sector seems to suggest that there is a dichotomy between ‘formal’ and ‘informal’, but in reality, as the ILO notes, a continuum exists, with linkages between formal and informal via subcontracting arrangements. It is also possible that formal employment situations can include workers operating in informal conditions (e.g. workers in a formal workplace but who have no contract) (Ascoly, 2004).

The term ‘informal economy’, replacing the previously used term ‘informal sector’, is used to refer to workers and companies that are not recognised or protected under legal and regulatory frameworks and are characterised by a high degree of vulnerability (ILO, 2002a).

Some of the available research differentiates between informal economy and irregular economy: while the irregular economy is concentrated outside of the law, the informal economy operates in an illegal vacuum without obligations, because there is no legal regulation.

It has been observed that informal workers who normally work in family businesses do not receive a salary as such, understanding that their work is a contribution to the profits of such businesses. Moreover, in rural areas, it is still common practice to receive products in exchange for employment benefits, rather than a sum of money.

In this chapter we use a definition commonly employed in the European Commission: undeclared work. The definition for undeclared work is any paid activities that are lawful as regards their nature but not declared to the public authorities, taking into account differences in the regulatory system between Member States (EC, 2007c). Remuneration can include money or pay in kind.

That definition could include three broad categories:

- Undeclared work through 'undeclared hours' as part of regular job ('envelope wages').
- A regular worker has one or several additional jobs, which are not declared.
- The main job held by a worker, which is undeclared, including work of low number of hours per week/month.

▪ Characteristics of undeclared work

Informal economy workers often do not have wage agreements, earn little (not a living wage and often below legal minimum wage standards), are not paid on time, do not have employment contracts or regular working hours, and are not covered by non-wage benefits (such as health insurance or unemployment benefits). These working conditions involve risks for the health of workers, low career prospects and inadequate social protection coverage (Ascoly, 2004).

The lack of social protection also has economic consequences. The state is not able to guarantee just working conditions for undeclared work. As the Communication from the Commission (EC, 2007c) states, undeclared work has negative implications that affect all three pillars of the Lisbon Strategy ⁽⁸⁾ and the overarching objectives of the European Employment Strategy ⁽⁹⁾ (full employment, quality and productivity at work and social cohesion).

A study conducted before EU enlargement (Broughton, 2004) found that in the 15 Member States men who often have a regular job, are generally skilled workers and belong to the 25–45 age group usually carry out informal work. Women, students and unemployed people engaged in undeclared work often work in less favourable positions, earn less and work longer. Therefore, it is especially important to focus the study on women in informal work.

7.1.2 A gender issue

Women remain concentrated in 'invisible' areas of informal work, such as domestic labour, piece-rate home work and assistance in small family enterprises, which offer precarious employment status; low, irregular or no remuneration; little or no access to social security or protection; and limited ability to organise to ensure the enforcement of international labour standards and human rights.

Moreover, gendered biases about whether or not women who are married, pregnant or have children should still be employed (because they have too many other responsibilities and cannot give 100 % to their paid jobs, or will be entitled to increased benefits) have been manipulated to push these women out of the formal workforce as they are seen to be 'less flexible' workers. Thus, it is not unusual for women in the informal economy to be older women and mothers (Ascoly, 2004).

The issues of migrants and gender are connected. A growing trend shows that women are migrating more than men. Migrant women workers, because of their combination of flexibility (for gendered reasons) and vulnerability (associated with their disadvantageous position in society), show that the emancipation process is far from over and that this group faces specific obstacles in the labour market and are positioned as even more flexible workers (Ascoly, 2004).

The possibility of finding undeclared work is a key attraction factor that promotes illegal immigration. For illegal residents, who tend to fall outside the social security system, undeclared work is often offered under conditions that are socially unacceptable and in breach of health and safety regulations (EC, 2007c).

⁽⁸⁾ Lisbon Strategy. Available at: <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:C:2007:306:SOM:ES:HTML>

⁽⁹⁾ European Employment Strategy. Available at: <http://ec.europa.eu/social/main.jsp?catId=101&langId=en>

7.1.3 Data on employment in the informal economy

Precise data on employment in the informal economy are difficult to come by. This employment is difficult to measure, because it is highly complex; in addition, people involved in these activities try not to be identifiable. Because of its very nature, it is very difficult to obtain reliable estimates for this unregistered employment. Methods can be divided into indirect (searching indicators for the existence of informal economy, such as monetary methods, labour accounts method, econometric modelling) and direct (systematic observation, interviews, enquiries of the supply side). All of them have limitations and have been criticised (EC, 2007c). A thorough understanding of the extent of undeclared work and its causes therefore requires combining both methods. Some authors propose the use of a qualitative approach as the most appropriate method, given the sensitivities that surround informal paid work (Katungi et al., 2006).

Moreover, there is a wealth of administrative information that is not systematically exploited and could be used to complement findings from direct and indirect analyses (e.g. statistics from inspections) (EC, 2007c).

Another problem is that countries define informal employment differently; as a result, the data collected reflect only a partial picture of the scope of activity that is taking place in the informal economy. For example, many of the data collected at the national level refer only to those workers whose main job or only job is in the informal economy, leaving out those who have secondary jobs in the informal economy (a number thought to be quite large in some countries). Sources of data also vary from country to country, and in many countries data on informal employment cover only urban areas or capital cities (Ascoly, 2004).

7.1.4 Data sources

The focus of the literature survey was on worldwide, European and national literature over the 12 years from 1998 to 2009. From a statistical point of view, the principal sources are the official OSH data given by the EU Member States, compiled and analysed by Eurostat. Specific work on safety and health that refers to informal female work in Europe is scarce in the academic literature. At the international level, one of the main sources is the ILO. In Europe, the principal official sources are EU-OSHA, the European Foundation for the Improvement of Living and Working Conditions (especially the European Working Conditions Observatory and the Industrial Relations Observatory) and the European Parliament. The EU Member States provide national and regional publications that are edited, for example, by governmental departments, women's institutes and national safety and health organisations. In addition, texts edited by universities, foundations, study groups and investigators were examined.

The main source for the literature search was the Internet. Some European and national organisations were also asked for support:

- embassies and national institutions of Denmark;
- Eurofound;
- European Commission;
- ILO;
- Ministry of Social Affairs and Employment (the Netherlands);
- the North–South Institute (Delahanty, 2009);
- institutions of Spain including National Institute of Statistics, Women's National Institute, Ministry of Employment and Social Security (e.g. De Cabo, 2005, Instituto de Mayores y Servicios Sociales, 2003; Plà et al. 2005; Instituto de la Mujer, 2006,); and
- Women in Informal Employment, Globalizing, and Organizing (WIEGO).

7.1.5 Combating informal work

Since 1990, efforts have been made in the EU to transform undeclared work into regular employment. These efforts (and research related to the subject) generally have economic aims and focus mainly on the illegality rather than the health repercussions of undeclared work. They try to combine simplification of the business environment (removing disincentives, providing appropriate incentives in

the tax and benefit system) with improved law enforcement and the application of sanctions. They also try to step up efforts to measure the extent of the problem and progress achieved.

A recent report by Eurofound provides an up-to-date evaluation of current approaches and measures used in the 27 EU Member States to tackle undeclared work. The deterrence approach is the most common, whereas prevention measures are increasing (Eurofound, 2008i). Some policy measures are applicable to typical female activities, mainly those relating to household services. Service vouchers to buy services at a lower price, or widespread childcare facilities to eliminate this sector from the undeclared economy, can be seen as an example. Those kinds of measures are more common in countries such as France, Belgium or Denmark (EC, 1998, 2007d; Renooy et al., 2004; Eurofound, 2005b).

7.1.6 Overview of EU Member States

Undeclared work is an expanding reality that is becoming more important in the worldwide labour and economic structure. The effects of undeclared work impact on the working conditions and daily life of workers (such as low wages, lack of rights and scarce safety and health measures). The most disadvantaged groups, such as unqualified women, are the most vulnerable in this illegal situation.

In the past decade the EU has developed various documents and guidelines to launch a debate on the causes and measure of the phenomenon, as well as to implement and analyse policies to tackle undeclared work. Some of these policies relate to employment strategies; very few include the gender dimension (EC, 1998, 2007c; Council EU, 2003a, 2005). An exception is the Council Resolution (2003b), which points out the strong implications of undeclared work for gender equality.

Informal work affects almost every society and should be a common issue of concern. It is not only a comparatively new form of labour activity, it is, to a considerable degree, a reflection of the formal, 'visible' side of the labour world, being at the same time gender and age specific, as well as time and space specific. Many types of informal work and sectors are 'engendered' in the same way as they are in the 'visible', formal side of the labour market. The main features of both male and female informal workers are their insecurity and vulnerability, as well as their higher poverty risk compared with 'formal' workers. Most people working informally, and especially women, are deprived of secure work, benefits, protection, representation or a voice. Informal work provides a relative comfort level in the short term, but it deprives informal workers, mostly women, of a more structured future —from both the national and cross-national perspectives (Dimova, 2007).

Therefore, it would be wrong to classify informal work as purely 'female' or 'male'. The extent to which the informal sector is 'female' or 'male' varies geographically and over time. Overall, in most European countries, both western and eastern, old and new Member States, men are more active in the informal sector than women.

However, figures show the importance of undeclared work in female employment. In 2001, 49.7 % of female employment was informal, while for men this figure was 43.8 %. Within the informal economy, women were also concentrated in the most unstable, unprotected and precarious categories; therefore, their working conditions were even poorer than those of males (ILO, 2002b).

In Denmark almost three times more men than women carry out undeclared work (29.4 % of males compared with 11.5 % of females). In Germany, Sweden and the United Kingdom, male participation is generally twice as high: 14.5 % for males and 6.5 % for females in Germany; 15.4 % for males and 7 % for females in Sweden; and 10.3 % for males and 5.4 % for females in the United Kingdom (Pedersen, 2003).

In new Member States, male informal workers also outnumber their female counterparts, but the gender differences are not as high. In Bulgaria, for example, it is thought that 44.5 % of all men aged 15 and over are engaged in informal work, compared with 37 % of women (Eurofound, 2005a; Dimova, 2007).

More recent prevalence data are showed in a special Eurobarometer (Riedmann and Fischer, 2007) that represents the first attempt to measure undeclared work on an EU-wide basis and in a cross-national comparable way using the same method, questionnaire concept and definition in all countries. The results show that more than one-third (38 %) of all suppliers of undeclared work are women, except in Spain and France, where the relation is almost a 1:1 ratio, and Italy, where women

dominate. Younger people, the unemployed, self-employed and students are groups that are over-represented. Household services are the most significant undeclared activity performed in the previous 12 months (19 %), including cleaning services and care for children or the elderly. The second most frequently named category (16 %) is services or goods in construction, ranging from small repairs to the construction of complete new houses. Personal services such as hairdressing were mentioned by 9 % of respondents.

The trend of young people being more frequently involved in undeclared work can be observed in all regions. There are, however, some differences. While people in the youngest age group (15–24 years) are especially active in undeclared work in northern Europe, their involvement in undeclared work is less accentuated in most central and eastern European countries (EC, 1998; Broughton, 2004; Renooy et al., 2004; Eurofound, 2005a; Riedmann and Fischer, 2007).

The ILO (2002a) points out the importance of regulating informal work, especially for migrant women, highlighting in particular that the lack of education and training opportunities has implications for the sustainability of migrants' employment.

7.1.7 Categories of workers and sectors

The majority of workers involved in undeclared activities belong to the most vulnerable categories of the labour market: unemployed people, the self-employed, seasonal workers, students, children and migrant workers. For women, undeclared work will occur mainly in services, including cleaning and domestic, care or medical services, along with some manufacturing industries such as textiles and leather production (Eurofound, 2005a and b).

When joining the informal sector, women usually rely on the skills and experiences they already have — mainly in the areas of food processing and trading, sewing, domestic and personal services. This is why women are mostly found in sectors such as personal services, the care economy, the trade Horeca branch, healthcare, education, commercial cleaning and similar activities. In agriculture, however, men and women participate equally (Renooy et al., 2004; Eurofound, 2005a; Dimova, 2007; Riedmann and Fischer, 2007).

Home-based work is one of the most invisible and difficult-to-count types of informal employment, and few countries actually collect statistics on home-based work. It exists in a wide range of sectors, including personal services such as shoe repair and childcare, clerical services such as data processing and invoicing, handicraft production, and manufacturing — especially of textiles, garments, electronics and other consumer goods (Delahanty, 199; Gallin, 2007,).

Cleaning workers also include a large proportion of (sometimes undeclared) self-employed workers, who are mostly engaged in domestic cleaning. The workforce is predominantly female (77 %) and most of the workers work part time (70 %). In Europe, it is estimated that about 30 % of cleaning workers are migrant workers, although this figure is probably an underestimate.

Illegal immigrants are particularly vulnerable to undeclared work because, in breaching the rule of residence, they are likely to be removed when apprehended. This allows some employers to employ them on conditions that would not be accepted by other individuals (EC, 1998).

7.1.8 Risks and employment conditions

Working conditions for women in undeclared work are less favourable overall than those for men. Women tend to be employed in less autonomous, low-skilled, exploitative and organised jobs. Female jobs in the informal economy have low social value, and career prospects in sectors such as childcare, care for elderly and domestic cleaning are rather limited. Women earn less, work longer, and tend to work informally out of economic necessity rather than to earn extra 'cash on the side', and have more difficulties than men in finding a regular job (Eurofound, 2005a; Broughton, 2004; Dimova, 2007; ILO, 2002a; Pfau-Effinger, 2003; Renooy et al., 2004; Riedmann and Fischer, 2007).

Most of the second or multiple jobholders would be men, while women working illegally would typically be officially 'inactives' (housewives), which has negative consequences because their pension rights depend exclusively on their partner's job rather than on their own work (EC, 1998).

The risk of suffering an accident was regarded as being higher in undeclared work by only a relatively small share of undeclared workers (8 %). Likewise, harder physical conditions compared with regular work or a higher risk of losing the job were reported by a small minority only (9 % and 7 %, respectively) (Riedmann and Fischer, 2007).

The measured degree of involvement of men and women strongly depends on the structure and activities carried out undeclared. Women predominantly carry out activities in the area of household services, while men almost exclusively do undeclared work in the construction or repair sector (Riedmann and Fischer, 2007). The risk exposure of women and men is also determined by the kind of activities they undertake, which is quite different because of the strong occupational gender segregation in the EU labour market (EU-OSHA, 2003a); for instance, when analysing MSDs at work, women showed more symptoms related to repetitive movements, whereas men were more affected by symptoms related to manual handling.

OSH studies have developed in typical activities where researchers are more likely to find informal work that can help us to determine new research areas.

Poor women employed in the informal economy also face a number of serious health and safety risks, including dangerous working conditions, gendered violence and increased susceptibility to HIV/AIDS. They must also often contend with a deficient infrastructure and a range of time and space constraints on their productivity (Lund and Srinivas, 2000; Chant and Pedwell, 2008). Workers in the informal economy, especially women, face a higher poverty risk than workers in the formal economy (Chen et al., 2005).

The production conditions determine the situation of female informal work related to safety and health. Social protection must be given depending on the economic sector, the legal status of the worker, the familial and living circumstances and the legal and institutional environment (Lund and Srinivas, 2000).

Many women in rural areas are engaged in occupations that are comparable to a professional activity but are not recognised, protected or paid as such. Further, women in rural areas are more affected by hidden unemployment than men owing to traditional role models and the poor endowment of many areas with the appropriate infrastructure such as childcare facilities (European Parliament, 2008b). Some specific risks of women working in agriculture include the lack of basic rights such as holidays and insurance, a lack of information about risks and preventive resources, and a lack of workers' representatives. In some specific working conditions, there is a lack of reward, no social or economic recognition of their work and a high exposure to violence (Fundació Lluís Nomen, 2006).

The Horeca sector presents a wide variety of hazards related to MSDs, dermatological and respiratory problems and psychosocial risks. The combination of migrant workers and an undeclared economy increases their exposure to these risks. Employment in this sector is higher for women (EU-OSHA, 2007d), and they have to bear similar risks to male workers: noise and high sound levels; low light conditions; temperature and breathing problems. Many jobs in the Horeca sector require strenuous physical work. In addition, many accidents occur in informal small businesses, while violence and harassment from customers, in addition to that received from colleagues and superiors, are significant risk factors.

Evening, night and weekend work are quite common in the sector, as are irregular shifts. These patterns often lead to increased tiredness and problems with combining work and non-working life, which is more likely to affect women because of their child- and homecare duties. Specific problems related to the payment system in the sector often involve undeclared employment and illegal wages, particularly when it comes to the payment of extra allowances (Eurofound, 2004b). Finally, pay gaps, segregation and informal processes are indirect evidence of gender discrimination, which act against women gaining management jobs in the hotel industry (EU-OSHA, 2007d).

Migrant women in Europe are concentrated in the non-formal sector, where, for example, women street vendors or leaflet distributors may face exposure to sunburn and melanomas; conditions among such women are seldom studied. Women migrants are also disproportionately employed in home work and receive very little pay as they are paid by the piece; they often work very long hours and the pressure increases the risk of accidental injuries from, for example, sewing machines. Language barriers may prevent migrants from understanding OSH information and training, raising issues or obtaining help, and create difficulties for them in accessing healthcare systems. The invisibility of women in migration data makes it difficult to ascertain much about them (EU-OSHA, 2003a).

7.1.9 Some regional data

There are differences between EU countries in terms of the social acceptance and economic factors of undeclared work. Dr Birgit Pfau-Effinger, in a study for the European Commission (EC), connects the incidence and types of female undeclared employment to different types of welfare states. In the egalitarian social democratic welfare regimes, there is neither the culture nor the need to rely on female undeclared (domestic) labour, thanks to state provision. In conservative welfare states, such as the former West Germany, the culture and the demand for domestic labour has led to the growth of undeclared work of considerable size in the household sector. Finally, in the countries of the so-called Latin Rim (France, Greece, Ireland, Italy, Portugal, Spain), cultural norms were very much opposed to women working formally and strongly geared towards keeping them in the house to perform family tasks (Renooy et al., 2004).

Information about some of the countries is presented here following some of the analytical groups proposed by a special Eurobarometer report (Riedmann and Fischer, 2007), which allows the identification of some regional patterns. We expose the two regions that show the highest prevalence of undeclared work in the EU.

There are very few studies about undeclared work at a national level. The available data are often related to inspection campaigns on selected sectors and/or enterprises, research through direct methods applied in samples of households and reports on regulation initiatives. In several Member States information is available on the gender division of undeclared work.

- **Central and eastern Europe**

The informal economy is more prevalent in eastern and central European countries than in other regions of the EU. Nevertheless, in most of the new Member States the share of undeclared work has been declining since the mid-1990s, and governments have targeted policies to combat the phenomenon. However, this group of countries still displays particular factors that should be kept in mind when explaining undeclared work. According to Renooy et al. (2004), those factors can be subdivided into three major groups: (1) socioeconomic/market, (2) institutional and (3) 'societal', which includes cultural traditions and the relationship between individuals, society and state. In some countries, corruption is an important barrier to democratic reforms and a factor that facilitates the functioning of a sizeable volume of undeclared work. These authors also emphasise the interconnection with legal business as an important characteristic of that region: small registered businesses often have subcontractors from the informal economy, so there is a fear that suppressing undeclared work may have a negative impact on private business.

In most transition countries in eastern Europe and the Commonwealth of Independent States (CIS), women's employability has seriously declined along with the disproportional losses of women's jobs and employment; as a result, women make up the majority of the informal economy's workforce. The rise of discriminatory practices (especially in the private sector) and cuts in social protection were among factors affecting women's employability (ICFTU, 2004; UNECE, 2004; Karat Coalition, 2007).

People who work in undeclared jobs because they are unable to find a regular job appear to be notably more numerous in central and eastern Europe (CEE) countries than in other parts of Europe. Women take on atypical jobs such as temporary and short-term work and subcontracting. Women also dominate home working and often receive irregular piecework and are usually unregistered and unprotected. Women also make up the majority of unregistered workers in the retail trade, tourism, textiles and agriculture. However, there is a difference in CEE countries from other EU regions, as female participation in informal economy rises with educational level (ICFTU, 2004; Riedmann and Fischer, 2007).

Emerging barriers to women's participation in the formal economy often create conditions for their involvement in the informal economy; some of the opportunities available to women in the informal economy include the time flexibility it can offer to allow them to reduce the conflict between work and home life (Marc and Kudatgobilik, 2002). Women working 'off the books' may classify themselves as keeping house rather than working, and thus not show up as economically active in labour statistics. In eastern Europe the informal economy has grown as part of the transition from a centrally planned to a market economy (United Nations Development Fund for Women (UNIFEM) (2006), *Women and*

employment in Central and Eastern Europe and the Western Commonwealth of independent States, United Nations. Available at: <http://www.unifem.sk/index.cfm?Module=Static&page=w&s=IWP>).

In the CEE countries, the sectors most likely to be affected by undeclared work with a high proportion of women workers were the following: services in Estonia; agriculture and services in Hungary; healthcare, agriculture, hotels and restaurants, and retail in Latvia; commerce and hotels and restaurants in Poland; agriculture and textiles in Romania; retail, hotels and restaurants, and agriculture in Slovakia; and retail, cleaning and hotels and restaurants in Slovenia (Eurofound, 2005).

In **Poland**, women represent between 25 % and 30 % of undeclared workers (Renooy et al., 2004; Germanowska, 2005; Sarzalska and Szydowski, 2006; Kesnere, 2007).

Informal employment is one of the key features of the labour market in **Romania** (between 20 % and 50 % of total employment, depending on the definition used), and has always been high on the political agenda.

Women make up 69 % of contributing family workers, and 29 % of the self-employed; both represent a proxy for informal work. Most women with a second job are contributing family workers (EC, 2007d; Parlevliet and Xenogiani, 2008). Agriculture is regarded as a survival strategy, it is supplying the non-agricultural part of the domestic economy with undeclared workers, and known for illegal migration, and many women are involved in these activities. Commerce and the textile and food industry also employ a number of women in undeclared work (Eurofound, 2004c; Ghinararu, 2005).

In **Bulgaria**, informal work seems to be very common for both women and men. Women work undeclared in manufacturing, services and subsistence farming (Loukanova, 2004; Eurofound, 2004d; Dimova, 2007).

In 2002, 25 % of workers had no employment contract; most of the women in that situation worked in the retail and hotels and restaurants sectors. At the same time, some of the 33.3 % of people working under an employment contract received actual wages higher than those declared (Eurofound, 2004d). In some areas of the country, an average 60 % of women work in the garment industry's informal economy and are often the sole breadwinners for their families (Ascoly, 2004).

In **Latvia**, undeclared work is most prevalent in construction, agriculture and forestry, manufacturing, hotels and restaurants, commercial services, retail and public sector healthcare institutions; most of them are typically female activities (Eurofound, 2004e, 2007g; Vanags, 2005)

One study revealed that 32.9 % of workers without labour contracts were women, and that gender differences between age groups varied: up to 55 years, the proportion of women and men is similar, whereas in younger groups there are three times as many men as women in undeclared work (Kesnere, 2007).

The groups that are more likely to find undeclared work in the **Czech Republic** include those without proper employment such as the unregistered unemployed, housewives, women on maternity leave or students receiving social benefits, social assistance or pensions that are not sufficient to fully cover their costs of living. Undeclared work is more typical for sectors with a higher share of manual work and low wages, low-skilled, seasonal or casual work — characteristics typical of female employment. Among the activities that are most affected are agriculture, Horeca, trade (especially street retail trade and markets) and other services, apart from construction (Kesnere, 2007).

A study published in 2002 showed that women represented 33 % of undeclared workers, and that the percentage of undeclared workers in the financial and business services was increasing (Renooy et al., 2004; Sirovátka, 2005).

In **Estonia**, almost equal numbers of men and women work undeclared (Renooy et al., 2004). In an inspection campaign developed to identify employers who paid undeclared wages, taxes were levied on, among others, catering, clothing and confectionery businesses (Eurofound, 2005c). Undeclared work affects 35 % of workers in the services sector (Eurofound, 2006a). 'Envelope' wages are very common in sectors such as catering and trade (Eurofound, 2004f; Leetmaa and Vörk, 2005). All of these are sectors with a high percentage of female workers.

Different calculations put the percentage of undeclared work in **Slovenia** at between 17 % and 23 % of GDP, which represents a medium level in the EU-27 context, and it is declining (Ignjatovic, 2005; Eurofound, 2006b). The sectors most affected are construction, transport, catering, retail and services such as cleaning, hairdressing and tailoring; in some of these sectors women constitute the majority of

undeclared workers. Some typical female activities (i.e. household help, picking and selling forest fruits and herbs, domestic or art and crafts work and similar activities) were identified as 'personal supplementary work' in a regulation that established a procedure for notification (Eurofound, 2004g; Ignjatovic, 2005).

In the **Slovak Republic**, campaigns carried out by the labour inspectorate found that construction, agriculture and forestry, wholesale and retail trade and hotels, restaurants and catering were sectors with high incidence levels of illegal employment. Most of these sectors have a high rate of female employment (Eurofound, 2005d, 2008k; Vagac, 2005).

▪ Southern countries

Among the Mediterranean countries of the EU, three (Italy, Greece and Spain) have a long tradition of outward migration and began receiving sizeable inflows of migrants only recently. France was, for decades, an important country of settlement for immigrants. At present, however, all are affected by a similar phenomenon: since the late 1980s numerous unauthorised migrants from third world countries and eastern Europe have been entering them (Reyneri, 2001). In the context of this phenomenon, the migratory role of women has become even more important. Migrant women workers are constrained in their choice of employment to typical female jobs, such as within households, facilitating child- and eldercare and cleaning. Many migrant women are victims of trafficking and are sometimes forced to be prostitutes. These women suffer from bad and precarious working conditions, and poor safety and health standards (King and Zontini, 2000).

Some researchers estimate the extent of undeclared work in **Cyprus** to approach 10 % of gross domestic product (GDP). There are two main types of undeclared work: work that is carried out by illegal immigrants and work done by self-employed workers who pay virtually no income tax (Christophides, 2007).

In 2006, the Mediterranean Institute of Gender Studies produced a shadow report to the Cypriot government's report for the United Nations Committee on the Elimination of Discrimination against Women. The report's basic findings cover the labour force participation rate of women, gender pay issues and the unemployment rate among women, and propose some measures for dealing with these matters. Findings include the following:

- Wages are lower for women than for men in informal work.
- Many women are employed in seasonal jobs (hotels, restaurants, gift shops) and are not eligible to claim unemployment benefits during the off-peak season.
- Migrant women often work in households and agriculture. Some of them (from eastern Europe) work in sex-based enterprises.
- Some immigrant women are asylum seekers or refugees. They are often discriminated against and overqualified in their work. Language and religion may become barriers for them.
- Female migrant workers in Cyprus, as in other countries, suffer from poor working conditions. They complain of marginalisation and exploitation, racism, discrimination, sexual harassment, contract violations, inadequate facilities, lack of rest and unpaid overtime (Convention on the Elimination of All Forms of Discrimination against Women, 2006).

In **France**, household women workers are included in one of the following situations: workers alternating between legal but low-paid work and undeclared work (sometimes carried out during night shifts) and women in irregular legal status (they may receive unemployment benefits at the same time). Other women in informal work may be working as temporary, part-time or seasonal workers. Women often need to work as informal workers in order to reconcile work with family obligations (Gineste, 2007; Puech, 2007).

Undeclared women workers in France may have to make a contradictory choice. Some of them decide to stay in the shadow economy because by doing so they earn more money and have some social benefits; other women have worked all their lives without a contract, for instance in a retail business, and when they retire their living conditions may become precarious, as they will have access to only a very small pension (Weber, 2008).

In **Greece**, the informal economy is extensive and associated with self-employment and family businesses, both of which are traditional forms of employment in this country (Karantinos, 2007).

There are no concrete data relating to safety and health for female undeclared workers. A large proportion of immigrant women workers compete with unqualified Greek women for jobs associated with difficult working conditions in some sectors of the economy: agriculture, social and personal services, tourism, hotels and restaurants, household and aged individuals and childcare (Reyneri, 2003).

Undeclared work is a persistent feature of the **Italian** labour market. Women represent a greater proportion of workers in undeclared work than those in the formal labour market and they are engaged mainly in domestic and care work. Most women accept undeclared work because of the lack of suitable opportunities in the formal economy, while some regard such work as a stepping stone towards formal employment. Almost 2.8 million workers in Italy are involved in irregular or undeclared work, according to data from the National Statistics Office (Istituto Nazionale di Statistica), and this total represents 12.2 % of the overall labour market. About 1.35 million women are in undeclared work. In terms of the economic sector, women predominate in education, health and social work (79.6 %), activities of households (77.7 %) and business activities. Meanwhile, the sector with the highest proportion of undeclared work (72.6 %) is household and related activities, followed by agriculture (33.1 %), hotels and restaurants (16 %), other community, social and personal services (15.8 %) and construction (13.5 %) (Eurofound, 2008j).

Italian policies in recent years have tended to discourage, or at least restrict, the entry of migrant workers to the country. Women dominate in providing services to families and in cleaning, while men predominate in the construction sector and, to a lesser extent, the industrial sector. There is a basic gender balance in restaurants and hotels (with some over-representation of women), agriculture and other unskilled service jobs. Information about safety and health related to female undeclared work in Italy is scarce (Ambrosini and Barone, 2007).

In **Malta**, undeclared female employment appears to be more widespread in personal and domestic services. There also seems to be a similar prevalence of men and women doing undeclared jobs in the hospitality industry (Debono and Farrugia, 2007).

It is very difficult to find data regarding undeclared work in **Portugal**, where informal work makes up about 22 % of the economy. Undeclared work is not the centre of the debate on employment policies, but there is a serious global effort to reduce the scope for clandestine work (Naumann and Simoes, 2007). Women are over-represented in economic sectors 'typically' associated with female workers: agriculture and farms, hotels and restaurants, education, health and social assistance, services and households. Working conditions for informal women workers are often poor: low wages, hard and busy schedules, work strain, shift work and inadequate rest (Centeno, 2006; Cruz, 2002).

In **Spain**, the estimated share of undeclared work in total employment reached 12 % in 2006. This is a problem linked to the phenomenon of immigration. The Spanish government has launched a series of initiatives to tackle the problem of labour irregularity: new policies on domestic work, the struggle against temporary employment, the strengthening of work inspection, the reform of the income tax system and the promotion of self-employment with better conditions (Gallino, 2002; González and Sanchez, 2007).

The risks detected for the female informal workers in household services are associated with their precarious working conditions: very long hours, often longer than their contracted hours; shift work; a separated life from their husband and children; being 'under arrest' in the employer's home; and having inadequate time to rest (Vogel, 2003).

In Spain, female undeclared work is present in the economic sectors with a 'typical' female profile: household, elder- and childcare, garment and shoemaking, agriculture and retailing. Issues related to safety and health depend on the risks associated with each sector. The origin of female undeclared work in Spain is a cultural fact. It is traditional to consider female work as only a complement of male work, but, at the same time, women have to work at home. Thus, women working in a small business or family-run farm consider themselves as 'helpers', not as workers doing a labour activity.

Migrant women are occupied in all sectors of irregular working in Spain. Irregular female work is often precarious (temporary and flexible work often associated with insecure working conditions, e.g. lower salary, difficulties with training, promotion, risk prevention, without contract or temporary, underpaid, unstable and insecure). Informal women workers in households earn low wages and are not given the opportunity to become formal workers; social security is very limited for them, their labour accidents are not recorded and working conditions depend on the (good or bad) relationship with employers.

Women employed in irregular work suffer from objective and subjective consequences. They have to stay in a precarious situation of social exclusion, with no possibility of access to formal jobs. They tend not to know about their social rights. Their tasks at work are monotonous and repetitive. Some women in informal work are happy about it (women who work in a family business), but informal work may drive others to despair (such as those involved in housekeeping and caring for the elderly or children). These negative feelings have psychological and social consequences, including depression, stress, low self-esteem and isolation. Many migrant women working in households feel overqualified for such activities.

7.2 Discussion

Table 40 summarises the characteristics of informal jobs for women

Table 40: Characteristics of informal jobs for women and examples of sectors with high proportions of informal work

Sector	Vulnerable groups Occupations	Health and safety risks	Specific issues	Wider issues
All	Family workers Undeclared workers Young people Migrant workers	Repetitive and monotonous work Physically strenuous work Gendered violence Lack of access to facilities Mental load Accidents and diseases not recorded and compensated Lone work Lack of access to healthcare/ preventive OSH services	Lacking access o preventive services Lack of training No access to consultation No representation Lack of basic rights (holidays, insurance, unemployment benefits) Hard and busy schedules Inadequate rest Working conditions depend on the relationship with the employer	Lack of pension rights No work contracts or temporary Higher poverty risks Lack of conciliation with family obligations Poor career prospects No social or economic recognition Overqualification Low wages “Envelope” wages No access to formal jobs Social exclusion
Agriculture	Family workers Undeclared workers Young people and children	Temperature and climatic conditions Pesticides Accident risks, incl. from vehicles and dangerous machinery Strenuous work	Seasonal work Irregular working time	

Sector	Vulnerable groups Occupations	Health and safety risks	Specific issues	Wider issues
Retail	Street retail trade and markets Gift shops Street vendors	Temperature and climatic conditions Ergonomic risks	“Envelope” wages	
Manufacturing	Pieced home work Garment and shoemaking Tailoring	Accident risks Poor equipment Chemical and biological risks	Irregular piece work Casual work	Lack of pension rights No work contracts or temporary Higher poverty risk Lack of conciliation with family obligations Poor career prospects No social or economic recognition
Hotels and restaurants Catering	Kitchen workers Cleaners Unskilled workers	MSDs Noise Chemical and biological risks Burns and cuts	Seasonal work Night work Irregular working times “Envelope” wages	Overqualification Low wages “Envelope” wages No access to formal jobs Social exclusion
Personal services	Hairdressing Cleaning Tailoring Accounting, data processing	Biological and chemical Poorly equipped	Casual work False self-employment Low wages	
Home and elderly care	Cleaning Child care Elderly care	Biological and chemical MSDs, heavy lifting Lack of ergonomic equipment and protective hygiene measures	Irregular working time Working at clients’ premises Lone work Lack of facilities Mental load	

Undeclared work is, by its very nature, a phenomenon difficult to measure and follow. In fact, the most widespread definition of undeclared work in the EU takes account of the differences in the regulatory system between Member States. In addition, the available studies measure this issue using different methodologies, with small and/or unrepresentative samples, so that results are not very comparable. Attention given at a political and policy level is not reflected in the rigour or the range of the research

on the issue. It will be useful to see the outcome of evaluations of the measures of effectiveness (EC, 2007d).

There is limited empirical evidence on female participation in the informal economy (Pfau-Effinger, 2003; Renooy et al., 2004). Although there are differences between countries, it seems that, in general, women participate less in undeclared work than do men. Their employment conditions are worse than those of men and they spend more time working undeclared throughout their lives because they have fewer opportunities to find formal employment. The data on undeclared work in the EU show the same gender segregation patterns as the labour market in general, implying that women are more likely to work informally in sectors typically designated as female. When considered, gender is studied as a sociodemographic subject in relation to global prevalence and/or combined with age. Curiously, many other aspects are considered when categories of workers are studied, such as the unemployed, the self-employed, seasonal workers, students or migrant workers; all of them are considered vulnerable categories of the labour market (Eurofound, 2005b). Research that takes into account the influence that gender could have in the perception and experience of women's working conditions on the undeclared labour market is not available.

Literature sources directly addressing OSH in the context of undeclared work were not found, for either men or women. Data are often dispersed and contained in non-official reports. Nevertheless, some information about labour/working conditions is available in the studies developed at both EU and national level, often related to sectors. There are no measurements of health status of undeclared workers (such as self-estimated health, absenteeism, work accidents, mental ill health), and they are likely to be under-reported in occupational statistics (EU-OSHA, 2007e).

Obviously, no specific studies were found on women's working conditions or work-related health comparing formal and informal work in the EU. All of the research shows the relationship between undeclared work, gender and OSH.

Knowledge about OSH in sectors typically viewed as having a high percentage of female workers and activities for which informal work is more prevalent is a good starting point to know the risks and health problems faced by women when they work undeclared. It can be hypothesised that sectorial/occupational risk patterns should be aggravated by the specific characteristics of undeclared work: lack of information about OSH, lack of preventive measures and training on OSH, lack of formal and informal social support at work, difficulties for workers to organise themselves and educate themselves about their rights, and being assigned to the worst workplaces. People in informal economies are unprotected and 'invisible', and therefore much more vulnerable (McIntyre.&Stewart, 2009). Female undeclared workers have to deal with the double discrimination of being female and 'illegal'; the situation is worse if they are immigrants.

Illegal immigrants constitute a significant number of undeclared workers in the EU. There is a lack of information on them, which creates difficulties for the assessment, estimation and effects of undeclared work and its impact for their health. Poor working conditions of migrant workers are even worse for illegal workers; it can be expected they are unlikely to complain and easy to exploit (EU-OSHA, 2007e).

Informal paid work helps people to resist poverty. In some parts it is undertaken by people who are not able or ready to work for many hours, but who want to keep in touch with the world of work. Women are often in such situations owing to their family responsibilities. The high cost of childcare has also encouraged people to take on informal work; women can find some informal employment more flexible around childcare arrangements than formal work. In some cases, the system creates significant disincentives to enter formal paid work (Marc and Kudatgobilik, 2002; Katungi et al., 2006). Women enter the informal economy, in general, because of a need to survive: not out of choice, but owing to financial pressures.

The EC, as well as individual Member States, has developed and implemented different policies to tackle undeclared work, although this subject is not at the centre of public debate. These measures aim to diminish or eliminate the phenomenon, but there are no measures to improve working conditions or prevent occupational risks in the shadow economy. Regional and country differences in the structure of undeclared work (kinds of activities, reasons to do it and perception and acceptance) suggest that adequate policies aimed at addressing this should take specific national situations into account (Renooy et al., 2004; Eurofound, 2005b; Eurofound, 2008i). Attempts to actively share experiences and learn from others have been largely lacking until now, but a recent report tries to fill this gap (Eurofound, 2008i).

Informal work and its gender dimensions do not seem to be at the top of trade unions' and women associations' agendas. Nevertheless, within the literature review some organisations have been identified, especially in CEE countries (see Annex 1) that participate in campaigns and studies on undeclared work.

7.3 Recommendations

More research is needed to assess the prevalence and gender aspects of the phenomenon of undeclared work in the EU.

A comprehensive analysis is needed in respect of working conditions to confirm whether there are significant gender differences between the formal and informal economy.

Information on migrant workers' OSH can be a source of data about undeclared workers and gender issues related to work. More research should be carried out on migrant women workers and undeclared work.

In spite of their limitations, direct methods are very useful to understand the phenomenon, as they provide more reach and detailed information about actual working situations. It seems to be a better strategy to conduct research on the occupational risks and ill health effects experienced by women working undeclared, as official statistics or working condition surveys do not include the shadow economy. In addition, the use of qualitative methods when undertaking such research is recommended from the gender mainstreaming perspective to investigate the situation of women at work (EU-OSHA, 2005).

Regional and national organisations such as non-governmental organisations (NGOs), trade unions, women's associations and migrant worker organisations, as well as research organisations, could be very useful partners in a future, more in-depth survey on the issue, provided that detailed research on OSH of women working undeclared will need local exploratory bases. For instance, some of those organisations work closely with informal workers, and these working practices are more likely to provide them with enough confidence to undertake qualitative methods.

Finally, of course, policies must be formulated, developed and assessed to reduce or eliminate undeclared work using a gendered approach.

Main points — trends and policy-relevant messages

- Many female workers are represented in part-time work and informal employment, which might not be considered when carrying out risk assessments and setting preventive OSH measures. Thus, in order to protect female part-time and informal workers from work-related risks, specific preventive activities, measures and adequate protection should be ensured to protect their safety and health at work. It is important that working equipment is designed with regard to the ergonomic needs of women and to guard against violations against the maternity protection act.
- Within the informal sector, women are mainly found in unstable, unprotected and precarious jobs, which restrict efficient and effective OSH practices. The main reason for engaging in informal work is often economic necessity and the lack of perspective of finding a formal job.
- When joining the informal sector, women usually rely on the skills and experiences they already have — mainly in the areas of food processing and trading, sewing, domestic and personal services. This is why women are mostly found in sectors such as personal services, the care economy, the trade Horeca branch, healthcare, education, commercial cleaning and similar activities.
- The multiple chemical, physical and ergonomic risks of these professions are exacerbated by a lack of career prospects; strenuous and loaded schedules; overtime, shift work and irregular working times; a lack of facilities; and a lack of adaptation of workplaces and equipment, for example in private homes.
- Informal female workers are not taken into account in official statistics: work accidents and work-related diseases of female informal workers are not reported, recorded and compensated, to a greater extent than for their male counterparts, because of the nature of their work (e.g. home care) or the traditional norms of the sector (e.g. at farms or small family businesses where contributing family members are not regarded as workers).

- Women working in a small family business or farm consider themselves as ‘helpers’, not as workers doing a labour activity. In addition, women working in private homes may classify themselves as keeping house rather than working, and thus do not appear in labour statistics.
- Most of the female workers doing undeclared activities belong to the most vulnerable groups: unemployed people, the self-employed, seasonal workers, students, children and migrant workers.
- Working conditions are poor, characterised by low autonomy, low skills, exploitation, violence, lack of training and information on risks and hazards, long hours and increased risk of injuries. Lone work, and a lack of access to representation, preventive services or consultation are other issues of concern.
- In most transition countries in eastern and central Europe, women’s employability has seriously declined along with the disproportional losses of women’s jobs and employment; women therefore make up the majority of the informal economy’s workforce. Overqualification is also an issue, as informal work increases with the level of training. The lack of perspectives also leads to migration for economic reasons.
- The combination of migrant workers and an undeclared economy increases their exposure to these risks.
- At many of these workplaces (e.g. in private homes), there is limited possibility for organising and ensuring the enforcement of labour and health and safety standards.

Recommendations for research, monitoring and OSH enhancement

- Research in the informal sector may benefit from qualitative approaches, as these facilitate the exploration of the sensitivities involved in this sector. It would be useful if the methods of data collection were standardised across studies.
- Information needs to be collected and collated at a national level to understand the scope of the problem and develop processes and procedures to better address the working practices of this sector. Combined inspection and awareness-raising campaigns, as conducted in, for example, home care or among cleaners in some countries, may help in that respect.
- It may be beneficial to run NGO-defined OSH training for workers in the sectors identified above to ensure that they are better able to deal with some of the risks and hazards they may encounter in these jobs.

7.4 Migrant women in Europe and their occupational safety and health

7.4.1 Introduction

As mentioned in the previous section, migrant women are one of the core groups who work in the informal sector. This section looks at the factors that impact on OSH-related practices for migrant women in Europe and explores why they are likely to seek work in the informal, rather than the formal, sector.

The EC stimulates and supports Member States' efforts in employment, social affairs and equal opportunities, stressing the gender perspective to fully utilise the potential of immigrant women in the labour market.

In its Common Agenda for Integration (EC, 2005d), the EC has emphasised the need to actively promote employment of immigrant women. This could be achieved at national level by ensuring that restrictions in labour market access are minimised and do not hamper integration when transposing the Directive on the right to family reunification (Council Directive 2003/86/EC of 22 September 2003). This Directive authorises the entry and residence of the spouse and children of a national from a developing country who is already a resident of an EU country. Access to employment for migrant women should, at the same time, ensure acceptable working conditions that are equal for all EU citizens and prevent discrimination of any kind. A Commission communication issued in October 2008, 'Strengthening the global approach to migration', emphasises the importance of migration as an aspect of external and development policy. The 'Pact on immigration and asylum', formally adopted by the Council of the EU in October 2008, focuses on legal immigration, the control of illegal immigration, border controls, migration and development, the finalisation of a common European asylum system and migrant integration.

This chapter gives a profile of the female migrant population in the EU. The first section presents data on the population, age and education of migrant women. Other sections address their employment status and the main health and safety risks and outcomes that they encounter.

7.4.2 EU statistics on migrant populations

According to 2003 Eurostat data (Eurostat, 2003), legal women immigrants in the EU accounted for 4 % of its total population. This figure is generally comparable to that of men, as, in 2006, the sex ratio of foreign immigrants in the EU was 114 men to 100 women (Eurostat, 2008c). There was a higher prevalence of men, with a few exceptions.

The scale and patterns of migration flows to and within Europe have varied greatly over time and between different European countries (Eurostat, 2011d).

According to Eurostat (2008d: 4–5):

The highest prevalence of male migrants was observed in Slovenia, where men represented more than 80 % of the total number of registered foreign immigrants. This was due to the large number of male immigrants from the Western Balkan countries. In Lithuania and Slovakia, nearly two-thirds of foreign immigrants were men, while in Romania, the Czech Republic and Germany the prevalence of men was also significantly higher. The few exceptions were Cyprus, Portugal and Malta, to which a large proportion of immigrants were women. In Cyprus, the majority of female immigrants came from Sri Lanka and Philippines, while in Portugal significantly more women than men came from Brazil and eastern European countries. France and Poland also recorded more women than men in 2006, as did Belgium and Italy according to 2003 data. In 2006, only the Netherlands had equal numbers of men and women among foreign immigrants.

There was a significant difference between the two citizenship groups of foreign immigrants, non-national EU immigrants and non-EU immigrants in terms of gender composition (Eurostat, 2008d: 5):

The proportion of males among non-national EU citizens immigrating to other Member States was much higher than that of non-EU immigrants: 125 male for every 100 non-national female EU immigrants and 108 male for every 100 non-EU female immigrants.

Thus, non-EU immigration seems to be better balanced than non-national EU immigrants in terms of gender distribution. However, gender composition of non-EU immigrants differs greatly across countries. With the exception of extremes — a huge male or female prevalence — in some countries such as Slovenia (up to four times as many men) and Cyprus (almost twice as many women), the gender composition of non-EU immigrants to many countries was quite balanced. These differences between individual Member States can explain the relatively low male prevalence among non-EU immigrants in the EU-27 as a whole (Eurostat, 2008b).

- **Women migrate at a younger age than men**

In all citizenship groups, women were younger than men when they migrated. According to data from the EU-12 Member States (Eurostat, 2008d), the median age of all female immigrants was two years below that of males. This was largely because of the different age composition of female and male immigrants with either national or other Member States' citizenship. The median age of migrating women was almost 4 years lower than that of males in both citizenship groups: about 28 for women and 32 for men. Female immigrants who were citizens of non-EU countries were also younger than men but by less than 1 year: the median age of women in this group was 27.2 years, whereas for men it was 28.0. Again, the gender/age patterns of immigration differed between Member States. Among migrating EU citizens (national and other EU immigrants) the figure for men was at least 2 years higher than that for women. The biggest difference among nationals was observed in Austria where the median age of male immigrants with national citizenship was almost 5 years greater than that of women (36.6 for men and 31.7 years for women) (Eurostat, 2008d: 7).

Among non-EU citizens the differences in median age between female and male immigrants were very small in many countries. In Spain and Sweden, the median age of male and female immigrants was the same; while in others i.e. Denmark, Finland and Luxembourg, it was almost the same. In Luxembourg and Finland, the median age of male immigrants was slightly lower than that of females. (Eurostat, 2008d: 8)

Young migrants are particularly vulnerable in terms of finding a job, 'especially if they have attended school outside the country of residence — as they face difficulty in having their qualifications recognised, together with language problems and weaker social networks in looking for a job. Overall, the situation of young foreigners seems particularly critical, as it reflects two different sources of disadvantage: age and migrant status' (Eurofound, 2007h: 18).

Migrant women entering the EU have an additional disadvantage: their sex. Although age is an important factor that can determine the type of jobs women immigrants get (e.g. very young and inexperienced women usually get low-paid jobs with poor health and safety conditions), an important factor for finding a job, more important than age, is the length of stay in the host country. Immigrants tend to find it easier to get jobs the longer they stay in a country. Social networks of migrant workers can have positive effects on providing valuable opportunities to find employment, but at the same time they tend to channel migrants towards unskilled and low-paid jobs that are often the only ones for which their compatriots have useful information and contacts (Eurofound, 2007h).

7.4.3 Employment/unemployment of migrant women

The labour market participation of foreign women has increased in the majority of OECD countries, with the Netherlands (+12.8 %), Spain (+14.6 %) and Portugal (+18 %) having demonstrated impressive increases in the participation rates of foreign women between 1993 and 2003. Austria, Denmark, Norway and Finland are exceptions. These are countries in which foreign women were best integrated at the start of the period, with participation rates that generally exceeded 60 %.

According to the OECD (2005: 19), 'there are two types of explanation for these trends. The first has to do with changes in the labour market situation in general and that of women in particular, while the second is linked to changes in the nature of migration flows'.

The latest OECD report (OECD, 2008c) summarises recent developments and trends for employment rates of migrants between 2001 and 2006 by gender and in comparison with the native-born population.

The results highlight the progress made in most OECD countries with respect to female immigrant employment. Some OECD countries, mainly in northern Europe, integrate female immigrants into the

labour market to a greater degree than men. This is the case for Finland, Denmark, Sweden and Norway. These results are influenced by the general market conditions for women in these countries and suggest that women immigrants benefit from them as well. In southern Europe the results are not as good for women, especially in Greece and Italy, where the ranking⁽¹⁰⁾ for women is 11 and 14 slots lower than men, respectively, for those countries. Yet, in Portugal the employment rate for female immigrants was 67 % in 2006 (the highest ranking of the OECD countries) (OECD, 2008c).

According to the latest Eurostat Labour Force Survey data (Eurostat, 2011d), in 2008,

The employment rate of male third-country nationals was 79 % (i.e. eight percentage points lower than that of male nationals). In contrast, the employment rate of female foreign citizens was systematically lower than that of national women: the employment rate of female foreign citizens (59 %) was 14 percentage points lower than that of national women (73 %), and this gap increased to 21 percentage points when considering female citizens of low and medium HDI countries (52 %). The magnitude of the employment gap between nationals and foreigners varied significantly among Member States.

At EU 27 level, in 2008, the activity rate of foreign citizens was six percentage points lower than for nationals. The lower participation rate of foreigners in the labour market is largely explained by the significantly lower activity rates of foreign women. While the activity rate of foreign men aged 25–54 (91 %) was similar to that of national men (92 %), for women, the labour market participation of foreigners (68 %) was 10 percentage points below the level of nationals (78 %). This effect was less marked for female citizens of another EU Member State (75 %), while it was more noticeable for third-country national women (63 %) and in particular for women who were citizens of countries with a low or medium Human Development Index (62 %). This inequality between national and foreign women can be seen in the majority of Member States for which data were available and reliable: in Belgium, the Netherlands, France, Sweden, Germany, Finland, Austria and Denmark, the gaps recorded between female nationals and female third-country nationals were larger than 25 percentage points.

The activity rate of recently arrived foreign-born women was 66 %, compared with 72 % for those resident for 8 years or more, but the situations in the Member States are very varied.

In contrast, Cyprus, Hungary, Portugal, Spain and Estonia reported a slightly higher labour market participation of third-country national women compared to female nationals.

According to the EU-LFS ad hoc module 2008, 50 % of foreign-born women reported family reasons for migration (e.g. accompanying family, family reunification or family formation), while only 28 % of them migrated with the intention of getting a job, the majority of whom (20 %) had not found a job in the receiving country before migrating.

Family obligations have a higher impact for immigrant women than for nationals on employment, as they are much less likely to work when they have children, and this increases significantly with the number of children they have. The activity rates of women are lower when there are dependent children in the household, the gap between native and immigrant workers increases with the number of children and is especially high for nationals of non-member countries. Native-born third-country national women had a labour market participation rate of 73 % — six percentage points below the level of native-born national women. This effect is not seen for men.

These women are also at higher poverty risk, which, combined with their restricted perspectives for employment and difficulties in finding appropriate housing (Eurostat, 2011d), makes them a particularly vulnerable group likely to accept worse working conditions, particularly if from third (non-EU-member) countries. In 2008 (Eurostat 2011d, p. 112-113),

23 % of employed foreigners (28 % of third-country nationals) were at risk of poverty or social exclusion, compared to 12 % of employed nationals. For foreigners, the presence of dependent children adds markedly to the risk of poverty or social exclusion. The explanation for this may be that in foreign households, women with children are less likely to be in paid employment than women in national households. As a result, the income of the household

⁽¹⁰⁾ 'It refers to ranking of OECD countries according to the employment rate of foreign born men & women, assuming that their educational distribution is identical to that of native-born and applying the employment rates by level of education observed for the foreign-born'. As seen in Table 1 of OECD (2008c).

would be lower than for households without children or for national households where employment rates of women are higher. Additionally, data indicate that even foreign households without children have a much higher risk than national households with children.

According to the 2008 Labour Force Survey (Eurostat 2011d, p. 84). :

The gender gap in activity rates may in part reflect cultural differences, as well as differences between men and women in terms of the main reasons for migration. Some EU Member States restrict labour market access for recently arrived third-country nationals migrating for family reasons — particularly those accompanying a family member admitted as a labour migrant. Given the larger proportion of women migrating for family reasons, this may partly explain the lower activity rate of female foreign citizens.

Equality and multiculturalism at the workplace (Finland)

The Population Research Institute's project 'Equality and multiculturalism at the workplace' was carried out from May 2005 to December 2007. Its principal aim was to promote the participation in working life of women with an immigrant background. The target groups were workplaces recruiting immigrants and their personnel. One of the substudies dealt with women who migrated from South Asia. The study showed the deep differences between the integration strategies of women from different socioeconomic backgrounds: those who belong to the ethnic business category find very different challenges in integrating from those who come as workers in the ICT sector or as wives of ICT sector workers. The study focused on successful migrant women in Finnish work. The study showed the importance of personal networks and supportive colleagues in attaining success at work. The opportunity to build a well-functioning work–life balance was essential for success.

Although migrant women's employment rates have increased significantly, they are over-represented in part-time work. According to OECD data from 2006, this type of contract is widespread among migrant women, particularly in Austria, Belgium, Germany, the Netherlands, Norway and the United Kingdom. Moreover, part-time jobs are more common among migrant women in countries where native-born women also work part time more often. This can be explained by national legislation, which can make part-time contracts a convenient option for employers. However, part-time work is also affected by the sectoral distribution of migrant employment, given that in some sectors non-standard contracts predominate (Eurofound, 2007h).

Analyses of EU-LFS 2005 data show that the acceptance of part-time employment is much more prevalent among migrant women than among native-born women, because of the unavailability of full-time employment. Underemployment (involuntary part-time employment) is also more common among migrant women than migrant men. In Belgium, France and Sweden one-third of migrant women are either unemployed or underemployed, while in Spain and Greece this is the case for one-quarter of female migrant women.

Additionally, levels of temporary contract employment are generally higher for migrant women than for native-born women. It has been observed that more than half of all employed migrant women in Spain and Cyprus have temporary contracts, compared with a third of native-born women in those countries (Rubin et al., 2008).

Eurofound (2007h: 18–19) states that

According to the OECD 2006 report, migrant women are systematically disadvantaged relative to their native counterparts. In other words, the former group reflect the difficulties associated with gender discrimination in addition to those pertaining to ethnic discrimination. Moreover, according to this OECD report, in all countries for which data are available, except for the Czech Republic, foreign-born women have lower employment rates than their native-born counterparts and this difference increases with level of education. Thus, highly qualified migrant women are particularly disadvantaged, partly because of language difficulties (as is the case for all migrant workers) and problems of recognition of foreign qualifications, but also because of their segregation in unskilled and precarious jobs. Eurostat data (2005) reveal that migrants usually have worse employment rates than nationals. This is particularly true for non EU25 citizens.

However, some exceptions emerge in Austria, Germany, Sweden and the United Kingdom, where migrant women often have lower unemployment rates than migrant men (Eurofound, 2007h: 19).

The OECD (2009: 30) also reported that:

In 2006, immigrants in the majority of European OECD countries were relatively more affected by unemployment than was the native population ... More than 15 % of immigrant women in the labour force are seeking employment in the Slovak Republic, Finland, Belgium, France, Germany, Spain, the Czech Republic, and Greece. In relative terms, the unemployment rate of immigrant women is at least twice as high as that of natives in Switzerland, Norway, the Netherlands, Belgium, Finland, Austria, Luxembourg and Sweden.

In 2008, at EU level, the unemployment rate of foreign citizens aged 25–54 was about twice that for nationals: 11 % and 6 %, respectively. The situation was worse for third-country nationals, whose unemployment rate reached 13 %. This pattern was seen in all Member States for which data were available and reliable, except Greece. Rates did not differ considerably between men and women and differences were at the level of one or two percentage points (Eurostat, 2011c). This trend, as well as trends for underemployment and part-time employment, is expected to have increased with the recent economic crisis.

7.4.4 Sector segregation

Women members of the migrant labour force 'can face particularly disadvantaged conditions: they suffer double or even triple discrimination due to sex, origin and class' (Parella, 2003; Eurofound, 2007h).

Rubin et al. (2008: 61) report that:

Studies of worldwide migration have shown that the majority of migrant women workers are employed in the services sector (e.g. catering, domestic, and healthcare occupations). In some regions, women migrants are also found in the manufacturing sector. Relatively few migrant women work in the agricultural sector. Within the services sector, demand for female migrant labour is increasing in low-skilled jobs such as domestic work — including cleaning and childcare, hotel cleaners and waitresses — as well as in skilled occupations such as nurses and other healthcare workers.

In Europe, too, 'female migrants are mainly predominant in the sectors of healthcare and social work and household services, with few chances of exit or promotion' (Eurofound, 2007h: 39–40).

In some European countries (e.g. France, Greece, Italy and Spain) domestic work or housekeeping is the most common occupation open to female migrants (Reyneri, 2001). In the United Kingdom, two-thirds of women workers in the cleaning sector belong to ethnic minorities (HSE, 2006b). This figure is confirmed by the latest Labour Force Survey on migrant workers (Eurostat, 2011c) (Table 41).

However, Public Services International, a federation of over 500 public sector trade unions from 140 countries, revealed that nearly half of all nurses employed in the United Kingdom in 2001–2002 came from developing countries, particularly the Philippines, India and South Africa (Rubin et al., 2008).

In Sweden, it is estimated that women from Africa and Asia are over-represented within the Horeca sector (Höglund, 2002, as cited in SOU, 2005: 56).

Table 41: Top 10 principal sectors of employment of nationals and foreign citizens aged 25–54 by gender, EU-27 (% of total corresponding population)

Sector	Nationals	Foreign citizens	Third-country nationals
Men			
Construction	13	23	23
Manufacturing	22	21	21
Wholesale & retail trade, repair of motor vehicles & motorcycles	13	11	12
Accommodation & food service activities	3	9	10
Transportation & storage	8	7	7
Administrative & support service activities	3	5	6
Information & communication	4	3	3
Information & communication	4	3	3
Professional, scientific & technical activities	5	3	3
Human health & social work activities	4	3	3
Agriculture	5	3	3
Women			
Activities of households as employers	1	15	18
Human health & social work activities	17	13	13
Accommodation & food service activities	4	13	13
Wholesale & retail trade, repair of motor vehicles & motorcycles	15	12	13
Manufacturing	12	10	9
Administrative & support service activities	4	9	10
Education	12	5	4
Other service activities	3	4	4
Professional, scientific & technical activities	5	4	3
Financial & insurance activities	4	2	2

Sorted by results of foreign-born persons. - Source: Eurostat, EU-LFS (2008)

According to the Eurostat 2008 Labour Force Survey, male and female foreign citizens are systematically less represented than nationals in public administration and defence, as well as the education sector. This is likely to be a consequence of more restricted access for foreigners to jobs in the public sector. In contrast, depending on gender, migrants are more represented than nationals in certain sectors. Foreign men are 1.7 times more likely to work in construction than national men. More than 15 % of foreign women worked in activities of households, while only 1 % of national women aged 25–54 worked in this sector.

Third-country national women were thus 15 times more likely to work in this sector than national women. For both men and women, foreigners were more likely than nationals to work in jobs in the accommodation and food service sector and in administrative and support service activities.

The length of stay in the country of immigration also has an impact on the sector in which immigrant women work.

According to the 2008 Eurostat figures (Eurostat, 2011c). 97:

in the field of activities of households as employers, 3 % of settled national women were employed compared with 12 % of settled female foreign citizens. In contrast, settled nationals were likely to work in other sectors such as public administration and defence, for both genders, human health and social work activities, for women (20 % of settled national women against 13 % of settled foreign women), and manufacturing, for men (25 % of settled national men against 21 % for their foreign counterparts).

7.4.5 Educational levels

According to the OECD (2005: 7):

In a number of European OECD countries, more than 40 % of foreign women aged between 25 and 64 have not gained higher secondary education, and in France the figure is as high as 66.5 %. In Ireland, the United Kingdom, Norway and Denmark, on the other hand, it is relatively lower.

Education improves the chances of foreign women entering the labour market, but to a lower degree than in the case of female nationals.

According to the Labour Force Survey data of 2005, the EU-15 labour market participation rate of native women of high ⁽¹¹⁾ education was 84.5 %, whereas for third-country migrant women it was 77.2 %. The participation rate gap was smaller for migrant and native-born women with medium and low levels of education (Rubin et al., 2008).

According to the 2008 Eurostat Labour Force Survey, regardless of the level of education, the unemployment rates of foreign citizens are higher than the rates for nationals. This is the case for both men and women. Third-country nationals with low educational attainment were particularly at risk of unemployment, with a rate of 17 %. For both nationals and foreigners, unemployment rates improve significantly with higher levels of educational attainment. However, for both men and women with high educational attainment, the unemployment rates of third-country nationals were more than twice those experienced by nationals. This indicates that unemployment of foreigners cannot just be blamed on poor educational attainment. Other factors such as the non-recognition of migrants' qualifications and skills earned abroad, language problems or discrimination clearly influence the higher unemployment rates of foreigners (Eurostat, 2011c).

For foreign women born abroad, a potential explanation might be the existing problems with the recognition of their qualifications. A university qualification, although it helps, cannot guarantee successful entry into the labour market for migrant women.

The OECD states (2005: 7) that

In Germany, only 65.2 % of foreign women with university qualifications have a job or are looking for one, which is 19 percentage points lower than the figure for female nationals. The disparity is also significant in Hungary, Denmark, France and Greece. In Hungary, Germany, Finland, Portugal and Spain, the labour force participation rate among foreign female university graduates is lower than among foreign women who have gone through higher secondary education.

Moreover, migrant women do not obtain jobs that correspond to their education. An analysis of 2005 EU-LFS data on the distribution of highly educated women in occupations indicates that only 40 % of the total group of third-country migrant women with a high level of education are employed in high-

⁽¹¹⁾ 'High' indicates that the highest qualification achieved is tertiary education or advanced research qualification (ISCED 5 or 6); 'medium' indicates that the highest qualification achieved is between upper secondary and post-secondary education; 'low' indicates that the highest qualification achieved is between pre-primary and lower secondary education. From Table B5, Appendix B of Rubin et al. (2008).

skilled occupations, with a significant minority (25 %) employed in low-skilled sectors (Rubin et al., 2008).

More recently, certain migrant worker policies have focused on attracting highly skilled or educated migrants. Although the definitions of the target group of migrants have differed among countries, this approach has been seen in several national programmes (such as in Denmark, Germany, Sweden and the United Kingdom) (Eurostat, 2011c). The highest shares of tertiary-educated foreign citizens (over 40 %) can be noted in Ireland, Sweden and Norway. On the other hand, the southern Member States (Portugal, Greece, Italy, Spain) and France tend to attract immigrants with a lower level of education: 40 % or more of the foreign-born population have a low level of education. In particular, 'highly educated migrant women are twice as likely as highly educated native-born women to be employed in low-skill jobs, with highly educated third-country migrant women having the highest incidence of de-skilling' (Rubin et al., 2008: 77).

According to the Eurostat 2008 Labour Force Survey, with an overqualification rate of 34 % (39 % for women), foreign-born persons are clearly more likely to be overqualified than native-born persons, who registered a rate of only 19 %. This difference indicates a potential misuse of migrants' skills and qualifications. This issue was more acute for non-EU migrants, for whom overqualification reached 36 %. This may be a consequence of the greater difficulties encountered by third-country migrants in having educational qualifications and skills earned abroad recognised in the receiving country.

There seems to be a double disadvantage for foreign women: whereas the proportion of overqualified national women was the same as for national men, the share of foreign overqualified women was four percentage points above that of foreign men. The situation was worse for third-country nationals, where the share of overqualified women was six percentage points higher than that of men.

However, there are marked differences by gender in different countries. While women are at a greater disadvantage on average, the overqualification rate of men was in fact higher than that of women in Estonia, Ireland, Norway, Sweden, Italy and Latvia (Eurostat, 2011c).

In countries such as Spain and Greece, there is a very significant difference between the percentages of migrant women from non-OECD countries, in jobs for which they are 'overqualified', and the equivalent percentages of native-born women (6.8 times higher in Greece and 2.2 times higher in Spain) (Rubin et al., 2008).

According to the most recent OECD data, the wages of immigrants who obtain further qualifications increase at a slower rate than the wages of native workers. Table 42 indicates the differences between the wages of immigrants and those who are native to the country, but with the same educational attainment, in some of the EU countries. In particular, immigrant women with tertiary education earn much less than their national counterparts compared with immigrant men (OECD, 2008c).

Table 42: Median wages of people with tertiary education, immigrants compared with native born, by origin of education and gender

Country	Men		Women	
	Education acquired abroad	Education acquired domestically	Education acquired abroad	Education acquired domestically
Portugal	49 (€33)	88 (€60)	52 (€35)	100 (€68)
Sweden	81 (€55)	88 (€60)	89 (€60)	95 (€64)
Germany	86 (€58)	100 (€68)	83 (€56)	95 (€64)
France	88 (€60)	86 (€58)	77 (€52)	110 (€74)

In the original table the wages are in US dollars. For this report, wages were calculated in euros. The European Central Bank exchange reference rate for EUR to USD was 1.4780 at 22 September 2009.

Source: Amended table from OECD (2008c).

However, there are also some positive messages: second-generation women perform better in terms of education than their male counterparts and integrate better in the labour market when they are given the opportunity to do so.

In 2008, in the EU as a whole, second-generation migrants with foreign and mixed backgrounds tend to be better educated than their peers with native-born parents. Among adults aged between 25 and 54, 28 % of persons with a foreign background and 33 % with a mixed background have a tertiary education, compared with 26 % of their native counterparts. The proportion with tertiary education tends to be higher for women than for men: at EU level, 30 % of women with a foreign background and 35 % with a mixed background had tertiary-level education, as opposed to 26 % and 32 % of their male counterparts (Eurostat, 2011c). However, there are important differences at country level, in relation to the direction and magnitude of gaps.

For second-generation migrants, the unemployment rates of men and women were at similar levels.

According to the Eurostat 2008 Labour Force Survey, in terms of employment rate, the performance of second-generation women with a foreign background (72 % employed) was closer to that of women with native parents (74 %) than for their male counterparts. At country level, this pattern was repeated in several Member States, which shows that second-generation women were more successful in integrating into the labour market than men.

At country level, the picture is more complex. The large variation in the labour market participation of second-generation women with a foreign background may be due to the wide differences between Member States in terms of the countries of origin of the parents of second-generation migrants.

The employment situation of second-generation migrants with a mixed background was significantly better than for second-generation migrants with a foreign background, being even slightly higher than that of persons with a native background, and mainly due to better integration of women.

Kofman et al. (2005) argue that, although women account for an increasing proportion of all labour migration and are dominant in some sectors, such as health, education and domestic services, migration studies have generally not been sensitive to gender issues. Moreover, recent data on the health and safety risks of migrant women are scarce. The only data available are based on a couple of studies in the United Kingdom initiated by the HSE, one European study carried out by Eurofound and a few scientific papers. A discussion based on these follows.

7.4.6 Wages

From existing statistics (Eurofound, 2007h; OECD, 2008a), it seems that the average income of migrant workers is lower than that of nationals. However, it is not clear to what extent this reflects a compositional effect. Female migrants are segregated into low-paid jobs, such as cleaning and household services. As elaborated previously in this chapter, for immigrant women sector segregation and subsequent wages are influenced to a lesser degree by their education. However, migrant women with education that is acquired domestically do have a professional advantage over migrant women who gained their qualifications abroad. This probably has to do with a higher level of trust in national educational systems.

However, a Belgian study (Vertommen and Martens, 2006), using a multivariate analysis procedure to control for sector, age, sex, employment status, company size and region, showed that the origin or nationality effect on income is rather small. One explanation might be that migrant women workers in most EU countries are younger than the native workers, and it is generally accepted that wages are lower for younger people.

A COMPAS (Centre on Migration, Policy and Society) report has found that gender and migration are among the factors that influence vulnerability⁽¹²⁾. In particular, female domestic workers experienced extreme vulnerability in terms of pay and other indicators compared with their male counterparts (Jayaweera and Anderson, 2008).

⁽¹²⁾ The Trades Union Congress Commission on Vulnerable Employment's (2007) definition of vulnerable employment is 'precarious work that places people at risk of continuing poverty and injustice resulting from an imbalance in the employer-worker relationship' (p. 3).

7.4.7 Health and safety risks and outcomes

- **Working hours — fundamental rights**

In several countries, women migrant workers are often employed to work irregular hours, as documented, for instance, in the case of Austria in healthcare and retail occupations (Eurofound, 2007h).

Female migrants who work in hospitals in the United Kingdom are more likely to work night shifts. Owing to this choice, they are more easily exploited in terms of work patterns, because they want to earn as much as possible, and working a night shift is one way to achieve this. For those working through agencies, the hours of work might be more irregular (HSE, 2006b).

FEMAGE (Finland)

FEMAGE (2006–2007) was a research and development project that examined female immigrants' opportunities in the labour market and impediments to their integration. The project focused on the issue of immigrant integration from three vantage points: national populations', stakeholders' and immigrant women's own perspectives. Nine countries (Germany, Hungary, Belgium, Poland, Czech Republic, Slovenia, Austria, Finland and Estonia) participated in the project. It was coordinated by the Bundesinstitut für Bevölkerungsforschung (Federal Institution for Population Research), Germany, with the Population Research Institute in the Family Federation of Finland as the Finnish partner. The project used empirical material from qualitative interviews of immigrant women, analysed survey material from an earlier DIALOG study, and arranged focus group interviews of stakeholders. FEMAGE was funded by the EC's sixth framework Programme on Research and Development. The outcome of the Finnish project showed that welfare state services, such as municipal daycare, give immigrant women a considerable advantage compared with societies where such services are lacking or of poor quality. The Nordic work-centred and gender equality ethos helps immigrant women to opt for waged labour but simultaneously deepens the stigma of unemployment. Immigrant women are eager to find employment outside their homes. They themselves find poor language skills to be one of the main obstacles to employment, although discrimination is also seen to play an important role.

There is also evidence (HSE, 2006b) of discriminatory treatment of migrant women in relation to pregnancy. Some employers did not make adjustments to enable women to work safely, and there was evidence of women compromising their health to continue working. In other cases, migrant women were forced to quit their jobs because of a lack of adjustments in their duties.

According to the COMPAS report, women migrant domestic workers tend to work longer hours while having fewer rights — such as being allowed out of the premises and having their own bed — than men (Jayaweera and Anderson, 2008).

- **Stress**

In the United Kingdom there are a number of areas in which gender impacts on health and safety (HSE, 2006b). This research documents significant gender segregation, with migrant women predominant in some sectors (e.g. healthcare) and practically absent in others (e.g. construction).

Migrant women were more likely to believe that their health, both physical and mental, was being compromised by the work they were doing. They were also more likely to say that they had experienced discrimination at work.

Smith et al. (2005) carried out a secondary analysis of two large random surveys, the Bristol Stress and Health at Work Study and the Cardiff Health and Safety at Work Study, in combination with new household interviews with over 200 people in black Caribbean, Bangladeshi and white groups in Cardiff and Bristol. After controlling for demographic, occupational and work factors, a significant

association between work stress and ethnicity was found. Racial discrimination in combination with gender discrimination was identified as having a strong influence on work stress. As a result, black Caribbean women reported the highest levels of stress. The research found evidence indicating that women migrant workers and black migrants face the worst discrimination and consequently describe themselves as suffering from work-related stress and ill health.

Research from the USA on gender and cultural diversity issues in work-site stress also indicated the need for stress management programmes to enable women in general, and specifically women of an ethnic minority, to cope with their unique stressors (Walcott-McQuigg, 1994).

- **Bullying and harassment**

The risk of bullying and harassment seems to be high for migrant workers (EU-OSHA, 2007a), particularly those in the healthcare sector. A study found that approximately 40 % of ethnic minority nurses in the United Kingdom had been subject to racial harassment by work colleagues, compared with the overall rate of 10 % for all nurses. Over 60 % of ethnic minority nurses had been subject to racial harassment by patients, compared with 20 % of nurses generally (Shields and Wheatley-Price, 2002).

Allan and Larsen (2003) found that migrant nurses' working experiences in the United Kingdom were quite different between the National Health Service (NHS) and the private sector. In the private sector migrant nurses were being exploited by working mostly as care assistants: jobs that can pay less and do not require the use of nursing skills. Moreover, they felt isolated. Some reported bullying from local care assistants and felt they were being policed. Internationally recruited nurses experienced exploitation in various ways, but particularly from their managers who used them to cover undesirable shifts. One of the more frequent causes of accidents for migrant nurses was from working with aggressive or confused patients (HSE, 2006b).

The COMPAS report revealed that migrant women workers were facing threats and fear of being sacked because they were pregnant (Jayaweera and Anderson, 2008).

Psychological abuse was the main problem faced by migrant domestic workers in respect of their conditions of work. This was reported by 72 % of the respondents, according to statistics produced using Kalayaan's ⁽¹³⁾ registration database for 2006 ($n = 312$, 76 % female) (Wittenburg, 2008)

A recent empirical study of the Institute of Labour (INE) in Greece, on labour relations in the cleaning sector, reveals that women migrant workers in outsourcing companies reported frequent incidents of sexual harassment by supervisors or executives of the client organisation. Some women, in particular the disadvantaged ones — young, single mothers, with little knowledge of the language — have even reported being threatened with dismissal or expulsion by the cleaning contractor if they did not submit to the harassment (INE, 2009).

- **Chemical risks**

Migrant workers in general receive no personal protective equipment (PPE) at all, or PPE of poor quality, at work compared with national workers. Women working in the cleaning sector have a greater risk of chemical burns or poisoning from the use of cleaning chemicals (HSE, 2006b). These chemicals can be toxic and include cleaning fluids, bleach and detergents. The average household contains around 250 chemicals that are toxic enough to necessitate medical attention if ingested (Rosenberg, 1984).

- **Accidents at work**

Evidence does exist for higher accident rates among migrant workers. Studies have identified language problems, as well as poor communication and on-the-job training, as possible factors for higher workplace injury rates for ethnic minorities (Bossley, 1975; Bourdillon et al., 1991). Other critical

⁽¹³⁾ Kalayaan is a registered charity established in 1987 to provide advice, advocacy and support services in the United Kingdom for migrant domestic workers (<http://www.kalayaan.org.uk/>).

factors in the prevention of accidents and injuries are hours of work and fatigue. Lilley et al. (2002) explored the relationship of fatigue, and some of its key determinants, with accidents and injuries in a group of forestry industry workers in New Zealand. Accidents and lost-time injury were associated with length of time at work, ethnicity and having had near-miss injury events (HSE, 2004). However, most studies are male dominated and do not take gender differences into account.

The Health Survey for England in 1999 generated data on accident rates among ethnic minorities (HSE, 2004), including data on both self-reported 'major' accidents (for which a doctor was consulted and a hospital visited) and 'minor' accidents (all other accidents causing pain and discomfort for 24 hours). By definition, fatal accidents are excluded. Among women, these were low. One exception was found among black Caribbean women who had a workplace accident rate of 27 %. When compared with the general population rate, overall, none of the rates within the minority ethnic groups was established as statistically different to the general population rate (HSE, 2004). However, migrant women are usually employed in occupations with a lower accident risk and, moreover, they may under-report accidents.

The main accident risk for migrant women in the healthcare sector in the United Kingdom was infection via needles. Generally, gloves, aprons and disinfectant wash were provided, with procedures on how and when they needed to be used. However, some workers commented on shortfalls in supplies of gloves and other protective equipment (HSE, 2006b). Another study examined issues relating to HIV infection among minority healthcare workers and identified that the inadequacy of training appears to be one of the primary reasons for high rates of needlestick injuries and exposure to blood (Askari and Alexander, 1989).

- **Ergonomic risks for musculoskeletal disorders**

A study in Italy shows the higher vulnerability to MSDs among migrant nurses and nurses hired through cooperatives. Nurses are especially affected by accidents at work, which mainly lead to MSDs (Valenti et al., 2007). Migrant women working as cleaners in hotels and restaurants suffered from aches and pains to backs, joints and legs. A few migrant women reported that they continued to lift heavy items when they were pregnant and that they did not receive any assistance from their employers, such as being assigned lighter duties (HSE, 2006b).

A US study of occupational low back pain, although not focusing on gender, reported that impairment ratings and temporary total disability costs are lower for African Americans than for white workers; this was found to affect their claims and benefits (Tait and Chibnall, 2001). This can have the effect of under-reporting incidents for migrant workers and women in particular.

- **Health and safety training — informing workers of their rights**

According to a study in the United Kingdom (HSE, 2006b), women migrants are more likely to be employed in workplaces with little or no culture of health and safety training. With the exception of those working in the healthcare sector, women were more likely to be in workplaces where training had not been offered. One recent study of immigrants employed as cleaners found that they were exposed to several environmental, ergonomic and psychosocial hazards, which then led to related health effects (Ahonen et al., 2010).

One issue that arose in this study was the difficulty in determining who is responsible for delivering health and safety training, especially for migrant workers coming from agencies. Was it the agency or the client employer? This ambiguity resulted in little or no health and safety training.

In the same study, women workers were more likely to believe that they had no health and safety rights at work, with nearly half holding this position, compared with a third of male workers.

7.4.8 Discussion

In the EU, there are more male than female immigrants to most countries in the eastern part of the EU, while women are more likely to predominate in the south. This is indicative of the twofold handicap that migrant women face regarding entering the labour market. Nevertheless, there has been a general improvement over the past 5 years in the employment rate of female migrants in the EU.

Women migrate at a younger age than men and are over-represented in part-time work. Overall, they are particularly vulnerable in relation to unemployment, type of contract and payment. While female participation rates increase in line with the level of education, it is also apparent that the differences across countries are smaller in the case of women graduating from university.

The sectors in which migrant women usually work are healthcare, hotel and catering, social work, and cleaning and household services. Apart from the classic health and safety risks characterising the sectors in which they are usually employed, migrant women are exposed to increased stress, bullying and harassment. Women were more likely to report that they had not been given any induction training. Moreover, it seems that women who have experienced discrimination, whether in the form of harassment or being given the worst jobs, are more reluctant to raise any concerns about their health and safety. Undocumented workers, particularly in the domestic sector, are more likely to compromise their health and safety in return for the opportunity to work.

The description of migrant workers is consistent with that found in 2003 (EU-OSHA, 2003a), in that they are mainly employed in the informal sector and carrying out domestic work, work long hours, are poorly paid and, of course, their OSH concerns are not seen as essential. These are concerns that need to be kept on the agendas of policy-makers and other government bodies to ensure the OSH of migrant workers.

7.4.9 Recommendations

In the communication of the European Commission, *A Roadmap for equality between women and men 2006–2010*⁽¹⁴⁾ the need to combat multiple discrimination, in particular against immigrant and ethnic minority women, was a main target:

The EU is committed to the elimination of all discrimination and the creation of an inclusive society for all. Women members of disadvantaged groups are often worse off than their male counterparts. The situation of ethnic minority and immigrant women is emblematic. They often suffer from double discrimination. This requires the promotion of gender equality in migration and integration policies in order to ensure women's rights and civic participation, to fully use their employment potential and to improve their access to education and lifelong learning.

(EC, 2006a: 4)

The EU recognises the need to protect the human rights of migrants (including health and safety rights), particularly women, and to ensure coordinated action against illegal migration, trafficking in human beings and people smuggling.

The United Nations (United Nations, 2004: 38) points out that:

A main problem that migrant women face is the lack of knowledge about their rights and the practices at their workplace; another is isolation. These problems can lead to exploitation, alienation and discrimination. By providing them with a thorough support network, which helps them adopt to their host country and allows them to obtain information on important issues relevant to them, there is likely to be marked improvement in their status and welfare.

Another problem, particularly in the domestic sector, is that the vast majority of migrant women are undocumented. **Regularisation policies** should target migrant women.

Rubin et al. (2008: 99) note that,

'The Spanish regularisation policies are an example of an integration policy that targets migrant women and men in a uniform way. Out of approximately 700,000 migrants regularised in Spain in 2005, 41 % were migrant women. Most of these were employed in the domestic sector.' Apart from hindering migrant workers entering the labour market, the lack of language was identified as a cause for the increased rate of accidents. **Language training** is one direct integration policy that specifically targets immigrants who lack the basic language skills to participate in the labour market. In the past, Germany and France introduced such policies for migrant workers. The Federal Employment Services

⁽¹⁴⁾http://europa.eu/legislation_summaries/employment_and_social_policy/equality_between_men_and_women/c10404_en.htm

in Germany funds language training for over 24,000 women every year. Immigrant women face particular challenges when integrating into the labour market.

According to Eurofound (2007h: 39):

the disadvantaged conditions of migrant workers seem to be linked to their difficulties in obtaining a work permit, even in countries where there are labour supply shortages. In fact, the most disadvantaged migrants are those who work without a permit. As a first measure, therefore, it could be important to **adjust the rules on entry and work permits** to the actual conditions of labour demand.

A second important issue for migrant workers is related to their chances of acquiring citizenship of host countries. **Citizenship** determines more favourable conditions in access to several skilled occupations, such as public sector employment, the professions and business activity.

The third issue concerns the **recognition of educational credentials** acquired by migrants in their country of origin, especially if they achieved them outside the EU. The mechanisms, which govern the recognition of educational credentials in EU countries, frequently penalise migrants and this is even more crucial considering that, in recent years, immigration includes increasing proportions of highly qualified workers.

The study carried out by London Metropolitan University for the HSE (2006a) provides a list of concrete recommendations addressed to the authorities, employers and trade unions for improving migrants' health and safety:

- Labour Inspection should develop **practical guidelines** for employers on health and safety to consider when engaging migrant labour. Guidance and tools for conducting risk assessment should consider the language and literacy skills of migrant workers. In particular, a risk assessment for pregnant migrant women 'should take into account the fact that women's investment in migration for work might persuade them to continue working even at risk to their or their baby's health' (HSE, 2006b: 130).
- Authorities were encouraged to publish leaflets for health and safety rights and other guidance documents for migrant workers in different languages. Labour inspectors should check with employers whether 'health and safety information is provided in languages other than the national one and check what **induction and on-going training** is delivered and how it is tailored to migrant workers to ensure understanding' (HSE, 2006b: 130–131). This is particularly valid for women because a large number of migrant women have lower educational levels than men owing to discrimination regarding access to education in their home countries.
- 'Employers should carry out **adapted risk assessments** specific to the presence of migrant labour' (HSE, 2006b: 132). Recruitment agencies and labour providers should provide basic information to migrant workers on the health and safety rights and on the responsibility of the agencies and clients. Finally, trade unions should monitor levels of migrant worker membership and consider specialised training for health and safety.

Organising migrant workers is a real challenge for **trade unions**. A successful example of a productive partnership is that between the Transport and General Workers Union (T&G)⁽¹⁵⁾ and Kalayaan in the United Kingdom. Another active movement is Justice for Cleaners, started in the USA in the 1980s by the North American Service Employers International Union. The UK version began in 2004 and is led by Unite. This movement has successfully launched campaigns that aim at securing a living wage, sick pay, paid holidays and pension provision for cleaning workers. Trade unions can bargain collectively on behalf of migrant workers, and act swiftly when legal and agreed standards are violated (Trades Union Congress Commission on Vulnerable Employment, 2007).

Finally, **more gender-sensitive research is needed** on migrant workers and health and safety risks and outcomes.

⁽¹⁵⁾ In 2007, T&G merged with Amicus to form Unite.

Main points — trends and policy-relevant messages

- Migrant women, as part of the labour force, may encounter double or triple discrimination because of their sex, origin or class. Women migrant workers in Europe tend to work to a greater extent in areas that are open to them, such as the social work and household services sectors, with these offering few chances to leave or to obtain promotion. Women migrant workers tend to get jobs in workplaces that either do not have a culture of safety and health training or have very few such practices in place.
- Pregnant immigrant workers are a particularly vulnerable group, and workplaces are rarely adapted to protect them from health and safety risks.
- Studies have identified language problems, hours of work and fatigue, as well as poor communication and on-the-job training, as possible factors for higher workplace injury rates for ethnic minorities. Accidents and lost-time injury were also associated with length of time at work, ethnicity and having had near-miss injury events. Immigrant workers are rarely covered by official statistics and surveys. Therefore, there is a lack of data on the risks they are exposed to and the health problems they incur. This is even more of an issue for service professions, which tend to have lower data coverage due to the temporary and precarious character of the contracts.
- Violence and bullying are a particular issue for immigrant female workers.
- Family obligations have a significantly higher impact on activity and employment of female immigrants than for female nationals. This reflects cultural norms, but is also highly influenced by restrictions in labour market access for female workers migrating for family reasons.
- Second-generation migrant women have better educational levels and better integration into the labour market than first-generation women and even female nationals in some Member States. The success factors behind these positive trends should be analysed and shared among Member States to improve the situation for young female immigrants, as well as for young women in general.

Recommendations for research, monitoring and OSH enhancement

- As migrant women workers noticeably tend to belong to the informal sector, the same data collection practices are recommended as for this sector, because similar sensitivities exist in relation to information gathering.
- Information on safety and health practices should be made available in different languages to meet the needs of migrant workers. Sectors with a predominantly female immigrant working population, mainly in services, should be targeted as much as typically male-dominated sectors such as construction or manufacturing.
- Restrictive employment policies for women migrating for family reasons may be a driver for informal employment: as they cannot seek employment officially, they move into informal jobs. This should be taken into account when designing employment policies and health and safety strategies.
- Young female workers are particularly prone to engage in temporary contracts in low-skilled service jobs, and therefore are at high accident and injury risk. Ensure that young female immigrants receive appropriate induction, on-the-job training and supervision and they are covered by accident and ill health reporting and compensation.
- More resources need to be dedicated to ensure that training and information are delivered to female immigrant workers who work shifts, part time or on temporary contracts (e.g. seasonal workers in the hotel and catering sectors, or nightshift workers in healthcare, as well as subcontracted home care services delivered to private homes). These programmes need to take into consideration the specific circumstances of each sector. Labour inspections campaigns and routine inspections should specifically cover female immigrant workers and their jobs. Are cleaners and low-skilled workers covered? Are shift workers and part-timers covered? Have subcontracted workers been trained to understand work-related risks and how to protect themselves? Are they consulted and taken account of in risk assessment?

- Gender-sensitive budgeting in labour market policies, retraining and health and safety strategies should cover female immigrant workers. The national and regional needs are as diverse as the distribution of jobs, and risks among these workers and should be specifically addressed.
- Pregnant immigrant workers are a particularly vulnerable group. Enforcement of health and safety legislation needs to be ensured for them.
- Targeted policy measures for legalising employment for immigrants or delivering service vouchers, for example for cleaning or home care services, should include health and safety considerations. As female immigrant workers mainly deliver services, it may be necessary to include clients in the target groups for awareness-raising and enforcement. Minimum labour and health and safety standards should be agreed. Employee representation should include migrant women workers, as they are more vulnerable in terms of the types of contracts and payments they receive when employed, and awareness about their health and safety rights is low among them.
- Overqualification and underemployment are particularly relevant for immigrant female workers, more than for their male counterparts or for female native workers. This needs to be taken into account in employment policies, educational and retraining schemes and health and safety considerations. These workers may be highly, but inadequately, trained and prone to accept unfavourable working conditions because of their lack of opportunities. This may also lead to higher stress levels, discouragement and depression.

7.5 An 'emerging' female profession — domestic work

7.5.1 Introduction

As mentioned in previous chapters, women's 'work' tends to include domestic tasks, either within their own home as part of their domestic and family responsibilities or as a stand-alone job, especially within the informal sector and when they migrate to a different country. It is one of the professions in which it is 'easier' to get jobs to facilitate or supplement an income.

When evaluating workforce employment patterns, the definitions of new and emerging professions include (1) new professions created by changes in technology, society, markets or regulations and (2) existing professions that have been considerably modified by these changes or are increasing in employment (BNET: Business Publications, 2002).

In selecting particular emerging 'female' professions to assess further, first it is necessary to gain some knowledge on those groups of professions that women choose. The ILO defines more than 100 groups of main professions, but the United States Department of Labor (DOL), using 2007 statistical data, shows only a few occupations dominated by women: for the jobs of secretaries and administrative assistants, childcare workers, hairdressers, stylists and cosmetologists, registered nurses, teacher assistants, medical assistants and other healthcare support workers, auditing and office clerks and domestic workers women make up 90 % of total employment; 80 % of elementary and secondary school teachers are women; 70 % of cashiers, supervisors, office managers and administrative support workers and customer service representatives are women; and 60 % of accountants and auditors are female. However, it is obvious that women continue to hold the majority of jobs in 'female' industries (About.com: Women in Business, 2009).

Another trend recognised by the Women's Bureau of the DOL is women's entry into non-traditional occupations, in which women comprise 25 % or fewer of total workers. These occupations include all main occupational groups and provide wide employment possibilities for women. The anticipated expansion of employment in many of these occupations could be brought about by a growing economy and a strong demand for workers, due to projected retirements or transfers of current workers to other occupations. Non-traditional occupations are also attractive to women due to higher entry-level wages and the possibilities of advancing or establishing their careers. Some examples of such jobs for women are architects, computer programmers, computer software and hardware engineers, detectives, chefs, barbers, clergy, engineers, computer and office machine repairers, construction and building inspectors, railway conductors, machinists, truck drivers, fire fighters, aircraft pilots and construction professionals. On the other hand, many occupations that were non-traditional for women in 1988 were no longer non-traditional for them in 2008, because an increasing number of women are entering jobs that were previously dominated by men. Some of these professions are purchasing managers, chemists, physicians, lawyers, athletes, mail carriers, bailiffs, correctional

officers and jailers, and butchers and other meat, poultry and fish processing workers (United States Department of Labor, 2009).

Obviously, many of the listed professions, depending on particular conditions, could be considered as emerging. Therefore, domestic work as a recognised problematic profession worldwide has been selected for a more in-depth discussion. The information presented below shows that this work is still a substantial source of employment for women (particularly migrants) and continues to grow. It is nonetheless largely unregulated and its workers are exposed to various hazards.

The ILO's governing body, at its 301st session (March 2008), agreed to place an item to facilitate decent work for domestic workers on the agenda of the 99th Session of the International Labour Conference (2010b), with a view to the setting of labour standards. In the draft report of the conference, domestic work is listed as one of the oldest and most important occupations for millions of women around the world. However, although its origin traces back to slavery and colonialism (ILO, 2010b), the provision of care work within the home became vital for the economy in contemporary society. Currently, domestic workers make up a large portion of the workforce in both developing and industrialised countries. This trend is sustained significantly by the incorporation of women into the labour force, the ageing of societies, the intensification of work and the frequent inadequacy of policy measures for the reconciliation of family life and work (ILO, 2010b).

Domestic work includes many tasks such as cleaning, laundry and ironing, shopping, cooking and fetching water, caring for the sick, elderly and children, looking after pets, sweeping and tidying gardens. It covers many other activities, occurs in different situations and relationships and, as a result, it is not easy to categorise (International Domestic Workers' Network, 2009).

The working environment of domestic workers differs from the working environment of business or office workers because the work takes place in the home. Domestic workers are mostly women who are constrained to perform their duties in isolation, behind closed doors, and very often alone. Although domestic work is not aimed to produce added value, it does provide care to millions of households.

Therefore, in many cases domestic work is considered as equivalent to unpaid labour traditionally performed in the household by women and is seen as something other than regular employment; not fitting the general framework of existing labour laws. This ensures that it remains virtually invisible as a form of employment and is poorly regulated or rarely specified in legislation as an employment relationship in many countries. As a result, domestic work remains undervalued, informal or undocumented and is very often performed by children (ILO, 2010b). Overall, domestic workers are overworked, underpaid and unprotected. Maltreatment and abuse, especially of live-in and migrant domestic workers, is an everyday occurrence (ILO, 2010b).

Domestic work is one of the fastest growing economic sectors in Europe (Mather, 2005). Employing a domestic worker is becoming a solution for professional and middle-class individuals in European countries who need to combine work with raising a family, and for the sick and elderly from the working classes, who in many countries are dependent on homecare by domestic workers. In the context of the globalisation process, there is a relationship between the growing needs of European households for domestic services and the feminisation of migration. The promotion of the interests of domestic workers by trade unions comprises a complex issue for the key organisations working in this field, as there is a need for the elimination of bad practices of 'modern slavery', such as the trafficking of women and girls to provide these services, the need to implement domestic and household services in a more sustainable way, with proper employment opportunities and protection, and the exchanging of information on the existing labour law and social security regulations in EU Member States (Mather, 2005).

According to recent research by the EU Fundamental Rights Agency (FRA) (2011a,b):

- An indication of the extent to which migrants in an irregular situation are employed in the domestic work sector can be deduced from regularisation data. Some 500,000 irregular third-country nationals employed in domestic work have been regularised since 2002 in Italy and Spain, and another 250,000 persons are pending regularisation in Italy.
- Migrant women often face considerable discrimination and are over-represented in poorly regulated and poorly paid sectors of employment, such as domestic work. As domestic workers are mostly women, they are often vulnerable to specific forms of gender-based violence and racial

discrimination. In addition, their irregular migration status means they are often not entitled to basic rights under national law such as healthcare.

- Many women who migrate from southern and eastern countries to take up domestic work in Europe leave their children back home. In the absence of mothers, care work in sending households seems to be primarily performed by female family members such as grandmothers, aunts or older daughters, or is outsourced to female neighbours or friends. This creates a ‘global care chain’ that contributes to the gender division of labour all over the world. Couples in developed countries can avoid negotiating the burden of domestic work. However, the employment of migrant women, in turn, serves to perpetuate the gendered division of domestic labour.

The report by FRA was based on research conducted with (predominantly female) migrants and civil society organisations in 10 EU Member States — Belgium, France, Germany, Greece, Hungary, Ireland, Italy, Poland, Spain and Sweden — that highlights some of the fundamental rights challenges affecting migrants in an irregular situation employed in the domestic work sector. Although many fundamental rights issues raised in this report are common to other persons employed in the domestic work sector, the risk of violations is exacerbated for workers who do not have the right to stay in the host country.

7.5.2 Domestic work and its general characteristics

▪ Definition

Domestic work, putting it simply, can be defined as labour for another family within its home. **Domestic workers** should not be confused with homemakers or housewives, who work in their own homes (ILO, 1998).

▪ Classification of domestic work

The ILO’s **International Standard Classification of Occupations (ISCO)** ⁽¹⁶⁾ recognises domestic work under two broad classification groupings (5 and 9) and identifies associated tasks and the corresponding skill levels (ILO, 1998).

Classification 5 addresses commercial establishments, institutions and private households. It covers two key categories: *housekeeping* (minor group 512), which includes housekeepers and related workers and cooks, and *personal care and related workers*, including childcare workers, and *home-based personal care workers* (minor group 513). Housekeeping, categorised under 5121, emphasises the supervisory work of the housekeeper. Classification 5131 defines childcare workers as those who ‘take care of employers’ children and oversee their daily activities’ (ILO, 2010b: 30) and considers that the tasks include:

- assisting children to bath, dress and feed themselves;
- taking children to and from school or outdoors for recreation;
- playing games with children, or entertaining children by reading or storytelling;
- maintaining order in children’s bedrooms and playrooms;
- taking care of schoolchildren at lunch or other school breaks;
- taking care of schoolchildren on excursions, museum visits and similar outings;
- performing related tasks; and
- supervising other workers.

Similarly, home-based personal care workers under classification 5133 ‘attend to various personal needs and in general provide personal care for persons in need of such care at their own homes because of physical or mental illness or disability or because of impairment due to old age’ (ILO, 2010b: 30). The tasks of this category, an example of which is a ‘home nursing aid’, include:

⁽¹⁶⁾ The International Standard Classification of Occupations is a tool for organising jobs into a clearly defined set of groups according to the tasks and duties undertaken in the job (<http://www.ilo.org/public/english/bureau/stat/isco/index.htm>).

- assisting persons in getting into and out of bed and making the appropriate change in dress;
- changing bed linen and helping persons with their bath and toilet;
- serving food — prepared by them or others — and feeding persons needing help;
- giving or ensuring that persons take the necessary medicaments;
- watching for any sign of deterioration in the person's health and informing the relevant medical doctor or social services;
- performing related tasks; and
- supervising other workers.

Classification 913 speaks specifically of 'domestic and related helpers, cleaners and launderers'. It covers private households, hotels, offices, hospitals and other establishments, as well as a variety of devices to keep interiors and fixtures clean. The classification includes domestic helpers and cleaners, as well as hand-launderers and pressers. Under classification 9131, domestic helpers and cleaners 'sweep, vacuum, clean, wash and polish, take care of household linen, purchase household supplies, prepare food, serve meals and perform various other domestic duties' (ILO, 2010b: 30).

Peculiarities of the employment relationship of domestic workers include:

- **State** employment: when care workers are employed by the state or organisations subsidised by the state, usually (though not always) the signing of proper employment contracts and collective bargaining agreements and union rights are warranted.
- Employment by **private companies**: privatisation of such services determined the growth of private supply agencies, degradation of working conditions and development of the unionisation process.
- Participation of **social partners**: there are collective bargaining agreements between trade unions and confederations of householders in only a few countries.
- **Individual** agreements: most domestic work around the world, however, is done through private arrangements between individuals, someone hired or a family member, sometimes with a written contract but usually without it.
- **Live-in** and **commuting to work** solutions: many live-in domestic workers are on almost permanent call in the household; others live elsewhere and may work for several employers, perhaps working only a few hours per week for each (International Domestic Workers' Network, 2009).

Other key social aspects of the domestic work relationship include:

- **Gender** perspective: in all societies domestic work is still seen as 'women's work'.
- **Race** or **ethnic** issues: migrant workers are wanted as part of the labour force but are often met by racism or xenophobia. In addition, women of native origin from certain cultures or racial/ethnic groups are more likely to be employed by others from more powerful cultures or groups.
- **Age** aspect: there are still a large number of children doing domestic work in private homes in many countries, as well as many older women who are able to sell only their domestic service skills in the labour market.
- **Poverty** and **class**: only a small number of people who are not poor leave their own homes to work in those of other people who are usually wealthier (International Domestic Workers' Network, 2009).

Trends of social changes of domestic work are summarised in the draft report of the 99th session of the International Labour Conference (2010b: 6–7):

One of the most striking changes in domestic work in the past 30 years has been the growing prevalence of migrant work. In several regions, including Europe and the Gulf countries and the Middle East, the majority of domestic labourers today are migrant women. Another phenomenon, notable particularly in the industrialised world and a growing number of Southern American countries, is the higher proportion of domestic workers who work for more than one employer or who work for just one employer but do not live in his or her household. As for the age of domestic workers, young girls can be found alongside older age groups. In Ghana, for instance, legal child domestic workers are reported as constituting the majority of those employed in the household sector, and a study on Abidjan, Côte d'Ivoire, reports that the lower-middle class tends to resort to girls under 20 years of age. On the other hand, in the Southern Cone of Latin America, the bulk of domestic workers are between 29 and 49 years old, while in Jordan 70 per cent of migrant domestic workers are 30 years old and above.

As regards OSH issues the following implications of these trends can be drawn:

- Very often, migrant workers are not fluent in the national language, lack representation by lawyers and have limited or no access to unions, work contracts or money to solve their social affairs. These barriers are sometimes the reasons for very specific OSH problems of domestic work when infraction concerning agreed salary, sick leave, working hours, holiday pay or regulation on duties occurs and cannot be addressed by the worker. In addition, female workers are usually paid less than males and are always more vulnerable in such situations. Obviously, the scale of this problem directly depends on the consistently growing number of immigrants in domestic work and determines that particular OSH policy solutions are required.
- An arrangement whereby workers work for more than one employer or work for just one employer but do not live in his or her household eliminates or reduces some negative factors that affect live-in domestic workers (e.g. isolation from their own family, passport withheld, room and board consideration as part or even complete payment for services rendered). On the other hand, when domestic workers are working for several employers it is more difficult to control such employment and their working conditions.
- Domestic work by young girls requires particular attention. First, if they are under 18, the OSH requirements for child labour should be met. Second, various abuses that are suffered by domestic workers can cause very severe psychosocial consequences as young girls make up the most vulnerable group in society

- **Estimated number of domestic workers**

It is difficult to collect data on the number of domestic workers throughout the world. The main reasons for the lack of accurate and comparable data are the high rate of undeclared domestic work and the consequent under-reporting, the varying definitions of domestic work in statistical surveys and the fact that national statistics often do not count domestic workers as a distinct category but register them under such headings as 'community, social and personal service activities' (ILO, 2010b). LABORSTA (an International Labour Office database on labour statistics) operated by the ILO Department of Statistics covers official core labour statistics and estimates for over 200 countries since 1969 (ILO, 2009b); therefore, it is a fairly reliable source of data on the number of domestic workers. On the other hand, the total numbers of domestic workers are not as important for the development of the issue as are the relative values because these values more accurately present the scale of the problem. Table 43 summarises data from LABORSTA on the percentage of domestic workers in different countries. In this category, the LABORSTA information is based on households with employed persons (ILO, 2010b).

Table 43: Domestic workers as a percentage of total employment and women's share of total domestic employment

Country	Domestic workers share of total employment (%)			Women's share of the total domestic employment (%)
	1995	2000	2006	2006
Argentina	7.42	7.93	7.94	92.40
Costa Rica	5.60	6.17	7.17	91.70
Ecuador	–	6.35	4.16	89.60
Ethiopia	–	–	5.26	90.70
Israel	1.66	1.56	1.78	94.10
Mexico	3.35	4.47	4.16	90.90
Panama	5.98	5.66	6.19	87.10
South Africa	–	9.36	8.66	79.70
Spain	2.84	2.75	3.85	90.90
Switzerland	1.24	1.47	1.24	83.00
Uruguay	–	9.49	8.69	92.50

Source: ILO (2010b), p. 6

Table 43 shows that domestic workers make up a significant part of the workforce: in developing countries domestic work accounts for 4–10 % of total employment and 1–2.5 % of total employment in industrialised countries. In some countries, men are often employed as gardeners, guards and chauffeurs in private homes, but women actually make up the great majority of domestic workers (ILO, 2010b). Women's share of total domestic employment in different countries is close to, or in most cases exceeds, 90 %.

More detailed information on the number of domestic workers by country and gender can be found at the LABORSTA web site (<http://laborsta.ilo.org/>).

Code of practice of the Labour Relations Commission for protecting persons employed in other people's homes (Ireland)

This code encourages antidiscrimination practices by the employer and encourages employers to respect workers' entitlements. The employer shall supply to the employee a written statement of terms and conditions of employment, setting out clearly the hours of work; rates of pay; list of duties; periods of annual leave; place or places of work; and commencement date.

Details regarding the place or places of work and travel to the place or places of work (e.g. to a holiday home of the employer or in accompanying the employer's family on holiday elsewhere) shall be included in the written statement. The employer shall respect the dignity and privacy of the employee and shall take all steps necessary to safeguard the dignity and privacy of the employee working in the home.

The employer shall not withhold any personal documentation belonging to the employee (e.g. passport, visa, identity cards, bank account documentation).

The Domestic Workers Action Group of the Migrants Rights Centre in Ireland campaigned to have the National Employment Rights Authority carry out inspections in the private home sector, similar to those conducted in the hotel, catering and construction sectors. In November 2010, the National Employment Rights Authority Ireland Labour Inspectors carried out a pilot campaign of inspections targeting domestic workers employed in private homes.

7.5.3 Health and safety risks of domestic workers

Domestic work, with its specific working conditions, should be considered as a particular socioeconomic phenomenon. The main factors determining these conditions are historically developed standards of domestic work, the large variety of tasks performed by the domestic workers, the lack of appropriate legislation and limited possibilities to control domestic employment, domestic workers not being fluent in the relevant native language, the lack of legal assistance, union, work contract or money to resolve any dangerous situation that may arise. Sometimes domestic workers are illegal immigrants or have special limited visas. Often they are not entitled to obtain the basic social services available to others (ILO, 1998).

Undeclared women working in households have precarious working conditions: low wages ('market' wages), schedules at the disposal of employers, no holidays or extra payments, unstable jobs and no opportunity to change their job or conditions. When referred to labour health, these workers usually suffer from pain in their arms, back and neck. On the other hand, they also suffer from psychological ill health, due to mental load (De Cabo et al., 2005).

In general, domestic workers are exposed to work-related hazards (physical, chemical, biological, psychosocial) that are similar in nature to other workers, and the possible exposure to hazards associated with live-in domestic workers is much greater than for domestic workers who commute to work daily. Psychosocial risks could be considered as the most important work-related hazards for domestic workers, and this will be explored in more detail in the following paragraph.

- **Work-related psychosocial hazards.**

The types of psychosocial hazards occurring in domestic work and the extent of workers' exposure to these hazards have been investigated in research organised by Kalayaan, the organisation for domestic workers in the United Kingdom. The recorded experiences of 755 workers show that, on average, they worked 17.2 hours a day. Owing to the long work days and the physical energy expended, many cleaners and carers suffer from fatigue and exhaustion (Ahonen et al., 2010), which is not easily addressed as they do similar work day after day. Mather (2005) used research data on abuses suffered by domestic workers (Table 44) to show the seriousness of the problem.

According to the FRA research (FRA, 2011b):, one of the issues that arises with live-in domestic workers is that of working hours versus on-call hours. The worker may not be working more than eight-to-ten hours per day but may be expected to be 'available' 24 hours a day, trade unions in Germany, Greece and Italy said. A few respondents in charge of caring for older persons in Greece and Italy underlined that the person they care for wakes up regularly at night and that therefore it is difficult to define their exact working hours.

Kalayaan study of domestic workers in the UK

In research compiled the following case study was cited: Kalayaa, the organisation for domestic workers in the UK, recorded the experience of 755 workers. The average working time was 17.2 hours a day.

Table 44: Abuses suffered by domestic workers in the United Kingdom

Type of abuse	Percentage of workers
Denial of time off from duties	91
Psychological abuse (threats, name calling, shouting, insults)	88
Not paid regularly and/or paid less than agreed in contract	82
Passport withheld (and not obtainable on departure from employment)	63
No regular food (given leftovers or otherwise regularly denied food)	61
No bedroom (forced to sleep in hallway, kitchen, bathroom)	51
No bed	43
Physical abuse (hitting, spitting, beating, kicking)	38
Denied freedom of movement (forced to stay in house, or allowed out only if accompanied)	34
Sexual assault or rape (included attempted or threatened)	11

Source: Mather (2005), p. 16

The presented results clearly confirm the fact that domestic workers are usually considered menial or inferior to the family that employs them. Some of the present job titles for domestic workers include 'servant', 'maid', 'housekeeper' or 'nanny', which originated during slavery in western European countries and the USA in the fifteenth to nineteenth centuries and sometimes inspire negative associations with this phenomenon (ILO, 1998).

The International Organisation for Migration (IOM) in 2003 organised a study, carried out by researchers from the universities of Oxford and Nottingham, which aimed to assess the views of the employers of domestic workers in respect of their workers. Employers in Sweden, Italy, India and Thailand were interviewed. The results highlighted that 48 % did not think that domestic workers are entitled to a contract with their employers; 70 % believed they should not be allowed to join a trade union; 52 % opposed the right to a minimum wage; and 45 % said there should be no fixed working hours (Anderson and O'Connell Davidson, 2003).

The opinion of employers of migrant domestic workers in the United Kingdom regarding their workers can be illustrated by the following sentences (Mather, 2005: 16):

They're foreign, illegal and very, very small. They're absolutely terrified.

If they are going to come over here, they know the score. I mean, I'm not saying it's right that they should be exploited but, you know, I think they would know what they would be letting themselves in for.

They have a greater incentive to work because they desperately need the money ... She's dependent for money, so I think it's a circle that works well so that I can keep her.

When they're poor it's better because they need to work ... It's flexible hours and they need the money and it's cash-in-hand.

The whole idea of getting a migrant worker is that you're not getting into paid maternity leave and all that stuff.

- **Physical hazards.**

Domestic work includes a variety of chores, such as sweeping, vacuuming, climbing up stepladders, dusting, scrubbing floors and similar tasks, which are related to various physical hazards. Additionally, workers could be exposed to sharp edges, hot surfaces or vapour, falling objects, the risk of falling from heights (e.g. when leaning out to clean windows), the handling of loads, having to keep uncomfortable postures (e.g. kneeling to clean floors) for a period of time, being exposed to wind, rain, cold, solar radiation, hot and cold water, noise and vibration (ILO, 1998). According to research by FRA, a number of migrants interviewed in Belgium, France, Greece, Italy, Poland and Sweden reported work accidents that had happened either to themselves or to friends. Typically, accidents occurred while cleaning and concerned falling from ladders, stairs or windows (FRA, 2011b).

- **Chemical hazards.**

Domestic workers can be exposed to a wide variety of acids, alkalis, solvents and other chemicals used for cleaning which can cause dermatitis. Dermatitis can be exacerbated by the immersion of hands in hot or cold water. Many products used by domestic workers are allergens, such as natural rubber protective gloves, waxes, detergents, hand creams, antiseptics and whiteners. The inhalation of solvents, household pesticides or dusts could cause respiratory problems. As domestic workers often do not know enough about the materials they use and their safe use because they have had inadequate training in chemical handling, they can be injured through misuse of these materials (ILO, 1998).

- **Biological hazards.**

Domestic workers are constantly exposed to various biological agents, from house plants, organic dusts, moulds, food and insects. People responsible for the care of elderly people or young children in particular are at a greater risk of being infected with a variety of diseases, especially when changing nappies or handling contaminated food or water. After catching an infectious disease at the workplace while looking after a sick person, a domestic worker after can easily infect members of his or her own family (ILO, 1998).

7.5.4 Regulation of domestic work in the EU

Mather (2005) summarises the proceedings of the conference ‘Out of the shadow: organising domestic workers towards a protective regulatory framework for domestic work’ arranged by the European Trade Union Confederation (ETUC), in collaboration with the International Restructuring Education Network Europe (IRENE) and the Platform for International Cooperation on Undocumented Migrants (PICUM), in Brussels on 14–15 April 2005. The summary describes the attempts in different EU Member States to regularise household services and the employment situation of the workers who provide them.

Currently most of the information about trade union activities and research on domestic work comes from the ‘old’ 15 EU countries. The present trend is that the domestic workers in the old EU-15 are migrants from the new Member States or accession countries. However, similar patterns of a need for household services and provision of care at home are also visible in the new Member States. There are young parents who have to work for economic reasons and struggle with the lack of childcare facilities (which used to be provided, but often have been abolished or reduced after changes such as privatisation, emerging into a market economy instead of planned economy, and so on). In addition, adults are migrating (within Europe/outside Europe) and leaving their ageing parents behind, who at some time may need to have care provided for them. Although increasing numbers of unemployed workers function as domestic workers, there is also a growing number of domestic workers who have emigrated from countries further east (e.g. Ukrainians working in Poland or Byelorussians in Lithuania).

In some of the EU-15, particularly the Nordic countries, the welfare state is still the main provider of care for children, the elderly, the sick and disabled, and the workers who perform these activities have recognised work and working conditions. In most countries, however, the use of public funds for these activities has been reduced severely, while supplying household services is another aspect of the

industry that has been taken over by private enterprise (e.g. through the promotion of micro- and small enterprises in Denmark). Many governments promote the sector as a way of reducing unemployment, particularly of 'low-skilled' women (e.g. the 'mini-job' scheme in Germany). The 'mini-job' system refers to workers who are paid less than €400 a month, and it is promoted in order to bring more people into employment and to regularise undeclared work. However, despite the rising level of 'mini-jobs', the level of unemployment remains high. This gives rise to the suspicion that some permanent jobs are being reduced to 'mini-jobs'. Data from June 2004 show that there were 67,400 legally declared domestic workers in 'mini-jobs', only 13.3 % of whom were immigrants. This means that many more domestic workers remained undeclared and large numbers of migrant domestic workers remain unregistered. It is clear that the 'mini-job' system has not improved the quality of domestic workers' employment or social protection and has not ensured the regularisation of undeclared work.

At the same time, millions of domestic workers find their own employment in one-to-one arrangements within individual households. It is very difficult to regularise such private arrangements, but some governments are attempting to manage the process. For example, 'service voucher' systems for domestic workers are used in Belgium and France. Service vouchers are considered a type of employment contract which gives certain workers official status and recognition by the state. Under the voucher system, after working a defined minimum number of hours, domestic workers obtain social insurance cover. This system also helps individual employers with domestic workers' social security contributions using an automatic deduction from their bank account after filling in a special form. Individual employers also receive tax incentives for using the system.

New ways to regularise and professionalise household services are being tested in four municipalities of the province of Catalunya, Spain. 'Emergim', an interesting new project, brings together local authorities, trade unions, domestic workers' associations, employers, university researchers and women's groups. The first task of the project was to determine the extent of unofficial domestic work. The results of the investigation show that in four cities there are 3,500 employed domestic workers, but only 500 of them have been officially declared. The estimated value of this work is €3 million per year. The second task was to develop Emergim agencies in each of the four cities in order to provide advice and support on legal, tax, employment, health and social services. Over 1,000 workers have received advice; 214 of them have made their situation legal and 244 clients have received training. The third task is increasing the population's understanding of why this sector needs special treatment. The methods used are awareness-raising, posters, local media and strong campaigns publicising the problems and possible solutions.

Domestic workers' protection by employment law also varies enormously between Member States. Research by Wiebke Düvel of the European Trade Union Institute for Research, Education and Health and Safety (ETUI-REHS) shows that in 13 European countries domestic workers are accommodated by employment laws in some way (Table 45). On the other hand, Mather (2005) cites Düvel's warning: 'It is not necessarily positive legislation. Sometimes it is actually negative for domestic workers' (Mather, 2005: 17).

In some countries there are national-level negotiations between trade unions and employers that have produced collective bargaining agreements. These include Belgium, Italy, Germany and France. However, in a situation where the majority of employers are individuals rather than established businesses, finding an appropriate employers' association with whom to negotiate is always a problem. In some countries (e.g. Belgium, France, Italy), there are both legislation and collective bargaining. In other countries, there is one or the other (e.g. Denmark, Finland, Germany). In some countries, there is no bargaining at all (e.g. Latvia, Lithuania).

Table 45: Laws and/or collective agreements relating to domestic workers in Europe

Country	Collective agreement	Legislation
Austria	(no data)	X
Belgium	X	X
Czech Republic		general law
Denmark		X
Finland		X
France	X	X
Germany	X	
Greece	(no data)	social security
Hungary	(no data)	X
Iceland	X	
Ireland		X
Italy	X	X
Latvia		
Lithuania		
Malta	(no data)	X
Netherlands	X	X
Portugal		X
Romania		labour code
Spain		X
Sweden		X
Switzerland	X Geneva only	

Source: Mather, 2005, p. 18

According to research by FRA (2011b):

Only some countries have established policies to facilitate accident insurance for migrants in an irregular situation. As an illustration, in Germany all employers have to have accident insurance for their employees, which costs them €90 per year. The accident insurance is in the employer's name and can therefore also be purchased for migrants in an irregular situation.

Mather (2005: 17) points out that

Trade unions vary greatly as to the extent that they take up the issues of domestic workers. Some are active in encouraging membership. In the Netherlands, for example, the unions are open to domestic workers to join, although in practice virtually none have done so. Others encourage the self-organisation of domestic workers. In Portugal there is a special union for domestic workers although, as in many other countries, there is no employers' association with whom the union can negotiate. The picture is complicated by the fact that so many domestic workers are migrant workers, and among them many are undocumented.

The data presented show that the worst situation regarding the regulation of domestic work is found in the NMSs (Czech Republic, Latvia, Lithuania and Romania).

- **The comparative survey on a legal perspective (2003)**

The comparative survey 'Domestic work, conditions of work and employment: a legal perspective', produced by José Maria Ramirez-Machado and printed by the International Labour Office in 2003, compares the national legislation of over 60 countries in a purposely broad spectrum of standards, varying widely in scope and efficacy, for domestic work.

The author (Ramírez -Machado, 2003: 7) states:

This comparative survey looks at standards affording a reasonable protection to domestic workers; those excluding them from basic labour standards; those encompassing Labour Code or equivalent legislation (i.e. general law on working conditions, work environment, Labour Protection Act); those which make no reference, specifically or not, to domestic workers; and those which refer to domestic workers at the highest level, the national constitution.

The emphasis is more on trying to present, for every aspect analysed, the variety of solutions offered by the different national laws studied, rather than trying to give a detailed updated picture of any of these laws.

The summarised results of the survey (Ramírez -Machado, 2003: 64) show that:

Of the national laws analysed, quite a considerable number of countries (i.e. nine) exclude domestic workers from general labour laws applicable to other categories of workers. In several countries (19), the law does not make express reference to them. Some others (20) have set up specific regulations on domestic workers in their Labour Code, or equivalent legislation (i.e. general law on working conditions, law on the working environment, Labour Protection Act, etc.). However, in some cases, this may simply mean that the general labour legislation does not apply in its entirety to domestic workers. Finally, in another group of countries (19), the specificity of domestic work has been recognised by the enactment of special laws dealing with this category of worker. Regardless of the manner in which domestic work is regulated by national laws, it may be said that, in general terms, standards on domestic work fall below labour standards set for other categories of workers.

Only 11 of the EU Member States were covered by the survey. Austria, Denmark, Finland, Hungary, Italy, Malta, Portugal, Spain and Sweden have special laws dealing with the category of domestic work, while Belgium and France have set up specific regulations on domestic workers in their Labour Code or equivalent legislation. Obviously, none of the discussed states falls into the group of countries that exclude domestic workers from general labour laws or have laws which do not make clear reference to them.

For all countries reviewed, even those with specific regulations on domestic workers (Ramírez - Machado, 2003: 69),

The analysis shows that conditions of work vary from country to country and different factors and national particularities exist which often exclude domestic workers from the scope of national labour laws. When domestic workers are covered by legislation, they often have worse conditions of work and lower legal protection than other categories of workers. The prevalence of clandestine or informal employment means that many domestic workers are not reached by labour authorities so, in turn, the legislation in force is of very little, or no use at all, to them.

Some good initiatives awaiting proper follow-up

The above-mentioned report of the 'Out of the Shadows' conference presents some good initiatives regarding domestic work suggested by the European Parliament in 2000, but is still waiting to be implemented effectively. A resolution on this issue was adopted by the Parliament on 30 November 2000, calling on the EU and Member States for:

- a European definition of domestic work;
- statistics on undeclared domestic work;
- recognition of this kind of work as an occupation;
- recognition that the domestic sector falls within the scope of existing directives on employment and occupations and should be covered by future guidelines — to be included in the employment guidelines — with a view to establishing European rules on the social rights of workers, the adjustment of supply and demand in the sector, access to training, and co-funding of contributions by public authorities;
- taking due account of the specific work situations and employment relationships of domestic workers, including their isolation and their atypical relationship with their employer when drawing up forms of regulation;
- involving the social partners closely in the development and implementation of guidelines for the domestic sector;
- improving the image and status of domestic work by the setting of minimum standards, notably with regard to maximum working hours and minimum social security coverage, professional training, reception facilities to promote integration, and information campaigns to inform workers and employers concerning their rights and duties;
- structuring the market for domestic work by organising frameworks for businesses and agencies providing domestic services;
- developing social dialogue at sectoral level;
- bringing domestic work within the scope of labour legislation and collective agreements;
- setting up specialised reception centres for female migrant workers who are suffering from abuses, and provide them with assistance to regularise their situation and help with legal actions against their oppressors;
- considering possibilities to grant regular work permits for domestic work; and
- linking the issuing of visas for domestic workers working for diplomats to a guaranteed minimum level of working conditions.

Unfortunately, there has been no follow-up to this valuable work so far by either the European Parliament or the European Commission (Mather, 2005: 51).

The FRA report on migrants in domestic work concluded (FRA, 2011b):

A legal framework applicable to all domestic workers, including those in an irregular situation, would further legal clarity on issues such as minimum pay, including a maximum ceiling for payments in kind for board and lodging; sick leave; compensation for work accidents and rest periods, as well as adequate accommodation standards. Such a legal framework should provide for the inspection of the workplaces of domestic workers to ensure safe and decent working conditions. Employers should be made aware of the obligation to treat their workers in accordance with existing labour law standards. Sanctions and penalties against employers responsible for abuse or exploitation of domestic workers should be set forth in law.

7.5.5 Discussion

As outlined in this section, domestic work accounts for 4–10 % of total employment in developing countries and about 1–2.5 % in industrialised countries. Further, as domestic work is still seen as 'women's work', the women's share of the total domestic employment in different countries is close to or exceeds 90 %. In several regions, including Europe and the Middle East, the majority of domestic workers today are migrant women. Regarding the age of domestic workers, young girls can be found alongside older age groups. A more intense focus on the issue of child labour may be required to ensure that countries follow safety and health regulations for children.

A notable phenomenon, particularly in the industrialised world and a growing number of South American countries, is the higher proportion of domestic workers who work for more than one employer or who work for only one employer but do not live in his or her household.

In general, domestic workers are exposed to work-related hazards similar to those experienced by other workers; the possibility of hazards associated with live-in domestic workers is probably much greater than for domestic workers who commute to work daily. Psychosocial risks should be considered as the most important work-related hazards for domestic workers. Almost 90 % of domestic workers suffer from various types of abuse.

The main factors determining such situations are the historically developed standards of domestic work; the wide variety of the tasks performed by domestic workers; the lack of appropriate legislation and limited possibilities to control domestic employment; the fact that domestic workers are not fluent in the native language; and the lack of legal assistance and access to a union, work contract or money to solve the precarious situations in which some domestic workers may find themselves. Sometimes domestic workers are illegal immigrants or have limited visas. Further, the position of domestic workers is usually considered menial or inferior to the family for which they are employed.

The work situations detailed in this section, and discussed elsewhere in this chapter, are similar to the findings from the 2003 EU-OSHA report (EU-OSHA, 2003a); therefore, the OSH concerns of domestic workers still need to be progressed across the EU.

The extent to which domestic workers are protected by employment law also varies among EU Member States. In some countries there is both legislation and collective bargaining. In other countries there is one or the other. In some countries there is no bargaining at all. The worst situation regarding regulation of domestic work is found in the NMSs.

Even when domestic workers are covered by legislation they often have poorer conditions of work and lower legal protection than other categories of workers. The prevalence of informal employment means that labour authorities do not reach many domestic workers; consequently, the legislation is of very little use, or no use at all, to them.

7.5.6 Recommendations

Domestic work is considered to be one of the fastest growing economic sectors in Europe. Women account for about 90 % of domestic workers, the majority of whom are immigrants. The possibilities of controlling domestic employment are very limited owing to its character and the lack of appropriate legislation. Therefore, domestic work, with its specific working conditions, should be considered as a particular socioeconomic phenomenon, and may need further investment in terms of research, policy development and safety and health practices.

The worldwide investigation and discussion on domestic work issues and the rather poor information on these from European states demonstrates that more in-depth studies of the present situation of domestic work in all EU Member States, using the same suitably prepared methodology, need to be initiated.

With reference to the importance of the problem, the results of the in-depth studies and a worldwide experience package of recommendations regarding domestic work need to be prepared.

Main points — trends and policy-relevant messages

- Domestic work is one of the fastest-growing economic sectors in the EU.
- Psychosocial risks are one of the most important work-related hazards for domestic workers, as the majority (close to 90 %) are exposed to various types of abuse, followed by ergonomic, chemical and biological risks. Accident risks should also not be underestimated either.
- Domestic workers are exposed to work-related hazards (physical, chemical and biological) similar to other workers, but generally do not receive appropriate OSH training. These hazards tend to be combined as a result of the variety of tasks involved in domestic work.
- Domestic workers normally do not have access to worker representation and OSH preventive services. They therefore lack knowledge about their rights and the risks to which they are exposed.
- Owing to the 'low status' afforded to domestic work, usually by employers, it is difficult for domestic workers to get contracts, a fair wage and fixed working hours.

Recommendations for research, monitoring and OSH enhancement

- More research is needed on this sector. Women are the predominant group and a large percentage tends to be migrants or work in the informal sector. In view of this, to get valid and reliable data researchers should explore qualitative methods to better interface with workers in this sector.
- More specific, detailed and consistent regulations in respect of domestic workers are needed across the EU-27.
- As labour authorities do not reach many domestic workers because of their inherent nature of engaging in informal employment, safety and health practices need to explore other ways of reaching these workers, such as using stakeholders and interest groups, as well as NGOs.
- Clients are an important stakeholder group that should not be overlooked. Basic information on OSH should be provided and may help improve general safety levels. Awareness-raising campaigns should also address the providers and the individual employers. This is an area where there is common ground with public health organisations and accident prevention units for home accidents.
- Services delivered at private homes present a particular challenge to labour inspections. Experiences from successful campaigns and inspections should be shared across Member States. Examples include the Irish campaign on domestic workers and the Austrian elderly care campaign (see Chapter 8).
- Good OSH practice applied in elderly care homes and among cleaning subcontractors and those involved in childcare should be communicated to service providers that subcontract home care and services as a basis for training materials, information leaflets and brochures to clients and caretakers.
- The provision of equipment through public health schemes for private use is another area of common ground with public health authorities that is worth exploring. Easier access to lifting devices and basic hygiene measures (e.g. appropriate gloves), for example through social security support schemes, may help improve the OSH of workers providing these services in private homes.

8 Policies and programmes related to women at work

In the EU Member States gender-sensitive policies and programmes promote equality at the workplace. They are developed and managed by a variety of institutions and play an important role in achieving equality; in the long term, they can fundamentally affect equality within the work environment. This chapter presents existing policies and programmes in three EU Member States: Finland, Austria, and Spain. These are not generalised across the EU, but do provide a good overview of what is happening in specific countries.

8.1 Finland

8.1.1 Introduction

In Finland, governmental as well as non-governmental institutions help to promote gender equality at the workplace. They aim for the reconciliation of work and family life for both genders and to spread equality and diversity at work into all aspects of work life. Generally, these institutions provide extensive information on the gender issue and the gender statistics that are available in Finland. The institutions promote networking between different research institutes and support the funding of the research issues related to gender.

The research institutes also aim to support gender equality in the workplace by producing new scientific knowledge and developing tools and practical methods for stakeholders. Research related to work sectors dominated by women (e.g. nursing and cleaning) is also carried out in Finland. In view of this, the gender perspective should generally be taken into account when interpreting results and planning preventive actions. The employment rate, payment, and proportions of part-time and self-employed workers and of those in supervisory roles vary between genders, as does exposure to discrimination, violence and harassment at work and to OSH risks, accidents and health hazards. Furthermore, the analyses concentrate on how gender influences the relationship between well-being and public and organisational policies. These policies, as well as legislation related to gender equality, assist in reaching the goal of gender equality in Finland.

Additionally, several programmes fund projects that are associated with the gender issue in Finland. These programmes aim to diminish gender segregation in Finnish working life. They aim, for example, to prevent violence against women at work and support gender mainstreaming and gender equality at workplaces and in educational careers by developing structures that support women's entrepreneurship. Thereby, the programmes might increase networking among stakeholders in the field.

In order to measure changes in working life in Finland, both genders' attitudes concerning equality are examined through interviews. Although gender equality plans are available at many governmental and municipal workplaces in Finland, only a minority of Finnish men and women believe that they enjoy equal status at work.

Nevertheless, many programmes, policies and collective practices related to mainstreaming gender into work are available in Finland. Some of these policies and programmes, as well as research and legislation related to gender equality, are discussed below.

8.1.2 Representative bodies and their remit

At the national level, gender equality issues come under the patronage of the Ministry of Social Affairs and Health in Finland. Four authorities based at the Ministry of Social Affairs and Health promote gender equality.

- (a) **The Equality Unit** is responsible for policy preparation and coordination at the Ministry of Social Affairs and Health. **The Ombudsman for Equality** is an independent authority that monitors and oversees compliance with legislation concerning gender equality. **The Equality Board** is an independent committee that oversees compliance with gender equality legislation and resolves related matters. **The Council for Gender Equality** can be regarded as a board, which is a parliamentary body that works to promote gender equality in societal matters.

The following committees and authorities assist the dedicated committees mentioned above:

- (b) The Parliament has a subcommittee that deals with issues of equality in working life and gender relations. The EU Ombudsman and the **European Court of Justice** issue judicial rulings on matters including gender equality issues.
- (c) **Occupational safety and health** authorities supervise compliance with equality legislation in the workplace.
- (d) **Employers and institutions of higher education** are obliged under the Equality Act to draw up equality **plans for promoting gender equality**.

In addition to the four authorities of the Ministry of Social Affairs and Health, the following non-governmental organisations are also involved in equality work: **The Coalition of Finnish Women's Associations, The National Council of Women of Finland, The Feminist Association Union and the Miessakit Association** ⁽¹⁷⁾ The EU is the central international forum for Finnish cooperation on gender equality. Finland also cooperates internationally on furthering gender equality in its work with the Nordic Council of Ministers, the United Nations and the Council of Europe (Ministry of Social Affairs and Health, 2009).

The Ministry of Social Affairs and Health approved gender mainstreaming as part of its commitment with the National Public Health Institute. A pilot programme was carried out by the Finnish Government, through the Ministry of Social Affairs and Health and 'Equality matters' programme, from 2004 to 2007. It found health differences between the genders that are the result of biological differences as well as differences in exposure to diseases. However, differences in biological and reproductive health account for only a small proportion of all gender differences in morbidity and mortality. Based on instructions from the Ministry of Social Affairs and Health, the National Public Health Institute department directors and earlier recommendations, a gender mainstreaming working group comprising six National Public Health Institute employees and a chair was established. The working group members were nominated by the management group and Director General and its remit included the management of research strategies, the implementation of a report and suggesting how gender mainstreaming would become a permanent part of the research strategy. Over the long term the working group aims to promote networking between research institutes and universities. This aim should be achieved by preparing a research seminar on gender and health. In addition to promoting networking, the seminar should produce innovations concerning the funding of the gender and health research issues (Luoto, 2005).

8.1.3 Equality at work

To examine Finnish women's and men's attitudes concerning equality, and experiences concerning the realisation of gender equality in working life, at school and within the family, the Ministry of Social Affairs and Health and Statistics Finland launched the research initiative '**Gender Equality Barometer**'. It reports on the state of gender equality in Finland every 4 years. Reports have so far been provided for 1998, 2001, 2004 and 2008. The barometer mainly examines the change that has taken place over the past 10 years. The results indicate that most of the issues examined have not changed during the past decade. In fact, it seems that highly educated women are increasingly experiencing gender-related disadvantages at work and that sexual harassment of women at work is also increasing. Moreover, the results show that father's role in the family seems to be strengthening. Interestingly, neither women nor men believe that the position of women in society has been equal to that of men during the past decade. However, whereas there is a need for more women in top positions in business and economics, more men are needed in the fields of welfare and healthcare. Although most workers think that gender equality at work is good or fairly good, it remains the case that women are more likely than men to view their gender as a disadvantage at work. This inequality is particularly noticeable in terms of pay, recognition of professional skill and career advancement.

Both women and men report that they can influence decisions made within their family, with parents more likely than in the past to share the responsibility for the family's financial security. Although

⁽¹⁷⁾ 'The Miessakit Association is a non-governmental expert organisation established to support the mental, psychological and social growth of men. The organization complements the existing crisis services available for men and promotes non-violent family life. Miessakit works as a national level link for men's groups with equal objectives and maintains international contacts in its field.' (<http://www.miessakit.fi/en>)

parents also appear to share equal responsibility for some domestic tasks, the main responsibility for most domestic tasks still seems to lie with the mother, and the majority of women still feel that they have too much responsibility for work done at home. Despite the fact that women and men think that fathers should be increasingly involved in the care and upbringing of their children, both genders believe that workplaces — especially in the private sector — do not always take a positive view of fathers taking family leave. Thus, it is more likely that women continue to take statutory family leave (Nieminen, 2008).

Similarly, the Ministry of Labour has carried out annual computer-assisted telephone surveys in Finland since 1991. The objective of the **Working Life Barometer** is to measure changes in Finnish working life by interviewing employed wage earners between the ages of 18 and 64. The Working Life Barometer 2005 reported that a high level of physical violence or threat of physical violence can be found in female-dominated workplaces in Finland. Thus, female workers perceived physical violence more often than male workers. Moreover, 11 % of women, compared with only 6 % of men, reported having experienced violence at work. Similar results can be found with regard to discrimination. Only 1 % of the participants reporting discrimination targeted at men, but discrimination against women was observed by 7 % of the workers. More positively, an increasing number of female workers participated in training provided by their employer in 2005. Interestingly, more women (54 %) than men (46 %) participated in training. However, although the number of days of training received fell for both women and men, male workers still tend to receive more days of training (5.9 days) than women (5.4 days) (Eurofound, 2007i).

8.1.4 Work and well-being

In order to expand cooperation for promoting well-being at work, the Ministry of Social Affairs and Health launched a forum for well-being at work. The forum consists of a broad variety of parties such as social partners and state authorities, as well as specialist researchers and institutions. It coordinates the actions of organisations promoting well-being at work and spreads good ideas and best practice. Furthermore, it aims to increase the number of networks, cooperation and partnerships in order to reach its goals in a more effective way. Thus, all individuals and organisations promoting well-being at work are invited to be part of the forum: experts in management and planning at work, supervisors responsible for well-being at work, OSH managers and OSH representatives, as well as the occupational healthcare system and other stakeholders.

The forum is based on achievements and good practices of previous working life programmes and covers four themes:

- occupational safety;
- control over work strain and stress as a part of management;
- occupational health services; and
- good practice.

Activities related to equality and diversity at work can be found under the theme 'Control over work strain and stress is a part of management'. Moreover, it is aimed at spreading the 'equality and diversity at work' topic into all themes. Controlling for work strain and stress should be regarded as a part of good management/leadership. However, equality and diversity have to be considered when analysing and controlling work strain and stress. Challenges may motivate staff and increase productivity. Moreover, measures taken in the workplace, as well as the choices made by individuals, are able to contribute to both occupational health and controlling stress and strain (Jokiluoma, 2010).

In addition to the Ministry of Social Affairs and Health, numerous other institutes and organisations are involved in programmes related to women at work in Finland. For example, between 2008 and 2011, the **Research programme on the future of work and well-being (WORK)** of the Academy of Finland, the Ministry of Education and the Finnish Work Environment Fund funded 21 projects, with a total value of more than €9 million, partly related to the gender issue (Academy of Finland, 2010a,b).

Generally, WORK focuses on relationships between work, well-being and health. It aims to improve the understanding of the relationship between work and well-being and to solve associated problems. The programme also considers how social cohesion can lead to economic and employment growth. The programme supports the application of new research methods in the field of work and well-being and directs attention to the reporting of the results and aims to participate actively in the public debate

on the relationship between work and well-being in Finland. The 21 projects funded by the programme carried out research in areas such as the changing relationship between work, subsistence and social life spheres, the attraction of working life, the diversification of working life, structural unemployment, well-being, health and work, and work as an economic foundation for welfare (Academy of Finland, 2010a).

The WORK programme focuses on women at work with regard to the continuing increase in atypical employment contracts in Finland. During the timeframe of the programme, the Academy of Finland funded two projects in this area. 'Gender inequalities, emotional and aesthetic labor and well-being in work' addressed the conditions required for disadvantageous and advantageous patterns of practising gender equality in the context of emotional and aesthetic labour and branding oneself in work (Korvajärvi et al., no date). 'Impact of Lifestyle Modification on Pregnant Women's Workability, Sickness Absence and Return to Employment' aimed to prevent gestational diabetes in order to improve women's physical condition and work ability, decrease sickness absence and increase the proportion of women returning to work after maternity leave. This case study is one of the very few projects on lifestyle issues, which, although being gender related, seldom include gender-sensitive preventive actions (Luoto et al., no date).

The Finnish Institute of Occupational Health (FIOH) is a research institute in OSH in Finland and allocates almost half of its working hours for research. The staff consists of medical doctors, chemists, engineers, psychologists, social scientists, statisticians and laboratory workers. As a result, research activities are broad in scope. Since 1987, FIOH has been a public corporation under the Ministry of Health and Social Affairs. The Ministry has determined several strategic targets for the research institute.

The FIOH's research programme includes diverse elements for gender mainstreaming. Thereby, it includes not only the results, but also practical applications. The institute also drafted the 'Gender Equality Plan', which was prepared in cooperation with staff members (Bondjers et al., 2009).

Every three years, FIOH conducts the Work and Health Survey. The surveys are available for 1997, 2000, 2003 and 2006 and 2009 and serve as a national surveillance system on perceived chemical, physical, ergonomic and psychosocial risks and the health of workers. The survey includes socioeconomic and workplace-related background factors, physical, ergonomic, chemical, psychosocial risks and safety at work, perceived physical and mental strain, organisational culture, gender and age equality, health promotion at the workplace, the use of health services, occupational health services, perceived health and work ability, mental well-being, vocational skills and health-related behaviour. While the data are collected with the help of computer-assisted telephone interviews, the sample is randomly selected from the population register and represents the Finnish working-age population from 20 to 64 years. The sample includes both employees and self-employed people. According to the results of the 2006 Work and Health Survey, gender differences are found in the work environment in Finland. The healthcare and social work sectors are strongly dominated by women (87 %), whereas sectors such as quarrying and construction, transport, and manufacture and installation are male dominated. Although women were seldom found among working directors and top civil servants (37 %) in 2006, their gender differentiation decreased from 2003 to 2006. However, unpaid overtime increased among female professional and managerial staff. The survey also indicates that a growing number of assaults by customers take place at work: approximately 10 % of female and 5 % of male workers reported that they had been assaulted or threatened with assault at work or while commuting. Thus, the proportion of women and men exposed to violence or the threat of violence increased from 2003 to 2006 (Kauppinen et al., no date).

Regarding treatment at work, interestingly, 12 % of female workers and 3 % of their male counterparts believe that the genders are treated somewhat or very unequally. In most of these cases the inequality was directed at female workers. In contrast, women were not as frequently exposed to repetitive work movements and uncomfortable working positions; the frequency of uncomfortable working positions of women declined most in the health and social services sector between 2003 and 2006. More women than men used a microcomputer or a computer terminal at their workplace for at least an hour every day. Whereas a lower proportion of women (11 %) than men (15 %) reported having suffered an accident at work or while commuting in the course of the year, female workers in Finland had a higher average number of days of sickness absence than their male counterparts (10.0 days and 7.3 days, respectively) in Finland during 2005. Generally, modern Finnish society can be regarded as work-orientated, as many women and men of working age spend a large part of their active time in employment and various related activities (Kauppinen et al., no date).

FIOH also carries out research in work sectors dominated by women. Cleaning and nursing is regarded as a typical female-dominated occupation, not only in Finland but throughout Europe, and in healthcare for the elderly most nurses are female. Hence, studies of the OSH risks of nurses in elderly homes are of major importance for female workers. From 2008 to 2009, an intervention study was carried out in 12 elderly care units, including a baseline evaluation and a follow-up evaluation 12 months later (Tamminen-Peter et al, 2011).

The interventions took place at the organisational and unit level. At the organisational level a work group led by a nursing line manager developed a physical risk management model with clear directions for practical work in compliance with legal requirements, by agreeing on the responsibilities of the staff, patient assessment systems, risk assessments conduct, performance monitoring, training provisions, equipment responsibilities, acquisition and maintenance. At the unit level the ideas of the risk management model were included in work instructions. The most demanding work situations involving patients were practised and then applied in healthcare. Later, organisational and individual outcome measures using the following measures were evaluated: safety culture questionnaire, risk assessments, a questionnaire about nurses' health, experienced strain, musculoskeletal symptoms, psychosocial factors, safety attitudes and the quality of care. The physical risk management model states the policy, as well as the goals, of the safety management system. The roles and responsibilities of managers and supervisors are clearly stated and the duties of all workers are outlined. Further, safety management developed in all intervention organisations and physical risks were reduced. Preliminary results indicate that female nurses' perceived physical exertion and musculoskeletal symptoms were also reduced in the 1-year follow-up (Tamminen-Peter et al. 2011).

8.1.5 Reducing segregation and separation

The Valtava National Gender Mainstreaming Development Programme (2008–13) is implemented by the Ministry of Employment and the Economy and funded by the European Social Fund. The programme supports gender mainstreaming and gender equality in employment, economic and education policies and customer services and aims to reduce the horizontal and vertical segregation of the labour market and education careers by developing structures that support women's entrepreneurship and increase networking of stakeholders in the field. The development programme consists of about 10 local and regional projects. These projects develop methods for gender mainstreaming and gender equality planning in different kinds of organisations (e.g. small and medium enterprises, education institutions, labour administration). The programme will produce a manual for gender mainstreaming in employment and economy administration, an evaluation of gender impact of project funding decisions, and education and training material for gender mainstreaming in labour, economy and adult education fields (Ministry of Employment and the Economy, 2009).

One of its strategic goals, 'Promoting gender equality and diversity at work' aims to increase gender equality at workplaces in Finland by producing new scientific knowledge and developing tools and practical methods for the stakeholders. The 'Work–life balance' research and action programme (2005–2009) was instilled to support balance between work, family and other activities of life. The programme consisted of several research and development projects focusing on people taking care of ageing parents and other family members. Now, the existing work arrangements, such as the alternation leave system⁽¹⁸⁾, the partial pension system, flexible working hours and holiday time, are used to provide this care. Nevertheless, other arrangements were proposed by parliamentarians and should be developed in the future, as an increasing number of ageing people needing care may incur a challenge for most of their relatives. The MONIKKO project understood the equality from a wider perspective, taking into account age, ethnicity and family situation. A Diversity Barometer was used to record Finnish human resources managers' attitudes to workplace diversity (Mustakallio et al., 2008).

The Centre for Social Research (SOCRU), founded by the Department of Social Research in 2009, is an active research organisation that focuses on gender-defined areas of research. It was formed as the result of cooperation between social anthropology, social psychology, social policy, sociology and

⁽¹⁸⁾ Ministry of Labour, Finland, Act on Job Alternation Leave (1305/2002), 2003. Available at:

<http://www.finlex.fi/pdf/saadkaan/E0021305.PDF> — 'The purpose of this Act is to promote the ability of employees to cope with their jobs through short-term absence from work, and at the same time to improve the employment potential of unemployed jobseekers through fixed-term work experience.'

women's studies. The Department of Social Research has a wide scope of social research and aims to organise long-term research, increase the flexibility of research careers, specialise researchers and teachers and prepare research projects in a more professional way. Furthermore, its objective is to better arrange and know about funding processes at national and international levels. The research at the department is divided into five areas:

- national and transnational change processes;
- research on work, well-being and gender;
- research on childhood and the family;
- research on interaction and culture; and
- knowledge, science and technology.

Questions related to social differences and equality are strongly interlaced in research on work, welfare and gender. Work is a fundamental source of income, social standing and esteem. The research areas deal with issues such as changes in working life and organisations from the points of view of the labour markets, work contents and everyday life, waged work, entrepreneurship, unofficial labour and gendering practices, the technology and the information society, the changes and solutions in welfare regimes and professions and questions of violence (Nätti, 2010).

The selected research projects include projects on 'Reworking gendering practices in work', 'Gendered work communities, conflicts and social capital', 'Gender inequalities, emotional and aesthetic labour and well-being in work' and 'Quality of life in a changing Europe'.

The 'Gendered work communities, conflicts and social capital' project mainly deals with how gendering practices promote and prohibit trust relations in work. The researchers assume that conflicts and trust are quite common at work and that people are interconnected more by conflicts than by agreement. The case study organisations represent female- and male-dominated workplaces or organisations that are under restructuring processes. In addition, they represent quite new trends of organising work. The results of the project, inclusive of academic output, are to be published both nationally and internationally (Korvajärvi et al., 2010).

The workplaces included as part of 'Gender inequalities, emotional and aesthetic labour and well-being in work' include recruitment work, call centre work, work at small firms in the well-being industry and work at organisations providing knowledge-intensive services. The researchers focus on low-paid and increasingly female-dominated branches, as well as the consequences of neo-liberal pressures in rural areas in small firms. In addition, the knowledge-intensive services can be analysed with regard to gender inequalities in the practices of recognition in working life (Korvajärvi et al., no date).

'Quality of life in a changing Europe' is funded by the EU's sixth framework programme. It analyses international comparative data on social well-being and collects new data on social equality at workplaces in the United Kingdom, Finland, Sweden, Germany, the Netherlands, Portugal, Hungary and Bulgaria. The project explores future trends by consulting policy-makers, politicians, researchers and managers and sketching scenarios with respect to trends concerning the quality of life and workplaces (Nätti et al., 2010).

8.1.6 Equality in pay

The Equal Pay Programme is one of the major programmes aimed at reducing gender differences in working life in Finland. The programme has found gender differences in both career proportion and pay in Finland. Based on regular working hours, women's pay is, on average, about 19 % lower than men's at Finnish workplaces. The difference is €583 a month (Pietiläinen et al., 2007).

According to the Ministry of Social Affairs and Health, equal pay is a basic condition for fair, good-quality and productive work. The government and the central labour market organisations are also committed to promoting equal pay. They want to narrow the gender-based pay gap to 15 % by 2015. In order to achieve this goal, measures such as contract policies, reducing the gender-based segregation of occupations, developing pay systems and supporting the career development of women are considered.

Equality policy moves beyond pay and aims for equality throughout working life, including decision-making and training, and aims to mainstream gender, reconcile work and private life and involve men in implementing equality policy. Regarding the legislation on gender equality, the Constitution and the

Equality Act are the main bodies of legislation in Finland that rule on matters of gender equality. The Equality Act consists of the obligations of authorities on promoting equality in their activities, quotas in national and municipal organs and the obligations of employers and educational institutions (e.g. use of equality plans). The Equality Act prohibits discrimination, sexual harassment and gender-based harassment and stipulates compensation in cases of harassment and discrimination. The Ombudsman for Equality and the Equality Board monitor the legislation (Ministry of Social Affairs and Health, 2005).

The Labour Institute for Economic Research has also approached the issue of equal pay and estimated the effects of career interruptions owing to parental leave based on longitudinal datasets (1995–2002). A significant negative relationship between career interruptions owing to childbirth and subsequent wages for women could be found in Finland. A ‘child penalty’ effect was revealed for women staying at home to take care of their young children. The longer the absence from work, the higher the ‘child penalty’. Further, the results indicate that most of the costs of having children can be attributed to the fact that women, when they become mothers, reduce their working hours. On the contrary, men tend to work longer hours when there are children in the family (Kellokumpu, 2007).

The Central Organisation of Finnish Trade Unions (Suomen Ammattiliittojen Keskusjärjestö) launched a **Working Conditions Barometer** in 2008. Every year, approximately 1,000 individuals of all work sectors participate in the survey. It covers working conditions, social relations between managers and workers, working time arrangements, on-the-job training, working environment and occupational health.

The Central Organisation of Finnish Trade Unions is mainly responsible for the ‘Gender Equality Clinic’, which it funds together with five unions from the Confederation of Salaried Employees. Providing information is important, as the instructions given in the Gender Equality Act are rather limited. Thus, the website provides information including publications, news, an extensive databank discussing pay equality, reconciliation of work and private life, discrimination, harassment, well-being at work and equality legislations, as well as tools to promote gender equality and gender equality planning at workplaces. In addition, it offers consultations by experts through a question and answer service (Lohikoski, 2010).

Statistics Finland is regarded as one of the most important providers of gender statistics and reports in Finland. Its report, ‘Women and Men in Finland’, presents data on gender mainstreaming into OSH. Gender equality plans are made in 86 % of central government and 70 % of municipality and joint municipal boards in Finland, according to an unpublished report (Uosukainen et al., 2009). In spite of these proportions, only 36 % of Finnish men and 15 % of their female counterparts are of the opinion that men and women enjoy an equal status. These results can be backed up by the fact that 84 % of women and 61 % of men think that the status of men is slightly or even clearly better than that of women (Nieminen, 2009).

8.1.7 Gender and education

Statistics indicate that the educational level of women is higher than that of their male counterparts in Finland: 82 % of the female population aged 25–64, compared with 77 % of the male population, have at least an upper secondary education (OECD, 2008). This is the case for even the population with polytechnic and higher university degrees: slightly more women (15.5 %) than men (14.8 %) held a polytechnic or higher university degree in 2007 (Statistics Finland, 2007a). In 2007, among the employed, the level of education seemed to be higher among women than among men: 43 % of employed women (vs. 32 % of the employed men) had a tertiary education; another 43 % of employed women (vs. 49 % of their male counterparts) had an upper secondary education; and 15 % of employed women (vs. 20 % of employed men) had a primary and lower secondary education (Statistics Finland, 2008a).

However, 62 % of men vs. 38 % women had a second stage of tertiary educational qualification in 2007. Nevertheless, the numbers of women with second-stage tertiary educational qualifications increased steadily from 1975 (15 %) to 2007 (38 %) (Statistics Finland, 2007a). These increasing numbers of well-educated Finnish women certainly put higher demands on the quality and equality of working life (Statistics Finland, 2008a).

8.1.8 The genders at work

The statistics on the employment rate show that, among the Finnish population aged 15–74, 61 % of women are employed (vs. 66 % of men), 35 % are not in the labour force (vs. 30 % of men) and 4 % of women (and men) are unemployed. Between 1970 and 2008, the proportion of women aged 15–74 years in the labour force increased steadily up to 65.1 % (vs. 69.9 % for their male counterparts) in 2008. All in all, a total proportion of 73.9 % of women and 76.7 % of men participate in the labour force. In particular, having children aged younger than 7 years reduces the proportion of women participating in the labour force. Among those with children under 7, 69.7 % of women and 95.3 % of men participate in the labour force. Differences continue to be found among those with children under 18: 81.8 % of the women and 94.0 % of the men in this group are part of the labour market. Very little difference can be found with regard to participation in the labour market of those without children under 18: 70.3 % for women and 69.7 % for men (Statistics Finland, 2008a). According to Eurostat (2008a), the employment rates of the working-age population (15–64) was 67 % for both genders in Finland in 2006. The unemployment rate among women (6.7 %) and men (6.1 %) is quite similar in Finland in 2008 (Statistics Finland, 2008a).

In Finland, female workers dominate industries such as social work activities (91 % female), health activities (88 % female), the hotels and restaurants sector (74 % female), education (74 % female) and the finance and insurance sector (67 % female), as well as in other community and personal services (60 % female) (Statistics Finland, 2008a).

Generally, the proportion of workers working part time among women was higher than among men (17.3 % vs. 7.3 %) in Finland in 2008. The main reasons for working part time among women and men are studying (32 % vs. 41 %, respectively), inability to find a full-time job (30 % vs. 24 %), childcare (11 % vs. 1 %), health (6 % vs. 8 %) and other reasons (21 % vs. 26 %). Additionally, the proportion of female fixed-term workers was higher than for their male counterparts (18.8 % vs. 11.2 %) in 2008 (Statistics Finland, 2008a).

Gender differences can also be found with regard to the proportion of self-employed workers. More males (68 %) than females (32 %) were self-employed in 2008 (Statistics Finland, 2008a).

Interestingly, the situation is similar with regard to supervisory tasks. Whereas 46 % of Finnish men's tasks involve supervision of the work of others, only 36 % of female workers did so in 2008. Nevertheless, the numbers whose jobs involve supervision of the work of others has risen steadily (among women the figure was 21 % in 1984 and 36 % in 2008, and among men the figure was 32 % in 1984 and 46 % in 2008; Statistics Finland, 1984, 2008b). Similarly, the proportion of female superiors with subordinates (21 %) was lower than the proportion of male superiors with subordinates (31 %), whereas the proportion of superiors without actual subordinates was 15 % for both genders in 2008. As most of the decision-making bodies remain male dominated, experts recommend strengthening the presence of women in these fields (Statistics Finland, 2008b).

Although equal pay is strived for in Finland, the average monthly earnings of workers shows that women earned only around 80 % of the earnings of men from 1985 to 2008 (Statistics Finland, 2008c).

Interestingly, although similar proportions of women (26 %) and men (24 %) report that a gender equality plan has been prepared at their workplace and the same proportion of both genders (19 %) state that men have been encouraged to take family leave, fewer women (24 %) than men (33 %) believe that efforts have been made to decrease pay differentials between the genders. Moreover, a smaller proportion of women (34 %) than men (41 %) report that an equal division of work between the genders has been promoted at their workplace (Statistics Finland, 2008b).

Regarding accidents at work in Finland in 2007, female wage earners suffered fewer accidents (34,000) than their male counterparts (85,260) (Statistics Finland, 2007b).

Gender differences are also found regarding discrimination, violence and harassment at work. In 2008, more Finnish women than men had experienced discrimination at their current workplace in the previous 5 years with regard to receiving information (20 % vs. 14 %), the attitudes of co-workers or superiors (21 % vs. 12 %), remuneration (14 % vs. 11 %), career advancement opportunities (9 % vs. 7 %), access to training (11 % vs. 6 %) and at the time of hiring or appointment (7 % vs. 5 %). More female than male workers suffered violence or threats, as well as harassment or other inappropriate treatment, in Finland in 2008 (26 % of women and 13 % of men were victims of violence or threats;

43 % of women and 25 % of men were victims of harassment) (Statistics Finland, 2008b). The proportion of workers being sexually harassed in the previous 2 years also more than doubled among Finnish women than among men (54 % of females under 35 vs. 19 % of males under 35 in 2008). These percentages seem to decrease with increasing age (e.g. 54 % of women under 35 vs. 33 % of women aged 35–54 vs. 14 % of women over 54 in Finland in 2008). Interestingly, 12 % of women fear being the victim of violence or needing to be on guard because they are on duty either occasionally or more frequently, compared with only 5 % of their male counterparts (Nieminen, 2009).

Although legislation on (sexual) harassment and bullying at work is based on the occupational safety legislation and the Gender Equality Act, the Finnish Equality Act is one of the family and equality policies that focuses mainly on the reconciliation of work and family life to secure women's chances of remaining in the labour market when their children are young. It is the basis for the legislation on gender equality planning at the workplace level. More recently, men's role as fathers has also been encouraged in Finland. The Finnish Equality Act provides practical tools to promote gender equality and family-friendly policies in the workplace, for example the Equality Plan, which obliges employers with more than 30 employees to draw up a gender equality plan. Generally, the Finnish family leave system demands a great deal of negotiation and goodwill between the employee and the employer. Female-dominated small-scale enterprises and business owners face particular problems when implementing family leave arrangements in practice. A guidebook and factsheet on gender equality planning have been published to assist them. A model equality plan has also been prepared as a step-by-step process, targeted at small and medium-sized enterprises in particular. These actions may have had an impact, as the number of equality plans in workplaces has increased. In 2004, 26 % of human resource managers said that an equality plan had been drafted in their workplace, compared with 60 % in 2008, according to the 'Workplace Health Promotion Barometer' conducted by FIOH (Kupiainen et al., 2007).

In addition to policies related to an alternation leave system⁽¹⁹⁾ and a partial sick leave system, special legislation on maternity leave exists in Finland. A research project analysed the effects of the job alternation leave system on employment and other economic factors in the Finnish system. The results show that 70 % of people taking special leave (alternators) are women of an average age of 44. Their substitutes are also mostly women of an average age of 35 (70 %).

In 2007, 18,616 persons took special leave in Finland, many of them women in the age group 35–54. Since the start of the system in 1996, the number of people taking special leave has increased substantially. The typical duration of special leave is 6.8 months. Most of the alternators are employed in the state or municipality public sector, whereas one-third of the alternators are employed in the private sector. The alternators are often employed in the healthcare and social services, public administration, education, industry and transport and communication sectors. The results indicate that the job alternation leave system has little influence on the later employment position and sick leave taken by the alternators. The alternation leave system has clear benefits for the substitutes, as they show a declining unemployment rate and increasing employment rate.

8.1.9 Discussion

Generally, there is a need for a better understanding of gender mainstreaming policies in Finland. This will allow researchers to better plan their research projects, so that the results can be analysed and interpreted by gender. Moreover, the gender perspective should be taken into account when interpreting results and planning preventive actions. Women continue to dominate in certain sectors and tasks, occupy specific positions and careers and work according to gender-specific work patterns. Thus, it is important to keep gender mainstreaming on the agenda of OSH initiatives and programmes, despite the fact that OSH actions become more and more diversified with increasing diversity (e.g. gender, age, and ethnicity).

⁽¹⁹⁾ *Ibid*, Ministry of Labour, Finland, Act, 2003. — In this Act, the term alternator refers to the person taking the job alternation leave, and substitute refers to the person registered at an unemployment office as an unemployed jobseeker who has been hired to work during the alternator's leave.

8.2 Austria

8.2.1 Introduction

In Austria, both governmental and non-governmental institutions help to promote gender equality at work, in order to mainstream gender into OSH.

Austria supports gender-specific research, so that the exposure to OSH risks can be assessed in a differentiated way. A focus is needed on workplaces at which female workers dominate (e.g. homes for the elderly, nursing homes and/or cleaning activities). However, even within a single workplace, female and male workers often perform traditional activities (e.g. male workers cleaning windows and female workers cleaning bathrooms or vacuuming). Thus, when carrying out research projects it is important to take account of the gender issue.

Furthermore, research institutions should provide gender-related information to interested parties (e.g. advice on how to adequately design workplaces with regard to the 'gender' factor). The gender issue should also be taken into account because it affects the quality and effectiveness of health promotion projects. In addition to these kinds of recommendations, specific laws for expectant mothers also exist in Austria.

The following section presents current or recent Austrian policies, programmes and gender-specific projects.

8.2.2 Responsible bodies and their remit

- **Fonds Gesundes Österreich**

Gesundes Österreich (Healthy Austria) is a national contact point and funding body for health promotion and prevention. It supports health promotion in practical and scientific projects, training and networking, and establishes structures (Fonds Gesundes Österreich, 2005) to support the Austrian working population (Österreichischer Gewerkschaftsbund Oberösterreich, 2003) by mainstreaming gender into OSH. It is funded by the state 'Land Oberösterreich' and the Austrian Federation of Trade Unions, 'Österreichischer Gewerkschaftsbund Oberösterreich'. They emphasise that attempts should be made to improve the quality and effectiveness of health promotion projects by paying more attention to social and biological gender in OSH. 'Gender', just like the factors 'age', 'income' and 'education', has a significant influence on occupational health promotion projects, and therefore must be taken into account. At present, occupational health promotion projects generally include questions on substantial inequality and discrimination, but solutions focusing on power and the allocation of resources are harder to find. Therefore, it is of utmost importance to take into account the needs of female workers and their gender-specific risks and resources in occupational health promotion projects. Both male and female workers, including those who work part time, should be included in projects.

A number of requirements and recommendations have been formulated by the fund 'Fonds Gesundes Österreich':

- Gender-specific methods should be used to assess physical and psychological risks at work to determine any gender differences. The methods should include dimensions such as emotional and psychological strains, equal opportunities, lifting of light and heavy loads, specific risk behaviours and the compatibility of professional and private life.
- The results of risk assessments should differentiate between the genders.
- Moreover, women and men should be integrated into occupational health promotion. Any health promotion initiative should consist of health panels, which should integrate and be moderated by both women and men. In these health panels gender-specific issues, including issues such as sexual harassment, should be discussed and communication across genders promoted.
- Last, but not least, an evaluation should determine whether both genders participated in all occupational health promotion project phases in an adequate way and whether the occupational health promotion initiative was able to reduce gender-specific differences at work. Moreover, stakeholders in the field of occupational health promotion should discuss how far specific issues related to the needs of women are tackled adequately in health promotion projects.

- Projects should be increasingly encouraged in sectors that employ a high proportion of women.
- Knowledge related to the gender-specific aspects of occupational health promotion should be included in education and training.
- Moreover, in the field of public relations, women should be displayed not only in typical, but also in atypical, professions.

To put it in a nutshell, stakeholders are asked to take into account gender-specific aspects with regard to occupational health promotion. In this process, sensitisation and self-reflection play an important role in preventing gender-specific bias (Pirolt and Schauer, 2007).

- **Ministry of Work, Social Affairs, and Consumer Protection and Austrian Labour Inspectorate**

The Ministry of Work, Social Affairs, and Consumer Protection (Bundesministerium für Arbeit, Soziales und Konsumentenschutz; BMASK) has included gender as an issue in its strategic actions (Huber, 2005). The Central Labour inspectorate, which coordinates the regional labour inspectorates, is a section of the Ministry. It manages the multiannual OSH strategy and publishes the annual labour inspection report on OSH (Jahresbericht der Arbeitsinspektion).

Several strategy groups were set up.

Strategy working group 2 is coordinating sectoral campaigns. The strategy working group discusses the projects at regular meetings. Whenever necessary, additional experts are invited to these meetings. The results of projects are presented at joint events including conferences, workshops and seminars, on the website and on internal platforms. The group works in synergy with and guides the labour inspection campaigns and links the inspection's activities with the overall OSH strategy. Campaigns are defined on an annual basis and target groups of workers, sectors and occupations.

Minimum requirements for quality and good and recommended best practice examples were defined. The aim is to improve communication, information exchange and coordination (control) between the participating organisations and promote networking among the institutions. Existing information, materials, and websites are merged and coordinated to avoid duplication. Implementation and action guidelines, tools for primary, secondary, and tertiary prevention are being developed.

8.2.3 Labour inspection gender policy and implementation projects

- **The Austrian Labour Inspectorate's approach to gender mainstreaming in OSH**

The Central Labour Inspectorate is a department of the above-mentioned ministry and the central authority of over 20 regional labour inspectorates. The Austrian Labour Inspectorate fulfils its statutory mandate by ensuring safety and health at work, equal rights and fair competition at the workplace. Thus, it contributes to the prevention of accidents and diseases (Arbeitsinspektion, 2009a). It also supports gender-specific research and has defined a gender mainstreaming policy for the gender-sensitive implementation of its multi-annual strategic plan. This was introduced following a total quality management project, which highlighted the need for systems for gender mainstreaming in order to avoid gender stereotyping during the inspection process. A gender mainstreaming framework and strategy were put in place for the Labour Inspectorate, resulting in information, a survey and tools (indicators and checklists). They were implemented through a gender mainstreaming group and an intranet portal. The implementation took place through training for inspectors, public awareness raising and posters, the provision of data and reports, gender mainstreaming experts and a network, and gender mainstreaming benchmarks.

Gender mainstreaming, along with consideration of age and migration background, were subsequently integrated into the Austrian OSH Strategy (2007–12). The critical success factors were related to having a clear mandate from senior management, introducing mixed teams with gender mainstreaming experts, introducing gender mainstreaming standards and providing targeted training, guidance and information to labour inspectors.

Some of the recent projects are presented here. In order to allocate resources more equally to workers of both genders, recently female-dominated sectors have been targeted by awareness-raising

and inspection campaigns. The Austrian Arbeitsinspektion provides a great deal of gender-related information on its website.

- **Noise and musicians**

The results of the project 'Gender mainstreaming and noise reduction with regard to orchestral music' show that the assessment of noise exposure in orchestral music has to be carried out in a differentiated way. Full details of the project are given in section 3.7.1 of this report.

- **Home and healthcare**

The Arbeitsinspektion also looks closely at OSH risks at workplaces in which female workers dominate, such as homes for the elderly and nursing homes, where 82 % of workers are female (Huber and Jäger, 2006). These workers suffer from an increased risk of disease, as well as an increased risk of having to leave the profession. Their work of providing OSH will contribute to the improvement of working conditions in the nursing sector (Huber and Jäger, 2006).

A detailed description of these activities is provided in section 3.6 of this report.

- **Cleaning**

The Arbeitsinspektion also analysed the situation of cleaners in Austria. OSH strategy working group 3 of BMASK takes into account gender issues and demographic change, as well as the culture of the respective sector and the company itself. The project is led by BMASK and collaborating partners such as the statutory accident insurance AUVA, social partners and many others. The working group aims not only to reduce the number of skin diseases, MSDs and mental diseases (and the combined effects thereof), for example in cleaning companies, but also to improve and increase awareness in companies and among other stakeholders. Unfortunately, limited data exist on OSH risks within the sector. Female workers (77 %) represent the majority of cleaners. Most of these workers also work part time and a significant proportion are from ethnic minorities (Arbeitsinspektion, 2009b).

Interestingly, there is segregation between female and male workers in terms of the typical tasks they undertake in cleaning work. Whereas male workers often take care of cleaning windows, floors and facades, as well as thorough and primary cleaning, their female counterparts mainly clean bathrooms, empty rubbish bins, refill towel and soap dispensers and take care of daily routine maintenance cleaning under time pressure. Owing to this work segregation, female and male workers are exposed to different OSH risks in the cleaning sector. This also means that the risks have to be assessed separately (in a gender-sensitive manner). Generally, the risk categories include exposure to dangerous substances, slips, trips and falls, accidents related to cuts and needlestick injuries, dangerous equipment and working methods, lifting and carrying loads with inadequate ergonomics, and working with hazardous waste, biological agents, explosion risks, electrical currents and noise. In addition, cleaners may suffer from mental stress due to critical incidents, monotonous and repetitive work, contacts with patients suffering from mental disorders and/or sick children. Moreover, workers in this sector often work alone in environments with specific cleaning requirements or specific risks, such as moving trains, hospitals or cleanroom laboratories, in machinery rooms, in environments with forklifts and other vehicles and when cleaning windows outdoors. In many cases the necessary protective equipment is not provided to the workers or is inadequate, and many cleaners are not instructed with regard to their work. Therefore, it is important that they are provided with personal safety equipment (e.g. protective gloves), as well as information about its use and function (Arbeitsinspektion, 2009b).

Cleaning products often contain dangerous substances that can enter the body through inhalation and skin contact, and cleaners are at risk of developing breathing problems or skin diseases. Wet work can also cause work-related skin diseases such as eczema and dermatitis. Detergents may contain irritating or corrosive substances. Therefore, the correct protective equipment, including personal protective equipment (e.g. gloves), as well as skin protection products, is recommended for workers who carry out cleaning (EU-OSHA, 2008f). In order to protect against skin diseases, adequate gloves and skin protection products are recommended. Workers can be protected by alternating between wet

and dry cleaning. In order to ensure that safety measures are applied in the correct way, workers in the cleaning sector must be trained regularly (Arbeitsinspektion, 2009c).

The Ministry of Work, Social Affairs, and Consumer Protection (Bundesministerium für Arbeit, Soziales und Konsumentenschutz) found that increasing work pressure, disrespect with regard to the profession (probably due to cleaning workers not being valued/appreciated as much as other workers because they do 'simple' work), time pressure and inadequate work equipment often lead to or aggravate MSDs, such as pain in the back, shoulders or arms. As the height of their workplaces cannot be adapted to their physical needs, a high proportion of the workers suffer from MSDs (Bundesministerium für Arbeit, Soziales und Konsumentenschutz, 2009; Arbeitsinspektion, 2010).

The Austrian Arbeitsinspektion provides gender-related information on cleaners its website and information with regard to female cleaners is also published by EU-OSHA. EU-OSHA emphasises that the proportion of female cleaners is higher than that of male cleaners, with many of them working part time and a significant proportion belonging to ethnic minorities.

Further details about cleaners from an OSH perspective are given in section 5.1 of this report.

▪ Older workers

The issue of cleaners and the activities of the labour inspection are closely linked to their risk prevention activities for older workers. A high proportion of older women work in the cleaning sector. This age group is particularly at risk of slip and trip injuries (EU-OSHA, 2008e). Additionally, the accidents tend to be more serious. In addition to causing back pain and fractures of the thigh bones, injuries of the lumbar spine and even fatal accidents also occur (Manning, 1983). Cleaners were one of the groups targeted by the labour inspection, together with healthcare workers.

In order to develop work organisations and appropriate work design for older workers, the Austrian Arbeitsinspektion ran an awareness-raising and inspection campaign in SMEs in 2007. The campaign's objective was to motivate enterprises to carry out an analysis of their age structure, to identify age-specific risks and create work environments that are appropriate to workers of all ages. The Arbeitsinspektion developed a tool to enable enterprises to forecast recruitment needs over the short to medium term. It should help analyse the age structure in the context of risk assessment according to Article 4 of the Labour Protection Law (§ 4 Arbeitsschutzgesetz (ASchG)).

The Arbeitsinspektion produced a brochure on how to design workplaces in an age-appropriate way. It recommends that workplaces should be designed with regard to the process of ageing and provides information on how to carry out effective risk assessments. The employer should provide healthy and safe working conditions including risk prevention, ergonomics, adequate working hours and a good working atmosphere. Age-sensitive assessment includes job design, technical and organisational measures and dedicated occupational health programmes.

To protect workers from OSH risks, workplace design should already be taken into account when designing for young workers. With increasing age, skills such as experiential knowledge, decision-making, the ability to judge more complex contexts, communication skills, conversation, reliability, critical thinking, the sense of responsibility, stability, inner certainty, work awareness, loyalty to the company, motivation, understanding and wisdom tend to improve. On the other hand, skills such as physical performance, memory and the ability to deal with change tend to diminish. However, these disadvantages can be compensated for with new technologies, ergonomic aids or by teams consisting of younger and older workers.

Teams consisting of people from different generations foster the exchange of information between younger and older workers. Moreover, a healthy work organisation should consider high-quality leadership, team spirit, ideals and values, the management of knowledge and an adequate number of breaks at work. Generally, a climate of recognition and appreciation of different age groups should be fostered in organisations and managers should develop awareness regarding the increasing and decreasing skills of older workers. Furthermore, the health and competence of the individual employee should be promoted.

When designing workplaces for older people, work should be organised according to the individual resources of the given worker. The ergonomic design of workplaces (e.g. adapting the workplace to

the individual needs, providing twice the light intensity according to the Austrian standard EN 12464)⁽²⁰⁾ should be taken care of and physical work should be reduced with the help of technical and lifting aids to reduce awkward postures. Moreover, work in extremely cold or warm workplaces should be reduced to a minimum.

Regarding the workers' schedules, working hours, shift schedules and break schedules should be organised according to the workers' age, and efficient recreation opportunities should be made available by integrating short periods of rest.

For internal careers and training and development of competencies no age limits should be given, but teaching methods appropriate to the given age of the participants should be used (Arbeitsinspektion, 2009d).

8.2.4 Discussion

Equal working conditions for both genders should be used as a common parameter and specific aims related to the gender issue should be pursued in OSH organisations. When trying to implement gender mainstreaming into OSH, experts insist how important it is that women can participate and have access to interdisciplinary work groups. Labour inspectors were trained to carry out inspections in a gender-sensitive way and cover both male and female workers in inspection and when prescribing preventive measures.

National strategies should ensure that both male and female workers are covered, whether by health promotion programmes, legislation or law enforcement. Moreover, action guides for gender-sensitive inspection and law enforcement should be published. Promotion and communication, as well as awareness-raising, of OSH should cover both female and male workplaces, and this includes using real-life images of female and male professions and avoiding stereotypes.

National OSH strategies, health promotion, inspection and research programmes should be evaluated for their benefits to both genders, that is whether they cover female and male workers and address OSH issues relevant to both genders and all age groups. Female workers in the enterprise should be able to voice their concerns, elect their worker representatives, access training schemes and access preventive services, even if they work part time or shifts.

Broad participation of stakeholders can be regarded as an important success factor for the implementation of gender-sensitive programmes. According to the labour inspection experts, the attribution of properties and competencies should be challenged by both genders, instead of further hardening role stereotypes.

Additionally, information related to gender issues should be improved. All research areas of OSH, including intervention research and research in specific industrial sectors, should pick up gender issues. In particular, the risks related to dangerous substances should be analysed for both female and male workers.

⁽²⁰⁾ The Austrian standard EN 12464 specifies requirements for lighting systems for indoor workplaces in terms of quantity and quality of illumination. Adequate lighting should be provided to enable the workers to perform visual tasks efficiently and accurately.

8.3 Spain

8.3.1 Introduction

The right to equality and non-discrimination for both genders is proclaimed in the Spanish Constitution. However, although access to health and education has improved for women in recent years, female workers still have to endure inferior working conditions including less pay, more difficulties in self-employment and lower positions of responsibility than their male counterparts. Furthermore, domestic activities continue to be regarded as the responsibility of women in Spain.

Several non-governmental institutions aim to achieve the goal of gender equality in Spain. Equality between women and men began as an institutional objective in 1983, with the creation of the Women's Institute (Instituto de la Mujer), currently dependent on the Ministry of Equality. The Women's Institute aims to overcome the inequalities between the genders and encourage the participation of women in the labour market. It gathers and analyses information, publishes it and provides statistical information in databases to raise the social awareness of the Spanish population. To this end, it carries out research and develops technical instruments as well as teaching materials. In addition to this type of information, the Women's Institute provides a telephone information service, advising women with regard to equality issues. The Institute also provides training and implements programmes to foster the gender issue. Besides the Women's Institute, the Ministry of Equality also tries to spread good enterprise practices in the labour market by providing subsidies, giving advice and offering certificates to companies that provide effective organisation and policies for equality at work. In addition, it carries out research on pay differences between the genders and develops training, coaching and career development programmes for women in management positions. The ministry also organises interactive processes and provides opportunities for discussion about equality plans. Moreover, it tries to stimulate exchange and communication with regard to equal rights. Legislative measures as well as initiatives to reach the objective of gender equality also exist.

Gender equality units, as well as observatories, can be found in many Spanish ministries.

These different units are coordinated by a strategic plan. In addition, all communities have equality bodies to monitor the implementation of specific policies in Spain and must draw up plans of equality. However, to be effective, these plans need an adequate budget and coordination between the levels of administration.

Trade unions, business partnerships, women's associations and social economy businesses are also engaged in achieving the goal of gender equality in Spain. Trade unions support the organisation of female workers, detect gender-specific risks and provide information for special interest groups. Generally, it is of utmost importance that public institutions and non-profit organisations cooperate to be able to reach the goal of gender equality.

The **Spanish Strategy on Health and Safety at Work (2007–12)** emphasises the need to integrate gender equality into both the labour force and OSH policies. Several laws aim to ensure gender equality in social, economic, cultural and political life. In addition to the legislation, parental leave policies also affect gender equality in Spain.

The following section presents existing Spanish policies and programmes.

- **Researching women's equality**

Despite the Spanish Constitution's recognition of the right to equality and non-discrimination on the grounds of sex, which is proclaimed in Article 14, in Spain there remain obstacles to be overcome to be able to achieve gender equality in working life.

Access to services such as health and education has improved considerably and can be regarded as egalitarian. Nevertheless, the rise in women's educational level is not fully reflected in their participation in the labour market, working conditions or, certainly, access to positions of responsibility in the political and economic or scientific and technological spheres, where male–female presence is far from balanced (IV Strategic Plan 2008–2011).

In Spain, domestic responsibilities can be identified as one of the chief obstacles to women's full participation in the labour market and are often the reason why they leave work. A recent Women's

Institute study (*Las mujeres en cifras* 1983–2008) reached significant conclusions that confirmed the persistence of gender roles in Spain:

- Most respondents were in favour of female employment, but nearly one-third felt that women should work fewer hours than men to be able to play a more intense role in family responsibilities.
- Over two-thirds of the employers who responded felt that compatibility difficulties should be solved by families privately.
- Nearly 50 % of the employers felt that family responsibilities constrain women's performance and over 70 % believed that the measures to favour reconciliation placed a heavier burden on the rest of the staff.

In 2008, the Ministry of Equality was created, now merged into the Ministry of Health, Social Services and Equality (Ministerio de Sanidad, Servicios Sociales e Igualdad). Its main activities relating to mainstreaming gender into work are:

(a) Impulse of good enterprise practices in the matter of equality insertion of the women in the work market by:

- Good practices in the matter of equality by means of:
 - Annual subsidies for the implementation of equality plans of in SMEs and other organisations (of between 30 and 250 employees) to a maximum of €10,000.
 - Advising companies about implementing equality plans. The Law on Equality forces companies with more than 250 employees to negotiate plans on equality within the workplace and for larger companies to have 40 % women in their board of directors within 8 years.
 - Creation of a distinction of equality for companies, a certificate attesting to equality in companies that apply effective models of organisation and policies of equality between women and men at work.
 - Investigation of the wage differences between men and women (salary gap). Gender pay differences persist even in women's jobs and occupations. The persistence of the gender pay gap is caused, in some cases, by the different positions that men and women occupy in the labour market, in terms of factors such as type of occupation, industry, type of employment contract or working hours, but essentially to elements associated with so-called 'wage discrimination'.
- Create executive training schools for women in management positions with the goal of helping women to achieve positions of responsibility and decision-making. Design training, coaching and career development programmes for women executives (available at <http://www.objetivo15.net/index.html>).

Information from the companies of IBEX 35 (the Spanish stock market) and the Institute for Women showed that in 2008 just 43 of the 507 members of the boards of directors were women (8.48 %), who occupied only 3 % of the presidential positions and 7 % of the vice-presidencies. In addition, 43 % of companies had no women on their board.

- Organise seminars and discussion groups about equality plans.

(b) Improve women's employability and labour position

- Formative actions directed at the employment and self-employment of women in underprivileged social situations and which facilitates their entry into the labour force.

Self-employment has become one of women's primary options. In 2006 over 1,104,200 women (Labour Force Survey, fourth quarter), accounting for 30 % of businesses with and without employees, were self-employed. They are faced with many more difficulties than men, however, because:

- their companies are smaller and have a smaller turnover — they focus on specific industries and are geared to local markets;
- they find it harder to obtain financing; and

- they are under-represented in employers' associations, which rarely acknowledge or integrate women employer associations.
- Programmes of micro-credits with banks and enterprise consultant's offices.
- Developing support services for dependent people.

It must pay special attention, on the one hand, to communities of women with specific needs (women with disabilities, elderly women, substance-dependent women and single-parent families) and, on the other, to communities at the greatest risk of social exclusion (gypsy women, women inmates and ex-inmates, prostitutes, trafficked women and immigrant women).

▪ Reaching women — improving communication

The Ministry of Equality has carried out initiatives in other fields, for example communication:

- For the first time at the 1995 Beijing World Conference on Women, communication was stated to be a basic human right and a key strategic element for the social change demanded by women in the struggle for equal rights. 'Avanza' is the first initiative of the Spanish government for developing the Information Society. 'Avanza' includes a series of legislative measures and initiatives for direct action with a specific budget. In connection with this project, the Ministry of Equality has launched the project 'e-quality centre' (centro e-igualdad) that joins both concepts — equality and the Information Society — to enable women to use information technology as a tool to reach effective equality and ensure that the Information Society takes account of the gender perspective in its contents, products and services (available at <http://www.e-igualdad.net/>).
- Another method is to encourage using non-sexist language. There are, for instance, some guides about vocabulary in both female and male form, for instance *Las profesiones de la A a la Z*, which is about professions (Lledó, 2006).

Exposure to electromagnetic fields in rehabilitation rooms and its impact on pregnant workers (Spain)

A Spanish project studied the links between tasks and branches of activity, from data collected on workers' ill health by exposure to physical agents (especially among pregnant women) in several hospitals and rehabilitation centres.

The study focused on the following aspects:

- *Healthcare activity*: electrotherapy treatments application.
- *Physical agent*: non-ionising radiation, in particular microwaves and magnetic fields.
- *Type of exposure*: occupational exposure to non-ionising radiation in affected jobs.
- *Affected jobs*: physiotherapists and rehabilitation assistants. This group was chosen because it includes a high number of workers, a high proportion of whom are female (70 % of the workers involved in rehabilitation services are women and more than 90 % are women between 20 and 39 years old).

The results suggested that the exposure levels fall below that required by the Directive 2004/40/EC of the European Parliament and of the Council of 29 April 2004 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields). In addition to the baseline exposure assessment data that were collected, good practice guidelines to control these risks were developed.

The **Spanish Strategy on Health and Safety at Work (2007–12)** is designed to achieve optimum utilisation of the resources of the individual institutions, promote cooperation and coordinate the individual targets to ensure optimum protection of safety and health at work. The strategy emphasises the need to integrate gender equality into the labour force and OSH policies, particularly for SMEs.

In Spain, domestic responsibilities can be identified as one of the main obstacles to women's full participation in the labour market and are often the reason why they leave. For this reason, the government, using different laws, is trying to strengthen and develop care and service networks for minors and dependants as highlighted in:

- Law 39/99, promoting the reconciliation of family and work life of workers, relative to enforcing measures to improve the on-the-job safety and health of workers who are pregnant, have given birth or are breastfeeding.
- Royal Decree 298/2009, concerning the implementation of measures to encourage improvements in the safety and health of pregnant workers, workers who have recently given birth and women who are breastfeeding.
- Law 39/2006, promoting individual autonomy and the care of persons in a situation of dependence and of families (Ley de Promoción de Autonomía Personal y Atención a las Personas Dependientes) that aims to move from a care model in which care-giving is essentially shouldered by women to one in which care is orientated towards enhancing the capacities of dependants.

But the main act for this issue is the **Constitutional Act on the Effective Equality of Women and Men** (Ley Orgánica 3/2007, de 22 de Marzo, para la Igualdad Efectiva de Mujeres y Hombres) (hereafter LOIEMH). Since its approval in March 2007, Spanish companies have had to implement measures in order to be compliant with the law. LOIEMH lays down the legal premises required to advance towards effective equality in all areas of social, economic, cultural and political life.

▪ Parental leave

Parental leave policies can have an important impact on gender equality both in the workplace and with respect to sharing childcare responsibilities. The past few years have seen many changes in Spanish law with respect to maternity leave and parental rights. Mothers in Spain have the right to take 16 weeks of uninterrupted maternity leave (2 weeks more, for each child, in the case of multiple births). In the case of biological maternity, the mother is obliged to take a 6-week maternity leave after giving birth.

The most recent changes to the law have attempted to make access to parental leave flexible for parents. To improve this legal framework on parental rights, the new Act 3/2007 also gives fathers the right to 13 days' paternity leave (plus another 2 days in cases of multiple births). Within the next 6 years, paternity leave will be extended from 15 days to 1 month. The same terms are available to self-employed workers.

Another choice that parents have to make concerns their right to work part time when the child is younger than 6 years old. In this case they are not paid for the time they do not work, but at least they have the right to choose exactly when the time reduction is going to take place. This act also gives parents the right to reduce their working day from an eighth to a half in order to look after children under 8 years old. In the case of premature births, maternity leave starts when the baby leaves the hospital.

▪ Integration

One of the most controversial changes that the new law will bring about concerns electoral lists. In districts of 5,000 or more inhabitants political parties must have at least 40 % of women for every five posts. From 2011 this measure will be applied to districts of 3,000 or more inhabitants.

The act also devotes special attention to procedural guarantees for reinforcing judicial protection of the right to equality and to redressing inequality in the specific realm of employer–employee relations. The Labour and Social Security Inspectorate (Inspección de Trabajo y Seguridad Social) also reinforces punishments for violations of women's rights. The act develops labour inspection plans in the domain of equal treatment and opportunities for women and men at work and non-discrimination against women in employment.

Mention should be made in this regard of the role assigned in Article 77 of the LOIEMH to the equality units within ministries to implement policies through the Spanish administration, as well as other specialised structures such as the observatories created in:

- The Ministries of Defence: Observatory on Women in the Armed Forces, 2005 (Observatorio de la Mujer en las Fuerzas Armadas).
- Labour and Social Affairs: Observatory on Equal Opportunities for Women and Men, 2000 (Observatorio para la Igualdad de Oportunidades entre Mujeres y Hombres), Nationwide Observatory on Violence against Women, 2006 (Observatorio Estatal de Violencia sobre la Mujer) and Observatory on the Portrayal of Women, 2004 (Observatorio de la Imagen de las Mujeres).
- Health and Consumer Affairs: Observatory on Women's Health, 1994 (Observatorio de Salud de la Mujer)
- Foreign Affairs and Cooperation: Ambassador for the Special Mission for the Furtherance of Gender Equality Policies (Embajadora para la Misión Especial de Fomento de Políticas de Igualdad de Género).
- Interior: Observatory on Women in Law Enforcement Agencies, 2007 (Observatorio de la Mujer de las Fuerzas y Cuerpos de Seguridad)
- Justice: Observatory on Domestic and Gender Violence, 2002 (Observatorio contra la Violencia Doméstica y de Género)

A strategic plan is necessary to ensure due coordination among the different levels of government (central, regional and local) and the various social organisations (Álvaro et al., 2005).

The 1978 constitution authorised the creation of regional autonomous governments. Currently, Spain is divided into 17 autonomous communities (Comunidades Autónomas). The central government continues to devolve powers to these regional governments. As regional governments have full responsibility for social programmes, this includes equal opportunities. Since 1994, although with different starting dates, all the communities have had equality bodies to enforce specific policies orientated to women.

The communities have drawn up a plan similar to the National Plan, although with the adaptations necessary to respond to the conditions and specific needs of the women in its respective autonomies.

It is observed that some equality plans have been accompanied by the promulgation of Laws of Equality, some time before the Act 3/2007 (e.g. the Law of the Galician Parliament 7/2004 of 16 July for the equality of women and men or the Law of the Basque Parliament 4/2005 of 18 February for the equality of women and men). In order to expose the specific conditions of women in a specific community, some plans include reports that detail relevant data about the social situation of women. The main problems experienced with this are that these plans need a significant budget (sometimes non-existent) and that there is a lack of coordination between all levels of administration. The information must flow between these organisations. They must always know the activities and the results obtained in the matter of equality in other levels to avoid possible contradictions or duplication.

In addition, many communities have, or will have, in its region an organism like the Woman's Institute. In this way, a technical body whose focus is on OSH prevention and ensuring the improvement of the conditions of work related to equal opportunities for women and men was created and developed in an autonomic administration.

Other examples of bodies involved with gender matters, in addition to the Women's Institute, are the Observatories. For instance, in Castile and Leon, the Gender Observatory (Observatorio de Género de la Junta de Castilla y León) was created in 2005 to analyse and spread periodic and systematic information and to propose policies to improve the situation of women. It carried out studies into the accidents suffered by female workers in Castile and Leon and provided recommendations to protect women's health at work.

There are also Councils of Women that include public and private organisations and work on activities to promote equal opportunities between women and men.

In order to prevent discrimination in the private sector, some **autonomous communities (e.g. the Basque Country) have also created an Ombudsperson's Office for the Equality of Women and Men.**

In relation to social agents, there is high engagement from trade unions, business partnerships, women's associations and social economy businesses.

The most important national trade unions in Spain, in terms of number of members, are the Trade Union Confederation of Workers' Commissions (Confederación Sindical de Comisiones Obreras,

CCOO) and the General Workers' Confederation (Unión General de Trabajadores, UGT), in that order. Trade unions are developing important work in the field of the formation of female workers, mainly through guides of detection of risks from a gender perspective and publications about risks for pregnant woman and breastfeeding women at work.

On the other hand, it is necessary to have cooperation between public institutions and non-profit organisations (NPOs) that work in favour of equal opportunities.

From an international point of view, in 1988 the Ministry of Equality began the International Programme of Cooperation 'Women and Development', (Programa de Cooperación Internacional 'Mujeres y Desarrollo'), in collaboration with the Spanish Agency for International Development Cooperation (Agencia Española de Cooperación Internacional para el Desarrollo, AECID). This is a financial instrument designed to support projects related to achieving the full exercise of human rights for women in developing Latin American countries, with the support of Spanish non-profit organisations.

8.3.2 Discussion

In Spain, fewer women are in paid work than in other EU countries. The labour market displays horizontal segregation (men and women work in different sectors), as well as vertical segregation (men hold more senior positions), leading to gender-related differences in employment conditions and exposure to occupational hazards. The precariousness of work is significantly higher among women, and women are more likely than men to have temporary contracts. Men are more frequently exposed to physical risks and suffer a greater number of occupational accidents, whereas women, especially manual workers, are more frequently exposed to psychosocial risks. Most domestic chores continue to be performed by women, even by working women, which negatively affects their health.

From 2000 to 2010 Spain aimed to create three million jobs for women and implement work–family policies. Achieving gender equality at work requires employment policies that guarantee equal opportunities for both sexes, as well as shared responsibility for domestic chores between men and women. These programmes and policies, along with collective bargaining, help to reduce the impact of poor OSH on women. In Spain, moreover, there is an urgent need to significantly increase public childcare facilities and resources for the care of other dependants.

8.4 Overall discussion

Although the right to equality and non-discrimination for both genders is proclaimed in the constitutions of the EU Member States and the situation for women in the labour market has improved over the past decades, female workers are still subject to disadvantages within this sphere in Europe. This is reflected in opinion polls, which shows that only a small proportion of male workers and even fewer female workers believe that the genders enjoy equal status at work.

In order to promote and achieve gender equality in social, economic, cultural and political life in Europe, governmental, as well as non-governmental, institutions must cooperate, and their activities must be coordinated by a strategic plan. Enforcing legislation could facilitate the objective of gender equality, but there is also a need to integrate gender equality into both the labour force and OSH policies in Europe.

Generally, gender-related information and statistics, including good practice, should be provided to interested parties, in order to raise the social awareness among the European population. Therefore, gender-specific research (potentially funded by programmes) should be enhanced. This means that the gender perspective should be taken into account not only when interpreting results, but also when planning preventive actions. The resulting scientific knowledge can help to further develop (practical) methods and tools/materials. In order to increase the proportion of women in higher positions at work, specific training, coaching and (career development) programmes for women should be provided in Europe. In addition to these offers, structures must also be developed to increase the number of women performing supervisory work in the European labour market. Last, but not least, networking and opportunities to exchange information should be stimulated in the field of gender equality, in order to communicate and discuss gender equality plans with relevant stakeholders.

Thus, many governmental and non-governmental institutions are engaged in promoting gender equality in Europe. However, these plans have to be adequately coordinated and be supported by an adequate budget to be able to achieve their goal.

9 A summary of trends and issues

This review has highlighted that, although there have been some improvements in the OSH concerns of women, the situation as outlined in 2003 (EU-OSHA, 2003a) has not progressed as much as it could have done to address the OSH issues of working women.

Some of the trends include:

- The employment rate for women is increasing. More women are active in the workforce.
- Women accounted for 59 % of the employment creation between 2000 and 2008. However, the recent economic downturn is affecting women too, especially those of a younger age.
- Recently there has been an increase in women working as technicians and professionals and among elementary occupations, with many working part time.
- Women have more access to education, and the average education level of women is higher than that of men, especially among second- and third-generation female migrants. However, this is not reflected in their career development opportunities or in the hierarchy of the occupations in which they mainly work. This has important effects on health and safety as they are more exposed to monotony and repetitiveness and have less access to training.
- Part-time employment affects women much more than men, as, on average, 80 % of all part-time workers are women in some Member States, although there are large differences between Member States. Temporary and part-time jobs are replacing full-time employment for many women.
- Many female workers are represented in part-time work and informal employment. Women who work informally tend to do so in unstable, unprotected and precarious jobs, which restrict efficient and effective OSH practices.
- The pay rates between men and women continue to differ, with women receiving, on average, 16 % less than men. This gap has remained the same since 2003. The pay gap is also persistent in the female-dominated sectors and increases with age, but there are considerable differences between sectors and between Member States.
- Employment gains are high among older women, but they are less considered in training, and health promotion at work is not tailored to their needs.
- The contractual arrangements also put older women at high risk of poverty and make it difficult for very young mothers to enter working life. This makes them more prone to accept less favourable OSH conditions.
- The sectors in which women work depend on their age and ethnicity. Younger women work more in the hospitality sector, whereas older women tend to work in education and healthcare. The age distribution is more even for the retail sector and for administrative jobs.
- Domestic work is one of the fastest growing economic sectors within the EU. It is mainly women who occupy these jobs.
- Women in informal work and women who work at clients' homes and premises are more vulnerable to violence and harassment and may be less informed about their rights, and have little access to preventive services.
- Women are much more likely to be in contact with the public, such as clients or patients. Organisations need to consider psychosocial strains, as well as physical strains, in risk assessments, as most women work in education, healthcare and retail and therefore work in interaction with 'clients'.
- Women tend to under-report violence, bullying and harassment, and often there are no reporting mechanisms or measures in place.
- The employment rate of migrant women is increasing, but migrant women as part of the labour force may encounter double or triple discrimination because of their sex, origin or class.
- Some traditionally 'male' sectors have an increasing female working population; this is the case for agriculture and transport, although there are large regional and national differences.
- Women may be particularly vulnerable to multiple discrimination because of their age, gender, ethnic background, disability and sexual orientation.

- Women with disabilities tend to be at risk of double or triple discrimination, and tend to be discriminated against more than men with disabilities.
- Women have less access to rehabilitation and retraining schemes. The arrangements do not consider part-timers and family obligations nor are they tailored to the female professions.
- Unemployment and retirement age have converged between women and men. Consequently, age-related measures (e.g. regarding employment of young people or retainment of older workers) need to consider both genders and their specific conditions.
- While male workers may be highly exposed to selected physical risks, female workers are exposed to multiple risks of different nature that impact on their health. Some are illustrated in this report.
- Women are less likely to suffer accidents at work than men. However, official statistics are often not adjusted for hours worked, which may distort the picture. The accidents that women suffer are linked to the jobs they do and the sectors they work in. Consequently, they suffer more accidents linked to slips, trips and falls, stress and violence.
- The rates for work-related health problems are similar for both women and men. However, MSDs and stress-related problems affect women more. Lower limb disorders affect women more, but they are neither recognised occupational diseases nor compensated for.
- Research on work-related diseases still does not consider women to the extent that it should, although some progress has been made regarding cancer and reproductive issues. It is often based on knowledge of male-dominated professions and male metabolism of chemicals and excludes part-timers and occupations for which little is known about exposures.
- Female workers are highly exposed to dangerous substances and biological agents, but this is rarely assessed and their exposures are not considered in, for example, cancer research.
- Static work, prolonged standing and sitting and lower limb disorders are emerging issues and affect women more than men.
- MSDs are the most serious hazard that women face within the working environment.
- The working environment needs to take a holistic approach to OSH and take into account work–life balance, harassment and discrimination.
- It is important for working equipment to be designed with regard to the ergonomic needs of women.
- Women are more likely to suffer from psychosomatic symptoms at work, and this may be linked to poor psychosocial work factors, such as low control of jobs.

Although the OSH concerns of women have been raised, for the best part they remain linked to the 'norm' and the normal worker, i.e. men. Policies tend to reflect all workers and do not differentiate to a large degree by gender. The trends and issues listed above show that women continue to face discrimination in the workplace.

10 Conclusions for research, policy and prevention

The most important aspect of reviewing women who work is accepting that work is good for people, regardless of gender. Several studies have shown that work can improve individuals' physical and mental health, while improving their self-esteem and overall quality of life, and conversely that physical and psychological well-being can be hampered by unemployment, job loss and inactivity (Vaughan-Jones and Barham, 2009). These findings have also been shown to be gender (i.e. woman) specific (Klumb and Lampert, 2004).

However, the ways in which women work and where and how they work developed from societal and educational constraints. Webster (1996) outlined the patterns of gender segregation that determine the fields in which women pursue jobs, which result in low participation in occupations such as computer technology. These constraints also tend to influence salaries paid to women (Webster, 1996), with the difference between men and women continuing to widen (Virgo, 1994, as cited in Webster, 1996). The EU statistical data explored in Chapters 2 and 3 of this report showed these patterns, and, when compared with 2002 data (EU-OSHA, 2003a), it is evident that the situation has not advanced as much as it could have done over the medium term.

Moreover, as the extent to which women contribute economically tends to be underestimated (Stace, 1987), they are not taken as seriously as male workers. One contributing factor to this may be the overt and covert discrimination that continues to exist towards women (Brown, 1981; EWL, 2007). This discrimination could be based on whether they have a disability (Brown, 1981), their gender (Brown, 1981), their status as migrant workers (McKay et al., 2006; Trimikliniotis and Fulas-Souroulla, 2007; EC, 2008d), their race (McKay et al., 2006), their age (Doyal and Payne, 2006), their level of occupation and salary (Julius et al., 2003) and their status as mothers (Morgan, 1972). In addition, women with disabilities may encounter dual or triple discrimination based on their gender and disability or race and disability (Smith Randolph, 2005).

This review has presented information on risks and trends in specific areas that impact on women at work. Owing to the increasing number of women in the workforce, it is anticipated that they are also subjected to an increasing number of hazards.

Women tend to work in atypical jobs (i.e. those that are part time or temporary). There is conflicting evidence on the OSH concerns of these types of jobs. Some research shows that these jobs do not affect well-being (Bardasi and Francesconi, 2004), and some show that they may, at times, enhance it (Dijkstra and Barelds, 2009). Moreover, other research shows that they increase women's stress levels, as well as lead to repetitive strain injuries, migraine headaches, feelings of low self-esteem, low motivation and job dissatisfaction (Zeytinogla, 2005). It is also known that they are jobs in which fewer training opportunities, as well as reduced economic benefits, are offered. Although there does not seem to be a consensus about their effects, they will remain the choice for women, and this needs to be acknowledged. Further, Hall (1989) proposes that women may use part-time and temporary employment as a control mechanism. They opt in and out of mundane, repetitive jobs in order to gain some level of control over this environment. When they pursue non-traditional jobs, they may feel they need to prove their abilities to their male colleagues (Marshall, 1990), which in turn is not a healthy option.

The ability to balance work and home remains problematic for women and does impact on their psychological well-being, more so than men (Haines et al., 2008) and even over the long term (Kinnunen et al., 2010). There is evidence that women and men respond differently to the demands of work and home (Grzywacz and Marks, 1999; Kinnunen et al., 2010), usually because women feel more responsible for children and/or other relatives and take on more of the chores within the household. This review has highlighted those responsibilities.

Overall, the working environment is improved by workers receiving self-care information, newsletters, online services and telephone access to healthcare professionals; these allow them to make more informed health management choices, which then leads to significant cost savings (Hillier et al., 2005).

As Bertin and Henifin (1987) noted, a gender-specific approach to research, policy and prevention reduces the attention to risks and hazards within the work environment, especially in its ability to respond to the occupational health concerns of women workers. Despite these concerns, it is necessary to show why research, policy and prevention are an essential aspect of women's working lives.

10.1 Research

This review has reiterated the limited research that is gender specific about women who work, from both an EU and an international perspective. Researchers engaged in gender-based research have consistently raised these limitations. In 1989, Hall noted that research on women's occupational health was restricted to their differences from men, that is levels of endurance and strength and reproductive systems. In addition, Messing and Stellman (2006) highlight the difficulties in accessing research on women and occupational health and recommend that, rather than controlling for gender in analyses, the full effects of exposures and working conditions on both sexes should be examined. This should reduce the use of research on men to transfer policy decisions and practices about the workplace to women, who have different experiences and different ways of working (Hall, 1992).

Thierry (1998) proposed that in order to ensure the health and overall well-being of women with disabilities, they need to become more involved in the research process, including setting research priorities, designing the questions, conducting the research, taking part as subjects and disseminating the results. This may assist in both the short and long term and should be raised on the agenda for researchers.

Research needs to take account of individual differences within the genders, and the differences between the genders. For example, as shown in this review, it is accepted that women report more stress-related symptoms, and this has an impact on their rate of coronary heart disease. These results may imply that women are more prone to work-related stress. However, the jobs in which women tend to predominate, such as clerical, also tend to have much less control in respect of decision-making and this may be one reason for the higher levels of stress-related conditions, rather than women's inability to cope (Chavkin, 1984; Hall, 1989). However, one recent study in Sweden showed that active jobs, that is those with high control and high demands, were problematic for women (Lidwall and Marklund, 2006). Lidwall and Marklund (2006) also found that there are associations to show that men with active jobs are affected by job strain, so it is useful to always include both genders in research and determine which factors impact most on each gender. Harlow et al. (1999) propose a multidisciplinary, multimethod and holistic approach for research (i.e. one that covers all aspects of women's lives, experience, physiology, psychosocial, home environment, work environment).

Härmä (2008) notes that, regarding the differences that exist among shift systems, the existing epidemiological literature provides limited information on the choice of 'healthy' shift systems, so there is a need for more studies to examine what makes a good shift system for women. Moreover, research on shift work still tends to focus mainly on men. One review of epidemiological studies among shift workers on CVD (Bøggild and Knutsson, 1999) showed that only men were assessed in 11 of the studies; only women in one; both men and women in two; and specific genders were not listed in three studies. Although more men than women work shifts, in order to ascertain the specific effects of shift patterns for women, more women need to be included in research. Overall, more data are needed on the effects of shift work, especially to establish more definitive links between cancer and shift work (Pukkala and Härmä, 2007). Finally, new research on shift work should focus on more structured and systematic approaches that take into account the ever-changing shift patterns and work demands that arise from these patterns (Härmä and Kecklund, 2010). The research has broken the ground for work organisational factors to be considered as influential on physical disease and may help pave the way for the consideration of other factors, such as static work and prolonged standing and sitting, as major factors for physical disease, or the links between organisational risks and reproductive disorders.

One intervention study, using a sample of nurses and nurses' aides, showed positive results in reducing the risk of heart disease among this group of shift workers. The 6-month study was able to realise favourable improvements in triglyceride and high-density lipoprotein cholesterol levels by increasing ergonomic scheduling using more regular and more predictable shift schedules (Bøggild and Jeppesen, 2001). Another study with female nurses found that exposure to short periods of bright light (5,000 lux) improved subjective well-being among nurses (Leppämäki et al., 2003). These findings support the call for the implementation of best practice at both the individual and organisational levels (Härmä and Kecklund, 2010).

Further, Härmä (2006) has proposed that women would benefit more than men from having better work time control, as they carry out more household work. This should be explored further within the working environment. Overall, women would benefit from more control at the workplace, as it contributes to well-being (Vandenberg et al., 2002).

This review has shown the specific limitations in certain areas; more research is needed on the hazards and risks that women face, for example in non-traditional occupations. For instance, Quinn and Woskie (1988) note that research is lacking on the reproductive outcomes of construction workers when exposed to chemical agents on the job. Moreover, reproductive outcome research tends to examine activities and exposures as they pertain to women, without considering that these may also have an adverse effect on male reproductive outcomes (Bertin and Henifin, 1987). This limited focus in the research agenda has limited benefits for both women and men.

A large study on cancer and work, the NOCCA study excluded part-timers and occupations with limited knowledge on exposures, and therefore created a potential bias towards standard full-time (male) workers and conditions that are becoming less common, at least for the many women who work.

10.2 Policy

Traditionally, and even in the present working environment, women are at a much lower risk of experiencing occupational injuries and accidents than men, which may be one of the defining reasons why women's occupational health issues are not explored to a greater extent (Kane, 1999). Despite this, the number and rate of occupational injuries and illnesses, as well as fatal incidents, for women have been increasing, especially as more women enter the workforce and work in more hazardous jobs (Biddle and Blanciforti, 1999). Further, as industrial machinery is generally designed for male workers, the work is often tiring for smaller female and male workers (ILO, 2009b). The chapters on combined exposures and disability have highlighted that the combination of domestic responsibilities with working outside the home has detrimental effects on women's health, leading, for example, to increased job strain or RSI. Despite this, in Europe, it is the cultural norm to believe that if a woman is able to do housework she is not considered disabled, so is limited in the disability pension that she is granted (Alexanderson et al., 2005). These research studies demonstrate some of the reasons why women's OSH requires a higher policy profile.

Bird and Rieker (2008) promoted the expansion of the exploration of men's and women's health beyond the established biological and social reasons in order to improve on policy and associated decisions that arise from research outcomes. Shackleford et al. (1998) raised the point that women with spinal cord injuries found it difficult to get information about their condition, and this review shows that the finding could be extrapolated to the majority of women with disabilities, and those in the workplace. Overall, the continued use of the medical model (Meekosha and Jakubowicz, 1986; Saleebey, 1997) has worked to restrict how women are perceived and the services that are available to them in terms of OSH and subsequent compensation and rehabilitation.

Of course, women's role in improving working conditions, as well as forming trade unions, has been underplayed, but is acknowledged as essential because it 'introduce[s] an ethical judgement into our conversation and practice about working conditions' (Sass, 1999: 141).

These changes in work practices require changes in policy to better address the various occupational hazards that women face. However, this requires a dedicated presence and force on the bodies responsible for such decision taking, which may be a challenge for women for the following reasons.

Forastieri (2000) notes that women are under-represented in national and representative bodies responsible for setting policy and recommending programmes to improve OSH at the workplace. Having a greater percentage of women on these boards should help in getting 'women's issues' placed on these agendas, and thereby begin to improve their OSH.

Harassment, inflexible working structures and a reliance on long hours to complete projects on time (as cited in Watts, 2009a) all contribute to restricting women's advancement within organisations. Moreover, although the changing structure of the workforce means that more women are working and fewer men are available for work, the power structure within organisations has not changed and the number of women who are in managerial positions has not improved (Powell, 1999). This review shows that, although the number of women managers has increased slightly since the last EU-OSHA study (EU-OSHA, 2003a), it is still not representative of the number of women in the workforce. It has been proposed that women need to become 'more like men' and reduce the time they spend on home and family commitments, with a stronger focus on the organisation and their career (Collinson and

Collinson, 2004, as cited in Watts, 2009a). This will improve their ability to advance within the organisation and reduce this imbalance.

The common description of women as 'the weaker sex' is not useful in accepting that women's ability as workers transcends professions. The use of this type of label needs to be reduced, and the introduction of policy that is gender neutral may assist in this regard.

There is a need for the development of participatory methodologies that are appropriate to a specific policy, programme or research and which are then evaluated and operated within a context of partnerships involving policy-makers, programme directors, researchers and women's groups (Harlow et al., 1999). This holistic approach is more valuable in ensuring that all the relevant issues are included on OSH agendas.

Promotion opportunities need to be expanded for women, for example by establishing career ladders, introducing family support policies and enforcing policies against sex discrimination and sexual harassment (Anonymous, 2000b)

Risk assessments must be gender focused, as gender is rarely included in risk assessments (Daley, 2002). This is an important concern for the OSH of women and needs to be policy specific within organisations. More female safety representatives are needed (Daley, 2002). This may facilitate a stronger emphasis on OSH concerns for women and could be explored and encouraged within organisations. This is especially in the context of violence. The Council of the European Union (2010) proposed certain actions that Member States could adopt to deal with violence against women, including improving their capacity to deal with violence and providing protection and support to the victims and, most importantly, 'facilitating the interaction and rapid information exchange between the competent authorities thus ensuring a comprehensive response. It is also essential to have women on representative bodies to provide support to those women who are or have experienced sexual harassment (EC, 2007e).

Labour inspection actions and policy measures in OSH need to be assessed for their gender impact.

Finally, the gender pay gap needs to be reduced. Young girls and young women should also be informed about the opportunities and benefits of working in male-dominated professions (Ponzellini et al., 2010a). Their mindset about the stereotypes of male and female jobs needs to be changed (Diekman, 2010), and one way to do this is to promote policies that address women's OSH concerns in these professions.

10.3 Prevention

Health promotion is an essential step in preventing women from contracting occupational diseases or experiencing ill health. The following recommendations should assist in this regard.

Research has shown the links between occupational and environmental exposures with the increased risk of developing different types of cancer (Clapp et al., 2008). As the links are known, it is appropriate to continue to suggest that a reduction to these exposures will reduce the risk of women contracting cancer because of their work.

It is important to remember that two-thirds of pregnant women in the world work, and are exposed to various occupational hazards; these exposures need to be reduced.

The context of exposure specific to women is being acknowledged, in that personal protective equipment is being designed with women in mind (Harris, 2009). This includes footwear and ensuring that hard hats, goggles or eyewear, for example, are fitted for size and comfort.

Siddall et al. (1994) highlight the benefits to be gained when organisations are more responsive to the occupational and social needs of women. They note that access to child or parental care, such as flexible leave and helping women to achieve a work-life balance can lead to increases in performance, productivity and lower turnover. However, the pre-conceived cultural notions about women continue to exist, even in countries that are 'women worker' friendly. In this respect, in Sweden, Alexanderson et al. (2005) found that the ability to do 'housework' was a negating factor in women being granted a full-time disability pension.

Control is the work variable seen as the most important in coping with the various demands of the work environment (Hall, 1989; Karasek and Theorell, 1990). But, as seen in this review, women tend

to work in jobs with limited or no control, and are therefore more likely to have adverse reactions, which in turn may be one of the factors contributing to their higher sickness absence patterns than men (Vaughan-Jones and Barham, 2009). As such, organisations should explore ways to give their female employees more control over their work processes.

In addition, it may be useful if women have 'personal support' at the workplace, such as a mentor. It is acknowledged that workers with disabilities, especially those with mental and intellectual disabilities, but also those who may have physical or sensory disabilities, need the support of another person to become accustomed to the work situation (EC, 2008b). This support should help in negating the lack of control that women have over their work environment (Meekosha and Jakubowicz, 1986). In 2008, it was recommended that a typology of reasonable accommodation in the workplace could be developed with technical solutions, organisational arrangements, provision of assistance, qualification measures and awareness raising measures as main types (EC, 2008c: 3), and this may need to be developed to a greater extent.

Research from the USA shows that 'new' occupations in which women choose to work may not necessarily have the required preventions in place to reduce the risks that women face at the workplace. One study of long-haul female truckers showed that fewer than one-third of companies with which the women interacted provided sexual harassment or violence prevention training or had a policy for violence protection (Anderson et al., 2005).

Further, women moving into traditional male professions such as construction and civil engineering may start to assume the work habits of their male colleagues (long hours, presenteeism, visibility), which will tend to maintain the status quo (Watts, 2009a,b) and not help to improve work-related outcomes such as job strain.

Part-time workers and temporary workers are also known to be more difficult to reach through OSH prevention and training (EU-OSHA, 2003a).

Women take on more family responsibilities and the paid–unpaid work interface needs to be taken into account if healthy work is to be achieved (Lidwall and Marklund, 2006). Women still do not receive the emotional support from their husbands or partners that would help them to cope with the stressful effects of discrimination on the job and the conflicting demands from work and home (Kissman, 1990).

In order to prevent violence there is a need to challenge the inequalities and social norms that perpetuate such abuse (Garcia-Moreno et al., 2005). One way is to develop curricula that promote emotional and social skills, including non-violent ways of conflict resolution among children and young people (Garcia-Moreno et al., 2005).

In addition, jobs should be redesigned (Anonymous, 2000b; Cheng et al., 2000), as this is key to reducing job strain among women. Further, the education and raising awareness of the existence of cyber-harassment (ETUCE, 2010) would benefit those sectors in which women predominate. Employers need to ensure that breaks are taken (Tucker et al., 2003), as regular breaks helps to reduce the risks of incidents and accidents at work.

This present review continues to promote a more consistent and comprehensive approach to assessing women who work. Women are a significant aspect of the workforce, they make large economic contributions and they are working increasingly in more dangerous and hazardous jobs, thereby increasing the likelihood of being injured or becoming ill. They are not only in marginalised jobs, and their OSH needs should be acknowledged and promoted more widely across industry and organisations.

The proposals listed in this section for research, policy and prevention have been raised in previous research, and it is expected that they will continue to be raised in future research. It is important that this continues to be done, and that women's OSH concerns are not removed from the agendas of researchers, policy-makers and organisations. A summary of the findings and trends and a more detailed list of suggestions is included in every chapter of this report and in the summary preceding the report.

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Other sources

Some other sources are also proposed, including websites of NGOs, trade unions, research organisations and women's associations specific to a regional group, that could be interesting in a future deeper survey of the issue.

- **Bulgarian–European Partnership Association**

<http://bepa-bg.org>

The Bulgarian–European Partnership Association (BEPA) is a foundation working in the field of promoting social and labour standards and rights, in particular of women workers. Between 2002 and 2004, it developed a project involving women workers in garment industry subcontracting chains including Bulgaria and other countries.

- **Bulgarian Gender Research Foundation**

<http://www.bgrf.org/en/>

An NGO that promotes social equality and women's human rights in Bulgaria through research, education and advocacy programmes.

- **Center for the Study of Democracy**

<http://www.csd.bg>

A Bulgarian interdisciplinary public policy institute dedicated to the values of democracy and market economy. The informal economy is among its specific Economic Programs.

- **Center of Women Studies and Policies**

<http://www.cwsp.bg/en/htmls/page.php?category=1>

A foundation that continues and enhances the work on women's, gender and equal opportunities issues in Bulgaria and further develops new areas of expertise and activities.

- **Homeworkers Worldwide United Kingdom**

<http://www.homeworkersww.org.uk>

An organisation set up to support home-based workers around the world, with specific projects in Bulgaria, Romania and Lithuania related to the garment industry.

- **Institute for Contemporary Social and Political Studies**

<http://www.mirovni-institut.si>

A Slovenian non-profit research institution developing interdisciplinary research activities in various fields of social and human sciences, including gender.

- **International Confederation of Free Trade Unions**

<http://www.icftu.org/>

The International Confederation of Free Trade Unions (ICFTU) has a central and eastern Europe (CEE) area of interest.

- **KARAT Coalition**

<http://www.karat.org/index.php>

A regional coalition of organisations and individuals that works to ensure gender equality in the CEE/CIS countries, monitors the implementation of international agreements and lobbies for the needs and concerns of women in the region at all levels of decision-making forums.

- **Research Institute for Labour and Social Affairs**

<http://www.vupsv.cz/?p=index&site=en>

The Research Institute for Labour and Social Affairs (RILSA) is a public research institution, whose principal activity is applied research on labour and social affairs issues at a regional, national and international level; this research is formulated in line with the current requirements of state government authorities and possibly non-profit or private entities.

- **The Network of East–West Women/NEWW-POLSKA**

<http://www.neww.eu/>

An international communication and resource network supporting dialogue, informational exchange and activism among those concerned about the status of women in CEE, the newly independent states and the Russian Federation.

- **Women’s Alliance for Development**

<http://women-bg.org/>

The Women’s Alliance for Development (WAD) is a leading information, consultative and training centre, an active participant in the international consultative process and an advocate for gender equality and partnership of the sexes, in compliance with international standards in this field.

- **Women Working Worldwide**

<http://www.women-ww.org/>

A UK-based organisation that works with an international network of women workers.

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Chapter 1: Introduction

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Chapter 8: Policies and programmes related to women at work

Assessment of exposure to electromagnetic fields for workers in electrotherapy, including pregnant workers (Spain)

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The European Agency for Safety and Health at Work (EU-OSHA) contributes to making Europe a safer, healthier and more productive place to work. The Agency researches, develops, and distributes reliable, balanced, and impartial safety and health information and organises pan-European awareness raising campaigns. Set up by the European Union in 1996 and based in Bilbao, Spain, the Agency brings together representatives from the European Commission, Member State governments, employers' and workers' organisations, as well as leading experts in each of the EU Member States and beyond.

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