Women and occupational diseases in the European Union

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Contents

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Preface

Laurent Vogel,
Director of the Health and Safety Department, ETUI

There is a huge variance to be seen in most European countries between illnesses caused by work and recognized and compensated occupational diseases. There are three outcomes to this. It lets employers make big savings: part of the cost of illnesses is borne by the health branch of social security, and part by the victims themselves. It airbrushes away a large amount of work-related health impairment and papers over the key role of working conditions in social inequalities in health. It acts to play down existing risks and undermine pressure for effective prevention policies.

To say that the variance exists is not enough; it needs to be looked at closely. It is not a straightforward proportional reduction between illnesses and compensation. The data from occupational disease compensation schemes does not offer a sort of miniaturized picture of reality. There is a significant systematic distortion. Some illnesses are more frequently dismissed than others. Some work situations and social groups are put in an even worse than average situation. The variances differ between countries, but largely reflect national differences in occupational health that are part of each country's social and labour history.

Women continue to lose out heavily in occupational disease recognition systems almost right across Europe. It is classic - and largely ignored – discrimination. Where occupational diseases are concerned, women find it harder than men to access more limited social security or private insurance scheme financial benefits. This is systemic discrimination acting on indirect mechanisms. Just being a woman is enough to bar access to a benefit. A range of players - from the occupational health services that organize health surveillance to the joint bodies that negotiate lists of compensated occupational diseases – have shaped this situation which can only reinforce the stereotype that women's work is generally less hazardous to health.

The lack of Community harmonization has probably helped prop up existing discrimination. There is a paradox in the fact that occupational diseases triggered one of the very first occupational health initiatives (the first recommendation on it dates back to 1962) taken by the EU, which never resourced itself to run an effective policy. Other recommendations followed, but never any binding legislation. The variances between the different national systems are likely to be even wider now than they were fifty years ago.

Daniela Tieves' report builds on a body of work done by our institute on the link between the struggle for equality and health at work. It draws on information gleaned through a network of contacts in a selected group of EU countries. It has the virtue of examining a set of national and European data on the impact of work on health through the filter of a gender perspective, highlighting the scale of discrimination in this area and offering useful insights both for policy makers and research.

This report is published at a timely moment when the EU is framing a strategy for health at work for the period 2013-2020. The current strategy (2007-2012) was utterly devoid of a gender equality perspective. Its hard targets were limited to work accidents, which account for only a tiny proportion of health impairment. Its implementation has delivered no progress on the biggest issues of cancer and musculoskeletal disorders.

My thanks go Daniela Tieves for her enthusiasm and the quality of her research during her internship with our institute in 2010 and to all those who gave input to this report.

1. Introduction

" One should think of sex as a property of organism, not as a class of them." (Goffmann 1977: 305)

The issue of women and occupational health has been considered by different institutions in recent years (Vogel 2003, EU-OSHA 2003) and many aspects of it - like chemicals and reproductive health - call for more thoroughgoing analysis. The question of why women and health at work should merit examination finds an answer in Gottschall's affirmation that: *"Looking at employment and the work force in European industrial societies"* it can be seen that *"the working world is not gender neutral"* (Gottschall 2010: 671, own translation). If that is so, a gender-neutral approach to health at work is not appropriate.

Women's historical role as wives and mothers - arguably the main reason for segregation in the workforce[1] - was considered as "normal" until the 1960s. Therefore, women's lesser participation in employment (and education) found broad acceptance in society (Gottschall 2010: 671). It may also explain why research on the outcomes of work on workers and society focused on male-dominated sectors.

But the pattern of the workforce is now changing. The female employment rate in the European Union (EU) stood at 59.1% in 2008 (European Commission 2010: 8), although this is less an indicator of growing equality than a measure of incrementally rising female participation in the workforce. This growing participation also prompts the question of whether the quality of women's employment is also improving. This will be discussed in relation to women's working environment. However, there remains broad segregation between women and men in the workforce, not only within sectors, but also within occupations and the positions occupied by men and women[2]. This is described as horizontal and vertical segregation.

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1. Naturally, other factors are also in play, but the historical role of women in society and especially in families seems to be connected to this reason. One other big influence could be the structure of vocational training as Gottschall shows in relation to Germany: "As this analysis shows, gender can be firmly embedded in the structure of training systems, particularly in the case of strictly regulated systems, and act as a permanent structural element in the labour market, via linkages between training and employment systems. Accordingly, equality of levels of training can indeed go hand in hand with a hierarchical structure of professions or, by reference to employment careers, with a 'processual imbalance' which builds up over the course of a lifetime (Krüger, 1995) (cf. also Mayer/Allmendinger/Huinink, 1991)." (Gottschall 2010: 682; free translation)

2. It is not just the situation of women at work, but also – and partly in consequence – that of families that has begun to evolve and change. This includes such things as marriage, mother's age at first birth and childlessness. An overview of the situation can be found in Menning, 2004.

Although the stereotype of women as homemakers may be declining in European societies, its historical roots have produced an understanding that women's special role in regard to domestic work must be factored into any consideration of women and work (Gottschall 2010: 677). This not only includes the "double burden" of women working both outside and inside the home (women are more likely to do [more] housework than men), but also influences "female jobs". Women are more likely to work in occupations and/or sectors which are (traditionally) associated with "female qualities/talents" like caring for others or organising social arrangements.

Another significant outcome of this situation is the lack of research into female employment. Sociological theories of work (like those of Karl Marx and Max Weber) focused exclusively on male employment – chiefly industrial and administrative work which were essentially male preserves. Female-dominated domestic and employed work is a relatively recent research concern (Notz 2008: 472). This is also changing as for example the growing body of research literature on nurses and nursing shows. But there still remains a paucity of research into women in different occupations.

This segregation and the consequences of this change in the workforce in recent years have a huge impact on the situation of every individual worker. The situation described above is also tied into a specific societal understanding of the position of women in society. It is predicated on a specific conception of gender and its place in society. Initial "sex-class placement" stands at the beginning of a lifelong classification of a human being performed at birth which assigns the human a place in the social classification system (Goffman 1977: 302).

While this report focuses on gender inequalities in occupational diseases, the existence of other inequalities should not be overlooked. Dembe (1999), for example, points to the inequalities between white and ethnic minority workers in the United States. The latter are mainly found in higher-risk occupations or assigned tasks with worse exposures. But there is also an as-yet unresolved issue: "*The fact that a residual difference remains even after adjusting for job category has prompted Loomis & Richardson to suggest that there may be other factors contributing to observed disparities besides the basic risks inherent in jobs performed by minority workers.*" (Dembe 1999: 569)

To inquire more closely into the issue of women and work-related illness in Europe, and hopefully yield some insights into matters such as those alluded to by Dembe (above), this report approaches the topic from different angles. Some background information on women in the workforce and women's work and health is first given. The topic of occupational diseases is then considered, with more general information on historical aspects and the general statistical situation in the European Union. The focus is then turned to women and occupational diseases, with an examination of the social and theoretical framework and the situation of women and work-related illnesses in the EU using overall data. This is then fleshed out in more detail with a discussion of specific diseases using country data in the final chapter. The report concludes with a brief overview of possible avenues for future exploration in this area.

2. Women at work in the 21st century

Before looking at occupational diseases more specifically, this introductory chapter sets the background to the discussion on work and work-related health as it particularly affects women. A certain amount of basic information is needed to contextualize the discussion on women and occupational diseases. This first chapter introduces that more general information and the scope of topics that are important to the discussion later in the report. It first paints a broad picture of gender at work within the EU (2.1). The situation of women in the workforce, their position and role are key to the analysis of occupational diseases. The second part of this section examines health at work with particular reference to the situation of women (2.2).

2.1 Women and work

The female labour force participation rate increased more rapidly than the male rate, which virtually stagnated, from 2000-2006. Although women make up 40 to 50% of the workforce in nearly all member states, their employment seems to be confined to fewer sectors than male employment, and this appears to be increasing over time.

The female-dominated sectors are:
— health care and social work;
— public administration;
— retailing;
— business activities;
— education;
— hotels and restaurants.

Together they account for 61% of female employment. These six sectors, however, accounted for only 31% of male employment (data for 2005) (European Commission 2008: 55)[3]. This has produced a predominantly female workforce - particularly so in health and social work, education and retailing - which has

3. For men, the degree of concentration in the six most important sectors is much less (42%) and the sectors are different: construction, public administration, retailing, business activities, agriculture and land transport. But not only is the situation of men less concentrated, it also differs widely across EU countries.

increased for education in particular from 2000 to 2006. The EU-wide distribution of male and female workers within the sectors is the same with slight variations in particular sectors. The degree of concentration is very high for the health and social work sector in particular; in all EU countries (except Malta) the proportion of women in this sector is over 60%, and usually closer to 80%. This concentration in a handful of sectors is reflected by the occupations typically held by women.

In 2005, almost 36% of women in the EU were employed in the following six occupations:
— shop salespersons and demonstrators;
— domestic and related helpers/cleaners and launderers;
— personal care and related workers;
— other office clerks;
— administrative associate professionals and housekeeping;
— restaurant service workers.

The importance and proportion of this group of occupations differs between countries[4], but the group remains unchanged overall. Gottschall's analysis of this situation focuses on the underlying mechanisms, which seem to have kept this segregation relatively unchanged in recent years: *"A Swiss study of the construction of gender difference in differently categorized service professions finds that the social relevance of gender to vocational fields and business contexts varies and indirect mechanisms of reproducing gender differences (e.g., working time structures and the requirement of higher-level computing skills) become more important than exclusion mechanisms."* (Gottschall 2010: 686, own translation)

Domestic workers

Domestic work "*is one of the fastest growing economic sectors in Europe*" (ETUC 2005: 4). This rise is mainly due to an ageing population leading to a rise in elderly care demand combined with changing patterns in the workforce resulting in a rising need for help around the home. The situation of many of the mostly female employees in private households is described as precarious. Often they are not officially registered, pay is low and working conditions poor. This explains why in many cases it is vulnerable groups - women and migrants - that are employed in this sector. The situation regarding occupational health and safety as well as social security is very different in the EU member states.

(ETUC 2005)

Stabilisation of gender segregation by sectors and occupations is compounded by another segregation-related problem which is clear to see from the occupations and their working conditions - most are not providing high wages or permanent contracts.

4. Relatively small difference in Estonia, Latvia and the Czech Republic, over 15% more women in the group of six than for men in Denmark, France, Cyprus, Luxembourg and Sweden.

"The expansion of low wage employment in the service sector leads not only to the emergence of a feminized, so-called pink collar segment in most Western societies but also to a stabilization and/or tightening of gender segregation (Charles/Grusky 2004). This also reinforces social inequality among women." (Gottschall 2010: 687, own translation)

Gender differences are also to seen between fixed-term and permanent jobs. In nearly all EU countries (except Lithuania, Latvia, Hungary and Poland) the proportion of women working in fixed-term jobs is higher than the proportion of men, where the overall proportion of fixed-term employment varies widely (from over 35% in Spain to 4% in Ireland and Romania), due to differentials in labour market structure in Europe. Furthermore, the proportion of women working involuntarily in fixed-term jobs is higher than that of men (except in Latvia, Lithuania, Hungary, Poland and Slovakia). Fixed-term jobs are especially prevalent in the under-30 age group, where the rate of involuntary fixed-term employment is also higher (European Commission 2008: 78-81).

The gender pay gap

The gender pay gap is the percentage difference between the average income of women and men; it is referred to as one of the main indicators for equality. But it cannot be taken into account as the only indicator, as the numbers are influenced by many factors such as the segregation in a workforce (in a specific country) or female participation in a workforce.

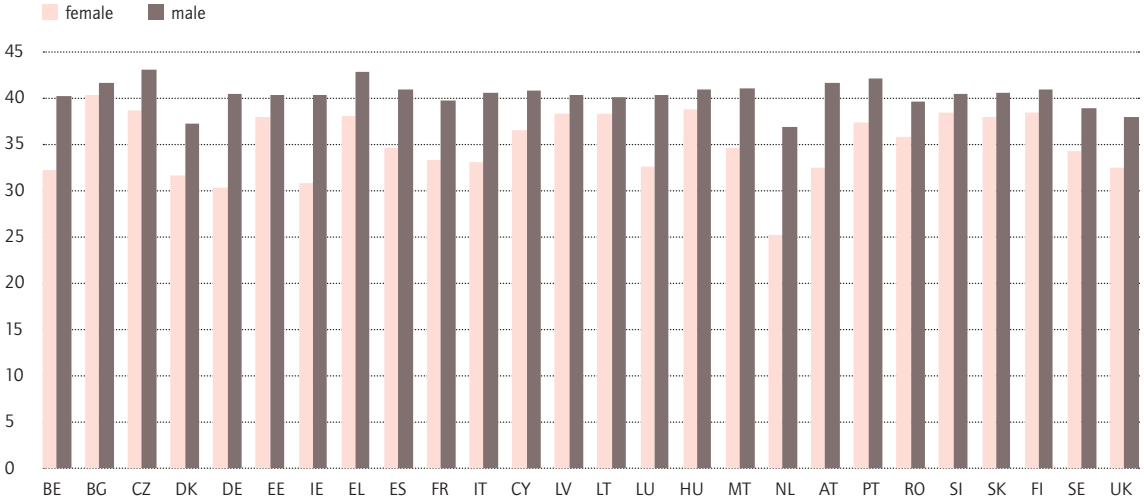
For the EU-27 the gender pay gap in 2008 is given as 17.6 by EUROSTAT. The range in the countries varies from 4.9 in Italy to 26.2 in the Czech Republic.

(European Commission. Directorate-General for Employment, Social Affairs and Equal Opportunities; EUROSTAT)

In addition to industry/sector, occupation and contract type, weekly working hours are an important factor in the gender dimension of work. As this factor will be even more important in regard to exposure as a cause of occupational disease, it will be discussed in more detail than the other factors.

Figure 1 gives an overview of the situation for both part-time and full-time employment in the EU countries in 2008. The first important point here is that in all countries, women's weekly working hours are shorter than those of men. The size of the gap between the sexes varies widely between countries.

Figure 1 **Average number of actual weekly hours of work in main job by sex – 2008**



Source: EUROSTAT

In addition to gender differences in the distribution of working hours, the time spent by women and men (aged 25-44) on unpaid domestic work differs greatly between the sexes and countries. "*In contrast to paid work, women spend considerably more time doing unpaid domestic work than men.*" (European Commission 2008: 111). Although more limited[5] than the data for working hours and part-time work, this data shows that women work – on average – 30 minutes more (paid and unpaid domestic work together) than men. Additionally, the surveys which yielded this data show a great difference between high- and low-income countries (from 10 minutes to almost an hour). The time difference between men and women spent on unpaid domestic work also varies greatly between countries (European Commission 2008: 111-113).

Similar findings are made by the Fourth European Working Conditions Survey. It found that in all countries of the EU, "*working women spend more time in unpaid work than do working men*" (EUROFOUND 2007: 25). The European Foundation for the Improvement of Living and Working Conditions (EUROFOUND) results also distinguish between different country groups:

"*In the Netherlands and the Scandinavian countries (and Switzerland), the amount of unpaid work is more equal between men and women than in southern European, continental and candidate countries; eastern European countries fall somewhere in between.*" (EUROFOUND 2007: 25)

In a study in Catalonia (Spain) Artazcoz *et al.* (2004) measured family demands by size of household (two, three or more than three), living with children aged

5. The data is based on time use surveys carried out in 14 EU member States - LT, LV, EE, PL, HU, ES, SI, IT, FI, SE, FR, BE, DE, UK - between 1998 and 2004. For more information on the survey, also see Aliaga 2006.

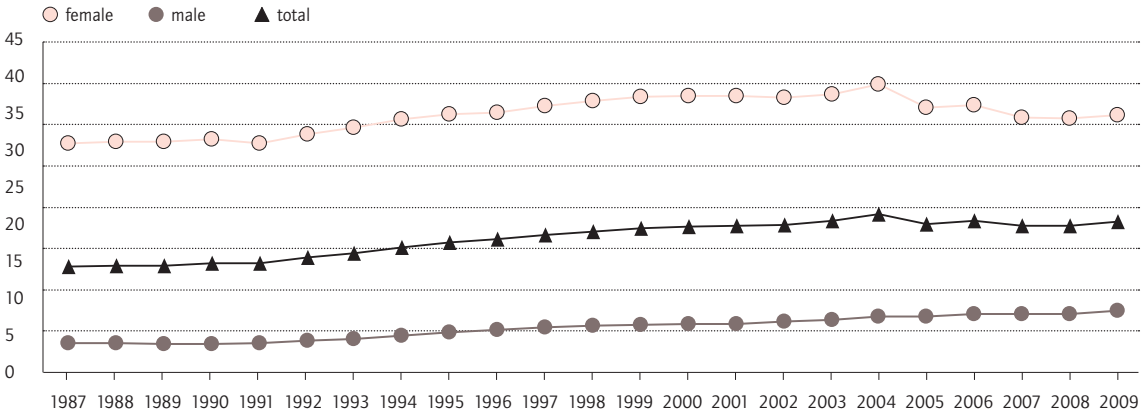
under 15 and with people aged above 65. For employed women they found – with regard to family demands and health outcomes – "*the combination of a low educational level and high family demands had a consistent negative effect on different health indicators*" (Artazcoz *et al.* 2004: 271). They suggest that women with higher educational status and therefore mostly better jobs are able to procure help from domestic workers for such tasks as cleaning or child care.

These figures for the EU are borne out by Stratton (2003) for the US, with the finding that women tend to spend more time on "indoor-housework" if they get married. Also the amount of (married) women's employment earnings seems to play a role, as higher earnings go along with less time for housework (Stratton 2003: 81)[6].

Another salient aspect of women and work is the distribution of part-time work between the sexes. Over the past twenty years, the proportion of female part-time employment can almost be described as traditionally higher than that of male part-time employment.

Figure 2 shows the EU trend in distribution[7] over the past 20 years.

Figure 2 **Part-time employment as percentage of total employment in the EU (%) – 1987-2009**



Source: EUROSTAT

Part-time employment generally and the proportion of men working part-time are both rising. Women's part-time employment has declined slightly from a peak in 2004. Another frequent issue in relation to part-time work and gender is that of involuntary part-time work. This must be approached with caution, as it inquires only into the situation, not the factors leading to the decision that part-time work is perceived as voluntary (e.g. family duties, lower pay for women, making it easier for them than men to work shorter hours in

6. A more detailed analysis of gender aspects in working time and the outcomes especially concerning work-life balance can be found in Krings *et al.* 2009.

7. The EUROSTAT data is for the following groups of countries: EC6-1972, EC9-1980, EC10-1985, EC12-1994, EU15-2004, EU25-2006, EU27.

order to provide childcare). The data on this are often argued to prove that women choose part-time work without inquiring into the factors that might have prompted the decision to work part-time. Nevertheless it is a source of information not to be dismissed, but it must be approached with caution.

Since 1987, the proportion of men working involuntary part-time has been consistently higher than that of women. But since 2000 especially, the gap appears to have narrowed and the percentage of women working involuntary part-time has risen by nearly 10% (from about 12% in the late 1980s to around 22% in recent years). After a decline at the end of the 1980s followed by a rise and a further decline over the 1990s, the proportion of involuntary part-time work has begun to rise again since 2002. Over this time, the gender gap has narrowed from around 20 to around 10 percent.

This short introduction is clearly not a detailed picture of women's situation in the EU workforce. But as this report is concerned with occupational diseases rather than employment trends, readers in search of more details are referred to the sources used for this chapter.

2.2 Women, work and health

" Gender is associated with a wide range of contextually and individually related exposures in addition to being related to factors that are linked to gender differences in health outcomes."
(Härenstam 2009: 127)

Following the brief overview of recent trends and the current situation of female labour force participation in Europe, this chapter looks at the health-related outcomes of this situation generally. It considers the general approach to women's occupational health in the European Union as well as selected exposures and risks to women in workplaces. The main concern here is to provide background for the discussion of occupational diseases further on, and the risks and exposures have been selected with that in mind. The literature may usefully be consulted for a more general overview.

"*The approach of the EU towards occupational health, which includes most of the overall aspects regarding work and health, is often characterized as 'gender neutral'*." (EU-OSHA 2003: 9). This has been criticized as inappropriate, especially in light of the findings of research into gender aspects in health and work. It also disregards the three dimensions of biological differences, distribution of work between the sexes (mentioned in passing rather than factored in) and the possible links between household work and paid work (Vogel 2003: 115).

The key findings of a report (by Kauppinen, Kumpulainen and Houtman in cooperation with other European OSH experts) published by EU-OSHA in 2003 addressing "Gender issues in safety and health at work" show the broad range of specific points and topics that are linked to gender aspects in health at work.[8] One of these is musculoskeletal disorders (MSDs): "*MSDs are very*

8. Since the focus of this report is occupational diseases, this chapter only briefly looks at those aspects which are important to the main discussion. Further information can be found in the sources cited here.

commonly encountered in certain occupational sectors that employ predominantly women (e.g., nursing, assembly lines) and are considered to be one of the major causes of absenteeism and morbidity among the female working population. Although this condition may manifest through a variety of syndromes (lower-back pain, carpal tunnel syndrome, shoulder bursitis, etc.), it is well-known that a number of factors related to activities in the workplace, or specific tasks, are highly associated with the development of musculoskeletal disorders in different parts of the body." (Polychronakis *et al.* 2008: 43)

The report's findings include the following key issues:

- Both women and men can face significant risks at work.
- Different jobs, different exposure to hazards.
- Gender segregation in the home: unequal sharing of household duties adds to women's workload.
- Different exposures to work hazards, different health outcomes.
- Reproductive hazards – an unequal focus.
- Examples of hazards and risks in areas of women's work.
- Linking equality and occupational safety and health.
- The risks of ignoring gender.
- Research gaps – improving knowledge of risks to women.
- Promoting equality in prevention: gender mainstreaming and gender impact assessment.
- Taking action to improve gender-sensitivity in risk prevention.

(EU-OSHA 2003: 10)

Those risk factors can be divided into "*physical, ergonomic and psychosocial factors*" (Schneider and Irastorza 2010: 30). Although the proportion of workers reporting MSD-related problems varies greatly between EU member states (between 8.2 and 53.5% in 2000/2001 according to the EWCS) (Schneider and Irastorza 2010: 32), it is worth looking at the all-Europe distribution to get the broad picture. As MSDs are one of the foremost work-related diseases in Europe, this requires further elaboration here.

Nearly a quarter of workers report suffering backache or/and muscle pains in shoulders/neck and/or upper/lower limbs related to their work. These perceptions are linked to known risk factors for electronic equipment assembly, textile and sewing workers, typists and computer operators, and supermarket check-out staff. What all these occupations have in common is that (excessive) repetitive movements of the upper limbs are required to perform their work tasks (Schneider and Irastorza 2010: 37).

These exposures, which are typical for the job positions cited, are exacerbated by the characteristics of female workplaces, particularly in the manufacturing sector. Factors like family duties mean that women, already dealing with discontinuous career paths, are often forced to accept low-skilled jobs which are not only characterized by the above risk factors, but often also include poor (ergonomic) working conditions and less prevention or attention to workplace design, working processes and the tools used (EU-OSHA 2003: 41-43).

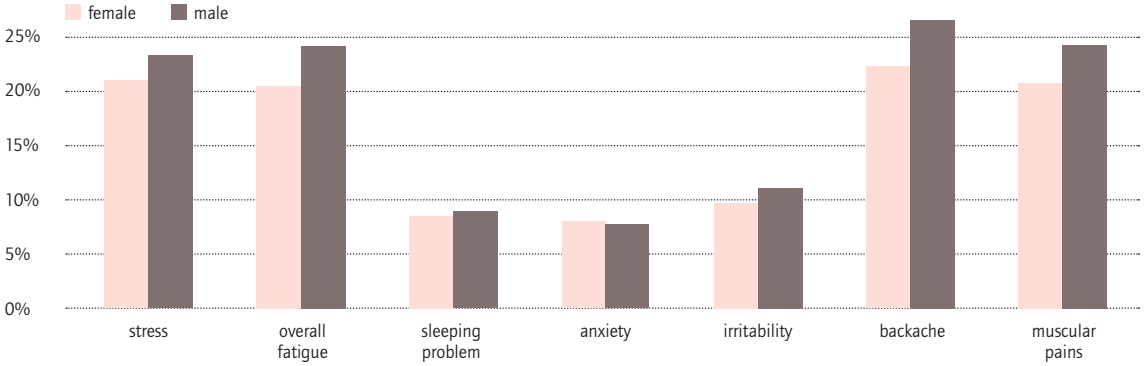
One case in point is the exposure of women to vibration, which leads to a higher risk of upper limb disorders. The research on this has been done predominantly on men, so ignoring the anthropometric differences between women and men which should be factored in to account for different morphologies (EU-OSHA 2003: 78).

Looking generally at musculoskeletal complaints, most of the EU-level studies and country-based surveys find no significant differences between women and men other than a higher prevalence of upper limb disorders reported by women (e.g. EU-OSHA 2003: 41-42, studies cited in Hooftman *et al.* 2004: 261). As the earlier conjectured reasons for those differences could not be wholly verified, Hooftman *et al.* (2004) focus their review on risk factors, arguing that bodily differences mean that "*tasks performed with the same (absolute) exposure will, in most cases, result in a higher relative workload for women, which could lead to more complaints*" (Hooftman *et al.* 2004: 262). Also, coping strategies for workplace exposures differ between the sexes. Some evidence was found that men may be at higher risk for lifting and women for arm posture. The lack of more (high-quality) studies constrains their findings, leading them to call for further study in this field (Hooftman *et al.* 2004: 268-270). A similar conclusion is drawn by Neely and Burström (2006), who looked at the perception of hand-arm vibration and possible gender differences. They found no significant differences for threshold measurements, but "*ratings for both perceived intensity and discomfort were higher for females*" (Neely and Burström, 2006: 135). These differences can not only lead to different behaviours and coping strategies concerning the same tasks at work, but also "*could put workers at risk for HAVS [hand-arm vibration syndrome, DT] because the current frequency weights are used in evaluating hand-held tools*" (Neely and Burström 2006: 139).

As this may arguably be but one piece in the puzzle of explanations for gender differences in upper limb MSDs, it may be relevant to consider a study done by Strazdins and Bammer (2004) in Australia. They found that: "*At work, women spent more time using computers, did more repetitive movements, and reported poorer and less comfortable equipment. Outside of work, women bore the brunt of the unpaid work involved in parenting, and to accommodate the time squeeze, cut back on their exercise and relaxation.*" (Strazdins and Bammer 2004: 1002). So work segregation and shouldering the main burden of household work are interlinking factors, which could also be explanatory in Europe.

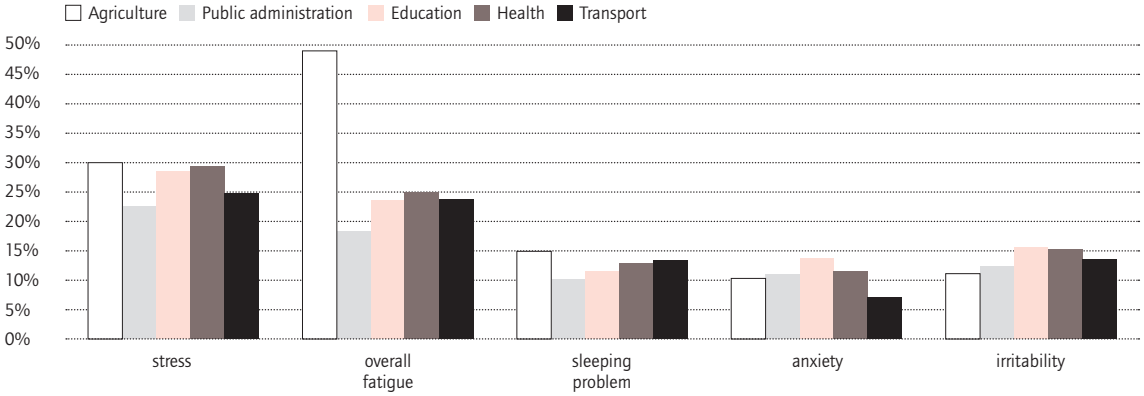
Another "prominent" hazard for both men and women is psychosocial risks. Stress and overall fatigue are the next most frequently reported perceived work-related health problems after MSDs according to the EWCS (2005), as can be seen in Figure 3. Although in the overall picture the perception of psychosocial outcomes is nearly equal for the sexes, the detailed country figures reveal huge differences in some countries (e.g., Poland, Slovenia, Finland and Belgium – for details see Milczarek *et al.* 2009: 55). The sector-specific figures (especially with regard to segregation) also merit consideration. The figures from the 2005 European Working Conditions Survey suggest that the female-dominated sectors of health and education are especially affected by psychosocial problems.

Figure 3 **Reported health problems by gender, 2005**



Source: EWCS

Figure 4 **Reported health problems by sector, 2005**



Source: EWCS

It can therefore be conjectured that many women who work in those sectors are at particular risk for the psychosocial factors mentioned here. Another study looks at the situation from a slightly different angle. The BiBB/BAuA-"Erwerbstätigenbefragung" 2005/2006[9] from Germany not only inquires into the burdens and exposures at work, but also seeks to determine whether participants find this factor stressful or not. The figures show that for the three most frequently cited factors, not only is female exposure higher, but so too is their perceived stress (see Table 1, p. 18).

9. The BiBB/BAuA-Erwerbstätigenbefragung is a representative telephone survey in Germany (20,000 workers), which focuses on education, work and qualifications as well as on exposures and demands at the workplace.

Table 1 **Mentally stressful labour situations**

Factor	Exposed		Stressing	
	Male	Female	Male	Female
Various tasks at the same time	59.2	67.4	15.7	19.0
Deadlines and pressure to perform	59.9	56.9	34.2	37.0
Being disturbed	46.9	53.8	28.6	32.6

Source: Beermann *et al.* 2008

This data suggests that women's perceptions of the same workplace risks differ from those of their male colleagues.

Gender/ stress – gender roles and mental stress

The study done by Sujet (consultancy firm) in Germany shows a close connection between mental stress and gender roles at the workplace. They argue that demands and expectations are linked to gender and the stereotypes arising out of gender-specific occupations or tasks in particular occupations. The study finds a connection between the societal discussion of gender issues and their outcomes in the perception and design of working conditions and occupational roles as well as different self-perceptions between the sexes.

(Gümbel and Nielbock 2009)

Taking burnout[10] as a case in point of an outcome of psychosocial risks in the workplace, the research literature yields some interesting results. Burnout is categorized as a disease often associated with "*depression, anxiety, sleep disturbances, somatic symptoms (e.g. cardiovascular) and physiological reactions such as prolonged elevations of glucose and markers of inflammation*" (Soares *et al.* 2007: 61).

Norlund *et al.* (2010) found a higher rate of burnout for women in northern Sweden. They attributed 50% of the sex differences to work- and life situation-related factors. For women in particular they found that "*significant associations to burnout were to a large extent related to the socioeconomic situation*" (Norlund *et al.* 2010: 8). As women are not a homogenous group, it is important to look at women and burnout in detail, as Soares *et al.* (2007) argue in support of their study's focus on women. They also found that high burnout levels were linked to reports of "*a worse situation than their counterparts socio-economically, work-wise, emotionally and physically*" (Soares *et al.* 2007: 69). Their analysis also shows that the complexity of burnout, especially among women, requires further research and particular preventive measures.

10. A person suffering burnout can be described as "*a person who cannot restore from tiredness, with a variety of bodily symptoms, who withdraws from social contacts, and has an increasing feeling of inefficiency*" (Lindblom *et al.* 2006: 51). The fact that stress is seen as a process developing over time is part of the interpretation of burnout as a process. Burnout is also "*characterised as a syndrome of emotional exhaustion, depersonalisation and reduced personal accomplishment, and with emotional exhaustion as the central component*" (Soares *et al.* 2007: 61).

The issue of psychosocial health brings up another aspect often cited in connection with women's work-related health issues: the double burden of women in work and household duties.

The fact that women still perform more household duties and provide more family care – based on time spend – was mentioned earlier in section 1.1. Where occupational health-related issues are concerned, research offers some interesting findings. First is a study by Franche *et al.* (2006) of female health care workers in Ontario (Canada) to examine how work conditions and work-family balance can be predictors of work affecting mental health: "*The findings suggest that workplace factors associated with workers' mental health are not only related to the work conditions and environment but also to the interface of work with family*." (Franche *et al.* 2006: 102)

The findings made by Chandola *et al.* (2004) chime with this. They used data from the Whitehall II study (United Kingdom) to look at the effects of low control at home on coronary heart disease and possible gender differences. They found that low control at home, which "*has been seen to originate from two sources – lack of power within household relationships or demand overload*" (Chandola *et al.* 2004: 1507) is a predictor of the incidence of coronary heart disease for women, but not for men. Besides showing the importance of the domestic situation for women's health (as men are more affected by the psychosocial environment at work), these findings point up the existence of gender differences on health outcomes from risks.

The studies by Artazcoz *et al.* (2004) tie into these conjectures. They argue that now working is the norm for women, studies must no longer focus only on "*the potential benefits or health-damaging effects of employment*"(Artazcoz *et al.* 2004: 264), but change the scope to "*the impact of family demands on women's health*" (Artazcoz *et al.* 2004: 264). So doing, they concluded that family demands, employment status and socio-economic position have an important impact on women's health. Their main findings suggest a difference between housewives and employed women based on educational level (and differing for different health indicators). Finally they found, that "*the health-damaging effect of family demands is restricted to less privileged female workers*" (Artazcoz *et al.* 2004: 268).

The findings of Borell *et al.* (2004), whose aim was "*to analyse the association between self-reported health status and social class and to examine the role of work organisation, material standards of living and household labour in explaining this association*" (Borell *et al.* 2004: 1872), support the findings of Artazcoz *et al.* They noted an apparent connection for women between poor health and household material standards as well as long hours of uncompensated household work.

Arguably, therefore, it is not only the hazards of working life that have an important impact on women, but such aspects as work-family-balance, hours of (uncompensated) household work and material standards at home also play a

role in health. This calls for a more integrated approach towards women, work and health and the measuring of demands and exposures.

As stated earlier in this report, working time is a key aspect with regard to occupational health. This is even more so with lengthening working time and as workers face problems juggling work and private life duties. As it is more often women who shoulder family care duties, this risk is especially important with regard to women's health. In the EU, the Working Time Directive has special importance for female workers, "*who experience significant work-life balance problems, trying to apportion their limited time between demanding jobs and household chores*" (Polychronakis *et al.* 2008: 55). The importance of working time to health and safety at work is back on the EU agenda with the review of the Working Time Directive.

Part-time work (and its high prevalence in the female labour force) is also a factor that feeds into women's occupational health as not all part-time workers can access OSH-programmes. Council Directive 97/81/EC requires part-timers to have the same rights as all other workers, which includes participation in health and prevention, but this does not always happen (see Polychronakis *et al.* 2008: 59).

Although this first overview of issues in women's occupational health paints only a fragmentary picture, since the main concern of this report is occupational diseases, it nevertheless offers a glimpse of the complexity of the topic and the wide range of factors which have to be taken into account. The issue will in all likelihood remain fragmented for want of a general gender mainstreaming concept for women and health at work or any EU regulations on the matter: "*It should be stressed that Council Directive 92/85/EEC (Official Journal L 348, 1992a), that stipulates the context for the protection of pregnant and breast-feeding workers, is the only statute at the European level that refers specifically to female workers.*"(Polychronakis *et al.* 2008: 52)

While all the main risks cited here have been treated separately for clarity of focus, it is clear that workers face those risks in combination in their everyday lives: "*In the EU-OSHA's European Risk Observatory's expert forecast, it was described that workers highly exposed to a combination of physical and psychosocial risk factors at work are more likely to report musculoskeletal problems than workers exposed to only physical risk factors of musculoskeletal disorders or psychosocial risks.*" (EUROSTAT 2010: 75)

This integrated approach towards the hazards that workers - and especially working women - face in everyday life forms the particular backdrop to the discussion on occupational diseases as one outcome of the problems discussed in this chapter.

3. Occupational diseases as an outcome of work

This chapter focuses on occupational diseases as one of the outcomes workers face from their everyday duties. The systems relating to occupational diseases, their recognition and/or compensation in the EU member states, differ widely and so a detailed description of each or a comparative study of all systems is outside the scope of this report. Nevertheless, this chapter tries to give a general introduction to the topic of occupational diseases from the European angle. Chapter 3.1 therefore reviews the history of occupational diseases with some examples of the current situation at the European level. After this background information, chapter 3.2 shifts the focus to women. The special place of women in the occupational diseases system is first briefly discussed, after which data from EUROSTAT's EODS-database is presented along with data from the fourth European Working Conditions Survey done by EUROFOUND.

3.1 History and introduction

The existing model for the recognition and compensation of occupational diseases as well as the model of "health at work" can be seen as the outcome of a historical development measured for the transnational level in three waves by Rosenthal (2009: 171):

1. End of the nineteenth century: "The forensic *occupational diseases* model, which was advocated after 1906 by the *Commission internationale permanente pour l'étude des maladies du travail*." (Rosenthal 2009: 171). The main goal was to demonstrate the possibility of a legal framework for workers made ill by their work.
2. Around 1930: the *occupational medicine* model was introduced by the ILO (with support from the CIPEMT) enabling aspects of social medicine and work organisation to be brought together.
3. Since the 1970's: the *health at work* model promoted by the ILO and the EU has prevailed. It seeks to integrate a more "*interdisciplinary idea of sanitary well-being*" (Rosenthal 2009: 171).

It can be broadly said, therefore, that occupational disease recognition and compensation systems stem more from concerns for technical coherence. The importance of this evolution of compensation systems is stressed by Fuchs (2009), who argues that: "*Insurance schemes against accidents at work (supplemented later by the insurance against occupational diseases) paved the way and became the model for other branches of social insurance*." (Fuchs 2009: 163)

The importance not only of the historical development of occupational disease compensation systems, but also the roots that continue to influence the mechanisms of those systems, are good reasons to bear the history in mind. Hatzfeld (2009) stresses the influence of the EU from the outset of his investigation of the transnational development of the recognition of MSDs. He therefore looks at the very earliest steps taken by the European Community when "*the Commission undertook to orient the policies of the member states in terms of recognition, redress and prevention of work-related health conditions*" (Hatzfeld 2009: 267). Identification of the most severe problems was made difficult by wide differences between national statistics, compounded by the different national recognition and compensation systems found by the experts analysing the situation.

"These differences are sometimes stressed because of the inequalities they produce in the provisions guaranteed to workers, and at other times they are minimised as if they were mere differences in terminology." (Hatzfeld 2009: 267)

Nevertheless the first Recommendation for a "standard European list of health-related conditions and substances" issued by the EEC Commission in July 1962 and subsequent developments in this field can be seen to have had some influence. In his conclusion on the developments concerning MSDs in Europe, Hatzfeld goes so far as to argue that the transnational level may be a better driver for progress than national policies/institutions: *"In general terms, the Transnational scale seems to be scope for progress in the assumption of responsibility for work-related health problems, while the national level rather seems to favour its rejection."* (Hatzfeld 2009: 280)

In addition to the interaction between the national and transnational levels, the development of national social systems and the role of the social partners and workers themselves must be taken into account.

A case in point here is that of the Radium Girls in 1920s America. Public opinion viewed the newly-discovered radium as a sort of miracle substance which could cure cancer and had health benefits, so workers did not perceive it as a danger in the workplace. Many of the workers affected were women, employed on painting watch dials and instruments with a mixture of radium powder, water and glue. Company supervisors told them to point the brushes with their lips or tongues. The company concerned, U.S. Radium, engaged in what amounted to a disinformation campaign, evidenced for example by laboratory staff taking more extensive precautions to protect themselves. Radium necrosis – a fatal disease - was brought into the public eye when three women sued the company and the case caught press attention. The women did not stand alone - publicity was secured through interaction between their lawyer, in association with the consumer league, Alice Hamilton, and press coverage, putting it in the public arena (Neuzil and Kovarik 1996: 33-52). So here, it was interaction between individuals suing, the resulting publicity, and the action of an organisation which brought about knowledge of the occupational disease and an opportunity to improve the situation for workers.

This example also shows the importance of workers' own perceptions of their health damage and how inherently important actions taken by the affected workers themselves and their colleagues may be.

History also yields a description of occupational diseases that goes beyond the purely medical. May and Bird (1993) define occupational diseases as:

"a) On the one hand, the outcome of a particular public attention elicited by abnormal clusters of diseases in individual industrial sectors or by prominent hazards from certain causes at work;

b) On the other hand, the results of socio-political treatment of these abnormalities. So, even more than diseases at all, (see Lachmund & Stollberg 1992) occupational diseases are social constructions." (May and Bird 1993: 389, own translation)

This definition is borne out by the current situation in the EU. Every member state (apart from the Netherlands[11]) has its own system for the recognition, treatment and compensation of occupational diseases shaped by its own historical development and cultural and political background. The European Commission's most recent measure on this was the Recommendation of 19 September 2003 concerning the European schedule of occupational diseases (2003/670/EC) which mainly recommends that member states develop prevention, work to introduce the European schedule of occupational diseases (Annex I) into national law, promote research concerning Annex II, which consists of *"diseases suspected of being occupational in origin which should be subject to notification and which may be considered at a later stage for inclusion in annex I"*, and continue transmitting data to the EODS system[12]. As the Commission has produced only Recommendations, the results in the member states are very different and – most importantly for the present report – wide variations (still) remain between the different member states.

The different systems have produced different approaches in recognition and compensation of occupational diseases. Scheele (2009) sums this up as follows: *"The same diagnosis in a particular case means a different assessment in terms of possible compensation depending on the country where the*

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11. The Netherlands has no separate system for the prevention, recognition and/or treatment of occupational diseases or occupational accidents. They fall within "normal" health care provision.

12. The history of European Commission measures can be tracked through the following publications, all published in the *Official Journal of the European Union:*
- Commission Recommendation of 19 September 2003 concerning the European schedule of occupational diseases (2003/670/EC), 25.09.2003;
- Communication form the Commission concerning the European Schedule of Occupational Diseases (COM (96) 454 final), 20.09.1996;
- Commission Recommendation of 22 May 1990 to the Member States concerning the adoption of a European schedule of occupational diseases, L 160, 26.06.1990, p. 39-48;
- Commission Recommendation 66/462 of 20 July 1966 on the conditions for granting compensation to persons suffering from occupational diseases - *Journal officiel* 1966, 147, p. 2696;
- Commission Recommendation to the Member States of 23 July 1962 concerning the adoption of a European schedule of occupational diseases - *Journal officiel* 1962, 80, p. 2188.

workers live and work, and whose criteria are met in the case for the workers concerned." (Scheele 2009: 3, own translation)

Taking this widely diverse situation as a basis for a European comparison in her discussion of the recognition of occupational diseases, Elsner (2008) concludes that the current situation is "unsatisfactory" (Elsner 2008: 285, own translation) for workers. She argues for harmonisation of national schedules:

"Harmonisation of national schedules of occupational diseases could improve their situation in the European context and at the same time provide an incentive for prevention." (Elsner 2008: 285, own translation)

All these things arguably mark out occupational diseases – and the systems for their recognition and compensation - as an important issue for science and policy at the European level. Evidence in support of this could be found from an analysis of the figures and associated costs of the problems concerned. But Rosenthal's analysis leads him to a different conclusion: the situation of occupational diseases in Europe not only seems to differ widely in each country, but there also seems to be room for improvement: *"Finally, health and safety at work highlight one grey zone of Welfare States that has been neglected for too long. In all industrialised countries, in spite of deep national variations among systems of financial compensation, occupational injuries and diseases are a weak link of social and sanitary protection. Massive statistical under-registration, acknowledged by Eurogip for the European Union, only allows one to suspect the extent to which bad working conditions affect a large section of the workforce."* (Rosenthal 2009: 170)

Bearing in mind system differentials between EU member state and the registration failings identified, the next chapter seeks to give an overview of the situation in the EU. As to whether Rosenthal's analysis also holds good for the specific situation of women will be discussed after a consideration of women's overall relation to occupational diseases.

3.2 Overview of the EU-wide situation

Rosenthal argues that the massive statistical under-registration he identifies is partly due to system characteristics, and identifies one of the outcomes as the varying number of member states submitting data to EUROSTAT each year. Nevertheless, a brief word about the overall situation in the EU based on EODS[13] data is required given the issues stemming from the year-on-year

13. The European Occupational Diseases Statistics (EODS) is a data collection held by EUROSTAT. Further explanations can be found in the methodology paper, which can be found at: http://circa.europa.eu/Public/irc/dsis/hasaw/library?l=/occupational_statisstics/working_2000_methodo/_EN_1.0_&a=d. Because of the scope of this report and the difficulties of analysis that would arise from considering individual countries, only the total figures for recognitions are used. The data is also available broken down by severity of the diseases (unknown, death, not mentioned, temporary, permanent).

variations in the number of countries submitting data and the availability of data only for recognitions, not claims. Recognitions are also disaggregated by severity, NACE sector and sex. The analytical problems from these circumstances notwithstanding, this data does give an initial impression of the current situation in the EU and is therefore included here. As national data will also be cited further on in this report, not all of which is available for all EODS data subcategories, only recognitions and claims are analysed, discounting severity.

Table 2 **The most frequent occupational diseases in the EU in 2007 (18 participating countries) – diseases with more than 1% of case**

Diseases	cases	% of all cases
Coal worker's pneumoconiosis	578	1.00
Ulnar nerve SDR	603	1.04
Mesothelioma	665	1.15
Asbestosis	728	1.26
Unspecified dermatitis	733	1.27
Bursitis of knee	811	1.40
Silicosis	821	1.42
Asthma	1101	1.91
Lung cancer	1375	2.38
Irritant dermatitis	1452	2.51
Medial dpicondylitis	2280	3.95
Allergic dermatitis	2528	4.38
Pleural plaques	4414	7.64
Hand or wrist tenosynovitis	4935	8.55
Hearing loss	7427	12.86
Lateral epicondylitis	8603	14.90
Carpal tunnel syndrome	13812	23.92
Total	**57752**	**91.54**

Source: EODS-data, EUROSTAT

Table 2 shows the most frequent occupational diseases in the EU in 2007[14] limited to the 18 countries participating in the EODS-system in 2007. The figures include the well-established problem of MSDs topping the list. Note that the 17 diseases listed account for 91.54% of all cases of occupational diseases reported to EUROSTAT in 2007. The remaining 8.46% comprise 78 other diseases. It can arguably be concluded therefore that a handful of diseases accounts for the biggest concentration of cases. Another aspect of concentration is identifiable from the distribution of diseases by industrial sector. In 2007, manufacturing (36%) and construction (13%) lead the ranking, followed by wholesale/retail trade and repair, real estate, renting and business activities

14. In 2007, the following 18 countries participated in the EODS data collection: AT, BG, CY, CZ, DK, EE, ES, FI, FR, HU, IT, LU, NL, PL, PT, RO, SE, SK.

and health and social work. The total workforce employed in each sector must also clearly be factored into the equation, and this could also go to explain the prominent position of manufacturing.

Another source of information produced by the EODS-system is the incidence rates. These enable a more thoroughgoing analysis of industry sectors by giving the ratio of the number of cases to the number of employees in the sector. The inherent problem here for occupational diseases is that the ratio is between the recent number of workers and diseases which have recently presented but may have developed over a longer time[15]. However, it does give a general picture of the sectoral situation and distribution of diseases. The first thing of note is the predominance of carpal tunnel syndrome. It leads the rankings in eleven of the seventeen sectors, with the highest rates in manufacturing (26.8), hotels and restaurants (15.24), wholesale and retail trade and repair (12.77) and health and social work (11.2). Looking at the overall incidence rates, manufacturing with carpal tunnel syndrome comes top, followed by hearing loss in construction (26.4) and lateral epicondylitis in manufacturing (20.1). The 4th placed incidence is somewhat surprising, not for the disease - carpal tunnel syndrome again - but for the sector - private households with employed persons. This female-dominated sector bears out the importance of carpal tunnel syndrome among women, and above all for women working other than in the "classic" industrial sectors.

From this short overview of the situation in Europe, the focus now moves to the main topic of the report: women and occupational diseases.

15. This is especially so for mining and quarrying. Also, the rates for the "unknown" sector cannot be included in the analysis but will be given here for completeness. The incidence rate is calculated as follows: (number of cases of the disease / Working population taken from the Labour Force Survey for countries submitting data in the given year in 1000) x 100.

4. Women and occupational diseases

This chapter considers the basic context of women and occupational diseases. The sociological context is therefore outlined first (4.1). This can be divided into two main aspects - most obviously that of women contracting an occupational disease or falling ill from a work-related cause and claiming recognition of an occupational disease and eventually also compensation. This latter aspect is explored further in 4.2 which examines the situation from a statistical point of view.

4.1 The social and theoretical context

" The determination that a disorder is caused by a patient's job occurs in a rich social context colored by the unequal power relationships that generally prevail between employees and management in the work environment and between patients and physicians in the health care setting."
(Dembe 1996: xi)

Occupational diseases – like any disease – are not just a biological fact susceptible of medical diagnosis. They are also influenced by a wide range of social factors. The main first steps in the story of an occupational disease from the individual's perspective are the worker's perception of symptoms and contacting a doctor, and the diagnosis. Both of these actions are shaped by social factors. While the former is influenced by a vast range of societal and personal factors, which are the focus of research in both public health (for general access to health care) and occupational health (e.g., access to an occupational doctor), diagnosis appears to be based on a simple causal model posited on a mono-causal connection between an exposure at the workplace and the diagnosed disease. Such a direct link may be found for certain specific diseases, but in most cases tracking back to a single causal factor is not possible or would overlook some important influences. These influences are complex and diverse (see also the box below as well as the aspects mentioned in 2.2), but they also play into one another in their outcome and impact (Dembe 1996).

Women's exposure to factors at their workplaces combined with bearing the main burden of domestic work and its attendant risks increases the combination of potential contributory factors to a disease. Adding women's greater likelihood of being the main care provider in a family for the care needs of elderly people or children, this "double exposure" increases the risk of, for example, musculoskeletal disorders and stress (as the prominent/main burdens mentioned). Women's consequent reduced leisure time and the longer time women need to de-stress also entails a greater risk of burnout (Briar 2009: 44-45).

Social factors in recognition and concept of occupational diseases

- New technologies and the reaction to those technologies by various societal groups can lead to the increased reporting and diagnosis of occupational disorders.
- Laws and legal decisions establishing financial compensation can bring increased attention to the question of whether or not a disorder is work-related.
- Union campaigns and labour activism can foster initial concern about the problem of occupational diseases occurring in particular trades.
- Occupational disorders are apt to be initially recognized during periods of economic instability and potential job loss.
- Medical interest in disorders caused by hazards in the workplace can be aroused by public reaction to similar environmental hazards present in the wider community.
- Cultural stereotyping based on class, gender, and ethnicity can distort medical opinion about the relationship between occupation and disease.
- The growth of medical specialization and the ensuing competition for professional authority, status, and financial rewards can help shape physicians' perceptions about the connection between disorders and job activities.
- Attention by the national mass media to a particular workplace disorder can heighten medical awareness of the problem.
- Marketing efforts by vendors of diagnostic, protective, and therapeutic equipment can stimulate initial concern about health disorders in workers.
- Technology, diagnostic procedures, and medical attitudes arising in the course of military conflicts can influence the way that occupational disorders are subsequently studied and understood.
- The actions of particular political parties and candidates can generate public and medical consideration of occupational health problems.
- Resistance to the medical recognition of occupational diseases is greatest when there are substantial costs associated with controlling the associated workplace hazards.

(Dembe 1996: 19-20)

Women's greater likelihood of being family care providers combined with the greater time they spend on domestic work adds another dimension to the social context of occupational diseases. Firstly, women may have to cope with a family member suffering from a work-related disease. This may increase the time spent on care provision and organisational matters associated with treatment and/or health care. Ultimately it may also result in the woman leaving paid employment to take up (unpaid) care work at home. This entails an increased risk of poverty (Briar 2009: 44) and in most social welfare systems leads to financial dependency on other family members or transfers from the state.

Secondly, women may themselves be affected by an occupational disease. The detailed factors for that are discussed elsewhere in this report. But some social factors which all the particular diseases mentioned have in common can be mentioned here. Again, the fact that women are the main domestic and care workers in a family makes their illness a burden for them and their family. There are no recent studies on how occupational diseases hamper everyday activities, but the statistics on severe interference due to health problems (overall) may afford insights into it. The prevalence rate of severe interference by health problems with activities people usually do (for at least the past six months) was higher among

women than men in all member states (except Ireland, 0.1% more among men) in 2006 (EUROSTAT 2010: 211-213). "*Within the EU-25, some 6.9% of men and 8.7% of women (aged 15 or more) reported that they were severely hampered in activities people usually do because of health problems for at least the six months prior to the survey (conducted in 2006).*" (EUROSTAT 2010, 211)

Despite the factors that women face from having a (chronic or long-lasting disease themselves), this results in two main options: recognition of the disease, and denial of recognition, or that women may even be unaware that their disease may be connected with their work or working conditions. Here, a look back at history and how a disease is "transformed" into an occupational disease may offer insights, taking the history of carpal tunnel syndrome (CTS) as the exemplar. Dr. George S. Phalen (Cleveland Clinic, US), who was the first to conclusively report and treat CTS from the early 1950s onward, claimed not to know what caused the disease; he called it "*spontaneous compression of the median nerve at the wrist*" (Dembe 1996: 70). As the reason for his refusal to acknowledge CTS as an occupational disease *"he pointed to the large proportion of women in his sample as providing additional evidence against work-relatedness, because 'men certainly subject their hands to more trauma than do women'"* (Dembe 1996: 71).

It is clear, therefore, that women's work (historically including sewing, cooking, cleaning, typing) is not perceived as making the same demands on any part of the body as physical labour mainly performed by male workers. Dembe assumed that this opinion of Phalen and others was mainly based on their failure to look into their patients' occupational history, unlike other doctors who did and came to different conclusions.

Nevertheless, this example shows how women and their work have been treated in the history of occupational diseases and how the more societal perception of women's work has influenced this history. This continues to influence the perception of women having a disease and the probability of that disease being linked to their work.

4.2 The most frequent diseases in the European Union

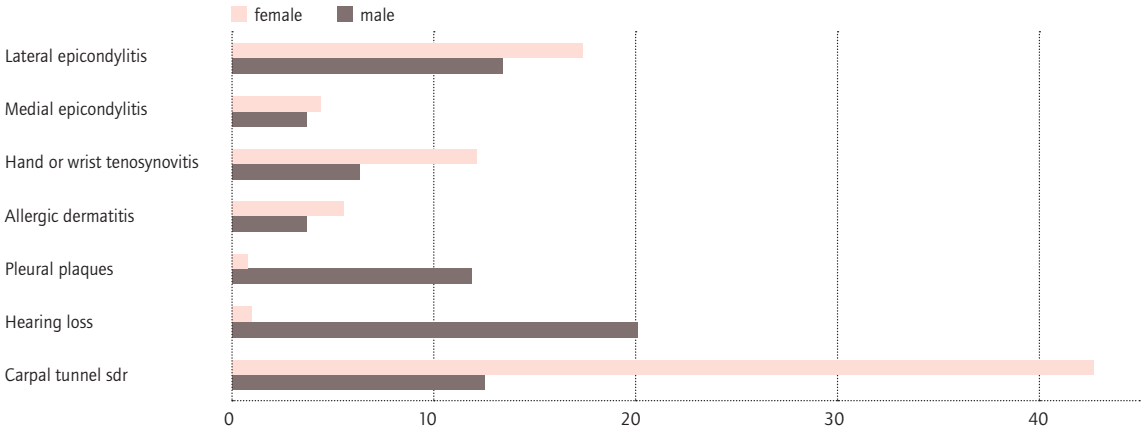
A broad-brush picture of the first aspect of women and occupational diseases - women as disease sufferers - can usefully be gleaned from the EODS data. This affords an overview of the gender distribution of diseases after initial recognition. In 2007, 37.76% of the recognised occupational diseases concerned women, whereas the majority - 62.06% - concerned male workers. This is a difference between the sexes of 24.03%.

The five most frequent diseases overall in 2007 were carpal tunnel syndrome (23.92%), lateral epicondylitis (14.9%), hearing loss (12.86%), hand or wrist tenosynovitis (8.55%) and pleural plaques (7.64%). Carpal tunnel syndrome is a female-dominated disease (67.6% of cases are in women); the importance of this disease is also clear from the data already discussed. Hand or wrist

tenosynovitis is also slightly more prevalent among women. Apart from these upper limb MSDs, women dominate infectious diseases (e.g., tuberculosis, hepatitis B/C) and some diseases of the respiratory tract (e.g., allergic rhinitis or upper respiratory inflammation). Nearly all other diseases are male-dominated, as might be deduced from the difference mentioned and the fact that women dominate the most frequent disease.

As can be seen from the analysis of the gender distribution of occupational diseases, the shares of each sex in the diseases differ widely. The concentration of women in particular sectors and occupations may be one reason for this. Before coming to conclusions, however, consideration of the within-sex distribution of diseases may be helpful.

Figure 5 **Distribution of diseases within the sexes by disease, 2007**



Source: EODS-data, EUROSTAT

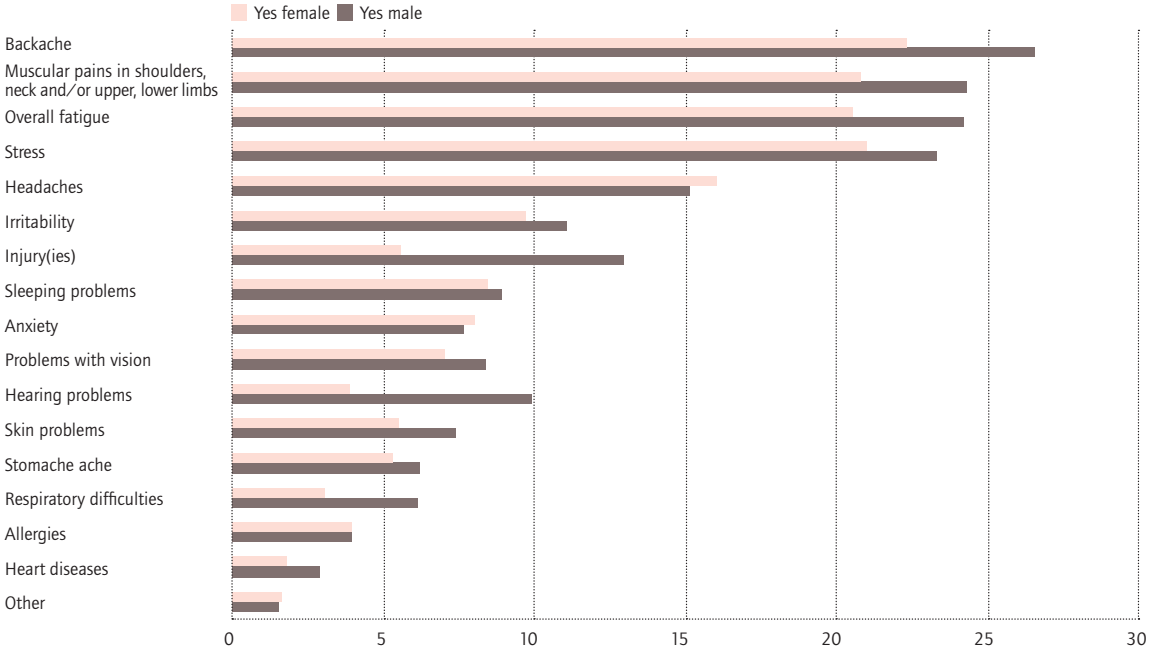
Figure 5 shows the five most frequent diseases in each sex (as these do not overlap completely, seven diseases are displayed) and their share within the sexes. Once again, the prominence of carpal tunnel syndrome, accounting for 42.8% of female cases, is most striking. It also accounts for the concentration of female cases in a few diseases, all of them in the group of MSDs, especially upper limb disorders. Apart from hearing loss - accounting for the biggest share of male cases - gender-specific disease distribution among men is not as highly concentrated as for women.

Moving on from this more technical description using recognition data, a discussion of workers' subjective evaluations of the situation takes the next step towards a rounded picture of occupational diseases and women. This section therefore concludes with a brief discussion of some questions from the "impact of work on health" section of EUROFOUND's 4th European working conditions survey (EWCS).[16]

16. Again, it must be emphasised that the limited number of member states participating in the EODS collection makes any comparison between the Working Conditions Survey and EODS data impossible.

Overall, 33.7% of men and 22.4% of women replied in the affirmative to the question: "Do you think your health or safety is at risk because of your work?". The gender difference in the perception of health and work narrows for the question: "Does your work affect your health, or not?", answered "yes" by 38.1% of men and 32.1% of women in the EU 27. Further questions about symptoms were put to these groups of people; no limit was placed on the number of symptoms given.

Figure 6 **Work affects health – Symptoms divided by sex**



Source: Fourth European Working Conditions Survey, EUROFOUND

Figure 6 shows the symptoms and their within-sex distribution. Overall, only a few symptoms (headaches, anxiety and allergies) are found to be either more prevalent among women or equally prevalent. It can be seen from this, that MSDs occupy a leading place not only among recognised diseases as discussed above, but also in the self-perception of men (26.6% claimed to have backache, 24.3% reported muscle pains in shoulders, neck and/or upper/lower limbs) and women (22.3% backache, 20.8% muscle pains in shoulders, neck and/or upper/lower limbs) as being the main symptoms. The gender gaps in the perception of symptoms that workers attribute to their work are all under 10%. The widest gaps are seen for injuries (7.4%) and hearing problems (6%) followed by backache (4.3%), overall fatigue (3.7%) and muscle pains in shoulders, neck and/or upper/lower limbs (3.5%).

From this it may be concluded that the effects of work on health differ between the sexes, but their impact as whole is not dramatically different. This is an entirely different picture of the situation to that portrayed by recognition of diseases.

Another interesting source of information is the EWCS question as to whether the person thinks they will be able to do the same job they are doing now until they are sixty years old. For the EU-27, 58.3% think they could do the same job until the age of sixty, 29.2% do not think so and 12.5% would not want to. These figures apply equally to women and men. Where occupational diseases are concerned, this equal perception by the sexes also stands in marked contrast to the official recognition statistics.

5. Women's share of occupational diseases

Having reviewed women's occupations and the hazards they face, and having discussed the background to occupational diseases, their development and data as well as specific data for women and the social aspects, this chapter looks at more specific issues with regard to women and occupational diseases. This will be done through a presentation of data from different EU member states supplemented by information from studies (including non-EU research). Since the countries present not only differences but also similarities in some respects, the discussion is structured by topics rather than countries.

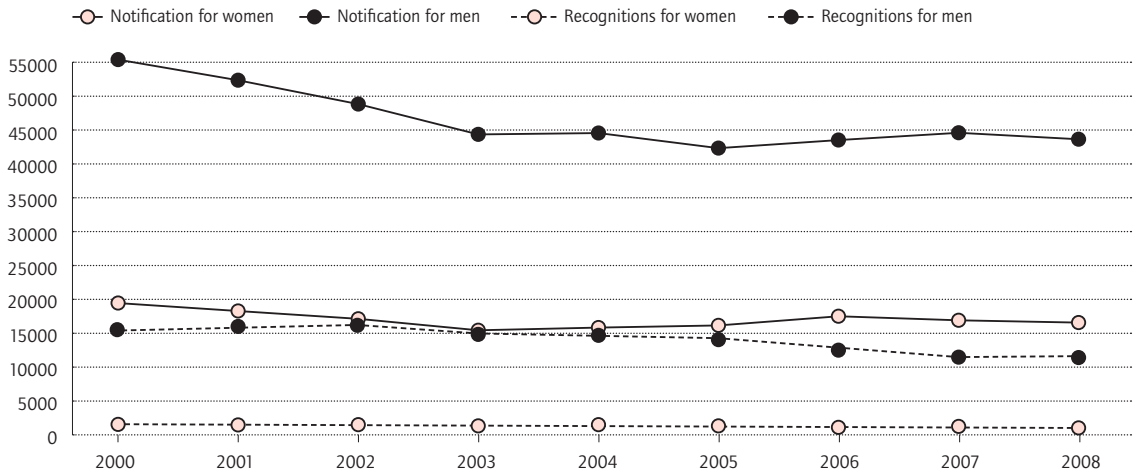
5.1 The notification and recognition figures – Discrimination in the recognition process?

The discussion of occupational diseases and influences of work on workers' health requires important distinctions to be made. Among the first and most important is that between workers' self-perceived work-related diseases or problems (as reported by the EWCS, for example) and official claims for and recognitions of occupational diseases through national systems. It is important to bear both statistical resources in mind, but the distinction has to be made very clearly where recognitions in particular are concerned. Because of legal systems and their underlying social manifestations (as shown in 3.1) not all health impairments perceived by workers classify as occupational diseases as defined by the different lists (or other systems) in EU member states. The most common way for a worker experiencing a health impairment perceived as an occupational disease is to report it to and claim recognition from the appropriate social system agency. In some countries (e.g., Denmark and Germany) doctors also have a duty to report/notify possible cases of an occupational disease to the relevant authorities. The supposition must be that not all claims are recognized.

As notification and recognition data is not collected via the EODS system, this chapter looks at the data available for particular countries, taking Denmark, Germany and Italy as examples.

Figure 7 shows the total number of notifications and recognitions of occupational diseases for men and women in **Germany**[17]. From 2000 to 2008, the absolute number of cases declines from 75,390 to 60,762; 20-30% of these notified cases were recognised, compared to a rate of just under 20% for recent years. Around 10% of these recognised cases are women (meaning that around 90% are men). The female-to-male ratio of notifications of occupational diseases is under 30% for women to over 70% for men.

Figure 7 **Notifications and recognitions of occupational diseases in Germany, 2000-2008, absolute numbers**



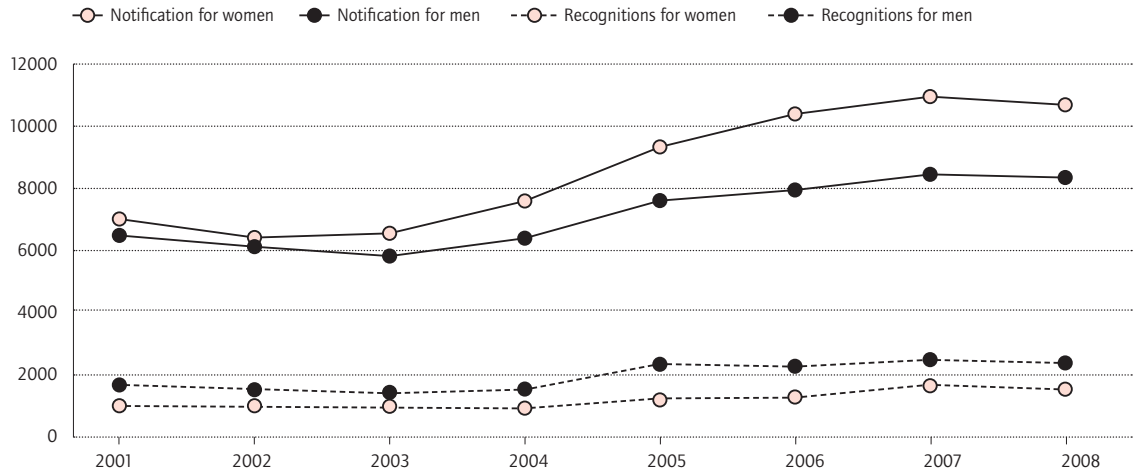
Source: German Social Accident Insurance

So, for Germany, the question is why there are so few claims from women, from which stems the question – why the low recognition rate for women? One possible answer may lie in the distinction of cases between the different diseases. First, it is clear that physical impact (represented by noise and mechanical impact), which decreased from around 40% to around 30% from 2000 to 2008, and skin diseases, which increased from 27 to 30% over the same period, are the main diseases notified by the German workforce. After the recognition process, the picture changes and now noise alone (around 40% in recent years) and diseases caused by inorganic dust (up from 30 to around 35% from 2000 to 2008) top the table, while all other disease groups are under 10%. As around 50% of the claims for skin diseases are by women (and clearly the leading causes of female claims at over 50% compared to below that and mostly even under 10% for all other diseases), the low recognition rate for skin diseases (down from 8 to 4%) is one explanation for the low recognition rate for women. The issue of skin diseases will be discussed further under 5.2. No evidence from studies or suggested answers from other fields have been found for the gender difference in notifications.

17. The data for Germany was provided by the German Social Accident Insurance, which is the umbrella organisation for the industry distributed accident insurance institutions of the industrial and public sectors. Further information can be found at the website: www.dguv.de/content/index.jsp

With regard to notifications of occupational diseases in **Denmark**[18], it is clear that there are more notifications for women than for men. In 2005, for example, there were 9334 (55%) cases of occupational diseases notified for women and 7605 (45%) for men. Of these 9334 female cases, 13% were recognised; the proportion for the male cases was 31% (the combined total of recognitions was 21% in 2005). As Figure 8 shows, the number of notifications follows a rising trend from 2003 for both sexes, and notifications for women are constantly above those for men.

Figure 8 **Notifications and recognitions of occupational diseases in Denmark, by gender, 2001-2008, absolute numbers**



Source: Danish National Board of Industrial Injuries

With regard to recognitions, the first thing of note is the low proportion of cases which achieve recognition, followed by the clear male domination of recognitions. An analysis of this observation may be usefully informed by an examination of the figures for the different sectors.

This reveals a gender-differentiation in the dominant sectors for notification of cases (unsurprising, having regard to the labour market segregation in the EU): for men, manufacturing and construction; for women, human health and social work, public administration, education and health and the manufacturing sector. The human health, social work and manufacturing sectors show the main rises in female notifications (the other sectors are only slightly up), whereas manufacturing and construction are responsible for the rise in male cases. Looking at these sectors more in detail, it is possible to conjecture why the overall recognition numbers are higher for men than women, whereas the opposite is true for notifications. In manufacturing and construction, the

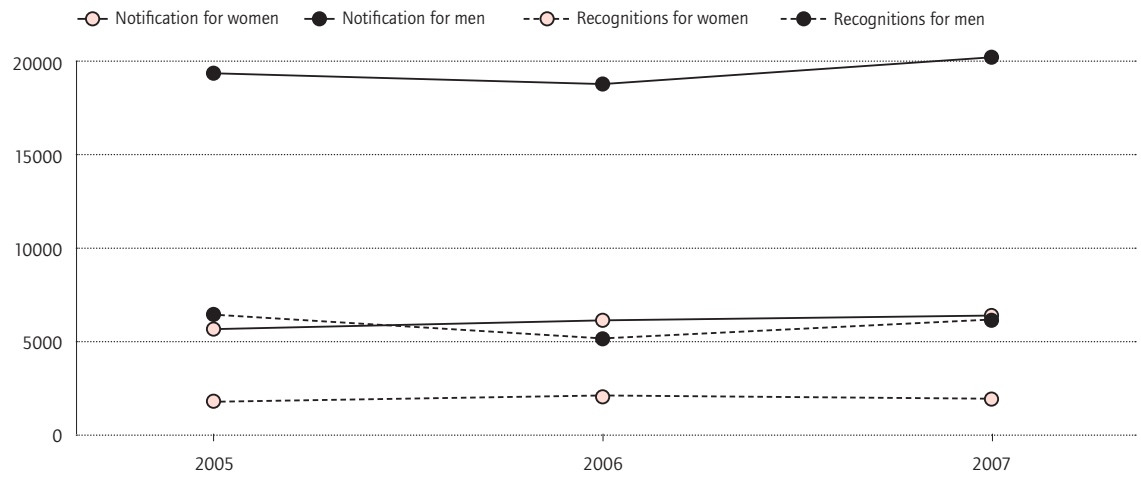
18. The data for Denmark were provided by the Danish National Board of Industrial Injuries, which is a Ministry of Employment agency. It processes claims for industrial injuries (occupational accidents and diseases) under the Workers Compensation Act. Further information can be found on the website: www.ask.dk/English.aspx

number of recognitions follows the increase in notifications (albeit slightly), whereas in human health and social work, and in public administration, recognitions have remained more stable over the years, and so not followed the rise in notifications.

But looking at the recognition of diseases in detail reveals another aspect to the low recognition rate for women: the group of "other diseases of the musculoskeletal system" (37.8%) dominates female notifications, followed by mental disorders (22.5%), other diseases (not stated, 15.44% - all numbers for 2008) and skin diseases (11.1%). The recognition rate for female cases of "other diseases of the musculoskeletal system" is 3.3% (male rate, 7.5%), 0.9% for mental disorders, 1.1% for other diseases and 73.4% for skin diseases. But as the latter disease group is responsible for fewer cases, the low recognition rates in the disease groups responsible for the most female notifications may explain the low overall recognition rate.

The recognition and notification data for **Italy**[19] show a relatively stable picture. As can be seen in Figure 9, between 22 and 25% of occupational disease notifications from 2005 to 2007 were for women. The both-sex recognition rate is between 30 and 34% in those years, but showing a recent slight decline. As recognition rates are both stable over time and the same for both sexes, Italy seems to exemplify equity in practice. The only unanswered question here seems to be why the male notification rate is three times the female rate.

Figure 9 **Notifications and recognitions of occupational diseases in Italy, 2005-2007, absolute numbers**



Source: Bancadati al Femminile, INAIL

19. The data for Italy are taken from the "Bancadati al Femminile" from the Italian Workers' Compensation Authority (INAIL), and can be found on the website http://donnaelavoro.inail.it/donnaelavoro/donnalavoro.asp?cod=1

This overview of the data in these three EU member states is clearly only part of the overall picture of recognition of women's occupational diseases in the EU. As there are no other studies of broader scope, further research in this area seems to be needed to explain the outcomes reported here.

Even so, certain things can be conjectured from the data and additional information on women and occupational health already given in this report.

Looking at the data from Italy and Germany, for example, it could be argued that the much lower rate of female claims for occupational diseases is because women work fewer hours or even part-time. Where working hours are concerned, the gap is not so wide as to explain the actual gap in notifications while for part time work, the proportion is high in both countries (Germany 45.3% and Italy 27.9% in 2009 according to LFS/EUROSTAT). But the numbers from Denmark would argue against this because the gap between women and men's weekly working hours is not as dramatically different as that between notifications, and part-time employment there is much the same (37.9% in 2009).

Another possible explanation might be offered by labour market segregation. But this would only explain the differences if there were vast differences in the labour markets of those countries, almost to the point of large-scale female non-participation. This is not seen to be the case.

Based on the historical development of compensation and recognition systems mentioned earlier, it could be assumed that the labour market - mainly male dominated until recent decades - and the systems designed to deal with that market's outcomes - cannot accommodate specifically female work patterns. One example might be the often segmented career of women with breaks for children or care. Also, the development of the system based on a male-dominated workforce produced a concentration of research, campaigning and public attention on the predominant diseases and/or exposures in those sectors/occupations. It is safe to assume, therefore, that there is still a research and awareness gap to be closed for female-dominated occupations/sectors (See also Vogel 2003: 159).

5.2 Are there female-dominated diseases?

Another question that arises out of the discussion of women and occupational health and the gender segregation of the workforce is whether there are some diseases that are more common to women than men. Some aspects of this have already arisen in the consideration of the all-EU situation in 4.2. The main health problems revealed by the data are upper limb disorders (especially CTS), skin diseases and mental ill-health. These will be considered in detail using national data to give a better overview of the situation.

5.2.1 Skin diseases

Skin diseases are a very common problem in many female-dominated occupations (including cleaning, hairdressing and health care), in part due to the prevalence of wet work involved. In 2007, 5.53% of all recognised occupational diseases for women reported to the EODS system were allergic dermatitis; this is the 4th most common female disease and the foremost non-MSD related disease in the list. The reason why skin diseases are a common problem for women in Europe seems clear, given the labour market segregation and the frequency with which women are found working in classically wet jobs or jobs which expose them to chemicals (like manufacturing). *"To conclude, the higher incidence of dermatitis among women reflects the jobs they do and therefore the occupational exposure to substances that cause skin irritation and allergies"* (EU-OSHA 2003: 70). It can be assumed therefore that cases of skin diseases in countries will include a high proportion of women.

Key points for skin disease

- Women workers are more often exposed to detergents, solvents and water. " Wet jobs" are particularly associated with hand dermatitis.
- Women have an increased risk of dermatitis in jobs such as electro-manufacturing work, hairdressing, healthcare work, mechanics and metalwork. There is also a high rate among kitchen workers and cleaners.
- Skin rashes are among the symptoms of sick building syndrome, which appears to affect women more than man.
- VDU work is sometimes associated with skin problems such as itching and rashes – possibly associated with poor indoor climate and stress.

(EU-OSHA 2003: 69)

In **Denmark** – according to the data from the Danish National Board of Industrial Injuries – skin diseases accounted for around 10% of female notifications between 2001 and 2008. The distribution of notifications for skin diseases between the sexes show a clear female predominance.

The female share of notifications has risen from 61.2% in 2001 to 65.5% in 2008. The recognition rate for skin diseases in Denmark is quite high (as mentioned above in 5.1); the recognition rate rose from 74.8% in 2001 to 87.7% in 2008. With recognition rates for men within the same range, the proportion for recognised cases between the sexes is similar to that of notifications (63.2% - 68.7% between 2001 and 2008).

This situation some years earlier can also be identified through a study of notifications, recognitions and compensation for skin diseases in Denmark from 1990 to 1996 by Halkier-Sørensen (1998) incorporating data from the insurance companies. He concludes: *"Skin diseases (eczemas) rank 1st among recognized and compensated cases, and are the most expensive. Therefore, preventive activities are mandatory. Because the dominant type of occupational*

eczema is irritant eczema, the primary indication for use of protective measures in industrial settings is prophylaxis of irritant eczema." (Halkier-Sørensen 1998: 78)

In addition to this broader picture of the industrial sector, a study by Feveile et al. (2009) looks at the probability of receiving a disability pension (based on a recognised occupational disease) from contact with cleaning agents, which can be assumed to be a main trigger for skin diseases. Looking at the exposed occupational groups they conclude: *"Not surprisingly, cleaners had the highest level of exposure in all waves, with around 60-70% being categorized as exposed. Care workers (in hospitals, nursing homes, and home care) were also highly exposed, with 20-40% exposed over the three waves. Kitchen staff, doctors, dentists, and food industry workers also reported exposure levels around 20% in the period (data not shown)."* (Feveile *et al.* 2009: 134)

With regard to those occupations and the disability pensions they found that *"exposure to cleaning agents and/or disinfectants may contribute to the increased rate of disability pension in the cleaning trade"* (Feveile *et al.* 2009: 134). Inklings of the situation of care workers in hospitals are given by Flyvholm et al. (2007), who studied self-reported hand eczema in a hospital population. Although the study did not focus on occupational diseases, it shows that hand eczema is more frequent among women and increases with age (more frequent in the population aged over 40).

For **Germany**, it was noted earlier (5.1) that the low recognition rate of skin diseases generally is one reason for the low recognition rate in women. Two possible reasons can be identified for this low general recognition in Germany. The first comes from the conditions for occupational disease No. 5101: *"Serious or recurrent skin ailments which have led to the enforced cessation of all activities which caused or could cause the occurrence, the exacerbation or the recurrence of the disorder."* (Schöneberger *et al.* 2010: 840, free translation)

This wording suggests that the sufferer has to stop work entirely in order to receive recognition for the disease.

Another possible explanation can be found in an article by Fokuhl, who analysed data from the German institution for statutory accident insurance and prevention in health service and welfare work suggesting that women do more to treat their diseases at an earlier stage. This leads to the outcome that men experience worse symptoms, increasing their probability of claiming compensation or requiring intensive, costly treatment (Fokuhl 2009: 48). One gender-specific action to arise out of this finding was a poster campaign showing footballers with their hands in the protective position for a penalty kick, titled "save your skin". These facts show the importance of prevention not being directed towards one sex only. Preventive measures should always be gender-sensitive.

The situation is somewhat different in the **United Kingdom**, where there is data on "official" prescribed diseases and data from the THOR system[20], which relies on voluntary reporting by doctors and specialists. The THOR data on skin diseases is based on OPRA and EPIDERM reporting and points to two main incidence rates: contact dermatitis (69.9% of all diagnoses) and skin neoplasia (22.9% of all diagnoses). The latter is clearly male-dominated (97.8%), whereas contact dermatitis is almost equally divided between the sexes with 43.6% male and 56.4% female diagnoses. The importance of this diagnosis becomes clear when the overall distribution of male and female diagnoses is considered: 38.9% of all diagnoses are female cases of contact dermatitis. The picture painted by the official prescribed diseases is somewhat different. Here only dermatitis is given as a diagnosis. Prescribed diseases cases have halved from 210 in 1999/2000 to 105 in 2007/2008. The female proportion of these cases is constant at between 20 and 30% in these years. The number of cases of contact dermatitis reported to THOR also decreased by 34.6% from 2406 to 1573 between 2006 and 2008.

In **Poland**, too, skin diseases occupy a prominent place, especially for women. They rank 4th in the list of most frequent diseases among females in 2009, when 65.4% of skin diseases were female cases[21]. According to Kiec-Swierczynska (1996), the situation was different before the changes in the character of the Polish economy. As the building and textile industries have declined in importance, the main incidence rate has shifted to the health care sector, exacerbated by the use of new techniques and substances (wearing gloves, disinfection, etc.) (Kiec-Sweierczynska 1996: 208).

This review of detailed national data in a sample of countries shows that even recently, skin diseases remain a major problem for the workforce in Europe, especially the female labour force. This is clear from the within-sector segregation of the workforce. It also reveals between-country differences. In Denmark, for example, notification and recognition of skin diseases – and research into it - seem to be well established. In Germany, the pattern for notifications is similar to Denmark (with slight differences), but completely different for recognitions due to the rules on recognition. Taken together with the analysis of the United Kingdom data, this illustrates the under-registration reported by Rosenthal for occupational diseases overall (see 3.1).

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20. The THOR system is based on reports from specialist doctors. It is divided into five parts: SWORD (consultants specialising in respiratory disease), EPIDERM (consultant dermatologists), SOSMI (consultant psychiatrists), MOSS (consultant rheumatologists) and OPRA (occupational physicians). The THOR schemes only cover a subset of the total cases of work-related disease: *"This is because quite a proportion of cases will either never come to the attention of a doctor or will be dealt with by a general practitioner. Moreover, many workers will not have access to an occupational physician at their place of work. Therefore, the subset of cases that are recorded within the THOR schemes will largely consist of either the serious or difficult-to-resolve cases that are referred to specialists by general practitioners or the more general cases from industrial sectors that are will covered by occupational physicians."* www.hse.gov.uk/statistics/sources.htm#thor)

21. Data yielded by information from the Nofer Institute of Occupational Medicine in Lodz (Poland), which hosts the Central Register of Occupational Diseases.

The German data and Fokuhl's analysis may also offer avenues for expanding knowledge on gender-aware approaches to diseases and how this might be applied to prevention and education. More focus should be placed on educational measures, perhaps taking a lead from the courses on skin protection run by the German Accident Prevention and Insurance Association which not only improve participants' knowledge on how to protect their skin, but also afford them an extended consultation with a dermatologist (Weisshaar *et al.* 2007). Even more valuable would be to introduce such schemes in vocational training and for occupations which are female-dominated but have not previously focused on prevention of skin diseases (Szepietowski and Salomon 2005: 48).

It has become clear that the monitoring systems in place today and the wide differences between EU member states' systems will make it hard to gain an overview or marshal the resources to tackle the problems. More research into ways that the member states and the recognising and/or insuring bodies could work together on this could be valuable.

5.2.2 Upper limb disorders (and CTS)

Disorders of the upper limb system and their special relevance to women workers have been discussed in relation to exposures and occupations. Turning to the EODS data, these exposures can be found mirrored in the recognised diseases for women in which CTS holds a prominent position. For this aspect, also, a more detailed consideration of the situation in some countries may repay study.

In **Denmark**, CTS features on the list of occupational diseases, with exposure defined as:

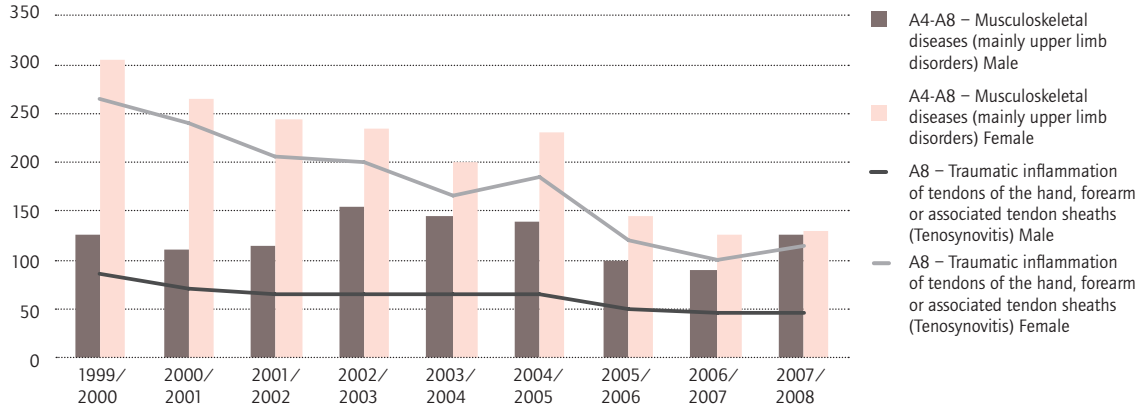
"(a) Work with heavily vibrating hand tools for a considerable amount of time (hand-arm vibration)
(b) A combination of quickly repeated, strenuous and/or awkward, wrist-lading work movements for a considerable amount of time
(c) Work with objects leading to direct and persistent pressure on the median nerve of the carpal tunnel for a considerable amount of time
(d) As a complication to tendovaginitis on the flexion side of the wrist qualifying for recognition on the basis of this List." (List of Occupational Diseases Reported on or after January 1, 2005: Appendix 1)

Contrast this with the situation in **Germany**, where CTS is not yet listed, but can be recognised as "like an occupational disease" under § 9 Abs. 2 SGB VII following a 2009 recommendation from the Federal Ministry of Labour and Social Affairs. Because this is a recent development and for statistical reasons, there are as yet no figures for CTS in Germany.

The **United Kingdom** displays a trend counter to that shown by the EODS figures. CTS plays a minor part in female diseases (cases of assessed disablement), and the share of female cases within cases of CTS is around 10% between 1999 and 2008. That notwithstanding, MSDs of the upper limb are also

one of the main female occupational diseases in the United Kingdom. In the case of "musculoskeletal diseases (mainly upper limb disorders)" and especially for "traumatic inflammation of tendons of the hand, forearm or associated tendon sheaths (tenosynovitis)" female cases dominate the statistics[22]. This is the only disease/disease group in which women occupy a greater share (overall, the share of female cases peaked in 2006/2007 with 14.9% of all prescribed diseases).

Figure 10 **Cases of prescribed musculoskeletal diseases and traumatic inflammation of tendons of the hand, forearm or associated tendon sheaths (tenosynovitis) from 1999 to 2008 divided by sex, absolute numbers**



Source: IIDB03 and IIDB02, Health and Safety Executive, with data from the Department for Work and Pensions

The trend in these diseases is shown in Figure 10. For the group of musculoskeletal diseases, the proportion of female cases has been greater in recent years, although the gap seems to be closing of late. For tenosynovitis the picture is different. There is an overall decrease in cases from 350 in 1999/2000 to 160 in 2007/2008, but the proportion of around 70-75% for women and 25-30% for men is stable over the period.

So, for the United Kingdom, the main problems for women – with regard to prescribed occupational diseases and cases of assessed disablement – are musculoskeletal diseases of the hands and wrists, especially tenosynovitis.

The picture differs with regard to musculoskeletal disorders reported through the MOSS and OPRA schemes in the THOR system. Here, too, upper limb diseases dominate the picture for women with between 58.1% and 64.0% between 2006 and 2008, and other hand/wrist/arm diseases accounting for the bulk of

22. The distinction between disease and disease group is based on HSE statistics. In the prescribed diseases table, tenosynovitis (A8) is included as part of musculoskeletal diseases (A4-A8), which also include task-specific focal dystonia (A4), subcutaneous cellulitis of the hand (A5), bursitis or subcutaneous cellulites arising at or about the knee due to severe or prolonged external friction or pressure at or about the knee (A6) and bursitis or subcutaneous cellulitis arising at or about the elbow due to severe or prolonged external friction or pressure at or about the elbow (A7). In the statistics for the new cases of assessed disablement tenosynovitis is given alone.

the remaining cases. But looked at for both sexes, the proportion is between 40 and 50% for each sex in these years. The question is therefore, why are the proportions so different? The answer may be that the gender differences stem from the design and/or functioning of the recognition and compensation system.

These briefly discussed country examples paint a completely different picture from that given by the EODS system figures. While CTS is one of the foremost occupational diseases in Europe and the impact of upper limb diseases on women is widely discussed in the literature, country situations appear not at all to mirror this. Recognition of those diseases for women would not only be important for the patients and their families, but would also lead to more preventive action taken in this area.

The importance of prevention for upper limb diseases can be seen from the example of CTS in a region of France. A study by Roquelaure *et al.* (2009) *"to assess the work-related population attributable fraction of CTS in industrial sectors and occupational categories at high risk of CTS in the general population"* (Roquelaure et al. 2009: 342) found *"that half of all male and one fifth of female CTS cases could theoretically be avoided in the general population if CTS prevention programs were implemented for blue-collar workers. For female, lower-grade, white-collar workers, almost a quarter of cases could be avoided" (Roquelaure et al. 2009: 347).* They went on to argue that*: "Our results thus suggest focusing prevention on blue-collar occupations for men, and blue collar and overall lower-grade, white-collar occupations for women."* (Roquelaure *et al.* 2009: 347)

One possible explanation for the neglect of (female) cases of upper limb disorders might be found in the analysis of the history of cumulative trauma disorders of the hands and wrists by Dembe (1996). He argues that not only are those diseases not new but have been well known since the industrial revolution (e.g., writer's cramp), and also discloses some interesting aspects concerning women and cumulative trauma disorders of the hands and wrists. He cites examples from the United States and Australia to show that women (together with different immigrant groups) had difficulty getting recognition for (newly emerging) disorders. He connects this with the prevailing attitude that only men's work is potentially hazardous, and other tasks are not that arduous.

"To some extent, this reasoning reflects naiveté about the real demands of the "other" non-traditional occupations and an unfamiliarity with the biomechanical stresses actually imposed upon the hands and wrists during those activities. But the common adoption of this perspective by many authorities may also have a deeper root, embedded in a particular class consciousness and its orientation to many of the social changes that have occurred in modern industrial society, including gender roles and the influx of immigrants and other non-traditional groups into the working force." (Dembe 1996: 97)

An ongoing recognition of female occupational diseases would therefore mean the completed integration of female workers into the workforce and mark the point of full equality.

The historical analysis also shows that the occurrence of "new" hand and/or wrist disorders often seems to be connected with changes in working techniques, workplace design or/and organisation of work (including pace and economic circumstances). This, and the importance of trade union action, could form a basis for campaigning on this issue.

The last thing to say in connection with upper limb diseases is that national systems sometimes rely on a mono-causal explanation model (e.g., only recognizing a disease in relation to one specific substance or circumstance). This is reflected in the data available:

"National data from some of the member states (see sections 3.7 and 5.2 of the report, 'Data from the member States') demonstrate that workers are normally exposed to more than one factor of musculoskeletal disorders and that lower limb disorders are not reflected in the exploration of work-related diseases or in the recognition of occupational diseases." (Schneider and Irastorza 2010: 33)

An agenda on integrating a multi-causal approach to the recording and recognition/compensation of occupational diseases is arguably of more pressing importance for the situation of female employees who are facing a fragmented picture of exposures. This applies not only to MSDs, but is also important for another aspect: mental ill-health.

5.2.3 Mental ill-health – psychosocial factors at work

Although mental illnesses and psychosocial risks at work - more commonly called "stress at work" - are broadly discussed in the scientific and popular literature, mental illnesses or psychiatric disorders are only rarely recognised as occupational diseases. The importance of having a disease officially recognised as an occupational disease has already been mentioned. Research and preventive actions are also important, given the implications of such a decision for patients and their families.

Mental health has been a central focus of many health promotion actions in the EU in recent years, due to the rise in mental disorders in many member countries: *"Mental illness, such as anxiety and depression, is twice as frequent in professions in which the majority of workers are typically female – i.e., education, social and health services, and client-oriented jobs."* (Schmitt *et al.* 2008: 119)

The prevalence of mental disorders is higher among women than men, which Schmitt et al. (2008: 117-118) argue could (mainly) be attributed to:
— socioeconomic disparities between the sexes (women are more likely to live in poverty and therefore suffer malnutrition for example);
— different help-seeking strategies in problematic situations;
— biological differences;
— different strategies to cope with distress;

— women face a series of difficulties that men do not, like fulfilling multiple roles in society, gender discrimination, greater risk of violence.

Due to the rising number of mental disorders and the consequences for society, individuals and the economy, much research and preventive action has been undertaken in recent years in member states and at EU level. However, there seems to be a lack of research into psychosocial risks and factors, and especially mental illnesses. This is pointed out by Nieuwenhuijsen et al. (2010) who reviewed research into the impact of work environment on stress-related disorders and found only seven studies on the matter. *"Based on these seven meta-analyses, strong evidence was found that high job demands, low job control, low co-worker support. low supervisor support, low procedural justice, low relational justice and a high effort-reward imbalance predicted the occurrence of SRDs."* (Nieuwenhuijsen *et al.* 2010: 281)

For the **United Kingdom**, reporting to THOR is again a key source of information on the psychosocial outcomes of work. The SOSMI and OPRA[23] reported cases from 2006 to 2008 reveal that anxiety/depression (48.2% in 2007) and other work-related stress (39.2% in 2007)[24] are the most frequent diagnoses. For anxiety/depression, the gender relation was between 41.9% to 45.3% for men and 54.8% to 57.0% for women in those years; likewise other work-related stress, where between 38.0% and 42.0% of the diagnoses were male cases and between 57.4% and 91.9% were female.

In a more thoroughgoing analysis of work-related mental ill-health using the same sources, Carder *et al.* (2009) looked at the years 2002 to 2005. Here again, anxiety/depression and stress were the most frequent diagnoses, so that a longer ongoing trend can be posited. They also looked at the sectors in which mental ill-health was most prevalent. Here, health and social work lead the ranking, followed by public administration and defence and health.

"Analysis by precipitating events indicated that the majority of work-related mental ill-health disorders reported to SOSMI and OPRA were attributable to workload followed by interpersonal relationships. The former may be addressed through changes in work practice such as additional recruitment or training or increased delegation." (Carder *et al.* 2009: 543)

Looking at these analyses, it can be argued that with between 5300 and 6400 reported cases from 2006 to 2008 from the participating psychiatrists and occupational doctors, there is an issue concerning mental ill-health in relation to work. Nevertheless, mental disorders are not recognised as occupational diseases in the United Kingdom. As can be seen from the proportions, this is an important – but neglected - group of diseases for women, also with reference to the causes mentioned earlier in this chapter.

23. For a more detailed description of SOSMI see Agius/Turner 2004.
24. The other diagnoses and proportions are: post-traumatic stress disorder (4.5%), alcohol or drug abuse (2.2%), psychotic episode (1.3%) and other problems (4.6%).

In **Germany** likewise, mental illnesses are not recognised via the list of occupational diseases. But here – due to the design of the social security system – the early retirement and sick leave figures may give an idea of the situation. For the early retirement figures, the Bericht zur gesundheitlichen Situation von Frauen in Deutschland (BMFSFJ 2001) reports that there are "significant differences" (BMFSFJ 2001: 392) between men and women. Here, mental diseases (neuroses and psychotic episodes) are responsible for 23.7% of female early retirements, compared to 14.0% for men (figures from the GRV 1996).

Another source of information is sick leave data. Taking the data from the German employee insurance (DAK) as an example, it can be said that women are clearly more affected here also. Mental disorders accounted for 13.1% of sick leave days for women in 2008, versus 8.7% for men. Sick days attributable to mental disorders have also shown a steadily rising trend in recent years. (Ulich 2008)

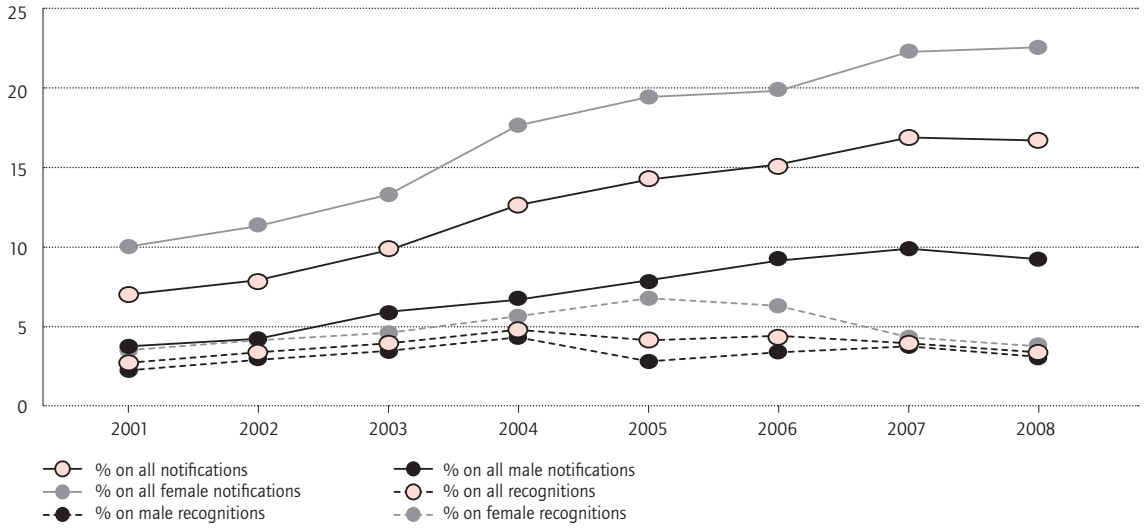
In contrast to Germany and the United Kingdom, mental disorders can be recognised as occupational diseases in **Denmark**. Post-traumatic stress disorders are on the official list and – as in many other countries –individual recognition can be applied for to the occupational disease committee. Denmark also has official figures for notification and recognition of the group of mental illnesses.

The proportion of mental disorders in female notifications rose steadily from around 700 to 2400 cases between 2001 and 2008, translating into a share rise from 10.0% to 22.5% of all female notifications. For men, the proportion of cases also rose from 3.7% to 9.2% on all male notifications. The share of mental disorders among female recognitions is between 3.5% and 6.7%. The time trend for this is shown in Figure 11 (see next page).

Additionally, the recognition rate for mental disorders differs widely between the sexes. For women, the rate of recognised cases among notifications decreased from 5.0% (peaking at 5.6% in 2002) in 2001 to 2.4% in 2008. For men, there was also a decrease from 15.3% in 2001 (after a peak of 16.9% in 2002) to 9.2% in 2008.

In their study of affective and stress-related disorders in Denmark, Wieclaw et al. (2005) looked at occupations to define their risks. They not only found a higher prevalence for women having one of the disorders, but also found a different risk profile for women. *"For both genders the highest risk for both disorders were found among social workers, professionals caring for the mentally and physically disabled, and teaching staff at he pre-primary education level."* (Wieclaw *et al.* 2005: 346)

Figure 11 **Percentages of mental disorders in notifications and recognitions of occupational diseases in Denmark 2001 to 2008, by sex**



Source: Danish National Board of Industrial Injuries

One recent development in Denmark on mental illnesses is Netterstrøm and Conrad's benchmark study for the Danish Work Environment Research Fund on work-related stressors in connection with mental disorders. Following the inclusion of post-traumatic stress disorder in the list of occupational diseases in 2005, therefore, an interest has developed in the possible connection between working conditions and other psychiatric problems. The paper is also written to *"be used in the continual development of the Industrial Injuries Committee's practice regarding the acknowledgement of disorder caused by the particular nature of a given job, for disorder which are not currently in the directory of occupational diseases"* (Netterstrøm and Conrad 2007: 6). So, there is ongoing interest in the issue in Denmark, which may possibly also be connected with the rising proportions of notifications.

5.3 Emerging topics

5.3.1 Voice disorders: Poland

Voice disorders are a scheduled occupational disease in Poland, defined in the Cabinet Ordinance of 30 July 2002 (item 15) as: *"Chronic vocal organ diseases due to excessive voice load lasting for at least 15 years comprise hard vocal nodules, secondary hypertrophic changes in vocal folds, paresis of vocal fold adductor/tensor muscles accompanied by the phonatory insufficiency of the glottis and permanent dysphonia."* (Sulkowski and Kowalska 2005: 342)

In 2002, 33.8% of all occupational diseases in Poland were vocal organ diseases, mainly affecting schoolteachers and university lecturers (98.1% in this occupation). Following a revision of the rules on recognition/diagnosis of

occupational diseases, the share of chronic vocal organ diseases in all diseases decreased to 25.2% in 2003 (Sulkowski and Kowalska 2005: 342). Looking at the occupational disease rate per 100,000 employees in Poland[25] it can be seen that voice disorders have topped the table from the mid-1990s until recently, when skin diseases have also become more prevalent. Overall, the rate has decreased from over 35 to just below 5 over the period. Additionally, chronic voice disorders were the most frequent disease among females in Poland in 2009. Within the diagnosis group, women account for 86.2% of cases in that year. As voice disorders are especially prevalent among educators, it is unsurprising to see women dominating the occupational disease figures in Poland's education sector.

As a result of this, there is extensive research into diagnosis (Niebudek-Bogusz *et al.* 2006) and treatment (Niebudek-Bogusz *et al.* 2008) in of this as an occupational disease in Poland. As a work-related illness isease most prevalent among educators in a female-dominated education sector, this is arguably a prime issue for closer consideration in terms of women and occupational diseases.

One preventive measure that has attracted consensus is giving workers an understanding of what is happening to them and raising their awareness about risk diseases. Training courses and workshops would seem to be the right way to go, therefore.

5.3.2 Hearing disorders: Sweden

The figures on notifications and recognitions in Europe show that auditory problems are also nowadays a male-dominated disease; however, the earliest concerns raised about the introduction of telephone communication and hearing loss include the case of a woman. They were reported by F.M. Pierce in an issue of the British Medical Journal of 1879. *"Pierce described the case of a woman who, in the course of her work as a manager of a manufacturing shop in Manchester, England, was deafened for two weeks by a clap of thunder that had been transmitted through the telephone wire."* (Dembe 1996: 173)

Nevertheless, looking at today's data, noise-induced hearing loss is a clearly male-dominated disease. 97.1% of all cases reported to EODS are male and country data seems to support that: Germany – 96.1% male notifications, 99.2% male recognitions (2008); Denmark – 91.6% male notifications, 97.8% male recognitions (2008); United Kingdom - no female cases in recent years.

The situation appears to differ in Sweden, however, where around 20% of reported noise-induced illnesses between 2001 and 2009 were female cases[26]. The immediate response is to seek a reason for the difference in the

25. Data from the Nofer Institute of Occupational Medicine (Lodz, Poland).
26. Data from the Arbetsskador annual report, accessible online: www.av.se/arkiv/arkiv_statistik

occupations held by women. But, according to the latest press release from Statistics Sweden on this, there are no significant differences to the gender-based segregation mentioned earlier in this report (2.1). Also, the most common female occupations in Sweden lie in the health care, education and retail sectors[27].

In a study based on the Swedish Work Environment survey, Hasson *et al.* (2010) looked at the prevalence and characteristics of hearing problems (hearing loss and tinnitus) in the Swedish working population. Participants were asked about their self-perceived hearing and tinnitus problems, and about their socioeconomic status. The finding was that *"in general, 25% of the working population reported either tinnitus or hearing loss. The corresponding figure among men was 29% and 23% among women"* (Hasson *et al.* 2010: 455). An increasing age-related prevalence and a high prevalence in workers aged under 40 were also found. The gender difference was lowest in this age group (20% of women and 24% of men had either tinnitus or hearing loss). With regard to socioeconomic status, workers in lower status groups more often experience hearing problems. In the over-50s age group, a connection with low socioeconomic status and hearing problems was found only for women. Hearing problems - and especially noise-induced hearing loss – rank among the big problem diseases worldwide and are forecast to increase in the years ahead, making the issue of women and hearing loss an undeniable concern.

Two older studies considered gender differences and women's specific perception of hearing loss. In a qualitative study, Hallberg and Jansson (1996) interviewed women with noise-induced hearing loss in a Swedish hospital. They wanted to describe *"their experiences of noise as a threat to health and their having to live with a hearing disability"* (Hallberg and Jansson 1996: 340).

Their analysis of the interviews distinguished four categories:
— lack of awareness: the women mostly became aware of the hearing loss only later in life (after retirement) and did not previously know the consequences of noise exposure;
— ambivalence: the women were ambivalent about how to manage the consequences of their hearing loss;
— avoidance and coping strategies: the women tried either to avoid hearing-intense situations (e.g., group discussions) or tried to cope with those situations;
— stigmatization: feeling that people looked on them as "mentally retarded or prematurely aged" (Hallberg and Jansson 1996: 344).

The first category was identified as the "score category" as it affected the

27. The ten most common female occupations are: Assistant nurses and hospital ward assistants, Home-based personal care and related workers, Child-care workers, Pre-primary education teaching associate professionals, Other office clerks, Shop salespersons, non-food stores, Primary education teaching professionals, Helpers and cleaners in offices, hotels and other establishments, Numerical clerks and Attendants, psychiatric care.

others. The women interviewed were unaware - both at the time of exposure and the time of the interview when they were already experiencing hearing loss - that experienced noise could damage their ability to hear. *"Their conceptions were that they never had been informed about the risks of noise. [...] One consequence of this lack of awareness might be that noise-exposed women form an invisible group."* (Hallberg and Jansson 1996: 344)

Hallberg (1999) looked at coping strategies and perceived disability, and possible gender differences in both. She concluded that *"women and men experience and cope with hearing loss differently and might also have different conversational goals"* (Hallberg 1999). She also investigated the possibility of a gender difference in perceptions of hearing impairment.

Nevertheless, no evidence or explanation was found for why the share of women with hearing loss as a recognised occupational disease in Sweden is so much higher than in other countries and the EU average.

5.3.3 Breast cancer: Denmark and the United Kingdom

Although the discussion on cancer as related to working conditions and the presence of possible carcinogens is not new, recent developments especially for breast cancer could push the issue up the agenda in more European countries. Hence its inclusion as an emerging issue here.

Women in Europe have the highest breast cancer incidence and mortality rates[28]. In December 2007, the WHO International Agency for Research on Cancer (IARC) Monograph Working Group published their decision to take shift work into account as possibly causing cancer: *"On the basis of 'limited evidence in humans for the carcinogenicity of shift-work that involves night work', and 'sufficient evidence in experimental animals for the carcinogenicity of light during the daily dark period (biological night)', the Working Group concluded that 'shift-work that involves circadian disruption is probably carcinogenic to humans' (Group 2A)"* (Straif *et al.* 2007: 1065)

In November of the same year, the Occupational Diseases Committee in **Denmark** decided, that breast cancer could be recognized as an occupational disease for shift-workers on a case-by-case basis decided by the Committee. As the link between shift work (especially night work) and breast cancer is still not fully proven, the Committee is awaiting an IARC report to reconsider the matter. In 2008, 35 cases (out of 75) were recognized; in the first eight months of 2009, 17 cases (out of 45) were recognized[29]. *"This relatively low number of employees may, however, represent only the tip of the iceberg, since even*

28. Data extracted from the GLOBOCAN database for the EU-27 on 24 August 2010. http://globocan.iarc.fr

29. Information and figures taken from press releases issued by the National Board of Industrial Injuries available on the website: www.ask.dk/English.aspx?sc_lang=en

for confirmed occupational carcinogens such as, for example, mesotheliomas and asbestos exposure, only minorities of cases are claiming compensation" argued J. Hansen, head of the Occupational Cancer Department of the Institute of Cancer Epidemiology, Danish Cancer Society (Hansen 2010). A recent study of nurses in Denmark also found increased breast cancer risks for nurses, although no clear conclusion was reached about the connection between years of shift work and breast cancer (Kjaer and Hansen 2009).

A recently-published Research Report (RR800) from Health and Safety Executive (HSE 2010) in the **United Kingdom** now adds new data for that country. The aim of the report was to estimate the burden of occupational cancer in Great Britain. As one of the methodologies outlined was to use the IARC categories for carcinogens (1 and 2A), breast cancer and shift work were also included in the report. Overall the percentage for cancers attributable to occupational carcinogens is estimated at 4.0% (5.7% for men and 2.1% for women) for registrations and at 5.3% for deaths (8.2% for men, 2.3% for women).

Breast cancer attributable to shift work accounts for the largest number of female registrations of cancer in 2004. Among the cases attributed to all occupational carcinogens, shift work (including flight personnel) with breast cancer as an associated cancer site accounted for the second highest number of cancer registrations after asbestos exposure. In women, it comprised the largest group for registrations (54.0%) and deaths. The HSE had already *"commissioned a major research study (with the University of Oxford) that aims to add further to our understanding of the reported association of shift work with breast cancer, other cancers and other major diseases"* (HSE 2009). This study will be completed in December 2011.

All this shows that the issue of women and occupational diseases is very much in the frame. It is not just about enabling women to successfully claim and get recognition for their occupational disease with regard to diseases that are already established as female-dominated or partly female. It is also an issue for the future, requiring research and investigation into the situation of working women. With more women in the workforce and a high level of segregation, researchers, politicians, employers and unions need to explore the possible risks through gender-focused analysis, which includes proactive identification of emerging issues. As these are identified, they must be addressed through research and knowledge development with a view to devising solutions.

6. Conclusion

This report on women and occupational diseases in Europe aimed to give a detailed yet understandable account of the complexity of the issue and the problems arising. It did not set out to argue the case for a particular agenda, and so the conclusions neither summarize the findings nor offer recommendations.

Possible avenues for future research and thoughts on how to address particular problems have already been made or cited in the body of the report from the sources used. These will not be repeated in detail here, since the aim is to consider the topic in the round and suggest strategies and ideas for the future.

This will be done in three steps. Firstly, a summary consideration of the gaps in different areas will seek to provide a rounded overview of many of the aspects raised during the discussion. Then, two interlocking strategies which might be helpful for all actors in the field of occupational diseases are outlined - firstly raising awareness, and secondly taking action.

Gender differences has not only been a main theme of this report, but is also high on press and political agendas through the gender pay gap, for instance. Where occupational diseases are concerned, it has to be approached with caution and always analysed in the specific circumstances. Arguably, there are four areas in which different types of "gaps" can be identified: the health of the population, the perception of health, the monitoring of work-related diseases and the recognition of occupational diseases.

Where the broader public health agenda is concerned, there is a debate about life expectancy and associated gender issues, as well the general health of men and women. The main angle of approach is through socioeconomic status. A lower status is broadly associated with poorer health, a key indicator often being low income. As women are more likely to have low income jobs, this is an example of how women’s health may be negatively influenced by their socioeconomic status.

Examples of gender differences in perception of health have already been given for different aspects in this report. A particular sensitivity to gender-specific perceptions of health and health influences would seem to be required, therefore. It is also important not only to monitor perceptions and publish the findings, but to inquire more closely into the circumstances. These shape

individual perceptions and must be factored in if the perception is to have more general relevance to the issue of women and occupational diseases.

Monitoring systems like THOR in the United Kingdom can help to complete the picture of occupational disease in a society by integrating the specialist opinions of doctors from different backgrounds. Combining those with general health monitoring and individual perceptions could arguably give a more rounded picture. This is also what this report has tried to do in a fragmentary way. Since not all sources are always available for all states or regions, and even where they are, they are not always comparable, the picture painted here for different facets like skin diseases or CTS, for example, cannot but be fragmentary. Nevertheless, from the experiences described here, it can be conjectured that synergies may be possible between those systems.

Gender differences in recognition in the EU member states have been pointed out and require more thorough investigation. A closer look at recognition systems and their underlying structures is a necessary first step for a proper comparison of the results, at least from the countries reviewed here. Combining the findings of those analyses with the results of an interconnected analysis of health monitoring systems – as mentioned above – could yield a complete picture, and help identify synergies, as well as strengths and weaknesses in the different systems and "cultures" concerning occupational diseases. This would foster a gender-sensitive approach and moves towards equality in this area.

Looking at all these differences in matters that are key to the issue of occupational diseases, it can be said that only with all those aspects in mind can a complete picture of the situation be had. This is beyond the reach of a single report or single project, and prompts a suggestion for interactive research between scientific disciplines and relevant political stakeholders. A joint research and monitoring approach could yield an overview that would enable a complete picture to be put together of the situation regarding women and occupational/work-related diseases in Europe. This is a complex task which must also factor in the different circumstances that influence the status monitored.

As well as monitoring situations and analysing outcomes, one approach for the future could be to build awareness of some of the specific issues mentioned earlier and the different aspects of male and female occupations and workplaces. This would include closer investigation of the reasons for the big differences in notifications of occupational diseases in different member states pointed out earlier. A lack of awareness could be one possible reason for these differences. Also, a greater awareness of the gender-specific aspects of exposures and the interaction of working life and private life could yield significant improvements in prevention.

Increasing awareness means including the issue in safety rep and worker training. Also, doctors need to understand the special situation of women in the workforce. This brings in action-oriented research, which could provide not only knowledge, but also an opportunity to engage the persons affected

with the process and empower them to contribute to improving their situation. The trade unions could play an important role here.

The action-oriented research approach could also be useful in galvanizing people to act. This includes some of the stakeholders already mentioned (workers, doctors, safety representatives, trade unions) and could help bring the issue to broader public attention. This would also play into awareness-raising.

In the final analysis, this report can only add one small piece to the wider composite picture of women and occupational diseases in Europe. Nevertheless, the data collected arguably suggest that further research, awareness-raising and action on the issue may be needed to bring about equality in this field.

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