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Health and safety at work in Europe (1999–2007)

A statistical portrait

2010 edition

European Commission
Employment, Social Affairs and Equal Opportunities

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Foreword

A safe, healthy working environment is a crucial factor in the individual's quality of life and is also a collective concern. Member State governments across the EU recognise the social and economic benefits of better health and safety at work.

The main principles governing the protection of workers' health and safety are laid down in the 1989 Framework Directive (89/391/EEC), the basic objective of which is to encourage improvements in occupational health and safety. All sectors of activity, both public and private, are covered by the Framework Directive, which establishes the principle that the employer has a duty to ensure workers' safety and health in all aspects relating to work, while the worker has an obligation, inter alia, to follow the employer's health and safety instructions and report potential dangers.

Tasks currently carried out in this field follow the orientations set in the Community Strategy 2007-2012 on Health and Safety at Work, which outlines action to make workplaces across the EU safer and healthier and sets a quantitative target of a 25% reduction in accidents at work, to be achieved through various EU and national measures. The Strategy for 2007-12 follows in the footsteps of the Strategy for 2000-06, when very good results were achieved and fatal accidents were reduced by 19% and those leading to an absence from work of three or more days by 24%, even though progress across sectors, companies and categories of workers may have been uneven.

Reliable, comparable, up-to-date statistical information is vital for setting policy objectives and adopting suitable policy measures, and an accurate statistical picture of health and safety at work in the EU is critical for monitoring policy and identifying preventive needs. It is therefore important to continue with efforts to improve the quality of European statistical data on health and safety at work.

This publication draws on all potential EU sources of health and safety data. Those from Eurostat include the Labour Force Survey and its ad-hoc modules on work-related accidents and health problems, European Statistics on Accidents at Work (ESAW) and European Occupational Diseases Statistics (EODS), a scheme relating to occupational diseases. Other data sources consulted include the European Survey on Working Conditions (EWCS) and the European Survey of Enterprises on New and Emerging Risks (ESENER).

We hope that his publication becomes a useful and effective tool in the hands of policy-makers, stakeholders, experts and all those with an interest in the development of a safe and healthy working environment.

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HEALTH AND SAFETY AT WORK IN EUROPE (1999-2007) – A STATISTICAL PORTRAIT

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Contents

Summary

This report presents a statistical portrait of health and safety in Europe from 1999 to 2007. It focuses on accidents at work, work-related health problems and occupational diseases, and exposure to risk factors at work. The publication is part of Eurostat's monitoring activities, and aims to support the Community Strategy of the European Commission to improve health and safety at work in Europe. One of the main objectives of the EU social policy is the creation of more jobs and jobs of better quality.

Data from different European surveys are presented in this report, including the Labour Force Survey (LFS) (more specifically the ad hoc modules on safety and health at work), European Statistics on Accidents at Work (ESAW), European Occupational Diseases Statistics (EODS), The European Survey on Working Conditions (EWCS), and the European Survey of Enterprises on New and Emerging Risks (ESENER).

The report starts with a description of several important features of the workforce in Europe to facilitate the interpretation of the data on health and safety. Subsequently, the occurrence of accidents is described, followed by work-related health problems and occupational diseases, and exposure to risk factors. In the final chapter, methodological aspects of the surveys presented are described.

Characteristics of the workforce in Europe

The employment rate in Europe increased from 61.8% in 1999 to 65.4% in 2007. This increase was especially found in women, which narrowed the gap in employment rate between men and women.

The employment rate of older people increased, especially for women. The employment rate for younger women also increased, but the employment rate for younger men was stable.

Migration trends showed that citizens of the EU27 became more mobile, while the EU also remained attractive to non-EU citizens.

The proportion of workers with part-time work or a temporary contract slightly increased from 1999 to 2007.

The proportion of employees and self-employed persons remained relatively stable during this time period.

There was an increase in the proportion of highly skilled non-manual occupations, whereas the proportion of highly skilled manual workers decreased.

At the same time, the proportion of workers in the services sector increased and the proportion of workers in the sectors industry and agriculture decreased.

In addition to these trends, it was found that persons with a restriction in the type or amount of work they can do or in the mobility to and from work were less often employed.

Accidents at work

According to the LFS ad hoc module 2007, 3.2% of the workers aged 15 to 64 had an accident at work in the past 12 months in the EU27. This corresponds to approximately 6.9 million persons in the EU27.

In line, data from the ESAW showed that 2.9% of the workers had an accident at work with more than three days of sickness absence in 2007. In addition, 5580 workers died in a fatal accident in 2007.

Accidents at work occurred more often in men, younger workers, and in workers with a low educational level. Highly skilled manual workers and workers in the sectors 'construction', 'manufacturing', and 'agriculture, hunting and forestry' more often reported an accident.

Approximately 70% of the non-fatal accidents resulted from loss of control, a fall, or body movement under stress. Wounds and superficial injuries and dislocations, sprains and strains were the most common type of injury. In fatal accidents, multiple injuries were most often registered.

According to the LFS ad hoc module 2007, 73% of the accidents at work resulted in sick leave of at least one day and 22% resulted in sick leave of at least one month. Men more often reported sick leave than women, and sick leave of one month or more occurred more often in older workers.

It was estimated that accidents at work resulted in minimally 83 million calendar days of sick leave in 2007. This does not yet include those workers that expect never to work again and workers that were still on sick leave.

The ESAW data showed that in the EU15 the occurrence of non-fatal accidents with more than three days of sick leave decreased from 4% in 1999 to 2.9% in 2007.

The number of fatal accidents in the EU15 decreased as well from 5275 persons in 1999 to 3580 persons in 2007.

In agreement, the LFS ad hoc modules of 1999 and 2007 indicated that the occurrence of accidents at work slightly decreased from 3.5% in 1999 to 3.2% in 2007 in ten European countries. This decrease could mainly be attributed to a decrease in accidents among men.

The occurrence of accidents decreased between 1999 and 2007 in workers aged 25 to 64, whereas the occurrence of accidents increased in young workers aged 15 to 24.

The decrease in accidents between 1999 and 2007 was found in most occupational groups and sectors, and was especially large in the sectors 'mining and quarrying' and 'construction'.

Work-related health problems and occupational diseases

In the EU27, 8.6% of the persons aged 15 to 64 that work or worked previously reported a work-related health problem in the past 12 months according to the LFS ad hoc module 2007. This corresponds to approximately 23 million persons. In total, 2.1% of the persons had two or more work-related health problems.

Musculoskeletal problems were most often reported as the main work-related health problem (60%), followed by stress, depression or anxiety (14%). This was supported by data of the EWCS 2005, in which backache, muscular pain, and stress were often reported by workers.

According to the ESENER 2009, about 80% of the managers responsible for the health and safety at work in the establishment indicated that musculoskeletal problems and work-related stress were of some or major concern. Because of the important role of musculoskeletal problems and stress, depression or anxiety, these health problems are described in more detail in the report.

The occurrence of work-related health problems increased with age. This increase slowed down in workers aged 55 to 64 years. This is probably due to the fact that unhealthy workers leave the workforce early.

In addition, low educated workers reported work-related health problems more often. Low educated persons more often identified musculoskeletal health problems as the most serious work-related health problem, whereas high educated persons most often identified stress, depression or anxiety as the main work-related health problem.

Work-related health problems often occurred in the sectors 'agriculture, hunting and forestry', and 'mining and quarrying'. In women work-related health problems were also frequently reported in the sector 'health and social work'. Furthermore, manual workers more often reported work-related health problems than non-manual workers.

In persons with a work-related health problem, 50% experienced some limitations in the ability to carry out day to day activities, and an additional 22% experienced considerable limitations.

Work-related health problems resulted in sick leave of at least one day in the past 12 months in 62% of the persons with a work-related health problem, and in sick leave of at least one month in 22% of the persons (LFS ad hoc module 2007).

Sick leave of at least one day but less than one month decreased with age in workers, whereas sick leave of at least one month increased with age.

It was estimated that work-related health problems resulted in minimally 367 million calendar days of sick leave in 2007. This does not yet include the persons that expect never to work again because of their work-related health problem

The LFS ad hoc modules in 1999 and 2007 showed that the occurrence of work-related health problems increased from 4.7% in 1999 to 7.1% in 2007 in nine European countries.

An increase in work-related health problems was found in men and women, and in all age groups, occupational groups, and sectors.

Although the occurrence of work-related health problems increased, persons with a work-related health problem less often reported consequences in terms of sick leave in 2007 than in 1999.

Between 2001 and 2007, musculoskeletal diseases contributed most to the occupational diseases recognized by the authorities in European countries according to the EODS. Neurologic diseases, lung diseases, diseases of the sensory organs, and skin diseases also contributed substantially.

Men were registered more often with an occupational disease than women. Most men with an occupational disease worked in the sectors 'manufacturing', and 'construction', whereas most women worked in the sectors 'wholesale, retail and trade' and 'health and social work'.

Approximately 25% of the recognized occupational diseases led to permanent incapacity to work.

Exposure to risk factors at work

In the EU27, 41% of the workers reported exposure to factors that affect physical health according to the LFS ad hoc module 2007. This corresponds to about 81 million workers.

Most workers identified difficult work postures, work movements and handling of heavy loads as the main factor affecting physical health. Less often mentioned were risk of an accident, exposure to chemicals, dusts, fumes, smoke or gases, and noise or vibration.

The assessment of exposure at work in the EWCS 2005 yielded similar results; workers reported exposure to tiring or painful positions and carrying or moving heavy loads more often than exposure to noise, vibration, smoke, fumes, powder, and chemicals.

Exposure to factors that affect mental well-being was reported by 28% of the workers in the EU27 according to the LFS ad hoc module 2007. This corresponds to 56 million workers.

The vast majority of the workers identified exposure to time pressure or overload of work as the main factor affecting mental well-being, followed by bullying or harassment and violence or threat of violence. In the EWCS 2005, almost two third of the workers reported exposure to tight deadlines or working at high speed for at least a quarter of the time.

Men were more often exposed to factors affecting physical health than women, whereas the occurrence of factors affecting mental well-being did not differ substantially between men and women.

Workers with a low educational level most often reported factors affecting physical health, and workers with a high educational level most often reported factors affecting mental well-being.

Exposure to factors affecting physical health was most frequently described in the sectors 'construction', 'fishing', and 'mining and quarrying'.

Exposure to factors affecting mental well-being occurred most often in the sector 'health and social work'.

Manual workers and workers in the army most frequently experienced factors affecting physical health, whereas highly skilled non-manual workers most often reported factors affecting mental well-being.

According to EWCS data, the exposure to ergonomic, biological, and chemical risk factors slightly decreased over time between 1995 and 2005. In contrast, exposure to a high work intensity, which reflects working at a very high speed and working to tight deadlines, increased during the same time period.

1

Introduction and background

Introduction and background

1.1 Introduction

This publication describes health and safety at work in the European Union in statistical terms. It presents a portrait of the changing European workforce and a picture of health and safety outcomes through a statistical analysis of accidents at work, work-related health problems and risk factors.

The publication constitutes a joint analysis of the various data statistical data on Health and Safety at Work:

- European Statistics on Accidents at Work, ESAW (Eurostat)
- European Occupational Diseases Statistics, EODS (Eurostat)
- The Labour Force Survey, LFS (Eurostat)
- The 1999 and 2007[1] Labour Force Survey Ad hoc modules on Accidents at work and work-related health problems (Eurostat)
- The European Survey on Working Conditions, EWCS (European Foundation for the Improvement of Living and Working Conditions)
- The Risk Observatory (The European Agency for Safety and Health at Work)
- The European Survey of Enterprises on New and Emerging Risks, ESENER (The European Agency for Safety and Health at Work)

The above data sources are the core sources of information used for this publication. They were sometimes complemented by other statistical information or results of scientific studies or surveys. It is beyond the scope of this publication to make causal inferences on the topic or to propose preventive actions. The publication aims to provide a general statistical overview of the current situation with regard to health and safety at work in the EU27, as for each of the above sources detailed statistical analyses have already been published.

This publication focuses on European Union level figures covering the period of 1999-2007 and presents an update of the previous publication "Work and health in the EU. A statistical portrait - data 1994-2002"[2].

1.2 Policy context

This publication provides a statistical portrait of health and safety at work which is one of the most developed areas of European social policy. This policy is regulated by an extensive body of EU legislation to improve the working conditions in the Member States. The policy agenda of the European Commission to improve health and safety at work in the European Union is communicated in the Community Strategy of the European Commission.

1 Venema, A., Heuvel, S. & Geuskens, G. Health and safety at work. Results of the Labour Force Survey 2007 ad hoc module on accidents at work and work-related health problems. Hoofddorp: TNO Quality of Life, 2009.

2 European Communities. Work and health in the EU. A statistical portrait. Luxembourg : Office for official publications of the European Communities, 2004.

1.2.1 Community Strategy

In 2002 the European Commission defined a Community strategy for the period 2002-2006[3]. The objective of this Strategy was to bring about a continuing improvement in well-being at work. Important objectives were a continuous reduction in accidents at work and illnesses. It was concluded in 2007 that based on the adoption and application in recent decades of a large body of Community laws (Article 153 of the Treaty on the Functioning of the European Union) the 2002-2006 strategy led to a considerable improvement of working conditions in the EU Member States and reduction in the incidence of work-related accidents and illness[4].

In spite of the progress achieved, occupational risk factors are not reduced in a uniform way and categories of workers, companies and sectors are still overexposed (e.g. young and older workers, small and medium size enterprises, agriculture). Furthermore, European Member States face a number of important changes with impact on health and safety at work (e.g. ageing of the working population, new employment trends, new and larger flows of migrants towards Europe, and changing patterns related to a growing number of women at work). At the same time the nature of occupational risks is changing due to innovation, the emergence of new risk factors (e.g. violence at work) and changing work patterns (work life becoming more fragmented).

Therefore, with a view of relaunching the policy on health and safety at work the European Commission defined the Community strategy in 2007 for the period 2007-2012. This strategy, which continues the efforts deployed in the framework of the previous 2002 – 2006 Community Strategy, is intended to provide an integrated framework within which Member States can deliver their national policies and stakeholders can promote common initiatives. The primary objective of the Community strategy 2007-2012 is an ongoing, sustainable and uniform reduction in accidents at work and occupational illnesses. The aim is to achieve an overall reduction in the total incident rate of accidents at work per 100,000 workers in the EU-27 of 25% during this period. The Council Resolution of 25 June 2007 on a New Community strategy calls on the Member States to develop and implement coherent safety and health strategies geared to national conditions, in cooperation with the social partners, and where appropriate, with measurable targets for further reducing accidents at work and the incidence of occupational illnesses, especially in those sectors of activity in which rates are above average.

1.3 Structure of the publication

The publication is organised in seven chapters. Chapter 1 introduces the background and policy context of this publication. Chapter 2 concentrates on the main characteristics of the EU labour force and major changes from 1999 till 2007. Chapter 3 to 5 present statistical data on accidents at work (Chapter 3), work-related health problems and occupational diseases (Chapter 4) and exposure to risk factors (Chapter 5). Finally, Chapter 6 presents the methodological background of the data presented.

3 European Commission. Communication from the Commission COM (2002) 118 final, 2002: 'Adapting to change in work and society: a new Community strategy on health and safety at work 2002-2006'. 2002. Brussels.

4 European Commission. Communication from the Commission COM (2007) 62 final. 'Improving quality at work: Community strategy 2007-2012 on health and safety at work. Improving the quality and productivity at work'. 2007. Brussels, DG Employment.

Working in Europe

2

Working in Europe

2.1 Introduction

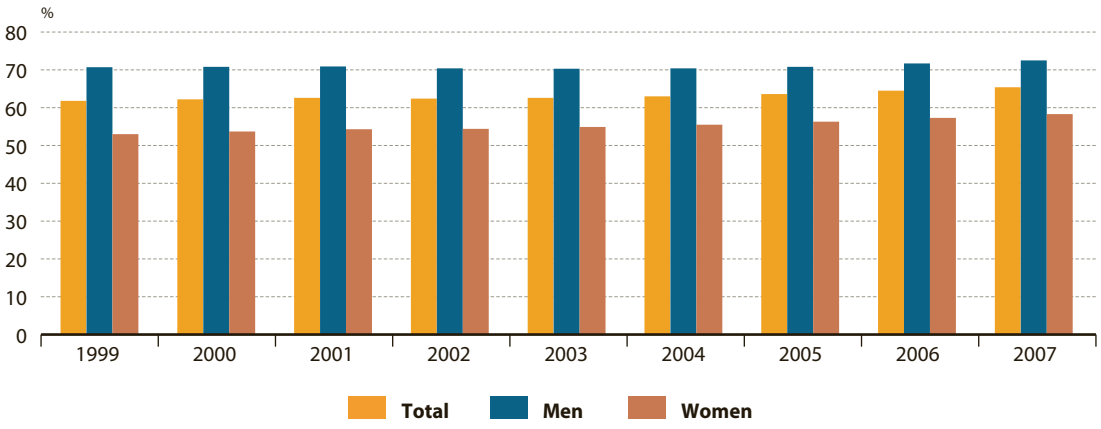
In this Chapter the main characteristics of the labour force in Europe are presented. This overview will facilitate the interpretation of the statistics on health and safety described in Chapter 3 to 5. Data are mainly from Eurostat's Labour Force Survey (LFS)[5] and include the current EU27 (except for 1999). More details on this survey are presented in Chapter 6. The chapter ends with some population projections.

2.2 Changing workforce

2.2.1 Employment growth and employment of women

Economic growth during several years has had a positive impact on employment[6]. The LFS (see Figure 2.1) showed an increase in employment rate from 61.8% in 1999 to 65.4% in 2007. The increase was higher in women (53.0% in 1999 and 58.3% in 2007) than in men. As a consequence, the gender gap in work participation narrowed (also see [7]).

Figure 2.1: Employment rate by gender in the EU-27 (%)



Source: Eurostat, LFS 1999-2007[8]

2.2.2 Young workers

The employment rate of young people (15-29) was rather stable from 49.6% in 1999 to 50.7% in 2007. The employment rate of women aged 15-29 increased slightly from 44.4% to 46.5% and the employment rate of younger men was stable (54.7% in 1999 and in 2007). An overview of the employment situation of young workers and the jobs they are employed in showed that they worked mainly in service

5 The Labour Force Survey covers the entire population living in private households and excludes those in collective households such as boarding houses, halls of residence and hospitals. Employed population consists of those persons who during the reference week did any work for pay or profit for at least one hour, or were not working but had jobs from which they were temporarily absent.

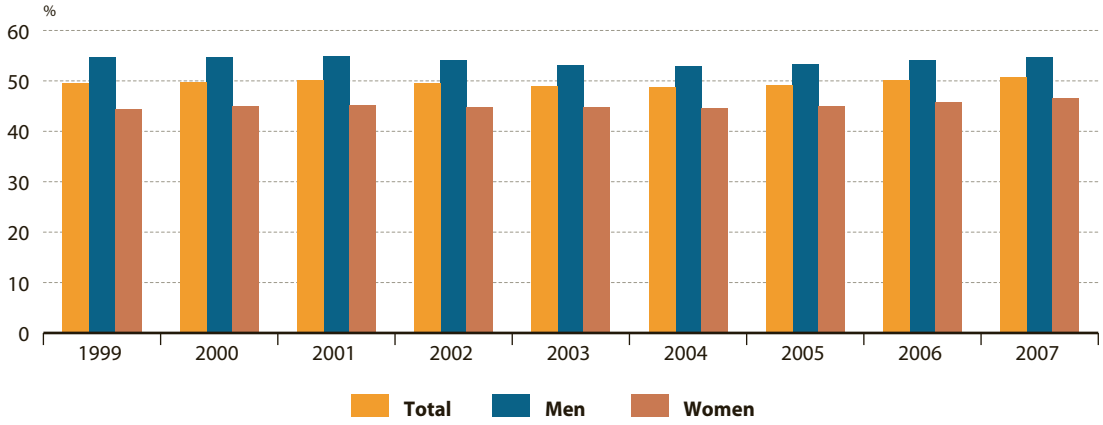
6 Nicola Massarelli. Labour Market Latest Trends, Fabrice Romans, editor. 2nd quarter 2008 data. Luxembourg: Eurostat, Data in Focus 40/2008.

7 Fred Ramb. Employment gender gap in EU is narrowing. Labour market trends 2000-2007. Luxembourg : Eurostat, Statistics in Focus 99/2008.

8 The employment rate is calculated by dividing the number of persons aged 15 to 64 in employment by the total population of the same age group.

professions and low-skilled manual jobs. The 'hotels and restaurants', and 'trade' sector were the number one employment sectors for young workers in 20 of 25 Member States and among the top 3 in all Member States[9].

Figure 2.2: Employment rate of younger persons (15-29) in the EU27 (%)



Source: Eurostat, LFS 1999-2007[10]

2.2.3 Older workers

In the EU27, the employment rate of older people increased from 36.5% in 1999 to 44.7% in 2007 (see Figure 2.3). The employment rate of women aged 55-64 increased more than the male employment rate for this age group. Despite this trend, the rate for men in 2007 (53.9%) remained considerably higher than that of women (36.0%). Men left the labour force on average at the age of 61.4 while women did so about one year earlier[11,12].

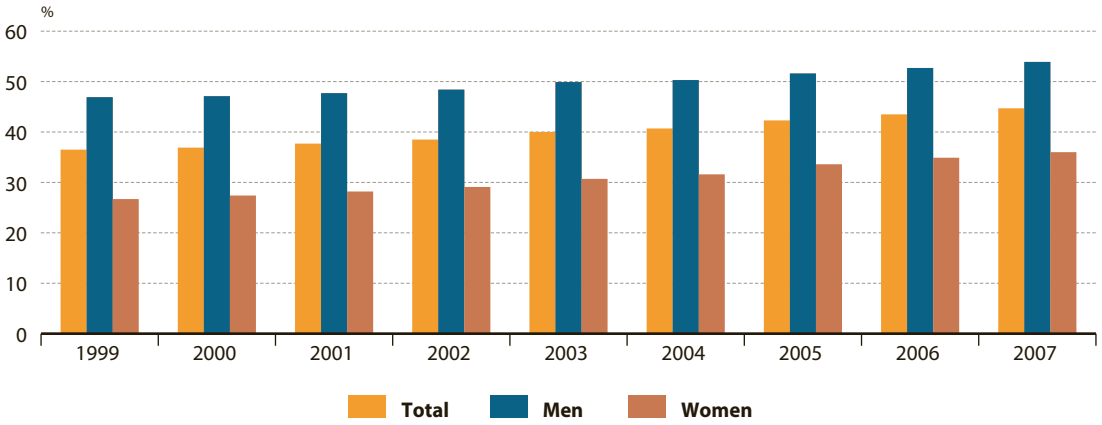
9 EU-OSHA, Facts 69.Young Workers – Facts and figures. Youth employment, European Agency for Safety and Health at Work, 2007. Available at http://osha.europa.eu/en/publications/factsheets/69/

10 The employment rate of younger persons is calculated by dividing the number of persons aged 15 to 29 in employment by the total population of the same age group.

11 The employment of seniors in the European Union. Luxembourg: Eurostat, Statistics in Focus (Population and social conditions) 20/2006.

12 Eurofound. Foundation findings. Drawing on experience – Older women workers in Europe, Dublin: European Foundation for the improvement of living and working conditions 2009.

Figure 2.3: Employment rate of older persons (55-64) in the EU27 (%)



Source: Eurostat, LFS 1999-2007[13]

2.2.4 Workers with disabilities

The European Commission reported[14] some increase in labour force participation of people with disabilities. About 16% of men and women 16-64 years of age in the EU reported to have long-standing health problem or disability[15]. One third of these persons indicated that they were not restricted in the kind or amount of work they can do or in their mobility to and from work. Persons not restricted in work or mobility were more likely to be employed than those who were restricted (also see Chapter 4 for more data on work-related health problems and occupational diseases).

2.2.5 Migrant workers

Recent migration trends showed that citizens of the EU27 became more mobile. In addition the EU remained attractive to non-EU citizens[16]. After rapid growth in 2003 the rise in immigration slowed down in the last few years with 3.5 million persons settling in a new country of residence in the EU27. There were relatively more non-EU than EU citizens among the immigrants. Half of all immigrants were younger than 29 years old. There were more men than women among immigrants and immigrant women were younger than immigrant men.

Migrant workers tend to work in unskilled occupations and are more likely to be overqualified for their job. They experience considerable job insecurity. Moreover, migrant workers are more often employed in sectors and occupations with less advantageous working conditions. Women and young migrants are considered vulnerable[17]. A study on the social situation in Europe indicated that recent intra-EU mobility has not led to serious disturbances on the labour market. This also applies to those Member States that have seen a relatively large inflow of migrants from new Member States[18].

13 The employment rate of older workers is calculated by dividing the number of persons aged 55 to 64 in employment by the total population of the same age group.

14 European Commission. Men and Women with disabilities in the EU: Statistical analysis of the LFS ad hoc module and the EU-SILC, Brussels 2007

15 Didier Dupré & Antti Karjalainen. Employment of disabled people in Europe in 2002. Luxembourg: Eurostat, Statistics in Focus 26/2003.

16 Anne Herm. Recent migration trends. Citizens of EU27 Member States become even more mobile while EU remains attractive to non-EU citizens. Luxembourg: Eurostat, Statistics in Focus (population and social conditions) 98/2008.

17 Eurofound. Employment and working conditions of migrant workers, Dublin: European Foundation for the improvement of living and working conditions, 2007.

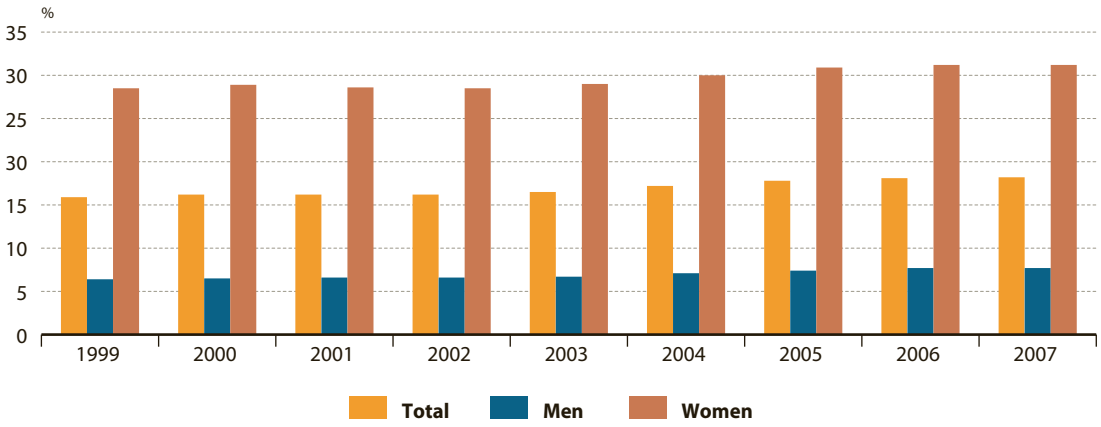
18 The Social Situation in the European Union 2007. Social Cohesion through Equal Opportunities. 2008. Luxembourg: Office for Official Publications of the European Communities.

2.3 Organisation of work

2.3.1 Part-time and temporary employment

Part-time employment increased from 15.9% in 1999 to 18.2% in 2007 (see Figure 2.4). In the EU27, 31.2% of the employed women worked in a part-time job in 2007 compared to 7.7% of the men. In Figure 2.5 it is shown that in 1999 11.8% of the employees held a limited duration contract compared to 14.5% in 2007. Unlike part-time work, no substantial differences in temporary employment existed between men and women[19]. Temporary and part-time workers had fewer opportunities to receive training and to learn new things at the workplace[20].

Figure 2.4: Persons employed part-time in the EU27 (%)



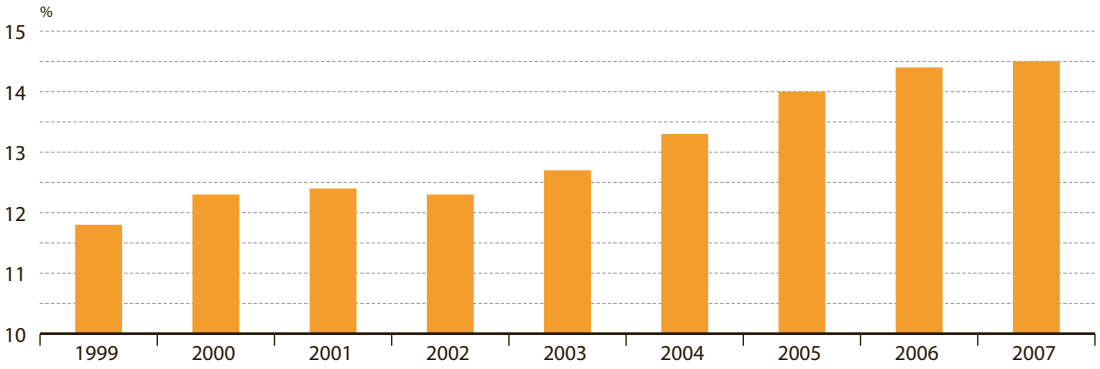
Source: Eurostat, LFS 1999-2007[21]

19 Omar Hardarson. The flexibility of working time arrangements for women and men. 2007. Luxembourg: Eurostat, Statistics in Focus (population and social conditions) 96/2007.

20 Parent-Thirion A., Fernández Macias E., Hurley J., et al. Fourth European working conditions survey. Luxembourg : Office for official publications of the European Communities, 2007.

21 The distinction between full-time and part-time work is made on the basis of a spontaneous answer given by the respondent. It is impossible to establish a more exact distinction between part-time and full-time work, due to variations in working hours between Member States and branches of industry.

Figure 2.5: Employees with a contract of limited duration in the EU27 (%)



Source: Eurostat, LFS 1999-2007[22]

2.3.2 Flexibility in working hours

The ad hoc module of the Labour Force Survey 2004 addressed work organisation and working time arrangements[23]. The data indicate that approximately three quarters of the employees aged 25-49 in the EU worked fixed or staggered hours each week. About a quarter of the workers had some flexibility in the hours they worked. Women slightly more often worked in such flexible arrangements than men. Workers in relatively high-skilled jobs were more flexible in their working-time arrangements than workers in lower-skilled occupations.

2.3.3 Employment trends

LFS data show that the proportion of employees and self-employed workers in the work force in the EU27 remained rather stable over the years. Most workers were employees (82.7% in 2000 and 84.0% in 2007) and the percentage of self-employed workers in the workforce was 14.6% in 2000 and 14.4% in 2007. Self-employed persons reported more health risks and took less health-related leave[24].

Most European workers (72.9%) worked in local units with more than ten workers. This proportion was rather stable over the years.

2.4 Sector and occupation

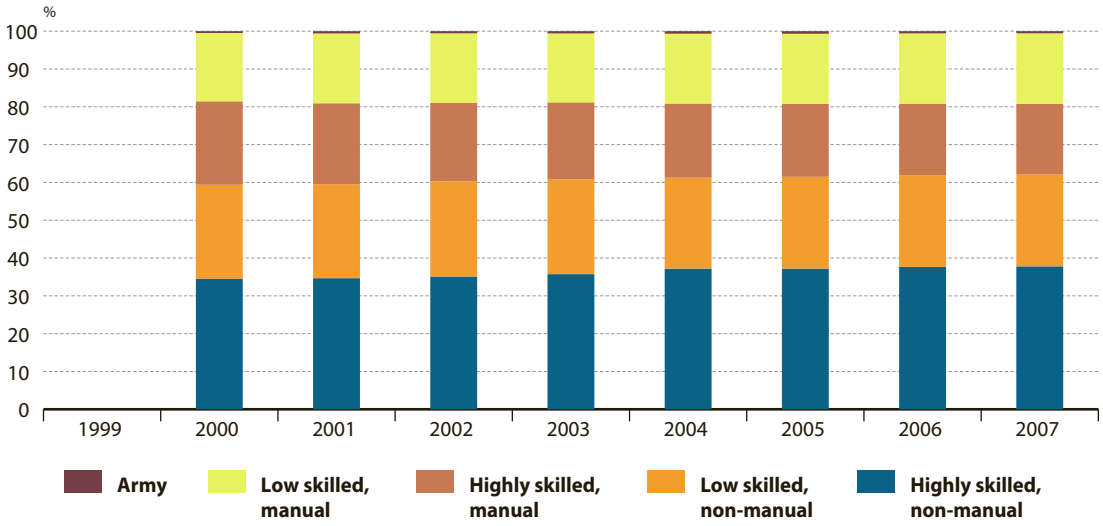
Figure 2.6 shows that the proportion of highly skilled non manual occupations increased from 34.5% in 2000 to 37.8% in 2007, whereas the proportion of highly skilled manual occupations decreased (from 22.1% in 2000 to 18.6% in 2007). The proportion of low skilled functions remained relatively stable over the years. A more detailed overview of occupations is presented in Table 2.1.

22 A job may be considered temporary if employer and employee agree that its end is determined by objective conditions such as a specific date, the completion of a task or the return of another employee who has been temporarily replaced (usually stated in a work contract of limited duration). Typical cases are: (a) persons with seasonal employment; (b) persons engaged by an agency or employment exchange and hired to a third party to perform a specific task (unless there is a written work contract of unlimited duration); (c) persons with specific training contracts.

23 Omar Hardarson. The flexibility of working time arrangements for women and men. 2007. Luxembourg: Eurostat, Statistics in Focus (population and social conditions) 96/2007.

24 Parent-Thirion A., Fernández Macias E., Hurley J., et al. Fourth European working conditions survey. Luxembourg: Office for official publications of the European Communities, 2007.

Figure 2.6: Workers by occupation in the EU27 (%)



Source: Eurostat, LFS 1999-2007[25]

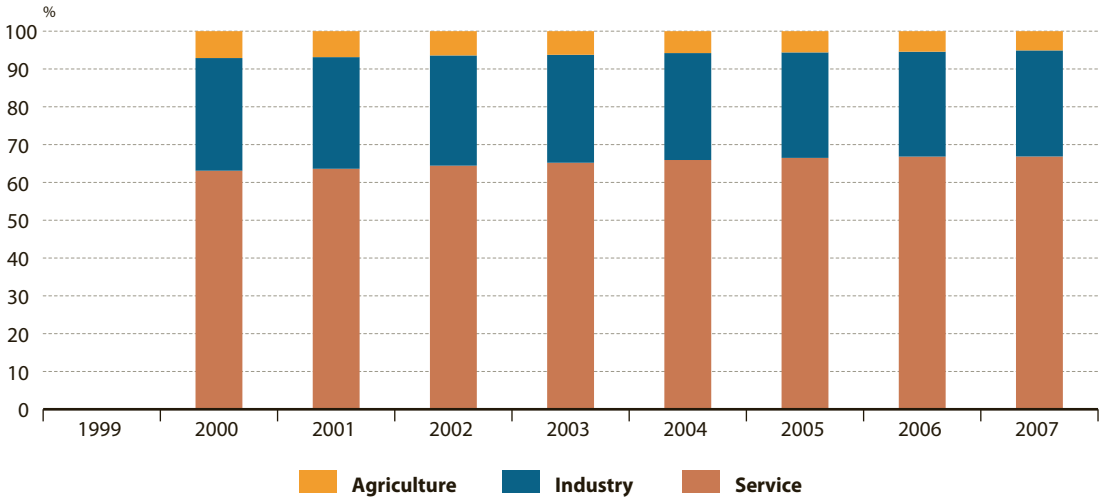
Table 2.1: Workers by occupation in 1999 and 2007 (%)

Occupation	Proportion in 1999	Proportion in 2007
Armed forces	0.6%	0.6%
Clerks	12.0%	11.4%
Craft and related trades workers	16.4%	15.0%
Elementary occupations	8.8%	10.4%
Legislators, senior officials and managers	7.8%	8.8%
Plant and machine operators and assemblers	9.2%	9.2%
Professionals	12.4%	14.4%
Service workers and shop and market sales workers	13.0%	14.4%
Skilled agricultural and fishery workers	6.8%	4.6%
Technicians and associate professionals	14.2%	17.2%

Source: Eurostat, LFS 1999-2007

25 No data available from 1999. Highly skilled, non-manual: ISCO = 100, 200, 300; low skilled, non-manual: ISCO = 400, 500; highly skilled manual: ISCO = 600, 700; low skilled, manual: ISCO = 800, 900; Army: ISCO 010.

Figure 2.7: Workers by economic activity in the EU27 (%)



Source: Eurostat, LFS 1999-2007[26]

From Figure 2.7 it can be seen that 'service' is the largest sector in the EU27 and that the proportion of workers in services sectors has slightly increased (from 63.1% in 2000 to 66.9% in 2007). The proportions of workers employed in 'industrial' and 'agricultural' sectors decreased over the same years.

2.5 Emerging issues

Across all the EU Member States the population is ageing. Recent Eurostat population projections show:

- The population in the EU27 is projected to become older with the median age rising from 40.4 years in 2008 to 47.9 years in 2060.
- The proportion of persons aged 65 years or over in the total population is projected to increase from 17.1% in 2008 to 30.0% in 2060. This corresponds to 84.6 million persons in 2008 and 151.5 million in 2060. Similarly, the number of persons aged 80 years or over is projected to almost triple from 21.8 million persons in 2008 to 61.4 million persons in 2060.
- There were 4 persons of working age (15-64 years old) for every person aged 65 years or over in 2008. In 2060 there will be 2 persons of working age for every person aged 65 and over[27].

26 No data available from 1999. NaceS based on Nace1D (ref. 2): Agriculture = 'A' and 'B'; Industry = 'C' till to 'F'; Services = 'G' till to 'Q'. Note that this mapping is not perfect as the NaceS adopts the old rev1.1 coding, while nace1D is based on rev.2

27 Giannakouris, K. Ageing characterizes the demographic perspectives of the European societies. Luxembourg: Eurostat, AStatistics in Focus, 72/2008.

Accidents at work

3

Accidents at work

An accident at work is defined as "*a discrete occurrence in the course of work which leads to physical or mental harm*"[28]. This includes cases of acute poisoning and wilful acts of other persons, as well as accidents occurring during work but off the company's premises, even those caused by third parties. It excludes deliberate self-inflicted injuries, accidents on the way to and from work (commuting accidents), accidents having only a medical origin and occupational diseases. The phrase "in the course of work" means whilst engaged in an occupational activity or during the time spent at work. This includes cases of road traffic accidents in the course of work.

The Labour Force Survey ad hoc module 1999 and 2007 provided data on self-reported occupational accidents in the 12 month period prior to the administration of the survey, irrespective of whether these accidents resulted in absence from work. The European Working Conditions Survey (EWCS) asked respondents how many days off work due to health problems could be attributed to an accident. Therefore, only accidents with absence from work were reported in this survey. ESAW, the European Statistics on Accidents at Work, includes case-by-case data on occupational accidents with more than three days of absence from work and fatal accidents. A fatal accident is defined as an accident which leads to the death of the victim within one year. The ESAW data are provided by national reporting systems.

This chapter presents results from all three sources where appropriate, on occurrence, related factors, causes and circumstances, consequences and trends in occupational accidents. In chapter 6 details on the statistical sources are described.

3.1 Occurrence of accidents at work

According to the LFS ad hoc module 2007 3.2% of the persons in the EU27 of 15-64 years that worked or had worked during the past year had one or more accidents at work in the past 12 months. This percentage corresponds to 6.9 million persons in the EU27. In total, 0.4% of all respondents had two or more accidents, which corresponded to approximately 0.8 million persons.

Road traffic accidents during work or in the course of work (excluding commuting accidents) were reported in the LFS ad hoc module 2007 by 0.3% of the persons, corresponding to 0.67 million persons in the EU27. Road traffic accidents constituted 9.6% of all accidents at work.

According to ESAW, 5580 workers in the EU27 died in a fatal accident at work in 2007 and approximately 2.9 % of the workers had an accident at work with more than 3 days of absence.

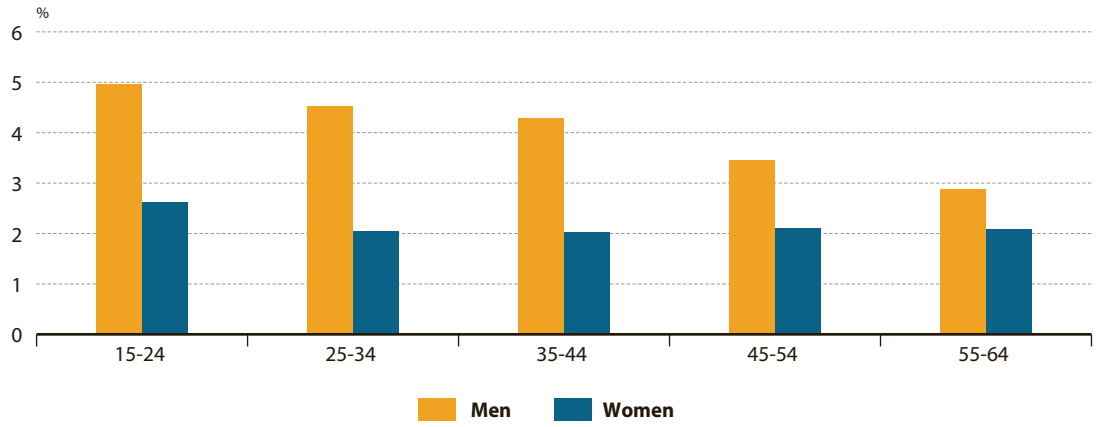
3.2 Demographic and work-related characteristics

3.2.1 Demographic characteristics

Figure 3.1 presents the occurrence of accidents at work in the past 12 months in the EU27 by age and sex. Men (4.0%) had more often one or more accidents than women (2.1%). In men, the occurrence of accidents at work decreased with age. Similar findings were found in the ESAW 2007 data (EU 15 without Greece) where accidents at work with more than three days of absence from work occurred more often in men than in women (3.2% for men and 1.4% for women). The occurrence of accidents at work with more than three days of absence decreased from 3.5% in workers aged 18-24 years to 2.0% in workers aged 55-64 years.

28 European Communities – DG Employment and Social affairs. European Statistics on Accidents at Work (ESAW) methodology – 2001 edition. Luxembourg: Office for Official Publications of the European Communities, 2001

Figure 3.1: Occurrence of one or more accidental injuries at work or in the course of work in the past 12 months in the EU27 in different age groups (%)



Source: LFS ad hoc module 2007

In the LFS ad hoc module 2007 persons with a low educational level more often had an accident at work, and these accidents also resulted more often in sick leave. However, the proportion of road accidents among all accidents was highest in persons with a high level of education, especially in men. With regard to marital status, single persons more often had an accident at work than married persons, but accidents in single persons resulted less often in sick leave.

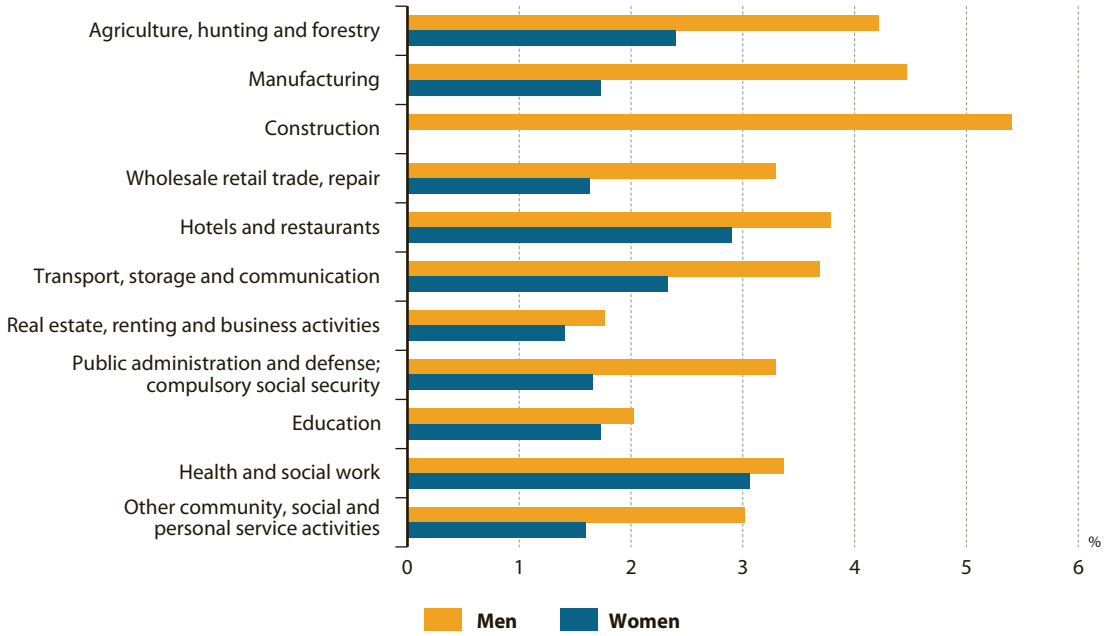
3.2.2 Work-related characteristics[29]

Figure 3.2 shows that accidents at work were most prominent in the sectors 'agriculture, hunting and forestry', 'manufacturing', and 'construction', particularly among men. Women in the sectors 'health and social work' and 'hotels and restaurants' had more often one or more accidents than women working in other sectors. As expected, the proportion of road accidents was highest in 'transport, storage and communication' (results not shown).

A comparable pattern was found in the ESAW 2007 data (EU 15 without Greece). Accidents at work with more than three days of absence occurred most often in the sectors 'mining and quarrying' (10.0%), 'construction' (51%), 'fishing' (4.1%) and 'agriculture' (3.9%). The lowest occurrence was found in 'financial intermediation' (<1%), 'real estate, renting and business activities' and 'electricity, gas and water supply' (both 1.7%).

29 In the analysis of the LFS ad hoc module 2007, work-related characteristics derived from the core LFS could only be studied in detail in persons that worked during the reference week, and had an accidental injury in their main job. The percentages presented should be considered as an aid to compare subgroups, and should not be interpreted as the occurrence of accidental injuries at work.

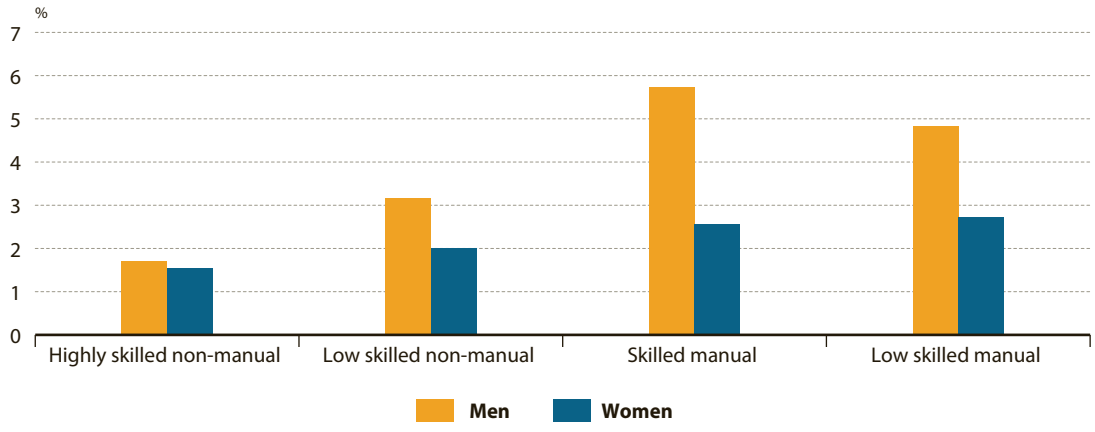
Figure 3.2: Workers in the EU27 reporting one or more accidental injuries at work or in the course of work in the past 12 months in their main job in different sectors* (%)



Source: LFS ad hoc module 2007
*sample size below publication limit for 'fishing', 'mining and quarrying', 'electricity gas and water supply', 'construction' (women), 'financial mediation', 'private households with employed persons' and 'extra-territorial organisations and bodies'

In the LFS ad hoc module 2007 skilled manual workers most often had accidents at work (Figure 3.3). In men highly skilled manual workers most often had an accident, whereas in women low skilled manual workers most often had an accident. Manual workers, both skilled and unskilled most often reported sick leave as a consequence of an accident.

Figure 3.3: Workers in the EU27 reporting one or more accidental injuries at work or in the course of work in the past 12 months in their main job in different occupations* (%)



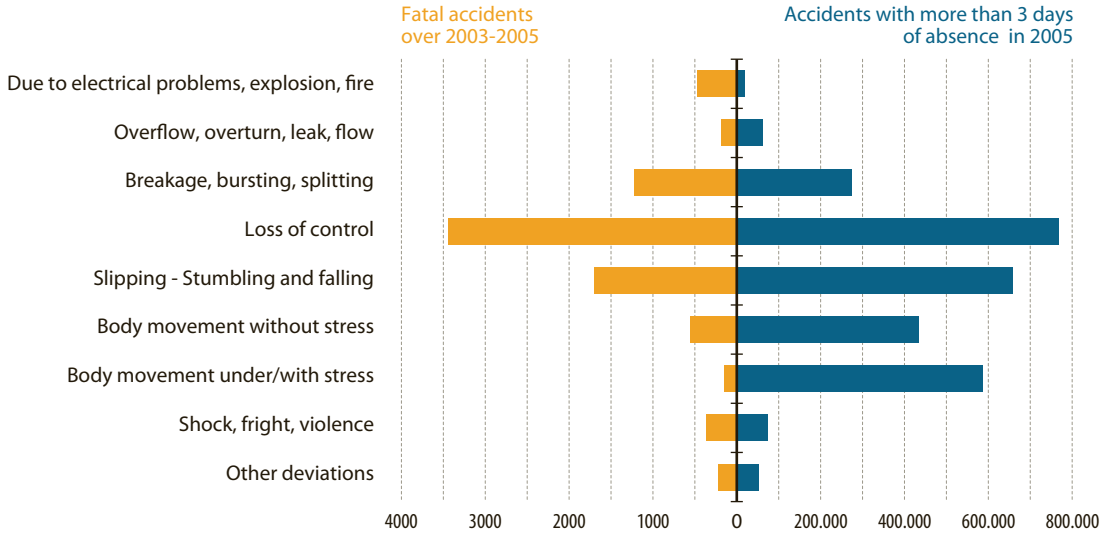
Source: LFS ad hoc module 2007
*sample size below publication limit for 'army'

Workers with shift work or atypical working hours had accidents relatively more often than workers with day work or regular working hours. Workers with temporary and part-time jobs had relatively less often accidents compared to workers with full time and fixed contract. This latter finding may be related to the number of hours worked per week. The size of the enterprise (local unit > 10 persons versus 10 persons or less) is not related to the occurrence of accidents in men. In women, those working in relatively large companies more often had an accident at work.

3.2.3 Causes and circumstances

ESAW provides data on the type of accident at work and the chain of events that resulted in an accident. In a recent publication[30] data from ESAW on causes and circumstances of accidents are presented for the first time. Figure 3.4 shows the events leading to fatal and non-fatal accidents. About 70% of non-fatal accidents at work resulted from loss of control, fall or physical stress. More than 40% of the fatal accidents resulted from loss of control.

Figure 3.4: Number of fatal accidents (left part) and accidents at work with more than 3 days of absence (right part) by deviation



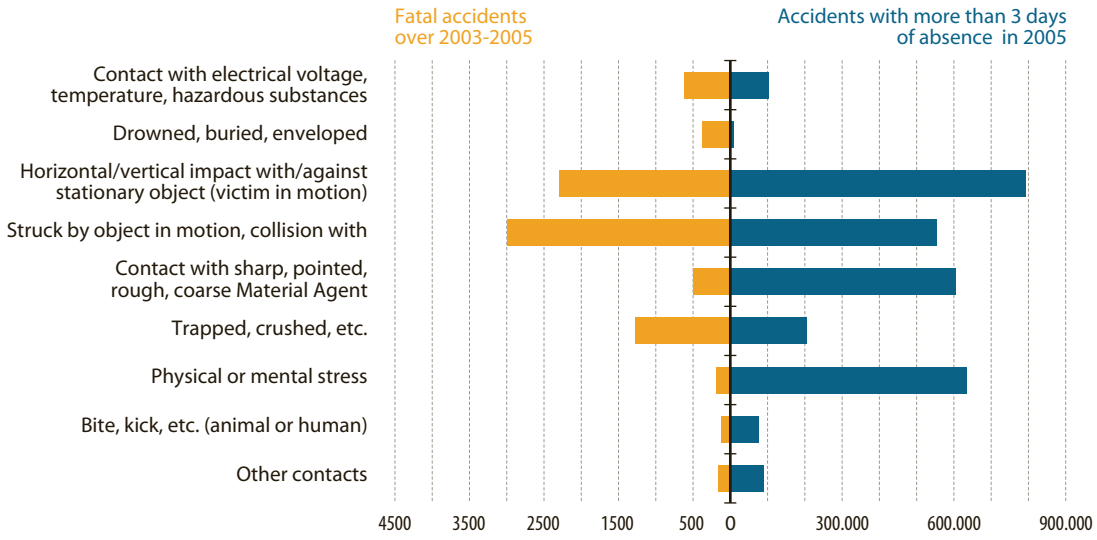
Source: ESAW[31]

In Figure 3.5 it can be seen that about 44% of the victims of non-fatal accidents and 62% of the victims of fatal accidents were injured by contact with or collision with an object. In non-fatal accidents, injury was most often caused by horizontal/vertical impact with or against a stationary object (victim in motion), physical or mental stress, contact with sharp, pointed, rough or coarse material agent and struck by or collision with an object in motion. In fatal accidents these were struck by or collision with an object in motion and horizontal/vertical impact with or against a stationary object (victim in motion).

30 European Commission, DG Employment, Social affairs and Equal opportunities. Causes and circumstances of accidents at work in the EU. Luxembourg; Office of Official Publications of the European Communities, 2009.

31 Data based on report described in footnote 30. Data available for 20 countries.

Figure 3.5: Number of fatal accidents (left part) and accidents at work with more than 3 days of absence (right part) by type of contact – mode of injury



Source: ESAW[32]

3.3 Consequences

In this paragraph, the consequences of accidents at work will be presented as available in the statistical sources. First, sick leave will be addressed followed by information on the types of injury.

3.3.1 Absence from work

In the LFS ad hoc module 2007, sick leave as a consequence of the most recent accident at work or in the course of work in the past 12 months was assessed. Table 3.1 shows that in the EU27 73.4% of the persons with an accident at work reported sick leave for at least one day. Of all persons aged 15-64 years that work or worked during the past 12 months 2.3% was on sick leave for at least one day due to an accident at work. This corresponds to approximately 5.0 million persons in the EU27. Prolonged sick leave (for one month or more) was reported by 22.0%, which corresponds to 0.7% of the persons that work or worked during the past 12 months, and to 1.5 million persons in the EU27.

32 Data based on report described in footnote 30. Data available for 20 countries.

Table 3.1: Accidents at work in the past 12 months, sick leave and prolonged sick leave in the EU27 by sex and age (%)

		Accident(s) at work	Sick leave > 1 day*	Sick leave > 1 month
		%	% of accidents	% of accidents
	EU27	3.2	73.4	22.0
Men		4.0	77.1	23.4
Women		2.1	64.7	18.5
Men	15-24	5.0	76.8	15.6
	25-34	4.5	75.2	21.9
	35-44	4.3	77.8	24.5
	45-54	3.5	77.9	25.5
	55-64	2.9	79.3	31.7
Women	15-24	2.6	57.2	u
	25-34	2.1	61.8	13.2
	35-44	2.0	68.6	19.9
	45-54	2.1	65.3	22.8
	55-64	2.1	69.5	26.1
Total	15-24	3.9	70.8	14.3
	25-34	3.4	71.6	19.5
	35-44	3.3	75.2	23.2
	45-54	2.8	73.6	24.6
	55-64	2.5	75.8	29.8

Source: LFS ad hoc module 2007
* Data from IE not included because of wording differences
u: reliability limit for publication not satisfied

From Table 3.1 in can be concluded that men with an accident at work reported sick leave and prolonged sick leave more often than women. The reporting of sick leave for 1 day or more is rather stable over age groups, but prolonged sick leave is related to age. Older workers with accidents more often experienced prolonged absence from work than younger workers.

The LFS ad hoc module 2007 makes it possible to estimate that among workers that returned to work after the most recent accident at work in the past 12 months, the total number of lost calendar days summed up to at least 83 million days[33]. In addition, about 25 thousand other persons expected never to work again because of the accident, and approximately 363 thousand persons were still on sick leave at the time of the study. The number of lost days in these latter groups is not known.

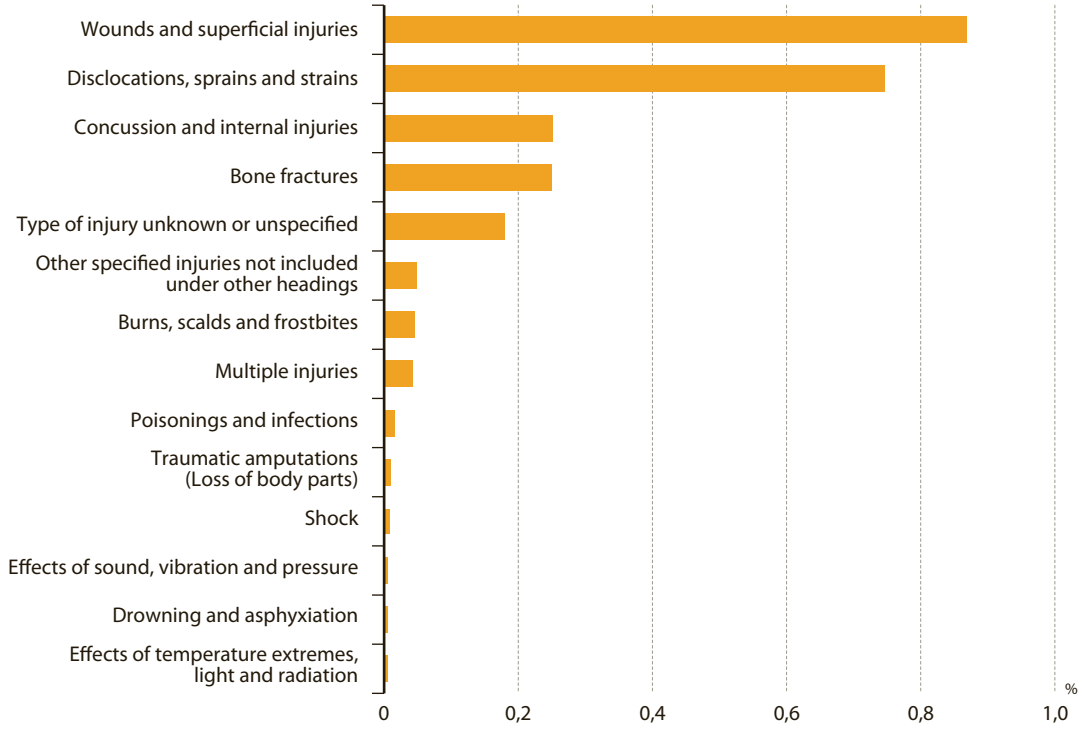
On the basis of ESAW 2007 it was prudently estimated that accidents at work resulted in at least 67 million lost calendar days (not including the days off as a result of accidents with less than four days of absence). Permanent incapacity to work occurred in more than 100000 workers that were registered in ESAW that year.

33 This estimate is calculated by taking the minimum number of calendar days of a category as the value for that category (e.g. 1 month - 3 months = 30 days)

3.3.2 Type of injury

ESAW provides data on the type and location of the injuries suffered. Figure 3.6 describes that wounds and superficial injuries, and dislocations, sprains and strains are the most common types of injury. In workers with fatal accidents at work (not in the figure) multiple injuries are most often registered.

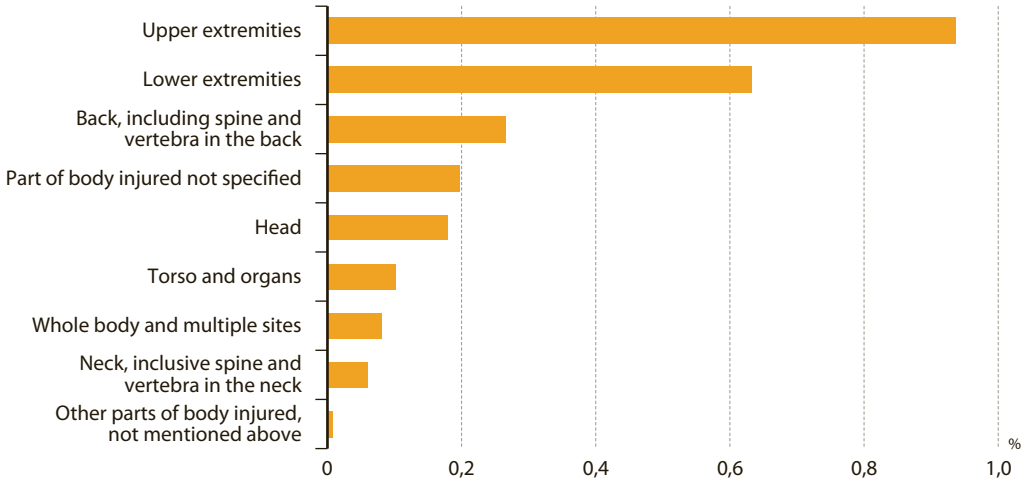
Figure 3.6: Occurrence of accidents at work with more than 3 days of absence by type of injury (%)



Source: ESAW 2007

Figure 3.7 shows that injuries were most often located on the upper extremities, followed by the lower extremities. In fatal accidents (not if the figure), the injury most often affected the whole body or multiple sites, followed by the head.

Figure 3.7: Occurrence of accidents at work with more than 3 days of absence by location of injury (%)



Source: ESAW 2007

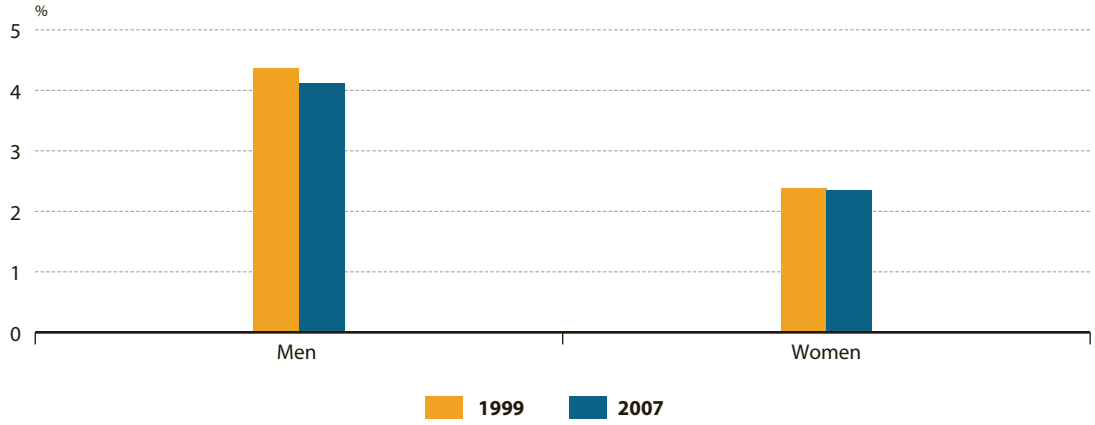
3.4 Trends

Both in 1999 and 2007, the LFS ad hoc module included questions on accidents at work and work-related health problems. For ten countries, data on accidents at work in 1999 and 2007 could be compared (DK, ES, FI, HU, IE, IT, LU, PT, SE, UK (UK data reflect old results)). Therefore, it should be stressed that the following trends do not necessarily reflect the trend in Europe.

The occurrence of accidents at work slightly decreased from 3.5% in 1999 to 3.3% in 2007 among persons that worked in the past 12 months in the ten European countries[34]. Figure 3.8 shows that this decrease could mainly be attributed to a decrease in the occurrence of accidents among men (from 4.4% in 1999 to 4.1% in 2007). No decrease in accidents among women was found (2.4% in both years). The occurrence of accidents decreased in most age groups between 1999 and 2007, but slightly increased in workers aged 15 to 24 years from 3.8% in 1999 to 4.0% in 2007 (see Figure 3.9).

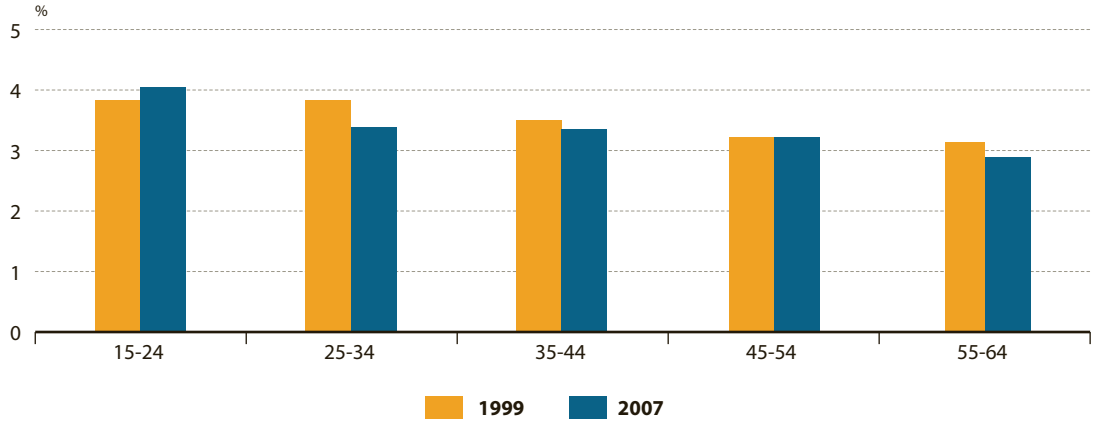
34 The figures refer to the overall total percentage of accidents.

Figure 3.8: Workers reporting one or more accidental injuries at work or in the course of work in the past 12 months by gender and year (%)



Source: LFS ad hoc module 1999 and 2007 – 10 countries included

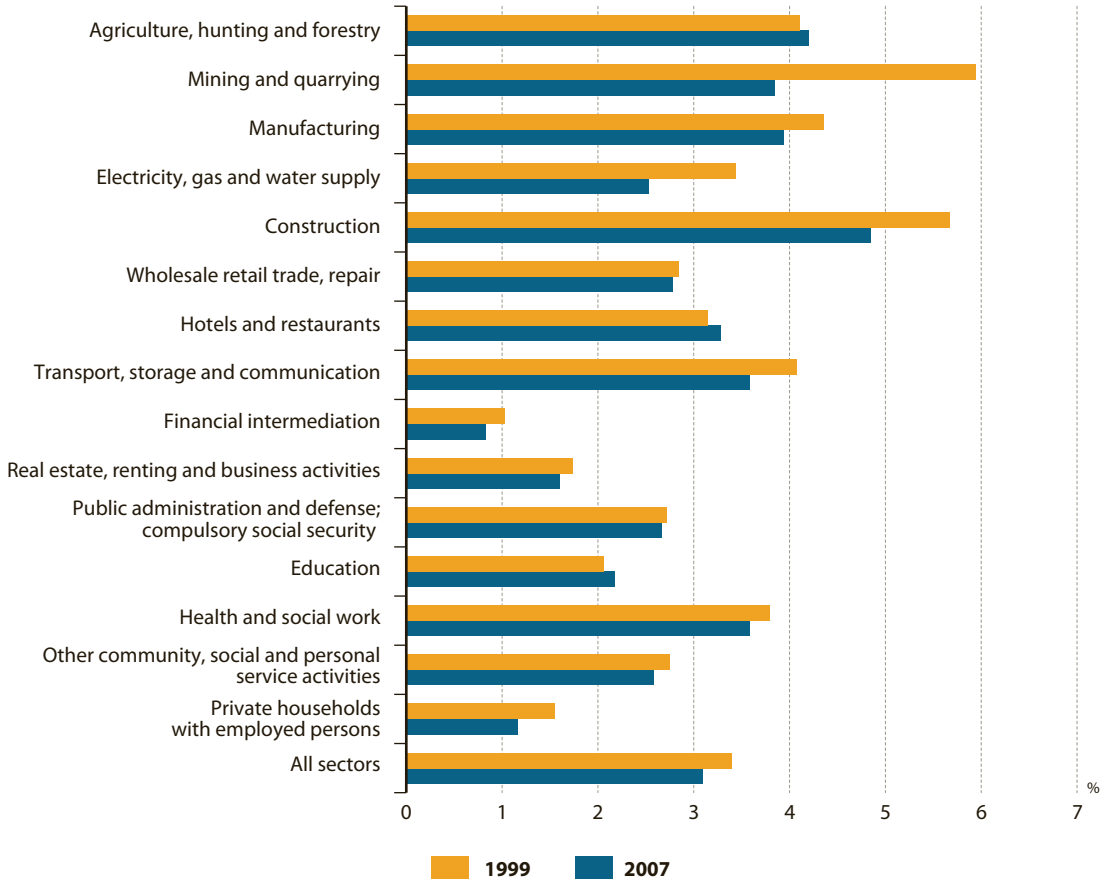
Figure 3.9: Workers reporting one or more accidental injuries at work or in the course of work in the past 12 months in different age groups by year (%)



Source: LFS ad hoc module 1999 and 2007 – 10 countries included

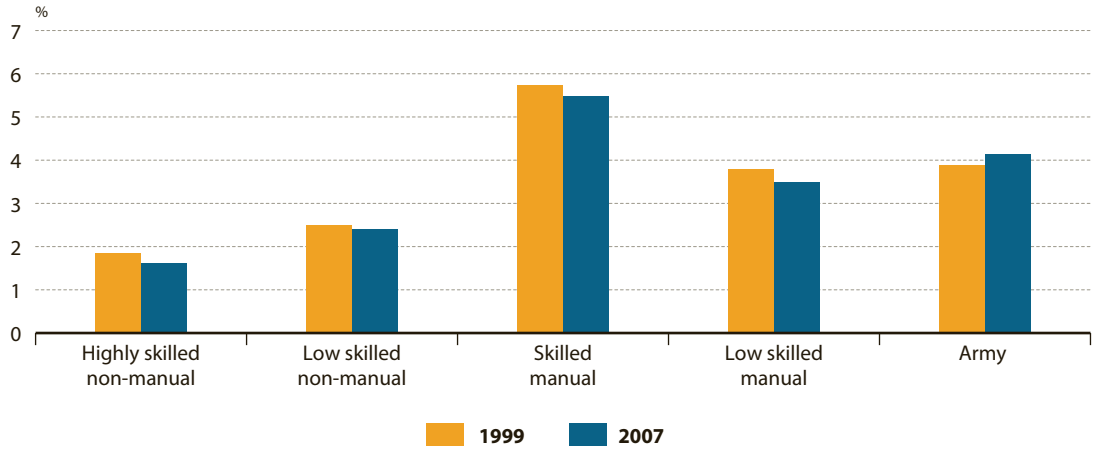
The decrease in the occurrence of accidents at work between 1999 and 2007 was found in most sectors in the ten European countries studied. The decrease between 1999 and 2007 was especially large in the sectors 'mining and quarrying' and 'construction' (Figure 3.10). In all occupational groups, except for the 'army', fewer accidents were reported in 2007 than in 1999 (Figure 3.11). The decrease seemed to be slightly smaller in the larger firms (more than 10 persons) than in smaller firms (Figure 3.12).

Figure 3.10: Workers reporting one or more accidental injuries at work or in the course of work in the past 12 months in different sectors* by year (%)



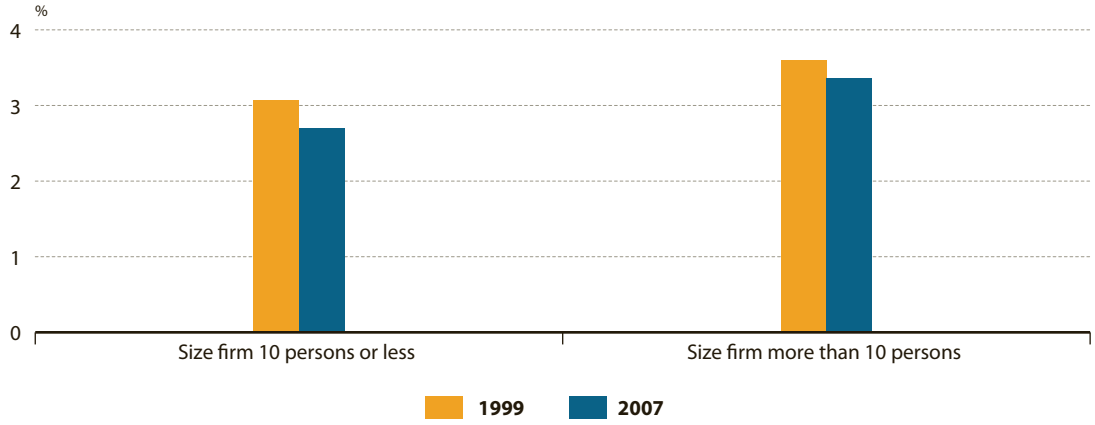
Source: LFS ad hoc module 1999 and 2007 – 10 countries included
*sample size below publication limit for 'fishing' and 'extra-territorial organisations and bodies'

Figure 3.11: Workers reporting one or more accidental injuries at work or in the course of work in the past 12 months in different occupational groups by year (%)



Source: LFS ad hoc module 1999 and 2007 – 10 countries included

Figure 3.12: Workers reporting one or more accidental injuries at work or in the course of work in the past 12 months by size of the firm and year (%)



Source: LFS ad hoc module 1999 and 2007 – 10 countries included

In the ESAW data both the occurrence of non-fatal and fatal accidents significantly decreased since 1999. In the EU15[35] the occurrence of accidents with more than three days of absence declined from 4% in 1999 to 2.9% in 2007. In the same period and the same population the number of fatal accidents declined from 5275 to 3580. In agreement with the LFS ad hoc modules of 1999 and 2007, the occurrence of fatal and non-fatal accidents did not decrease in women according to ESAW. The decline found in the ESAW data are more prominent than the decline found on the basis of LFS survey data. For an explanation of this difference a more detailed comparison is needed.

3.5 Emerging issues

Increased employment rates and the ageing of the workforce in the EU might result in a decreasing overall accident rate. Because both trends were specifically prominent in women, and the occurrence of accidents was lower for women than for men, the overall accident rate might decrease in the future.

However, the finding that older workers with accidents more often reported prolonged absence from work than younger workers and the finding that the declining trend in accident rate was less apparent in women, suggest that care should be taken when only the overall accident rate is considered.

Due to growing employment in the services sector and in highly skilled, non manual occupations where accidents are generally less frequent than in other sectors and occupations, the occurrence of accidents might decrease in the future.

35 For all available sectors and in 2007 EU15 without Greece

Work-related health problems and occupational diseases

4

Work-related health problems and occupational diseases

Work-related health problems are diseases for which occupational factors increase the risk of disease, or aggravate an already existing disease[36]. In the Labour Force Survey (LFS) ad hoc module 1999 and 2007, self-reported work-related health problems were defined as 'illnesses, disabilities or other physical or psychic health problems, apart from accidental injuries, suffered by the person during the past 12 months, that were caused or made worse by work'. In the European Working Conditions Survey (EWCS), self-reported work-related health problems were measured by assessing whether or not work had an impact on health. In Chapter 6, details on the LFS and EWCS are presented.

Occupational diseases are typically restricted to those diseases for which the occupational factor is the only, or clearly the most important, cause. In the European Occupational Diseases Statistics (EODS), case-by-case data on occupational diseases recognized by the national authorities are provided by countries. The EODS contains the number of newly recorded occupational diseases and fatal occupational diseases during the reference year. Since the occupational origin has to be approved by the national compensation authorities, the concept of occupational diseases is dependent on the national legislation and compensation practice. In Chapter 6 details on the EODS are described.

In the European Survey of Enterprises on New and Emerging Risks (ESENER), the management of health and safety risks in the workplace is assessed by managers and workers' health safety representatives. ESENER especially focuses on psychosocial risks, including for example work-related stress, violence, and harassment. In Chapter 6 ESENER is described in more detail.

This chapter presents results from the three survey sources (LFS, EWCS, and ESENER) on the occurrence of work-related health problems, related factors, consequences, and trends. Additional statistics from EODS are described in a separate paragraph. Finally, specific attention will be paid to musculoskeletal problems, stress, depression and anxiety, and other prominent work-related health problems.

4.1 Occurrence and type of health problem

In the LFS ad hoc module 2007, persons aged 15 to 64 years that work or worked previously were asked whether they suffered from one or more health problems caused or made worse by work in the past 12 months. In total, 8.6% of the respondents in the EU27[37] had a work-related health problem. This corresponds to approximately 23 million persons in the EU27[38]. In total, 2.1% of these persons had two or more work-related health problems.

The occurrence of work-related health problems in the past 12 months was related to employment status (Figure 4.1). According to the LFS ad hoc module 2007, 8.2% of the *employed* men and women had a work-related health problem. In this chapter, *employed* persons refer to all workers, and include both employees and self-employed persons. Men classified as inactive at the time of the interview were more likely to report a work-related health problem than those employed or unemployed[39]. This reflects a healthy worker effect, in which healthy workers remained in the workforce and unhealthy workers became inactive. The selective drop out of the workforce was less pronounced among women in the

36 Eurostat. Work and health in the EU. A statistical portrait. Data 1994-2002. 2004. Luxembourg, Eurostat.

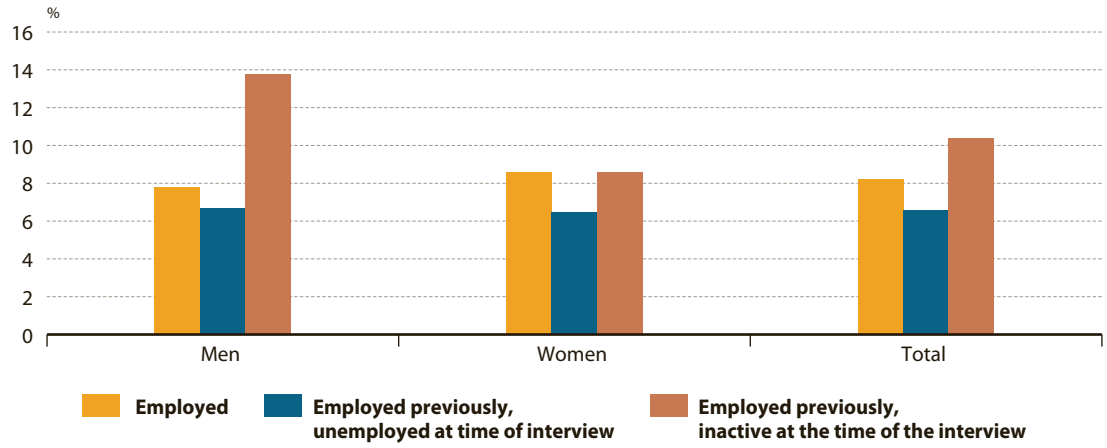
37 France is not included due to a substantial deviation in the questions used to assess work-related health problems (see Venema, A., Heuvel, S. & Geuskens, G. Health and safety at work. Results of the Labour Force Survey 2007 ad hoc module on accidents at work and work-related health problems. Hoofddorp: TNO Quality of Life, 2009.)

38 Data from FR not included because of wording differences. Number of persons is based on the assumption that the percentage of persons with a work-related health problem in France is the same as in all other EU27 countries, i.e. 8.6%.

39 Unemployed persons were persons who worked previously, were available for work, and were either actively seeking work in the past four weeks or had already found a job to start within the next three months. Inactive persons were persons who worked previously and were neither classified as employed nor as unemployed.

EU27. This may be related to the fact that in general, work participation among women is lower due to many other reasons than health.

Figure 4.1: Occurrence of work-related health problems in the past 12 months in the EU27 by employment status (%)



Source: LFS ad hoc module 2007 – FR not included

Table 4.1 shows the type of work-related health problem that was indicated as the most serious work-related health problem in the past 12 months according to the LFS ad hoc module 2007. In persons that work or worked previously, bone joint or muscle problems mainly affecting the back, bone joint or muscle problems mainly affecting the neck, shoulders, arms or hands, and stress, depression or anxiety were reported most often as the most serious health problem. Heart problems, breathing or lung problems, and headache and/or eyestrain, were less frequently described as the most serious work-related health problem. Infectious diseases, hearing problems, and skin problems were least frequently reported. When only persons that worked at the time of the study were taken into account, similar findings were found. Most notably, cardiovascular diseases were less frequently reported by employed persons.

Table 4.1: Type of work-related health problem indicated as the most serious among persons with a work-related health problem in the EU27 (%)

Type of work-related health problem	Persons that work, or worked previously	Persons that work
	%	%
Bone, joint or muscle problem which mainly affects back	28.4	29.5
Bone, joint or muscle problem which mainly affects neck, shoulders, arms or hands	18.8	20.1
Stress, depression or anxiety	13.7	14.5
Bone, joint or muscle problem which mainly affects hips, legs or feet	12.6	11.3
Breathing or lung problem	5.2	4.8
Heart disease or attack, or other problems in the circulatory system	5.9	3.8
Headache and/or eyestrain	4.4	4.9
Infectious disease (virus, bacteria or other type of infection)	2.5	3.1
Hearing problem	1.4	1.3
Skin problem	1.3	1.4
Other types of complaint	5.8	5.3

Source: LFS ad hoc module 2007 – FR not included

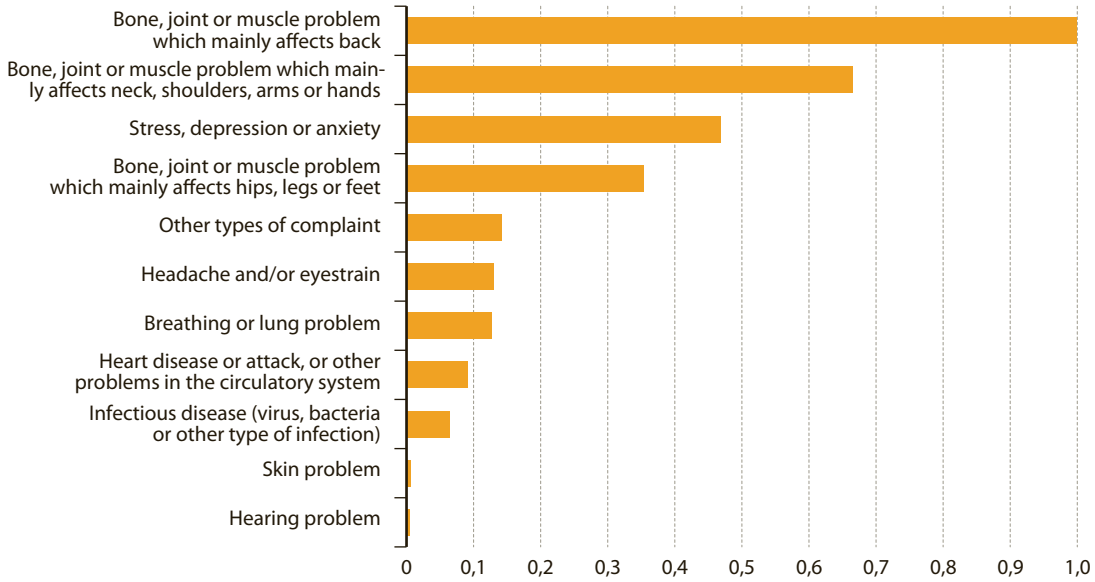
In the LFS 2007 ad hoc module about 60% of the respondents with work-related health problems identified musculoskeletal problems as their most serious work-related health problem and 14% identified stress, depression or anxiety as the most serious health problem. The important contribution of musculoskeletal problems and stress, depression or anxiety to work-related health problems as found in the LFS ad hoc module 2007 was supported by data of the EWCS 2005. In paragraph 4.6 and 4.7, musculoskeletal health problems and stress, depression and anxiety will be described in more detail.

Figure 4.2 and 4.3 present the occurrence of different types of work-related health problems in the LFS ad hoc module and the EWCS 2005. As described earlier, the LFS ad hoc module 2007 assessed the most serious work-related health problem, whereas in the EWCS 2005 all work-related health problems were assessed. Therefore, the relative occurrence was calculated. In Figure 4.2 and 4.3 a value of '0' means that the type of work-related health problem was least often reported, whereas a value of '1' reflects that the type of work-related health problem was most often reported.

Figure 4.2 and Figure 4.3 show that both surveys found that musculoskeletal health problems contributed most to work-related health problems. The importance of stress and anxiety also appeared, and headaches were relatively often reported in both surveys. In the EWCS 2005, fatigue, irritability, and sleeping problems were also frequently reported (Figure 4.3). These complaints were not explicitly assessed in the LFS ad hoc module 2007.

In ESENER, the perspective of companies on health and safety risks at work in the EU27 was assessed. As a part of ESENER, managers responsible for health and safety at work in the establishment were asked to indicate concerns to the establishment. Figure 4.4 presents that together with accidents, musculoskeletal problems and work-related stress were most often identified as important concerns. Almost 80% of the establishments reported some or major concern for these outcomes.

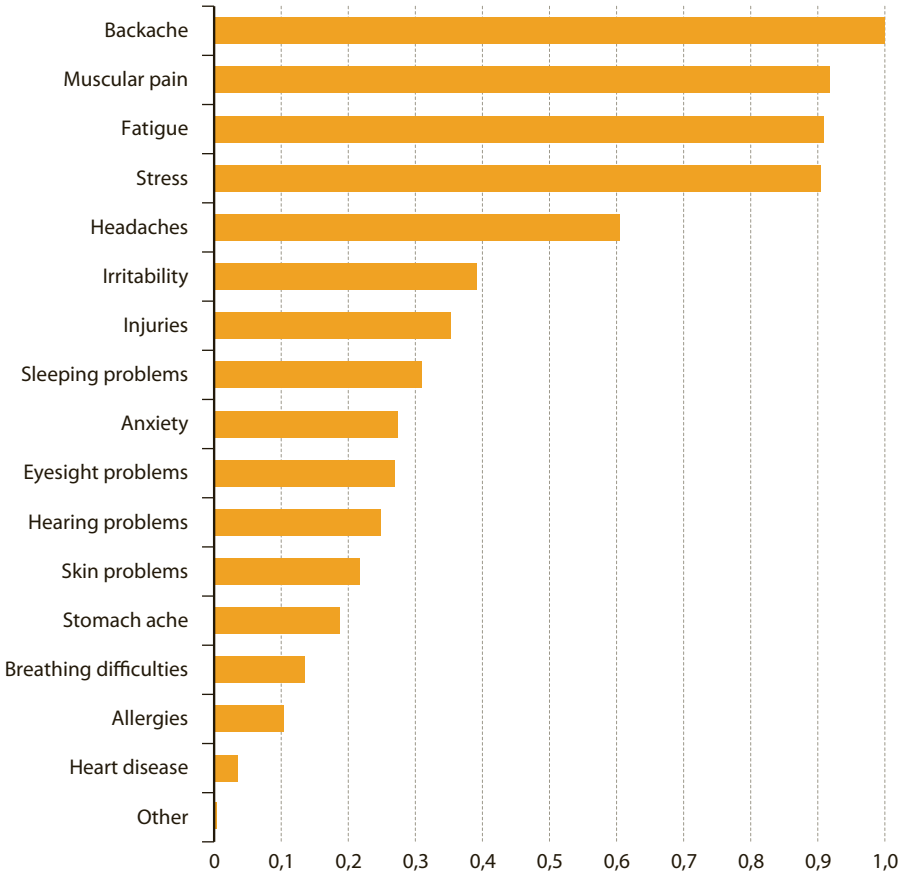
Figure 4.2: Relative occurrence[40] of different health problems as the most serious work-related health problem in the past 12 months in employed persons in the EU27



Source: LFS ad hoc module 2007 – FR not included; only one work-related health problem reported per person

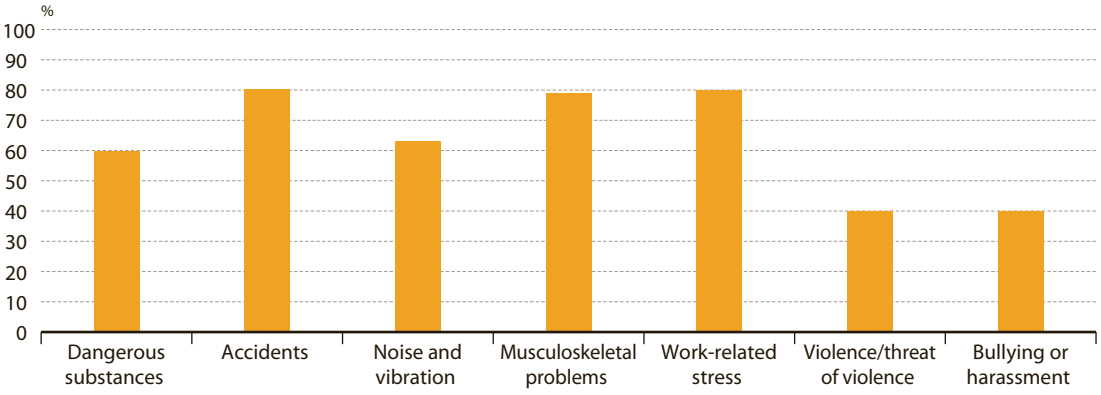
40 A value of '0' means that the type of work-related health problem was least often reported, whereas a value of '1' reflects that the type of work-related health problem was most often reported.

Figure 4.3: Relative occurrence[40] of different work-related health problems in the past 12 months in employed persons in the EU25



Source: EWCS 2005 - more than one work-related health problem could be reported per person

Figure 4.4: Issues perceived to be of some/major concern in the EU27 as a percentage of the establishments (%)



Source: ESENER 2009

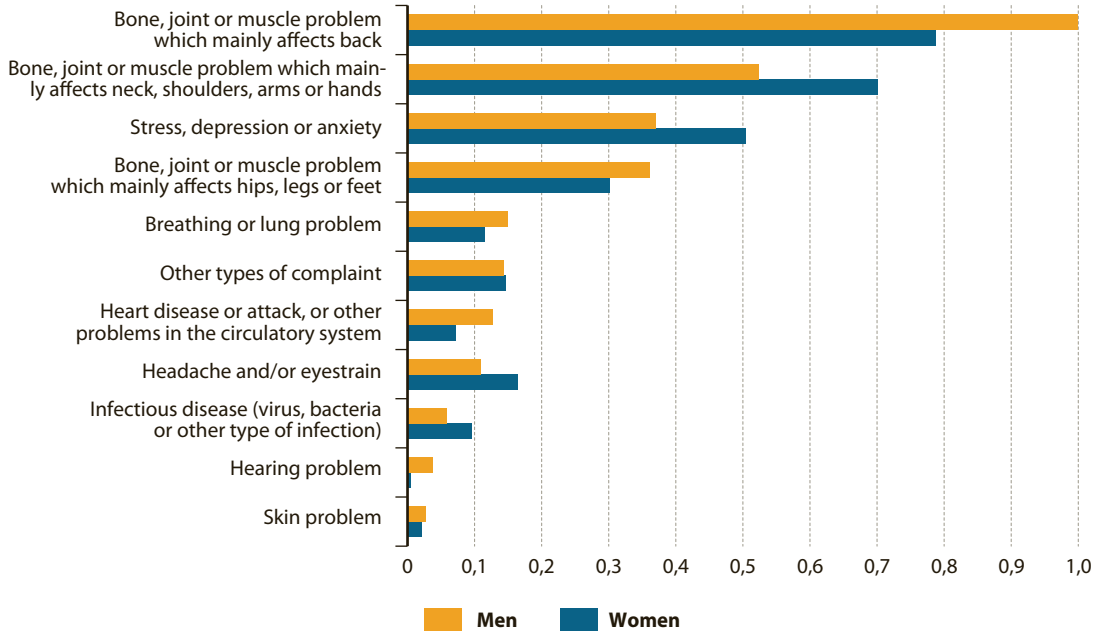
4.2 Demographic and work-related characteristics

4.2.1 Demographic characteristics

In the LFS ad hoc module 2007, differences in the occurrence of work-related health problems between men and women that work or worked previously were small, i.e. 8.6% versus 8.5%. When only employed persons were studied, women more often had a work-related health problem than men (8.6% versus 7.8%).

Employed men and women differed with respect to the type of work-related health problem that was considered to be the most serious health problem. Men more often had back problems than women, and women more often had problems with the neck, shoulders, arms or hands than men. Besides, women more frequently identified stress, depression or anxiety as the most serious work-related health problem than men (Figure 4.5). The results of the EWCS 2005 added that if not the main work-related health problem, but *all* work related health problems were assessed, men reported stress slightly more often than women. In addition, men report anxiety about as often as women (Figure 4.6).

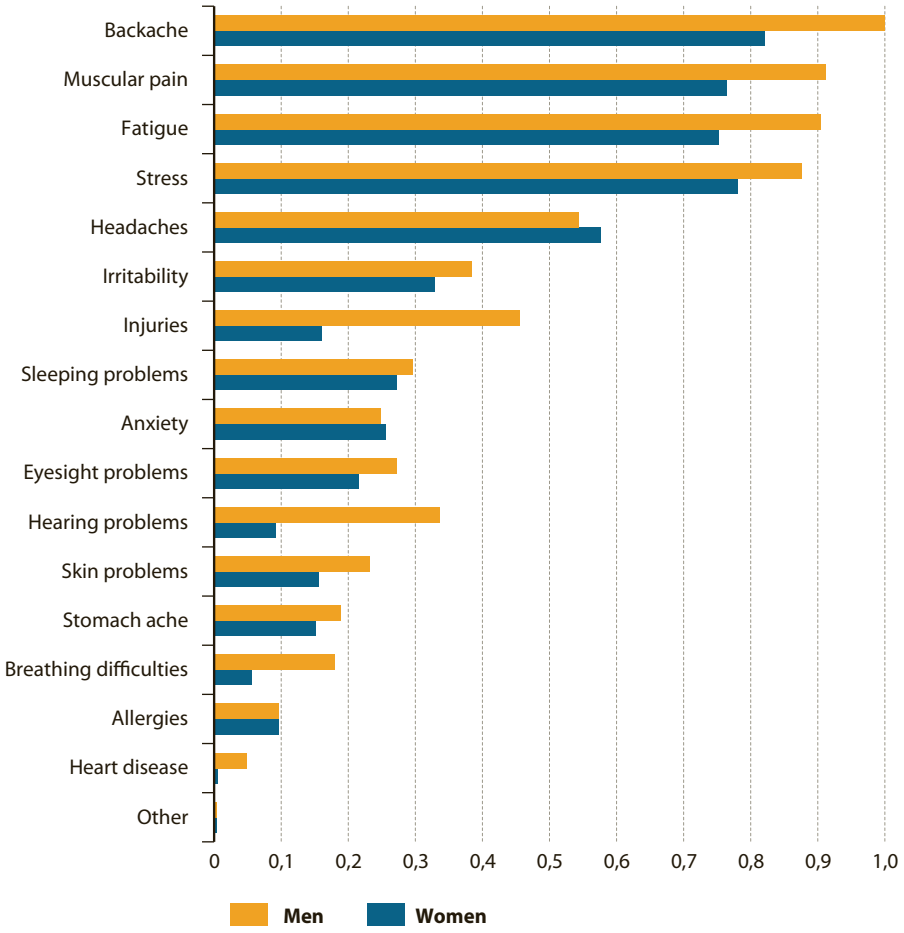
Figure 4.5: Relative occurrence[41] of the type of work-related health problem indicated as most serious health problem in the past 12 months in employed persons in the EU27 by sex



Source: LFS ad hoc module 2007 – FR not included

41 A value of '0' means that the type of work-related health problem was least often reported, whereas a value of '1' reflects that the type of work-related health problem was most often reported.

Figure 4.6: Relative occurrence[41] of different types of work-related health problems in workers in the EU25 by sex

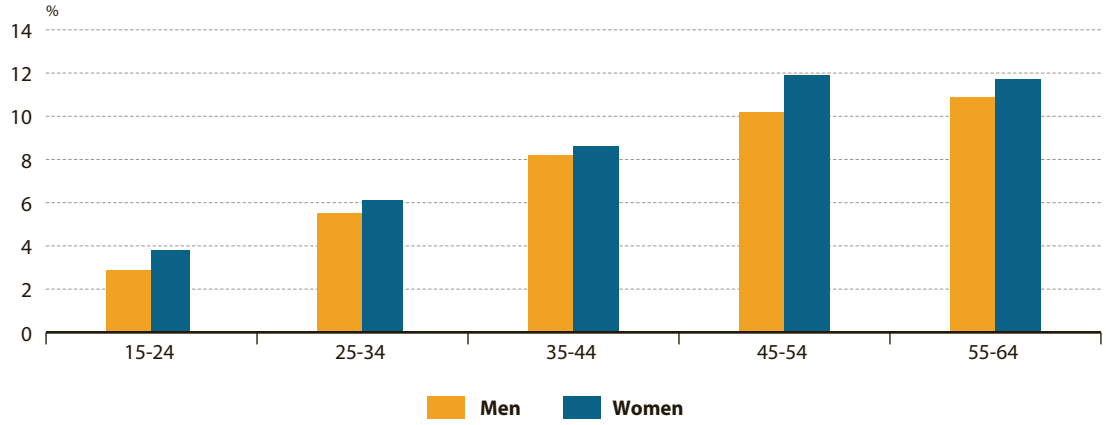


Source: EWCS, 2005

The occurrence of work-related health problems strongly increased with age in both the LFS ad hoc module 2007 and the EWCS 2005. However, in the oldest workers in the LFS ad hoc module 2007 (55-64 years), the increase in the occurrence of work-related health problems slowed down in men, and a decrease was found in women (Figure 4.7). This pattern was supported by the EWCS 2005. In the EWCS 2005, it was found that workers aged 55-64 years less often reported that work affects health compared to workers aged 45-54. Together, these findings suggest that workers with work-related health problems have left the workforce before the age of 55, or left the workforce between the age of 55 and 64.

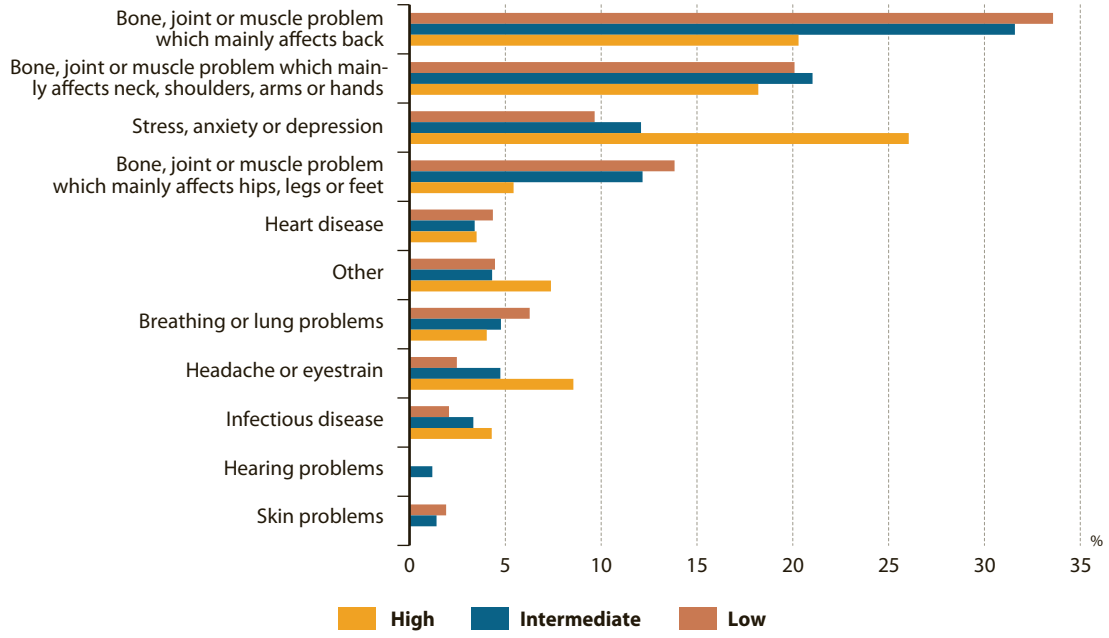
The occurrence of work-related health problems differed among educational groups in persons that work or worked previously. In the LFS ad hoc module 2007, high educated persons had fewer work-related health problems (7.3%) than intermediate (8.9%) and low (8.9%) educated persons. In Figure 4.8 the relation between educational level and the type of most serious work-related health problem in the past 12 months is presented. Low or intermediate educated persons more often identified bone, muscle or joint problems as the most serious work-related health problem than high educated persons. In contrast, high educated persons more often had stress, depression or anxiety, headache or eyestrain, and other health problems than intermediate and low educated persons.

Figure 4.7: The occurrence of one or more work-related health problem in the past 12 months in employed persons in the EU27 by age (%)



Source: LFS ad hoc module 2007 – FR not included

Figure 4.8: Most serious work-related health problem* in the past 12 months in the EU27 by education (%)



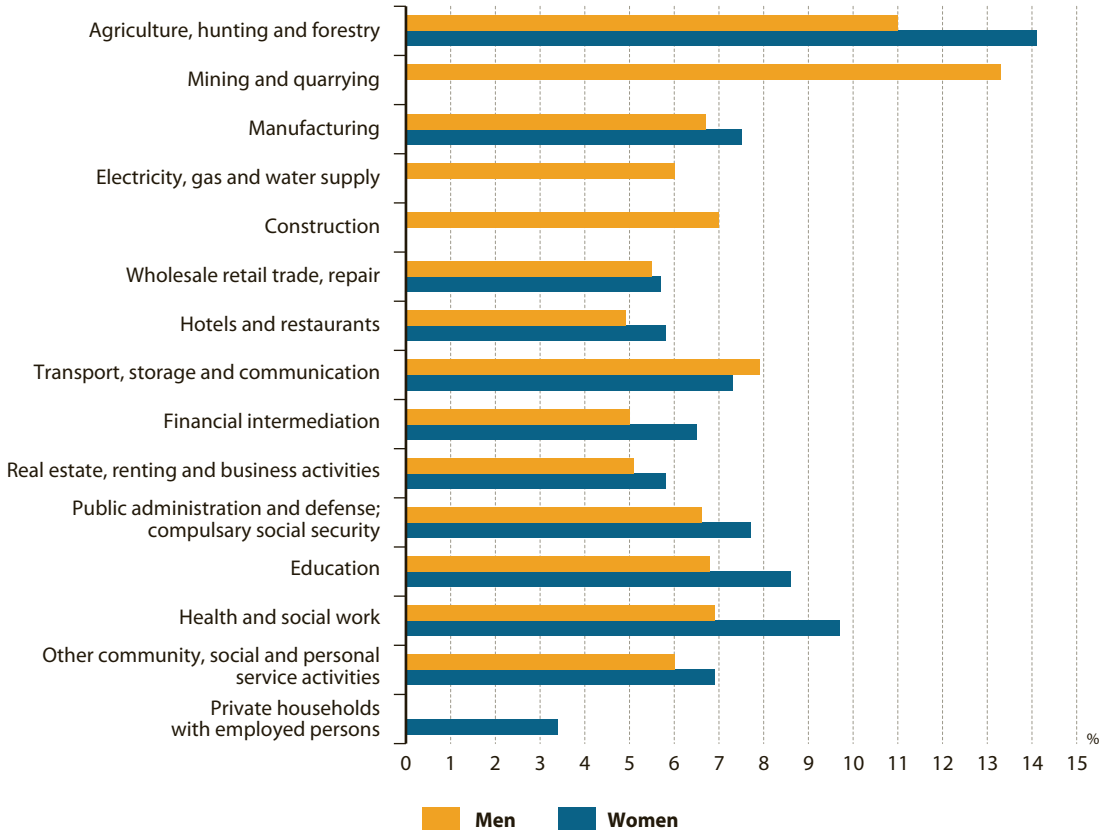
Source: LFS ad hoc module 2007 – FR not included
*sample size below publication limit for skin problems (high education) and hearing problems (high and low education)

4.2.2 Work-related characteristics[42]

In the LFS ad hoc module 2007, work-related health problems most often occurred in the sectors 'agriculture, hunting and forestry' and 'mining and quarrying'. Especially among women, work-related health problems were frequently reported in the sector 'health and social work' too. The high occurrence of work-related health problems in these sectors is related to the fact that less favourable job characteristics are more prevalent in these sectors, such as manual work and atypical working hours[43]. In contrast, workers in the sectors 'wholesale, retail trade and repair', 'financial intermediation' and 'real estate, renting and business activities' had relatively few work-related health problems (Figure 4.9).

The differences in work-related health problems between sectors in the LFS ad hoc module 2007 were supported by data of the EWCS 2005. In Figure 4.10, the relative occurrence of work-related health problems in different sectors is presented for both surveys. Figure 4.10 shows that in both surveys, a very similar pattern in the relative occurrence of work-related health problems was found.

Figure 4.9: Employed persons with one or more work-related health problems in the past 12 months in different sectors* in the EU27 (%)

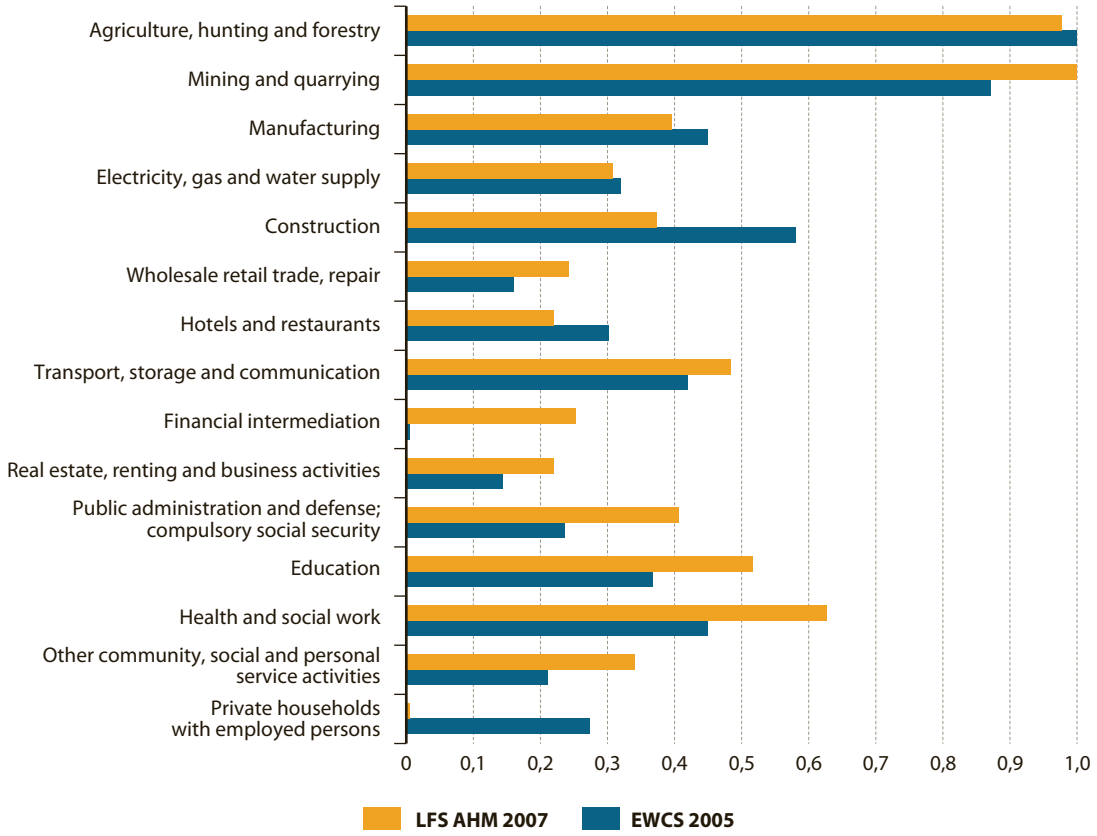


Source: LFS ad hoc module 2007 – FR not included
*sample size below publication limit for 'fishing', 'mining and quarrying' (women), 'electricity gas and water supply' (women), 'construction' (women), 'private households with employed persons' (men) and 'extraterritorial organizations and bodies'

42 In the analysis of the LFS ad hoc module 2007, work-related characteristics derived from the core LFS could only be studied in detail in persons that worked during the reference week, and had a work-related health problem caused or made worse by their main job. The percentages presented should be considered as an aid to compare subgroups, and should not be interpreted as the occurrence of work-related health problems.

43 Venema, A., Heuvel, S. & Geuskens, G. Health and safety at work. Results of the Labour Force Survey 2007 ad hoc module on accidents at work and work-related health problems. Hoofddorp: TNO Quality of Life, 2009.

Figure 4.10: Relative occurrence[44] of work-related health problems among different sectors*



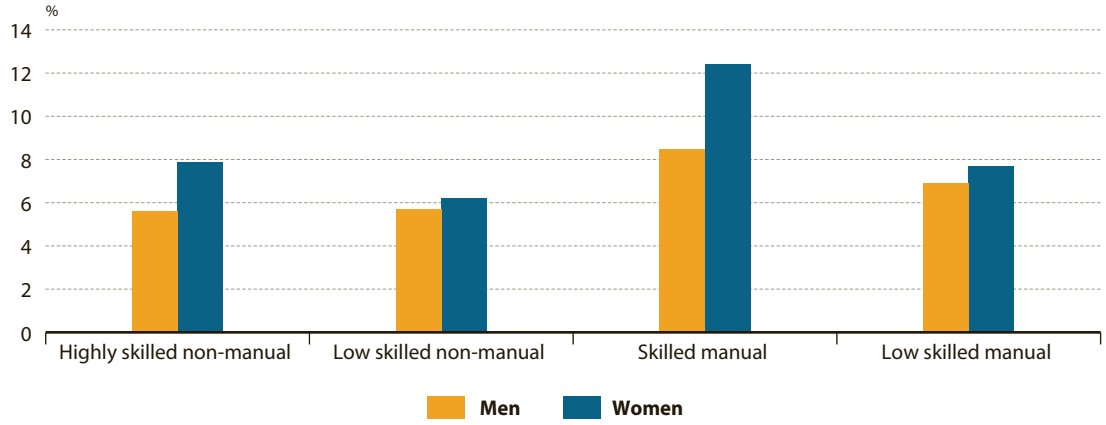
Source: LFS ad hoc module 2007 (EU27 – FR not included) and EWCS 2005 (EU25)
*sample size below publication limit for 'fishing' and 'extraterritorial organizations and bodies'

Manual workers were more likely to report a work-related health problem than non-manual workers in the LFS ad hoc module 2007, in particular highly skilled manual workers (Figure 4.11). A similar pattern in the occurrence of work-related health problems across occupational groups was found in the EWCS 2005.

In the LFS ad hoc module 2007 no differences were found for men working in large or small firms. Women working in a large firm (>10 persons) were more likely to report a work-related health problem than women working in a small firm (10 persons or less). This was supported by the EWCS 2005. This finding may be explained by the fact that firms are usually large in sectors in which women frequently report a work-related health problem, e.g. health and social work (Figure 4.9).

44 A value of '0' means that the type of work-related health problem was least often reported, whereas a value of '1' reflects that the type of work-related health problem was most often reported.

Figure 4.11: Occurrence of work-related health problems in the past 12 months in the EU27 by occupation* (%)



Source: LFS ad hoc module 2007 – FR not included
*sample size below publication limit for 'army'

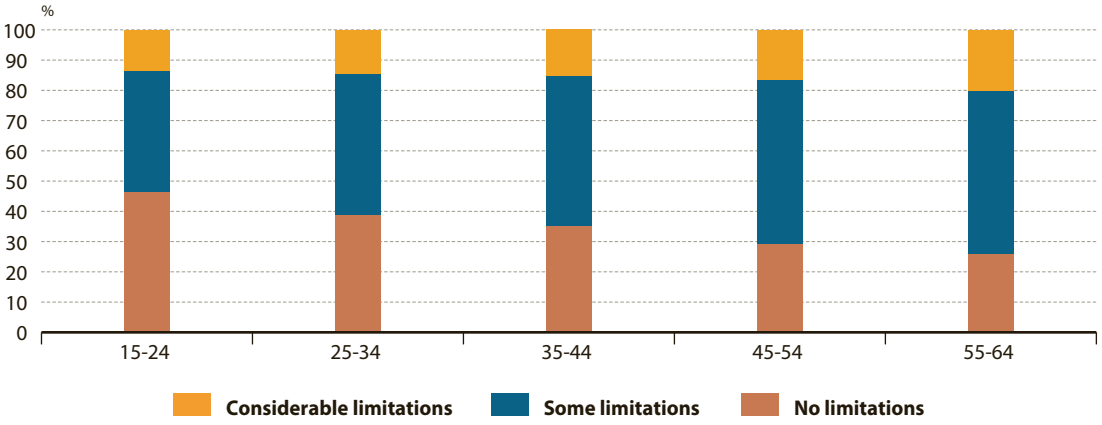
4.3 Consequences

In this paragraph, the consequences of work-related health problems will be presented as assessed by the surveys investigated. First, limitations in daily activities at work or outside of work will be described, and subsequently, sick leave will be addressed.

4.3.1 Limitations

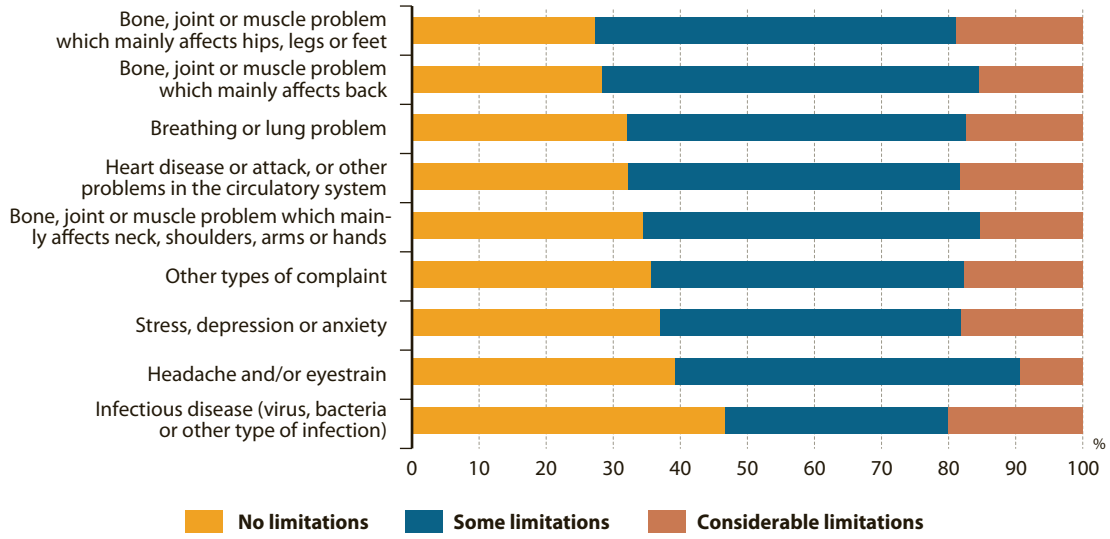
The LFS ad hoc module 2007 assessed the extent in which the most serious health problem limited the ability to carry out normal day to day activities either at work or outside of work. Among persons with a work-related health problem that work or worked previously, 28% had no limitations, 50% had some limitations, and 22% had considerable limitations. Figure 4.12 shows that in employed persons, the extent to which persons were limited as a result of their most serious work-related health problem strongly increased with age (some limitations from 40% to 54% and considerable limitation from 14% to 20%). The consequences in terms of limitations differed among work-related health problems. Figure 4.13 shows that in employed persons, limitations were reported relatively often in those with musculoskeletal problems of the hips, legs or feet (some limitations 54% and considerable limitations 19%) and in those with back problems (some limitations 56% and considerable limitations 15%).

Figure 4.12: Limitations in employed persons with a work-related health problem in the EU27 (%)



Source: LFS ad hoc module 2007 – FR not included

Figure 4.13: Limitations in employed persons by health problem* in the EU27 (%)



Source: LFS ad hoc module 2007 – FR not included
*sample size below publication limit for skin problems and hearing problems

4.3.2 Absence from work

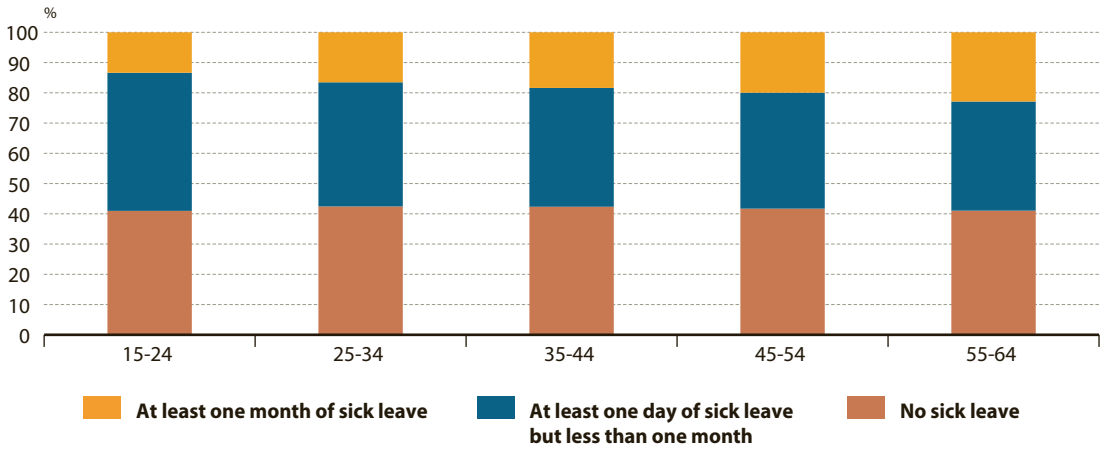
In the LFS ad hoc module 2007, 62% of the persons with a work-related health problem that work or worked previously reported sick leave of at least one day in the past 12 months due to their most serious work-related health problem. This corresponds to 5.3% of the persons that work or worked previously in the EU27, and to 12.5 million persons. It is estimated that among persons with a work-related health problem in the past 12 months, the total number of calendar days of sickness absence summed up to a

at least 367 million days[45]. This does not yet include 1.4 million persons that expect never to work again because of their work-related health problem, since the number of days of sickness absence in this group was unknown.

In *employed* persons, 58% of those with a work-related health problem reported sick leave of at least one day, which corresponded to 4.5% of the employed persons in the EU27 and to 8 million employed persons. Sick leave of at least one month was reported by 19% of the employed persons with a work-related health problem, which corresponded to 1.6% of the employed persons.

Figure 4.14 describes sick leave in the past 12 months in different age groups (LFS ad hoc module 2007). The proportion of employed persons in which a work-related health problem did not result in sick leave was relatively similar in all age groups (41%-42%). Sick leave of one day or more decreased with age (from 46% to 36%), whereas the occurrence of sick leave of one month or more increased with age (from 13% to 23%).

Figure 4.14: Sick leave in employed persons with a work-related health problem in the past 12 months in the EU27 (%)

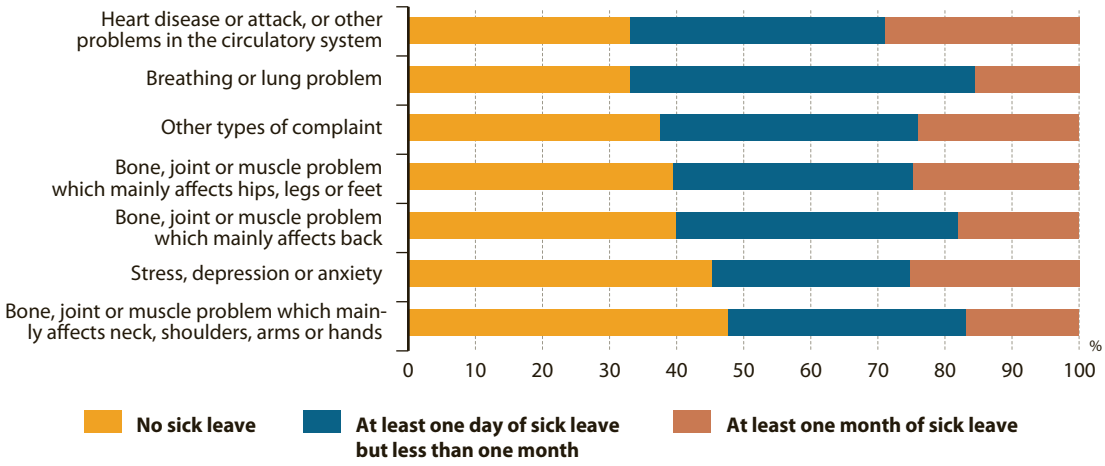


Source: LFS ad hoc module 2007 – FR not included

The LFS ad hoc module 2007 also offered the opportunity to study sick leave for different types of work-related health problems (Figure 4.15). Sick leave of one day or more but less than one month was more likely among persons with breathing or lung problems (51%) and bone, joint or muscle problems which mainly affects back (42%). Prolonged sickness absence, i.e. sick leave for one month or more, was most likely among employed persons with a heart disease or attack, or other problems in the circulatory system (29%), stress, depression or anxiety (25%) and bone, joint or muscle problems of the hips, legs or feet (25%).

45 This estimate is calculated by taking the minimum number of calendar days of a category as the value for that category (e.g. 1 month - 3 months = 30 days)

Figure 4.15: Sick leave in employed persons with different work-related health problems* as their most serious work-related health in the past 12 months in the EU27 (%)



Source: LFS ad hoc module 2007
*sample size below publication limit for skin problems, hearing problems, headache and/or eyestrain, and infectious diseases

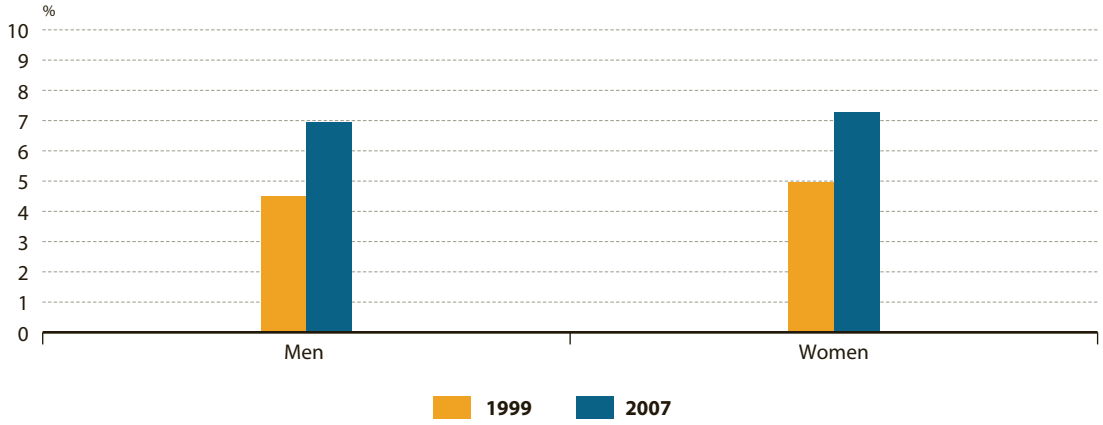
4.4 Trends

Both in 1999 and 2007, the Labour Force Survey included an ad hoc module on accidents at work and work-related health problems in persons aged 15 to 64 years. For nine countries, data on work-related health problems in 1999 and 2007 could be compared (DK, ES, FI, HU, IT, LU, PT, SE, UK[46]). Therefore, it should be stressed that the following trends do not necessarily reflect the trend in Europe.

According to the LFS ad hoc modules, the occurrence of work-related health problems increased from 4.7% in 1999 to 7.1% in 2007 among persons that work or worked previously. The increase in work-related health problems was found in men and women (Figure 4.16), and in all age groups (Figure 4.17). Very similar findings were found when only employed persons were studied. In *employed* persons, the occurrence of work-related health problems increased from 4.6% in 1999 to 7.0% in 2007.

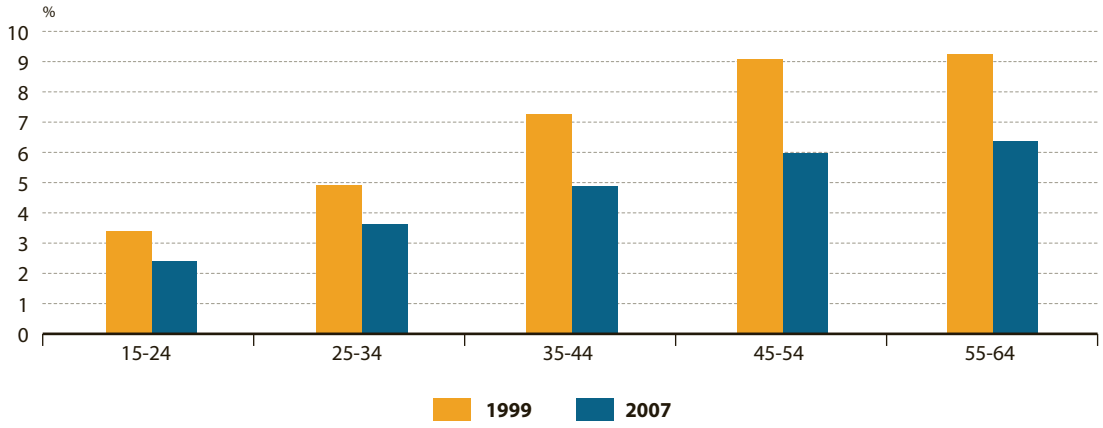
46 Old results for the UK.

Figure 4.16: Occurrence of work-related health problems in men and women that work or worked previously by year (%)



Source: LFS ad hoc modules 1999 and 2007 – 9 countries

Figure 4.17: Occurrence of work-related health problems in persons that work or worked previously in different age groups by year (%)

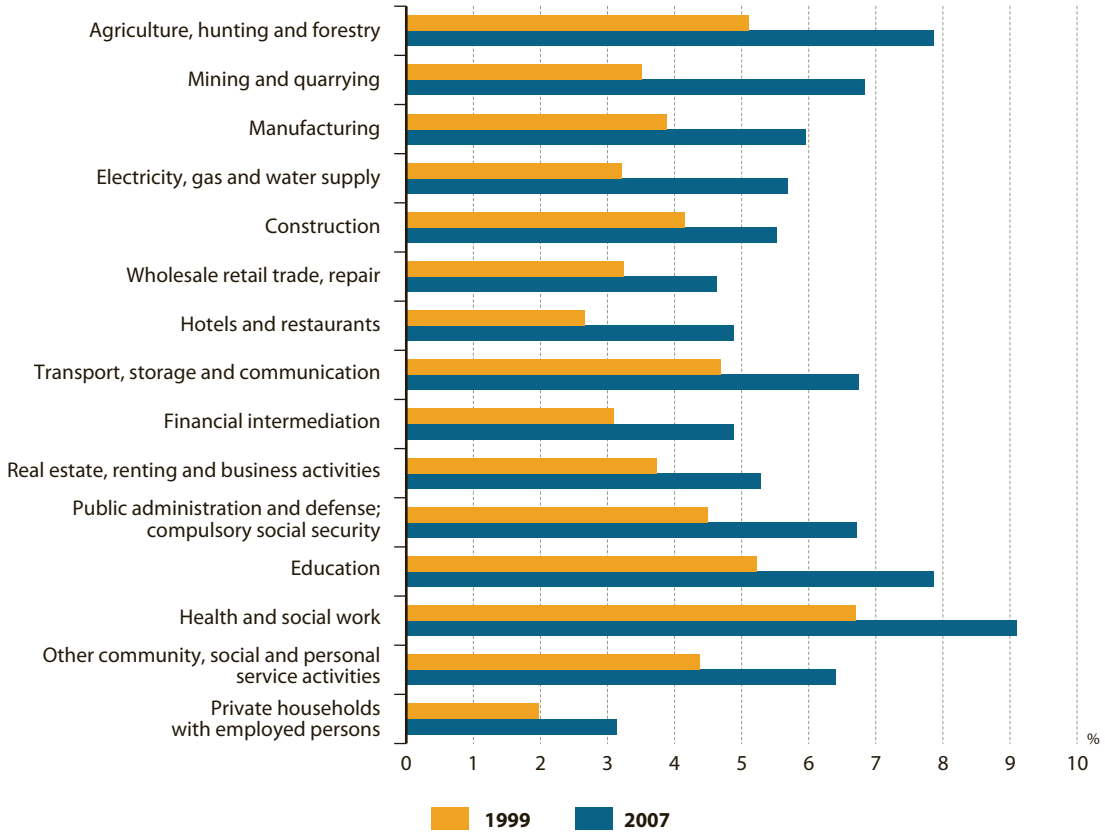


Source: LFS ad hoc modules 1999 and 2007 – 9 countries

According to the the LFS ad hoc modules, the increase in the occurrence of work-related health problems was present in all sectors (Figure 4.18). In the nine countries of which data of 1999 and 2007 could be studied, the greatest increase in the occurrence of work-related health problems was found in the sectors 'mining and quarrying', 'hotels and restaurants', and 'electricity, gas and water supply'. The increase in the occurrence of work-related health problems was relatively low in the sectors 'health and social work' and 'construction'. However, it should be noted that especially in the sector 'health and social work', the occurrence of work-related health problems was already relatively high in 1999.

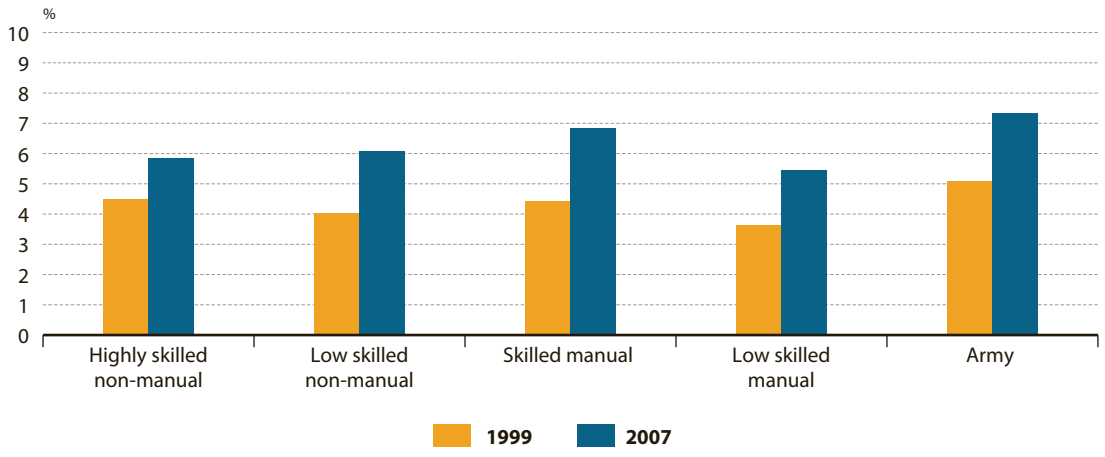
In all occupational groups, the occurrence of work-related health problems increased between 1999 and 2007 in the nine European countries studied. The increase among occupational groups was remarkably similar, though the increase in work-related health problems among highly skilled non-manual workers was slightly smaller (Figure 4.19).

Figure 4.18: Occurrence of one or more work-related health problems in the past 12 months in different sectors* by year (%)



Source: LFS ad hoc modules 1999 and 2007 – 9 countries
*sample size below publication limit for 'fishing' and 'extraterritorial organizations and bodies'

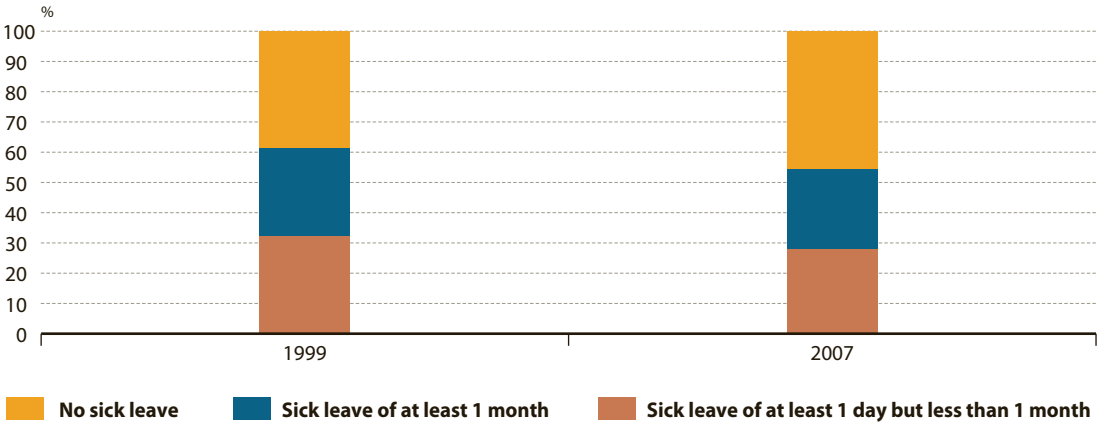
Figure 4.19: Occurrence of one or more work-related health problems in the past 12 months in different occupational groups by year (%)



Source: LFS ad hoc modules 1999 and 2007 – 9 countries

In 1999 and in 2007, the LFS ad hoc module also assessed the consequences of the most serious work-related health problem in terms of sick leave. Figure 4.20 presents the occurrence of sick leave among persons with a work-related health problem that work or worked previously. The occurrence of sick leave in 2007 was lower than in 1999 in the nine European countries studied. Sick leave of at least one day but less than one month decreased from 29% in 1999 to 27% in 2007. Sick leave of at least one month decreased slightly more, from 32% in 1999 to 28% in 2007. This suggests that although considerably more work-related health problems were reported in 2007 (7.1%) than in 1999 (4.7%), consequences in terms of sick leave occurred less often. Similar findings were found when only *employed* persons were studied. It remains unclear how the decrease in sickness leave due to work-related health problems could be explained.

Figure 4.20: Sick leave due to the most serious work-related health problem in the past 12 months in persons with a work-related health problem by year (%)



LFS ad hoc modules 1999 and 2007 – 9 countries

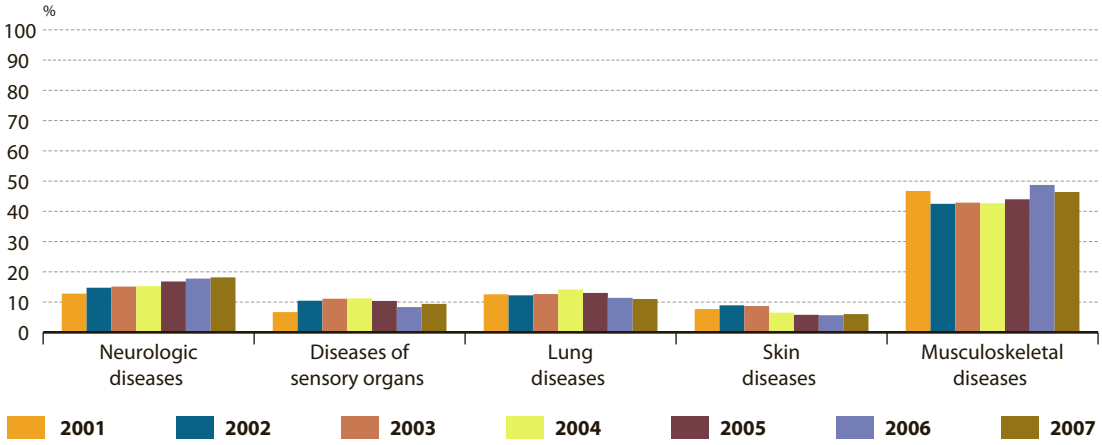
4.5 Overview of recognized occupational diseases

This paragraph presents data on recognized occupational diseases in the period from 2001 to 2007. Not all EU27 countries are included and the coverage by country is depending on the year. The figures presented are relative percentages of all reported cases (both the obligatory list and the voluntary list of diseases). The source of the figures on occupational diseases is the European Occupational Diseases Statistics (EODS). More information on the EODS is provided in Chapter 6.

4.5.1 The occurrence and type of occupational diseases and trends

The highest occurrence of recognized and newly recorded occupational diseases was found for the following diagnostic groups: musculoskeletal diseases, neurologic diseases, lung diseases, diseases of the sensory organs, and skin diseases. As presented in Figure 4.21, musculoskeletal problems contribute most to the recognized occupational diseases. In paragraph 4.1, it was already shown that musculoskeletal problems also contributed most to self-reported work-related health problems (LFS ad hoc module 2007, EWCS 2005).

Figure 4.21: Contribution of five important diseases to the recognized occupational diseases in Europe (%)



Source: EODS 2001-2007

When looking into the list of recognized diseases more specifically, the diseases most prominently registered between 2001 and 2007 are:

- Carpal tunnel syndrome
- Diseases due to overstraining of the muscular and tendonous insertions
- Hypoacousis or deafness caused by noise
- Diseases due to overstraining of the tendon sheaths
- Occupational skin ailments caused by scientifically recognised allergy provoking or irritative substances not included under other headings
- Pleural fibrosis, with respiratory restriction, caused by asbestos
- Mesothelioma following the inhalation of asbestos dust
- Chronic obstructive bronchitis or emphysema in miners working in underground coal mines
- Angioneurotic diseases caused by mechanical vibration
- Asbestosis

This list of the most prominent diseases appeared to be relatively stable over the years.

4.5.2 Demographic characteristics

In general, twice as many men as women were registered with a recognized occupational disease. The number of registered diseases increased with age until the age of 54. After the age of 54, the number of recognized diseases decreased. This pattern was similar for men and.

4.5.3 Work-related characteristics and trends

More than 80% of the occupational diseases occurred in workers with the following professions: workers in craft and related trades (41%), plant, machine operators, assemblers (21%), and workers with elementary occupations (19%). This ranking of professions appeared to be stable between 2001 and 2007.

The highest proportion of occupational diseases was found in the sectors 'manufacturing', (38%), 'construction' (13%), 'wholesale retail trade, repair' (7%), and 'health and social work' (5%). For men occupational diseases were most often found in the sectors 'manufacturing' and 'construction', whereas for women occupational diseases most often occurred in the sectors 'wholesale retail trade, repair', and 'health and social work'. The ranking in the occurrence of occupational diseases across sectors was stable over the years. However, the number of occupational diseases in the sector 'manufacturing' appeared to decrease with time, whereas the number of diseases in the other three sectors appeared to increase.

4.5.4 Consequences

About 25% of recognized occupational diseases lead to permanent incapacity to work.

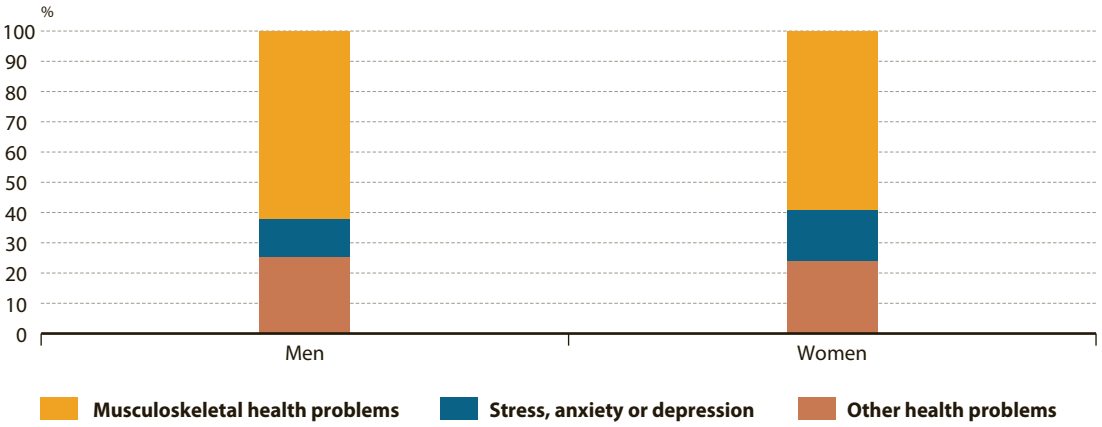
4.6 Musculoskeletal health problems

The LFS ad hoc module 2007 showed that in 61% of the persons with a work-related health problem in the past 12 months, musculoskeletal problems (bone, joint or muscle) were the main work-related health problem (Table 4.1). This finding was supported by data from the EWCS 2005 (see Paragraph 4.1) and by the EODS (see Paragraph 4.5). Because of the important contribution of musculoskeletal problems, the present paragraph will focus on these problems.

4.6.1 Demographic characteristics

Of the employed men 62% reported that musculoskeletal problems were their main work-related health problem compared to 59% of the employed women in the LFS ad hoc module 2007 (Figure 4.22). Similar findings were found in the EWCS 2005 with respect to backache and muscular pain.

Figure 4.22: Contribution of musculoskeletal health problems, and stress, depression or anxiety to work-related health problems in the past 12 months in employed persons in the EU27 (%)



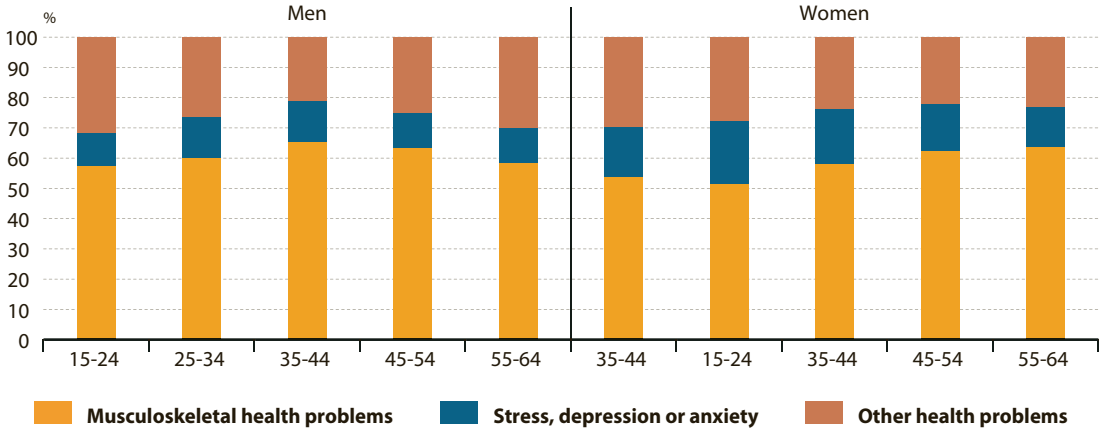
Source: LFS ad hoc module 2007 – FR not included

In the LFS ad hoc module 2007, the proportion of employed men with musculoskeletal problems as the main work-related health problem increased with age. This proportion decreased again in the oldest age groups (Figure 4.23). This pattern is explained by the fact that other health problems are more frequently identified as the most important health problem at older age. In employed women, the proportion of women with musculoskeletal health problems as the main work-related health problem continued to increase with age.

In the EWCS 2005 backache occurred slightly less often in employed men aged 45 to 64 years compared to younger workers, whereas the occurrence of backache among women continued to increase with age. The occurrence of muscular pain slightly increased with age in both employed men and women. These findings add to the LFS ad hoc module 2007 that musculoskeletal problems remain highly prevalent at older age, although they may less often be identified as the main work-related health problem in men.

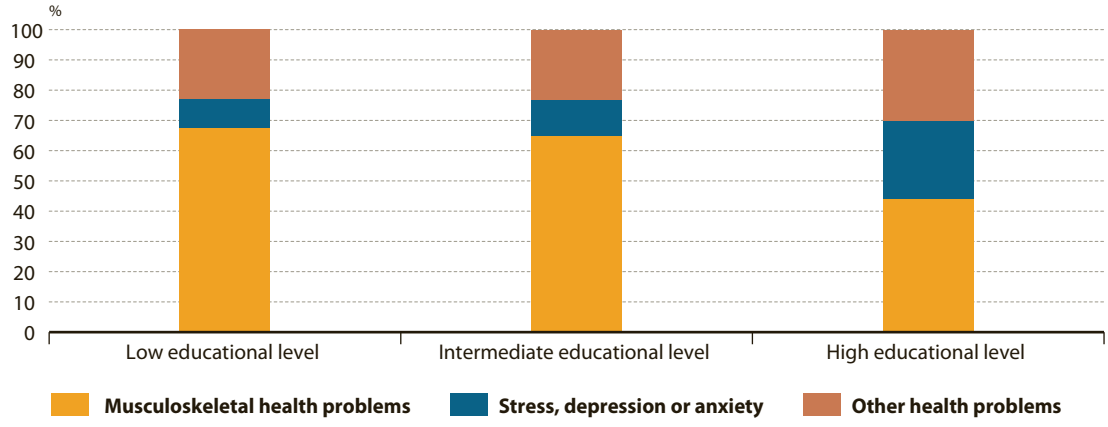
Educational differences existed with respect to the contribution of musculoskeletal problems to work-related health problems. Musculoskeletal health problems were most often reported as the main work-related health problem in persons with a low educational level according to the LFS ad hoc module 2007 (Figure 4.24). In 68% of the low educated persons with a work-related health problem, musculoskeletal health problems were the main problem, compared to 44% of the high educated persons.

Figure 4.23: Contribution of musculoskeletal health problems and stress, depression or anxiety to work-related health problems in employed persons in the EU27 by gender and age (%)



Source: LFS ad hoc module 2007 - FR not included

Figure 4.24: Contribution of musculoskeletal health problems and stress, depression or anxiety to work-related health problems in persons in the EU27 by educational level (%)



Source: LFS ad hoc module 2007 – FR not included

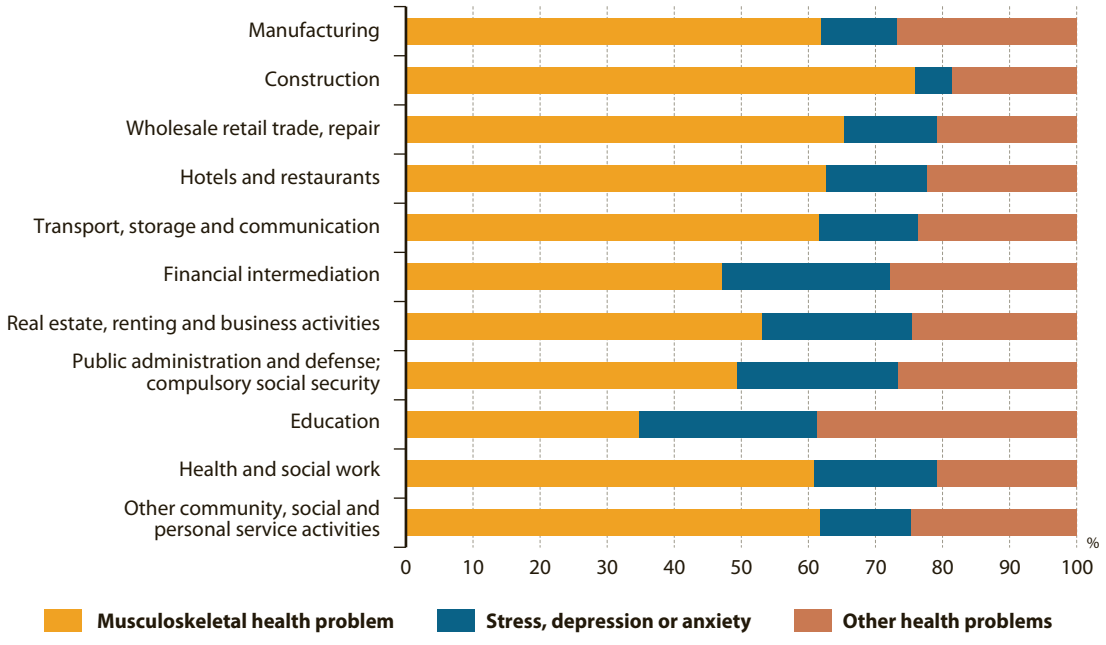
4.6.2 Work-related characteristics

In the LFS ad hoc module 2007, the contribution of musculoskeletal problems to the main work-related health problem differed among sectors (Figure 4.25). The highest proportion of musculoskeletal problems was found in the sector 'construction', whereas a relatively low proportion of the workers in the sectors 'education', 'financial intermediation', and 'public administration and defense' reported musculoskeletal problems as the main work-related problem. However, even in these latter sectors, musculoskeletal problems contributed importantly to work-related health problems (35% to 49%). These findings were in line with the EWCS 2005. After the sector 'fishing', 'mining and quarrying', and 'agriculture' (not shown in Figure 4.25), workers in the sector 'construction' most often reported backache, followed by those in the sectors 'transport, storage and communication', 'manufacturing', and 'health and social work'. Muscular pain also occurred often in these sectors.

In the LFS ad hoc module 2007, musculoskeletal problems occurred most often as the main work-related health problem in workers with manual work, whereas the proportion of workers with musculoskeletal problems was lowest among highly skilled non-manual workers (Figure 4.26). In agreement, the EWCS 2005 showed that backache and muscular pain were more often reported by manual workers compared to non-manual workers.

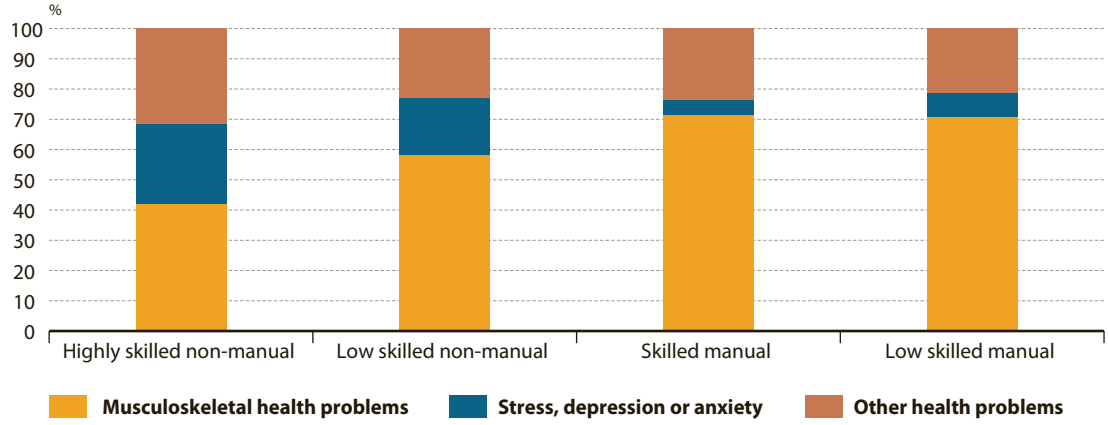
In both small (< 10 persons) and larger firms, musculoskeletal health problems contributed importantly to work related health problems (Figure 4.27). Musculoskeletal health problems occurred slightly more often in small firms according to both the LFS ad hoc module 2007 and the EWCS 2005.

Figure 4.25: Contribution of musculoskeletal health problems and stress, depression or anxiety to work-related health problems in different sectors* in employed persons in the EU27 (%)



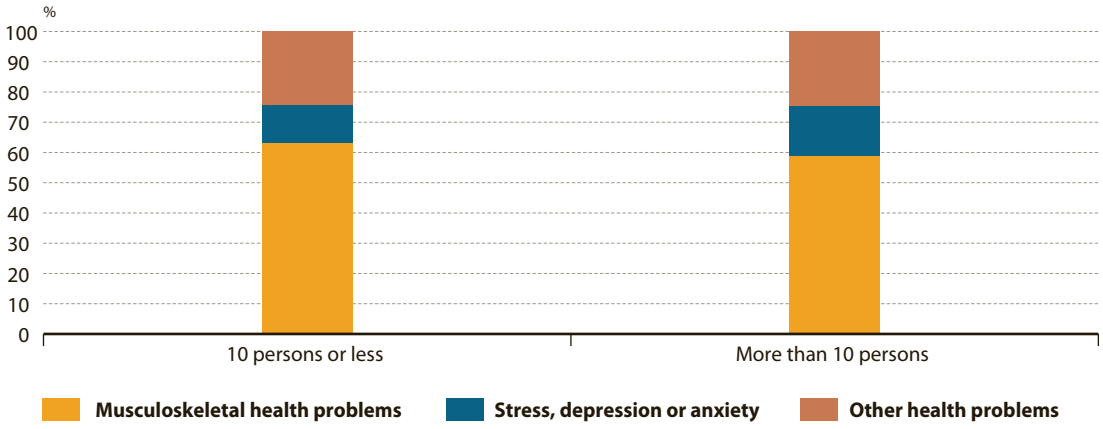
Source: LFS ad hoc module 2007 – FR not included
*sample size of one of the categories below publication limit for 'agriculture and hunting', 'fishing', 'mining and quarrying', 'electricity gas and water supply', 'private households with employed persons' and 'extraterritorial organizations and bodies'

Figure 4.26: Contribution of musculoskeletal health problems and stress, depression or anxiety to work-related health problems in different occupations* in employed persons in the EU27 (%)



Source: LFS ad hoc module 2007 – FR not included
*sample size below publication limit for 'army'

Figure 4.27: Contribution of musculoskeletal health problems and stress, depression or anxiety to work-related health problems in employed persons in the EU27 by size of the firm (%)



Source: LFS ad hoc module 2007 – FR not included

4.6.3 Consequences

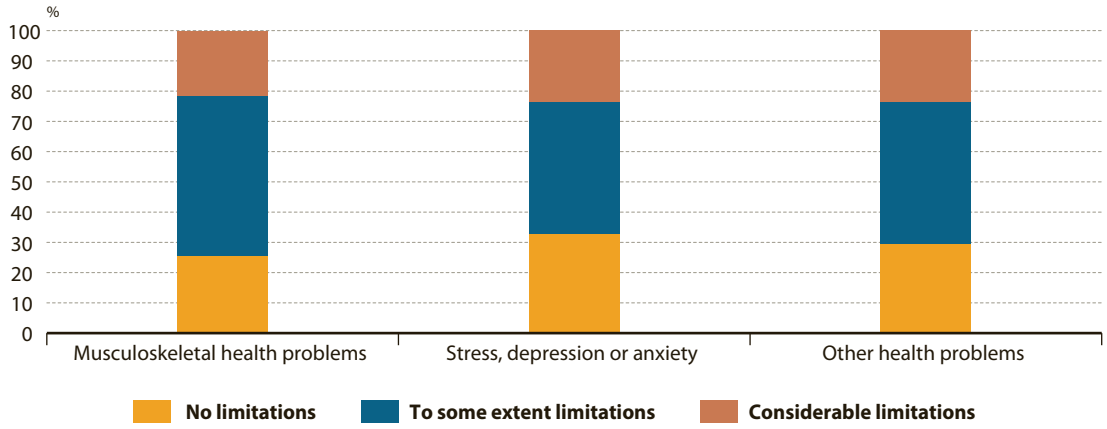
In approximately three quarter of the persons that work or worked previously, musculoskeletal problems resulted in some or considerable limitations in day to day activities at work or outside of work (Figure 4.28). About one in five persons with musculoskeletal problems as the main work-related health problem faced considerable limitations. Fewer limitations were found when only employed persons were taken into account. In employed persons, 54% had some limitations, and 16% had considerable limitations due to work-related health problems.

In line with limitations in day to day activities, sick leave as a result of musculoskeletal health problems frequently occurred according to the LFS ad hoc module 2007. In total 61% of the persons with

musculoskeletal problems as the main work-related health problem went on sick leave. About 35% reported sick leave for less than one month and 26% reported sick leave for at least one month (Figure 4.29). Putted differently, and taking the high occurrence of musculoskeletal problems into account, about 60% of all short term (< 1 month) and long term (at least 1 month) sickness absence in the EU27 can be attributed to musculoskeletal problems.

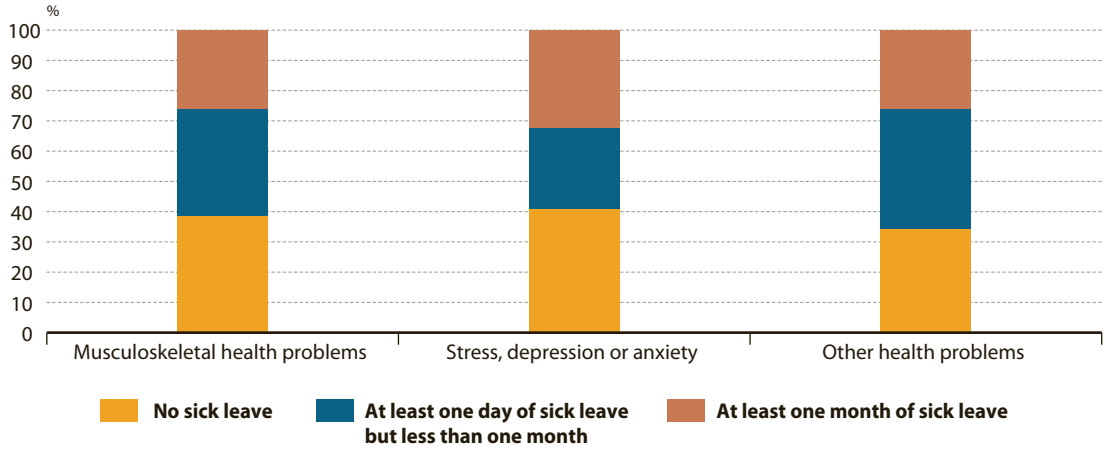
If only *employed* persons are taken into account, short term sick leave (< 1 month) appeared to occur in 39% of the workers with musculoskeletal problems and long term sick leave (at least one month) in 19% of the workers. Hence, in employed persons short term sick leave occurred more often and long term sick leave occurred less often compared to persons that did no longer work at the time of the study.

Figure 4.28: Limitations in day to day activities as a consequence of musculoskeletal health problems and stress, depression or anxiety in persons in the EU27 (%)



Source: LFS ad hoc module 2007 – FR not included

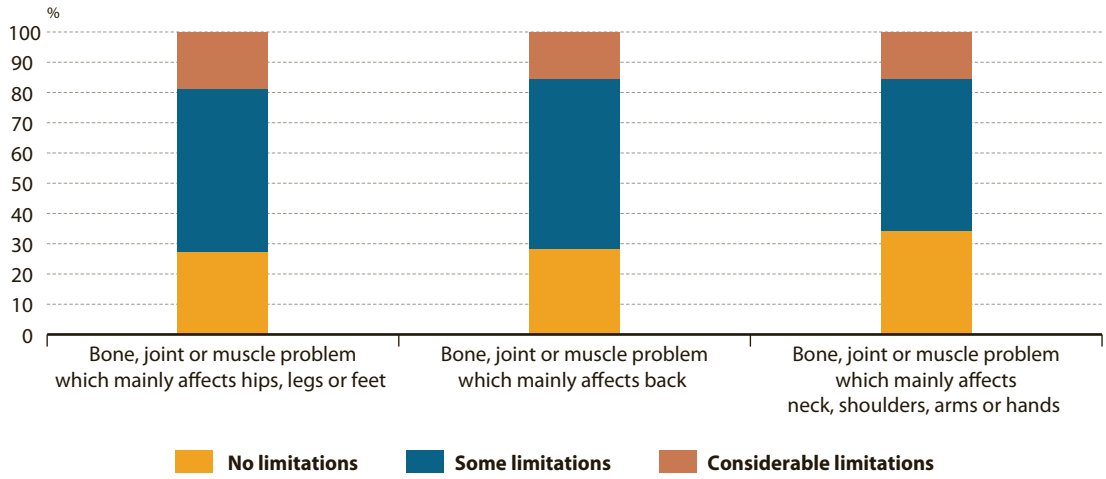
Figure 4.29: Sick leave as a consequence of musculoskeletal health problems and stress, depression or anxiety in persons in the EU27 in the past 12 months (%)



Source: LFS ad hoc module 2007 – FR not included

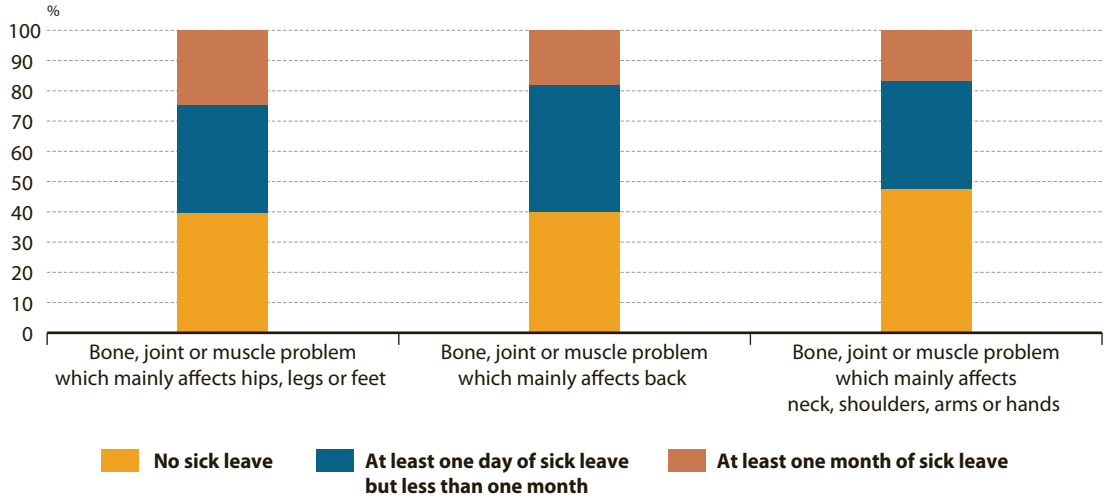
As presented in paragraph 4.3, differences in the consequences of disease existed between the different types of musculoskeletal health problems. Especially workers with problems of the hips, legs or feet, i.e. lower limb problems, more often experienced considerable limitations (19%) and longstanding sick leave (25%) (Figure 4.30 and Figure 4.31).

Figure 4.30: Limitations due to different types of musculoskeletal health problems in employed persons in the EU27 (%)



Source: LFS ad hoc module 2007 – FR not included

Figure 4.31: Sickness absence due to different types of musculoskeletal health problems in employed persons in the EU27 in the past 12 months (%)



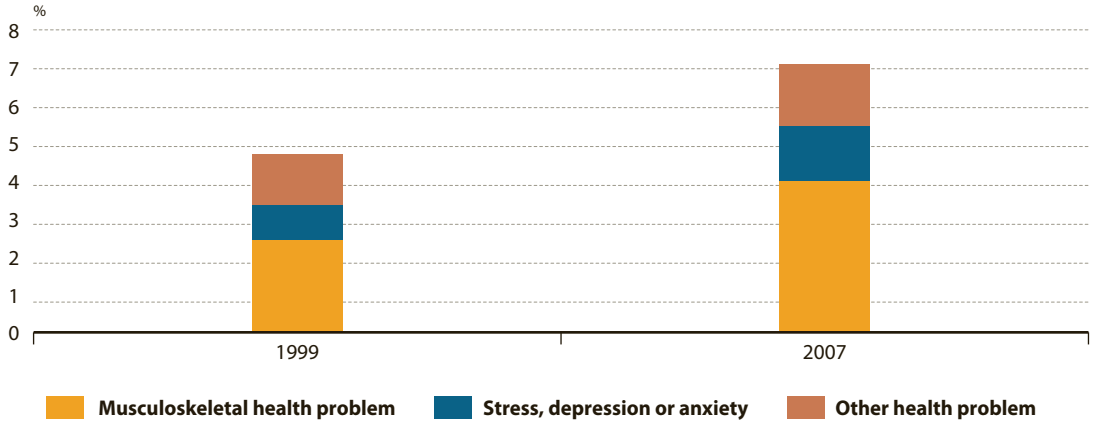
Source: LFS ad hoc module 2007 – FR not included

In a recent EU-OSHA report it was described that gender differences exist in the type and frequency of lower-limb disorders. It was suggested that because women are significantly exposed to prolonged standing and walking, they might be strongly affected by lower limb disorders that are currently not recognized[47].

4.6.4 Trends

In paragraph 4.4, it was shown that the proportion of persons with a work-related health problem increased from 4.7% in 1999 to 7.1% in 2007 according to the LFS ad hoc modules (Figure 4.32). Among those with a work-related health problem, the distribution in the type of health problems (i.e. musculoskeletal problem, stress depression or anxiety, or other) was quite similar in 1999 and 2007, though a small increase in the proportion of musculoskeletal problems was found. The occurrence of musculoskeletal problems as the most serious work-related health problem was 2.5% in 1999 and 4.0% in 2007. Very similar findings were found when only *employed* persons were studied.

Figure 4.32: Occurrence of work-related health problems in persons that work or worked previously by year (%)



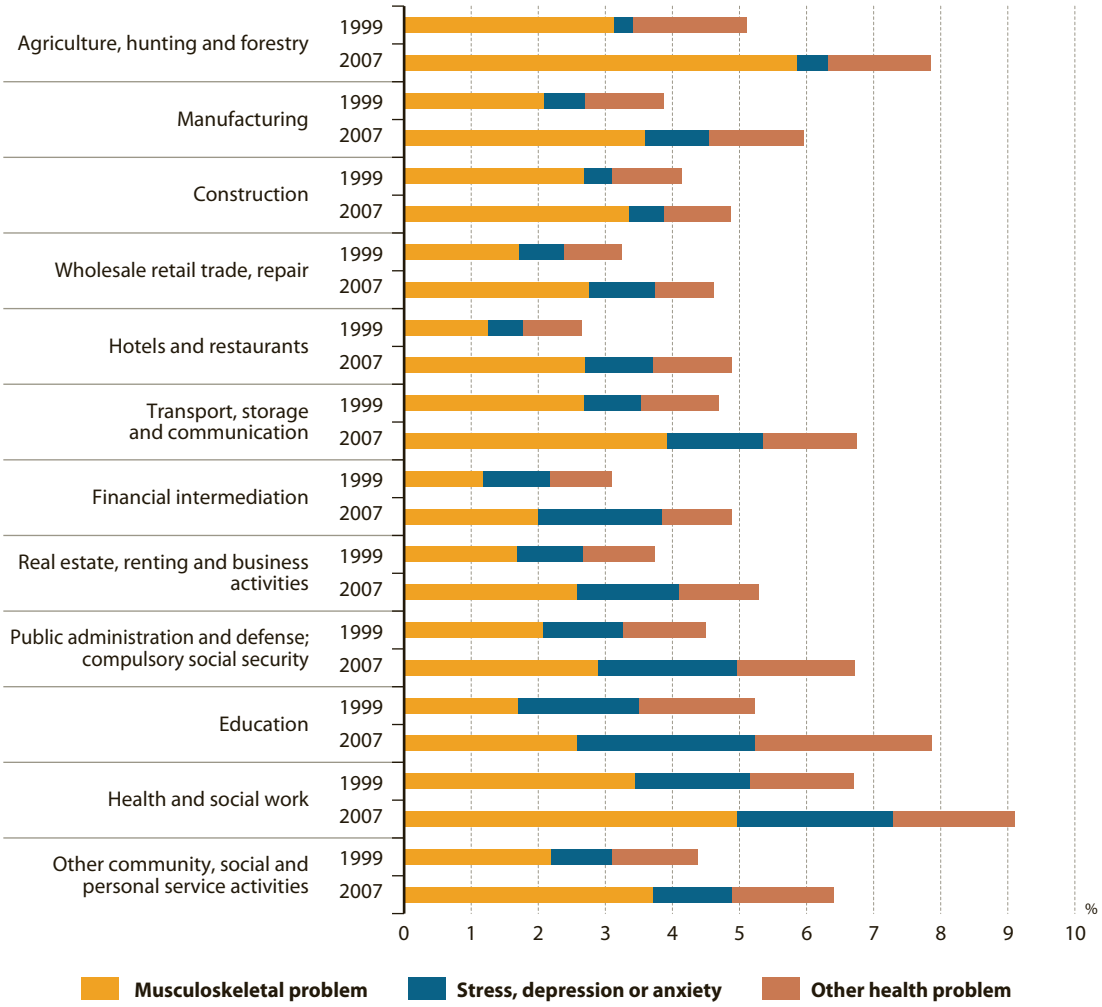
Source: LFS ad hoc module 1999 and 2007- 9 countries

Figure 4.33 shows that in most sectors, increases in the occurrence of in musculoskeletal problems as the most serious work-related health problem were found between 1999 and 2007. In the sectors 'agriculture, hunting and forestry', 'manufacturing', 'hotels and restaurants', 'financial intermediation', and 'other community, social and service activities', the occurrence of musculoskeletal health problems increased most.

In all occupational groups, the occurrence of musculoskeletal problems as the most serious work-related health problem increased between 1999 and 2007. Musculoskeletal health problems as the main work-related health problem increased most among workers with skilled and low skilled manual work (Figure 4.34).

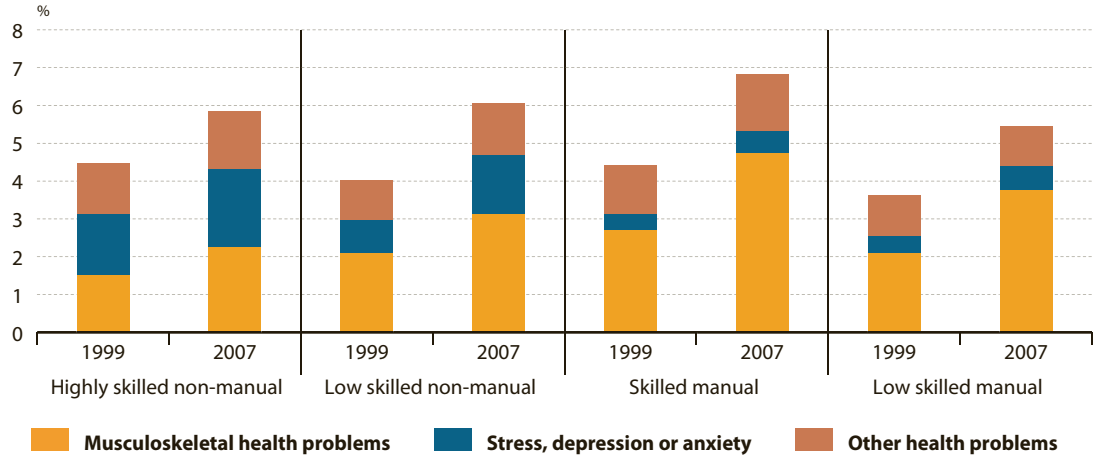
47 EU-OSHA. OSH in figures: Work-related musculoskeletal disorders in the EU — Facts and figures. European Agency for Safety and Health at Work, 2010.

Figure 4.33: Type of most serious work-related health problem in the past 12 months in different sectors* by year (%)



Source: LFS ad hoc modules 1999 and 2007 – 9 countries
*sample size below publication limit for 'fishing', 'mining and quarrying', 'electricity, gas and water supply', 'private households with employed persons' and 'extraterritorial organizations and bodies'

Figure 4.34: Type of most serious work-related health problem in the past 12 months by occupational groups* and year (%)



Source: LFS ad hoc modules 1999 and 2007 – 9 countries
*sample size below publication limit for 'army'

4.7 Stress, anxiety and depression

In total 14% of the persons with a work-related health problem experienced stress, depression or anxiety as the main health problem in the LFS ad hoc module 2007 (Table 4.1). Therefore, after musculoskeletal health problems, this health problem constituted the second most frequently reported main work-related health problem. The EWCS 2005 also showed that after backache, muscular pain and fatigue, stress was most often experienced. Anxiety was less often reported compared to stress, but its prevalence was still substantial (Figure 4.3). Depression was not assessed in the EWCS 2005.

Because of the important contribution of stress, depression or anxiety to work-related health problems, the present paragraph will describe this health problem in more detail.

4.7.1 Demographic characteristics

Stress, depression or anxiety as the main work-related health problem occurred more often in employed women (17%) than in employed men (13%) in the LFS ad hoc module 2007 (Figure 4.22). However, the EWCS 2005 showed that if all health problems were assessed instead of the main work-related health problem, employed men report stress slightly more often than employed women, and anxiety occurred about as often in men as in women (Figure 4.3).

In employed men and women, the proportion of workers that identified stress, depression or anxiety as their main work-related health problem was highest between the age of 25 to 44 years (LFS ad hoc module 2007, Figure 4.23). The EWCS 2005 also found that the occurrence of stress sharply increased with age until the age of 35-44, and subsequently sharply decreased with age. Similarly, the occurrence of anxiety increased with age, whereas the occurrence decreased again in the oldest workers (55-64 years).

In the LFS ad hoc module 2007, the occurrence of stress, anxiety or depression was related to educational level (Figure 4.24). The proportion of persons with stress, anxiety or depression as the main work-related health problem was highest among those with a high educational level (26%), followed by those with an intermediate educational level (12%), and a low educational level (10%).

4.7.2 Work-related characteristics

In the LFS ad hoc module 2007, the occurrence of stress, depression and anxiety as the main work-related health problem differed among sectors. Figure 4.25 shows that the proportion of stress, depression or anxiety was highest in the sectors 'education' (27%), 'financial intermediation' (25%), 'public administration and defense' (24%), and 'real estate, renting and business activities' (22%). In the EWCS 2005, the occurrence of stress and anxiety was also high in the sectors 'education' and 'health and social work'. This suggests that even though stress and anxiety may not frequently be the most serious work-related health problem in the sector 'health and social work' as indicated by the LFS ad hoc module 2007, workers in this sector often do experience stress and anxiety.

Among different occupations in the LFS ad hoc module 2007, skilled non-manual workers most often experienced stress, depression or anxiety as the main work-related health problem (26%), followed by low-skilled non-manual work (19%), low skilled manual work (8%), and skilled manual work (5%) (Figure 4.26). In line with this, the EWCS 2005 also found that non-manual workers more often experienced stress and anxiety than manual workers.

In the LFS ad hoc module 2007, stress, depression or anxiety was slightly more often experienced as the main work-related health problem by persons working in firms larger than 10 persons compared to firms of 10 persons or less (Figure 4.27). The EWCS 2005 also showed that stress and anxiety were more often found in workers employed in larger firms. This might be related to the fact that the size of firms in sectors in which stress, depression or anxiety frequently occurs are in general large, i.e. sector 'education', and 'public administration and defense'.

4.7.3 Consequences

According to the LFS ad hoc module 2007, stress, depression or anxiety frequently resulted in limitations in normal day to day activities either at work or outside of work (Figure 4.28). Among persons with this health problem as the main work-related health problem, 44% reported some limitations and 24% considerable limitations. Hence, persons with stress, depression or anxiety less often experienced some limitations compared to those with musculoskeletal health problems (44% versus 53%), but slightly more often faced considerable limitations (24% versus 21%). Similar findings were found when only persons that were employed at the time of the study were addressed, though the proportion of persons with considerable limitations due to stress, depression or anxiety was lower in *employed* persons (18%).

Sick leave due to stress, depression or anxiety as the main work-related health problem occurred in 59% of the persons in the LFS ad hoc module 2007 (Figure 4.29). Remarkably, long term sick leave (at least 1 month) occurred more often than short term sick leave (< 1 month) (32% versus 27%). Persons with stress, depression or anxiety as the main work-related health problem were more likely to experience long term sick leave than persons with musculoskeletal problems (32% versus 26%).

If only *employed* persons were studied, the LFS ad hoc module 2007 showed that short term sick leave (< 1 month) due to stress, depression or anxiety occurred more often than long term sickness absence (at least 1 month) (29% versus 25%). However, also in employed persons, those with stress, depression or anxiety were more likely to go on long term sick leave compared to workers with musculoskeletal problems (25% versus 19%), whereas those with musculoskeletal problems were more likely to experience short term sick leave (39% versus 29%).

4.7.4 Trends

In paragraph 4.4, it was presented that the proportion of the workers with work-related health problems increased from 4.7% in 1999 to 7.1% in 2007 in 9 European countries studied (DK, ES, FI, HU, IT, LU, PT, SE, UK[48]). Among those with a work-related health problem, the proportion of persons with stress,

48 UK data reflect old results.

depression or anxiety as the main health problem was similar in 1999 and 2007. The percentage of persons with stress, depression or anxiety was 0.9% in 1999 and 1.5% in 2007 (Figure 4.32).

The occurrence of musculoskeletal health problems, stress, depression and anxiety and other health problems as the most serious health problem increased in most sectors between 1999 and 2007 in the 9 countries studied (Figure 4.33). The contribution of stress, depression or anxiety substantially increased from 1999 to 2007 in the sectors 'hotels and restaurants', 'transport, storage and communication', 'financial intermediation', and 'public administration and defense'. A strong increase in both musculoskeletal health problems and in stress, depression or anxiety was observed in the sectors 'hotels and restaurants" and 'financial intermediation" between 1999 and 2007.

In all occupational groups, the occurrence of musculoskeletal health problems, stress, depression or anxiety and other health problems as the most serious health problem increased between 1999 and 2007 according to the LFS ad hoc modules. Stress, depression or anxiety especially increased in workers classified as low skilled non manual workers (Figure 4.34).

4.8 Other health problems

Figure 4.32 showed that the category of other work-related health problems than musculoskeletal problems and stress, anxiety and depression increased between 1999 and 2007 from 1.3% to 1.6%. In the present paragraph, respiratory problems, skin disease, and hearing problems will shortly be addressed.

4.8.1 Hearing problems

In the LFS ad hoc module 2007, hearing problems were experienced as the main work-related health problem in 1.4% of the persons with a work-related health problem. According to the EWCS 2005, 7.3% of the workers experiences hearing problems. Both the LFS ad hoc module 2007 and the EWCS 2005 showed that hearing problems occur more often in men than in women.

As described in paragraph 4.5, noise-induced hearing loss is one of the most prominent recognized occupational diseases in the EU-OSHA reported in 2005 that among the sectors with a high prevalence of recognized noise induced hearing loss are 'agriculture, forestry and fishing', 'mining and quarrying', 'extraction, energy and water supply', 'manufacturing', and 'construction'. Hearing is not only affected by exposure to noise. Exposure to chemical solvents can also affect hearing, and such effect may be underestimated. Workers who report higher rates of hearing problems also report high exposure to noise. Exposure to noise is not notably rising[49].

4.8.2 Skin diseases

As the largest organ of the body, the skin is exposed to chemical, physical, and biological risk factors. In the LFS ad hoc module 2007, skin problems were reported as the main work-related health problem in 1.3% of the persons with a work-related health problem. Skin problems were slightly more often reported by men than by women, but the difference was small (Figure 4.5). This gender difference was supported by the EWCS 2005, which found that overall, 6.6% of the workers experience skin problems.

As presented in paragraph 4.5, skin diseases are among the most often recognized occupational disease (EODS). The sector 'mining and quarrying' shows the highest incidence rate of recognized skin diseases, followed by 'manufacturing' and 'construction' (based on EODS). About 34 % of all cases of skin diseases were registered in 'manufacturing', followed by 'construction' (14 %), and 'health and social work' (9.5 %). The occupational group of crafts and related trades workers shows the highest prevalence

49 Elke Schneider and Pascal Paoli, European Agency for Safety and Health at Work (EU-OSHA). Risk Observatory Thematic Report EN 2. Noise in figures. Luxembourg: Office for Official Publications of the European Communities, 2005.

of recognized skin diseases, followed by the elementary occupations, service workers, shop and market sales workers, and plant and machine operators and assemblers[50].

Collecting accurate, specific statistical information on the distribution and prevalence of skin exposure across the EU is extremely difficult. The lack of any international clear-cut definition of occupational skin diseases also impedes the collection of high-quality epidemiological data. However, all studies have found trends suggesting both an underestimation of, and a regular increase in, the frequency and gravity of observed skin diseases. This is especially found for irritations, skin cancers and, above all, allergies of chemical origin[50].

4.8.3 Respiratory health problems

In the LFS ad hoc module 2007, 5.2% of the persons with a work-related health problem that work or worked previously reported breathing or lung problems as the main work-related health problem (Table 4.1). The EWCS 2005 showed that 4.7% of the persons that reported that work affect health experienced breathing difficulties.

In the LFS ad hoc module 2007, men more often had breathing or lung problems as their main work-related health problem than women (6.0% versus 4.3%) (Figure 4.5). In agreement, the EWCS 2005 showed that men were more likely to have respiratory difficulties. In persons that work or worked previously, the LFS ad hoc module 2007 showed that breathing or lung problems increased with age. If only employed persons were studied, the LFS ad hoc module 2007 and the EWCS 2005 both showed that respiratory problems increased with age, whereas the contribution of respiratory problems decreased again in the oldest age group (55-64 years).

A high proportion of workers with breathing or lung problems as the main work-related health problem experienced sickness absence in the past 12 months according to the LFS ad hoc module 2007 (71%). In total 45% of the persons that work or worked previously had sickness absence of less than one month, and 26% had sickness absence of at least one month. Hence, breathing or lung problems more often resulted in short term sick leave (< 1 month) compared to musculoskeletal health problems (35%) and stress, depression or anxiety (27%). However, the reverse was found for longstanding absence (at least 1 month).

4.9 Emerging issues

The prospects of an increase of work participation by women, the ageing of the workforce, and changes in sectors and occupations will influence the occurrence of work-related health problems in workers in the EU.

Because the occurrence of work-related health problems is higher among persons that do not work (Figure 4.1), higher employment rates could lead to a situation in which more persons with a work-related health problem participate in paid employment. Because the occurrence of work-related health problems in women is higher than in men, the increase in work participation of women may influence the occurrence of work-related health problems in the workforce (Figure 4.5). In addition, it may change the type of most serious work-related health problem in the work force (Figure 4.4).

The ageing of the workforce may also result in a larger proportion of workers having one or more work-related health problems (Figure 4.7). Since older workers with a work-related health problem are more likely to experience limitations in day to day activities (Figure 4.12) and long term sickness absence (Figure 4.14), the proportion of workers with these adverse consequences of disease may increase.

50 Willy De Craecker, Nele Roskams, Rik Op de Beek. European Agency for Safety and Health at Work. European Risk Observatory Report. Occupational skin diseases and dermal exposure in the European Union (EU-25): policy and practice overview. Luxembourg: Office for Official Publications of the European Communities, 2008.

Exposure to risk factors

5

Exposure to risk factors

Both the Labour Force Survey (LFS) ad hoc module 2007 and the European Working Conditions Survey (EWCS) 1995, 2000 and 2005 contained questions with regard to exposure to risk factors at work. The questions refer to factors at work that can adversely affect health or well-being. Both surveys distinguish between physical and psychosocial risk factors. In this chapter we will give an overview of the different types of exposure workers in the EU were confronted with, of differences in exposure for different demographic and work-related characteristics, and of trends in exposure. Since some risk factors are illustrated best by the results of one survey and others by results of the other, we will present figures from the LFS and from the EWCS, alternately. The LFS is aimed at the main risk factor affecting health or well-being, while the EWCS provides figures of all potential risk factors at work, irrespective of their estimated impact on health. If appropriate, we will compare the results of both surveys.

The European Survey of Enterprises on New and Emerging Risks (ESENER) asks the responsible actors (managers and workers' health and safety representatives) about how health and safety risks are managed at their workplace, with a particular focus on psychosocial risks; i.e. on phenomena such as work-related stress, violence and harassment. In Chapter 6 details on all three sources are described.

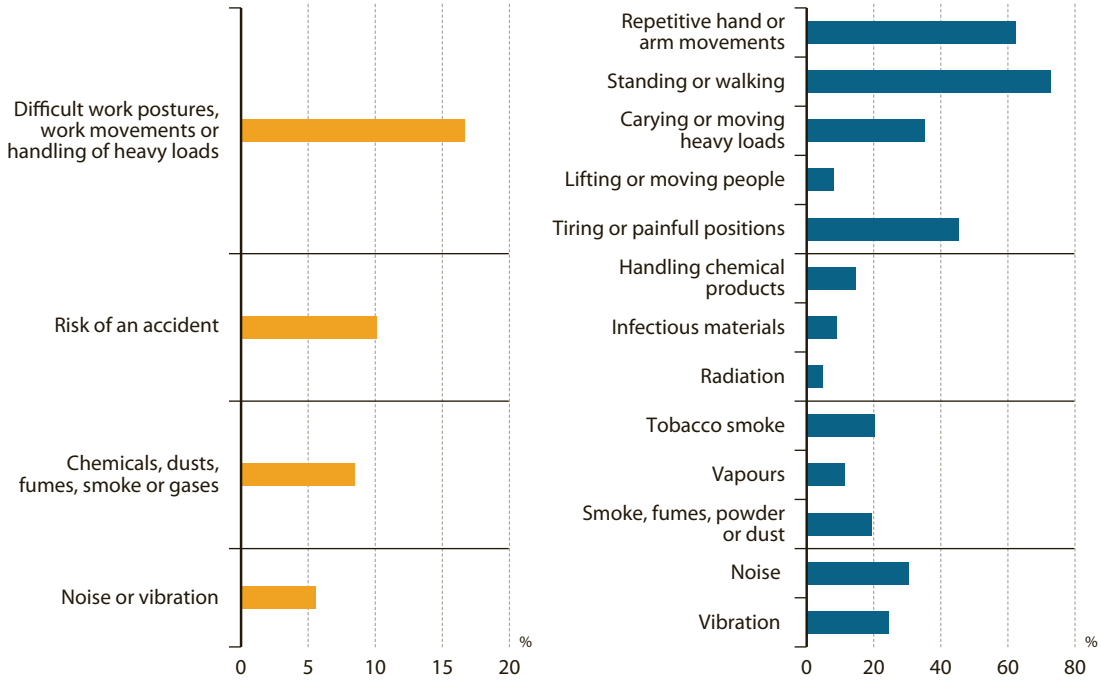
5.1 Occurrence of exposure to risk factors

5.1.1 Physical risk factors

In the EU27, 40.7% of the workers reported exposure affecting physical health, which corresponds to approximately 81.2 million persons. Figure 5.1 shows the exposure to physical risk factors of both the LFS ad hoc module 2007 and the EWCS 2005. Percentages differed between the surveys due to differences in phrasing of the questions. In the LFS ad hoc module 2007, most workers (17%) reported exposure to difficult work postures, work movements or handling of heavy loads as the main risk factor affecting physical health, followed by exposure to the risk of an accident (10%), exposure to chemicals, dusts, fumes, smoke, or gases (8%), and exposure to noise or vibration (5%).

Results of the EWCS show that exposure for at least a quarter of working time was reported by 45% of the workers for tiring or painful positions, 35% for carrying or moving heavy loads, and 8% for lifting or moving of people. These categories are similar to work postures, work movements or handling of heavy loads, which is mentioned often as the main risk factor affecting physical health in the LFS ad hoc module 2007. Other physical risk factors that workers reported to account for exposure of at least a quarter of their working time, were noise (30%), vibration (24%), tobacco smoke (20%), smoke, fumes, powder or dust (19%), and vapours (6%). The EWCS also assessed risk factors that were not in the LFS ad hoc module 2007. The results show that at least a quarter of their working time some persons were exposed to chemical products (15%), infectious materials (9%), and radiation (5%).

Figure 5.1: The main risk factor affecting physical health as assessed in the LFS ad hoc module 2007* and exposure (for at least ¼ of the time) to physical risk factors reported in the EWCS 2005 (%)



Source: LFS ad hoc module 2007 *Source:* EWCS 2005

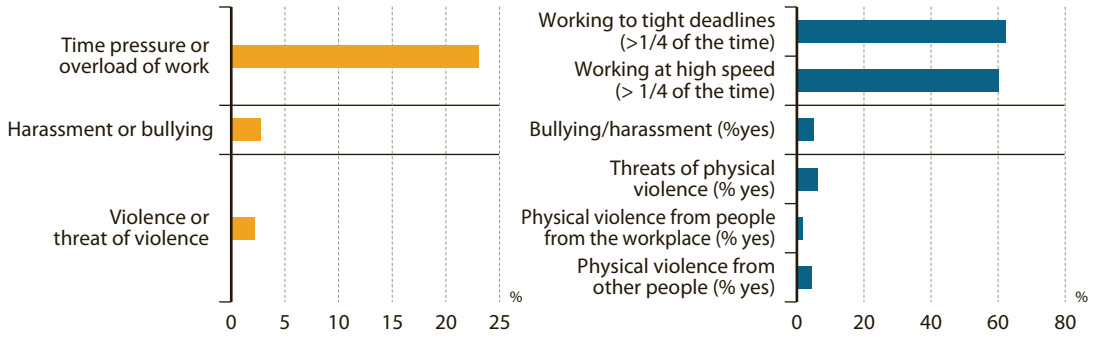
* MT and SI not included since main factor adversely affecting physical health was not assessed

5.1.2 Psychosocial risk factors

According to the LFS ad hoc module 2007, in the EU27, 27.9% of the workers reported exposure affecting mental well-being, which corresponded to about 55.6 million workers. Exposure to time pressure or overload of work was most often selected as the main risk factor (23%), followed by harassment or bullying (2.7%), and violence or treat of violence (2.2%). Time pressure or overload of work in the LFS ad hoc module 2007 could be compared to working to tight deadlines or working at high speed in the EWCS 2005. In both surveys this psychosocial risk factor was mentioned the most frequently, while harassment or bullying and violence or threat of violence occurred relatively less often. As with physical risk factors, percentages differed between the surveys due to differences in phrasing of the questions

Comparing data on physical violence and treat of violence shows that threat of violence occurs more often than physical violence. Apart from that, physical violence comes more often from other people than the people from the workplace (EWCS 2005).

Figure 5.2: The main risk factor affecting mental well-being as assessed in the LFS ad hoc module 2007* and exposure to psychosocial risk factors reported in the EWCS 2005 (%)



Source: LFS ad hoc module 2007* *Source:* EWCS 2005
* MT and SI not included since main factor adversely affecting physical health was not assessed

5.1.3 Combination of risk factors

In EU-OSHA's recent experts' forecasts the following risks were identified as emerging:

- Increase in musculoskeletal disorders (MSD's) and especially increase of MSD's related to stress and work overload[51];
- Increase in psychological risks on five main topics (new forms of employment contracts and job insecurity, the ageing workforce, work intensification, high emotional demands at work, and poor work-life balance[52].
- Increase in safety and health risks linked to global epidemics and to drug-resistant organisms in the workplace[53];
- Emerging concern with regard to biological risks[54].

There is increasing concern about multiple exposures to for example biological, chemical physical and psychosocial risks. While the range of potential health effects is wide, it is difficult to determine which of these constituents accounts for which health effects[55]. 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[56].

51 EU-OSHA. Expert forecast on emerging physical risks related to occupational safety and health. Luxembourg: Office for Official Publications of the European Communities, 2005

52 EU-OSHA. Expert forecast on emerging psychosocial risks related to occupational safety and health (OSH), European Agency for Safety and Health at Work, 2007. Available at http://osha.europa.eu/en/publications/reports/7807118

53 EU-OSHA. Expert forecast on emerging chemical risks related to occupational safety and health, European Agency for Safety and Health at Work, 2009. Available at http://osha.europa.eu/en/publications/reports/TE3008390ENC

54 EU-OSHA. Expert forecast on emerging biological risks related to occupational safety and health, European Agency for Safety and Health at Work, 2007. Available at http://osha.europa.eu/en/publications/reports/7606488

55 European Agency for Safety and Health at Work. Risk Observatory. Expert forecast on emerging physical risks related to occupational safety and health. Luxembourg: Office for Official Publications of the European Communities, 2005

56 European Agency for Safety and Health at Work. Risk Observatory. Expert forecast on emerging physical risks related to occupational safety and health. Luxembourg: Office for Official Publications of the European Communities, 2005

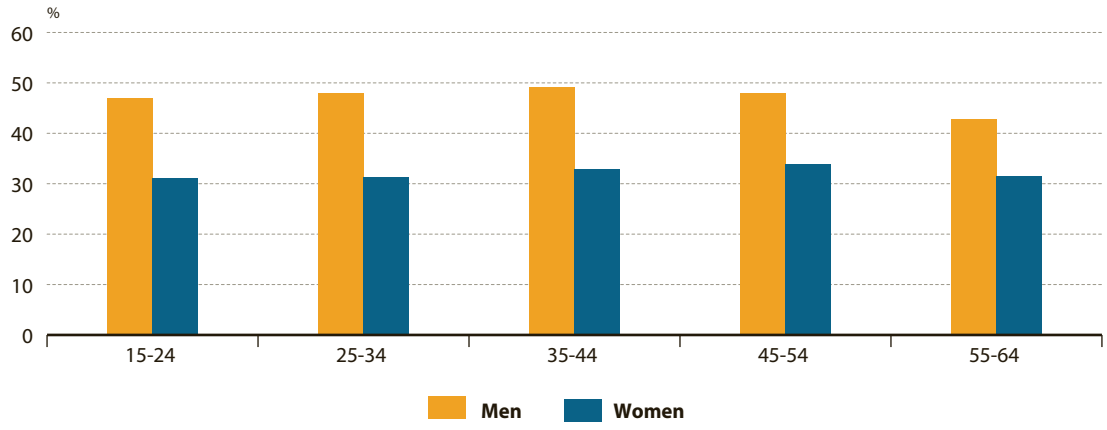
5.2 Demographic and work-related characteristics

5.2.1 Demographic characteristics

In the LFS ad hoc module 2007, exposure affecting mental well-being was reported about as frequent by men as by women (28.1% vs. 27.6%). In contrast, men substantially more often reported exposure affecting physical health than women (47.5% vs. 32.4%). Exposure affecting physical health was relatively similar across different age groups, though men aged 55-64 years reported exposure less often (Figure 5.3). In contrast, exposure affecting mental well-being gradually increased with age until the age of 45-54 years, and slightly decreased thereafter (Figure 5.4).

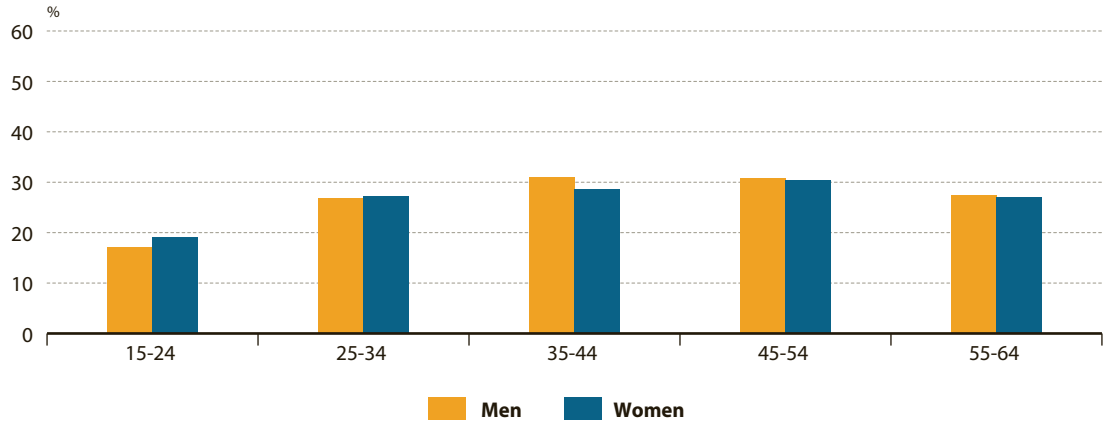
Exposure is also related to educational level. High educated workers most often reported exposure affecting mental well-being, while low educated workers most often reported exposure affecting physical health.

Figure 5.3: Exposure at work in the past 12 months affecting physical health in workers in the EU27 (%)



Source: LFS ad hoc module 2007

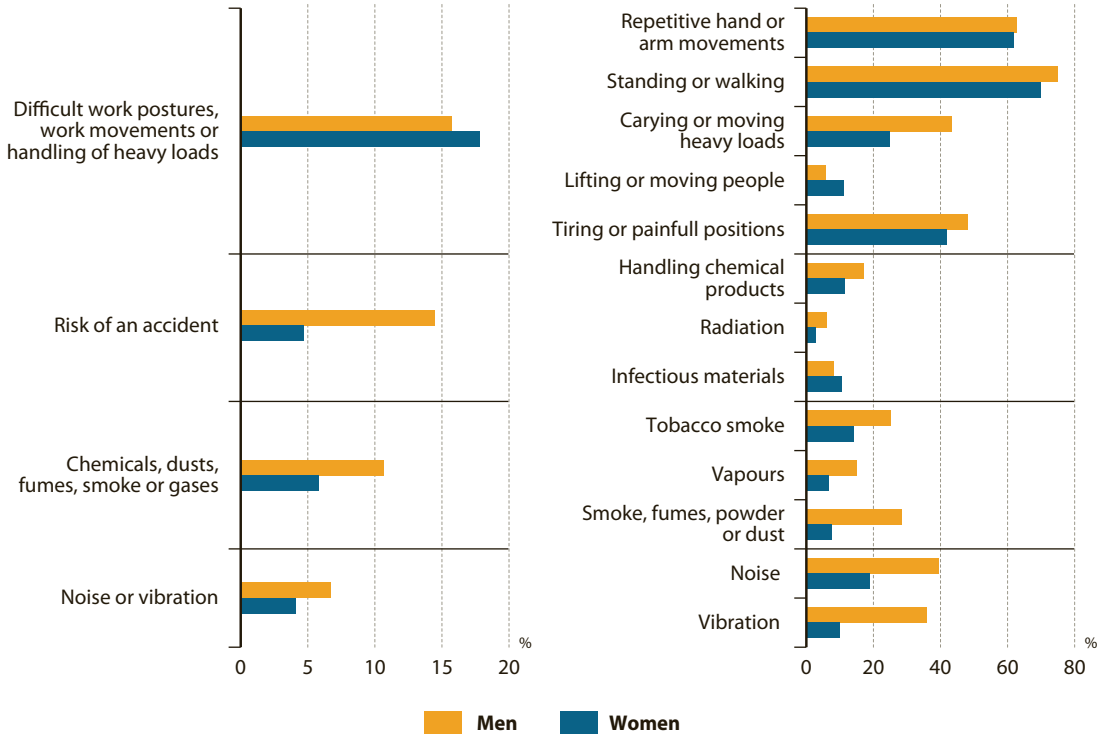
Figure 5.4: Exposure at work in the past 12 months affecting mental well-being in workers in the EU27 (%)



Source: LFS ad hoc module 2007

Figure 5.5 presents the exposure to physical risk factors. Figures from the LFS ad hoc module 2007 show that women more frequently identified exposure to difficult work postures, work movements or handling of heavy loads as the main factor affecting physical health than men, while men more often experienced exposure to the other risk factors assessed than women. According to the figures of the EWCS, men are more often exposed to physical risk factors. Only repetitive hand and arm movements, lifting and moving people, and handling infectious materials (such as waste, bodily fluids and laboratory materials)' were more often reported by women (Figure 5.6). The latter is attributable in large part to the higher proportion of women working in the most exposed sector: 'health and social work'.

Figure 5.5: The main risk factor affecting physical health as assessed in the LFS ad hoc module 2007* and exposure to physical risk factors (for at least ¼ of the time) reported in the EWCS 2005, for men and women separately (%)

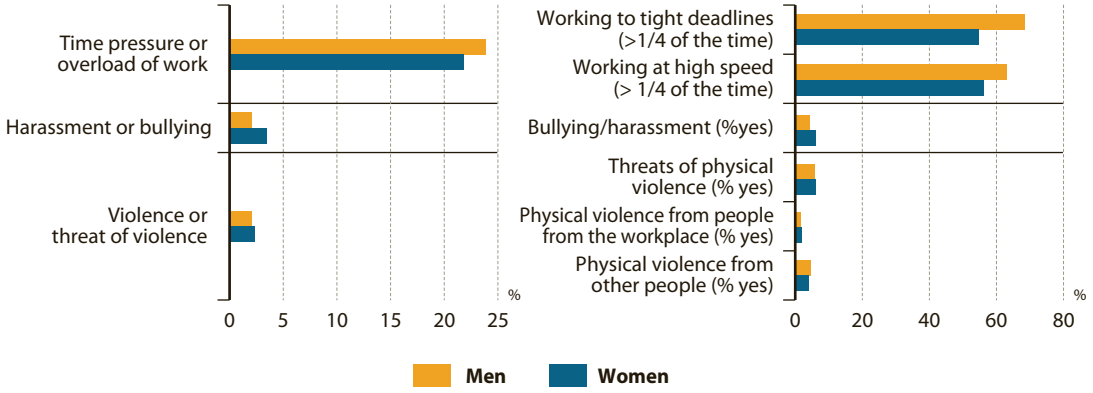


Source: LFS ad hoc module 2007 *Source:* EWCS 2005

* MT and SI not included since main risk factor adversely affecting physical health was not assessed

With respect to the main risk factor adversely affecting mental well-being, men more often reported time pressure or overload of work as the main risk factor affecting mental well-being than women. The EWCS 2005 shows similar results; men reported more often that they were working to tight deadlines and/or at very high speed than women. Harassment or bullying was more often described by women than by men as the main risk factor (LFS ad hoc module 2007). Women also reported more often they were exposed to harassment or bullying (EWCS 2005) (Figure 5.6). When the type of exposure was studied in relation to age, harassment or bullying and violence or treat of violence affecting mental well-being appeared to be more often described among workers aged 15-24 years than among older workers (LFS ad hoc module 2007; figures not shown).

Figure 5.6: The main risk factor affecting mental well-being as assessed in the LFS ad hoc module 2007* and exposure to psychosocial risk factors reported in the EWCS 2005 for men and women separately (%)

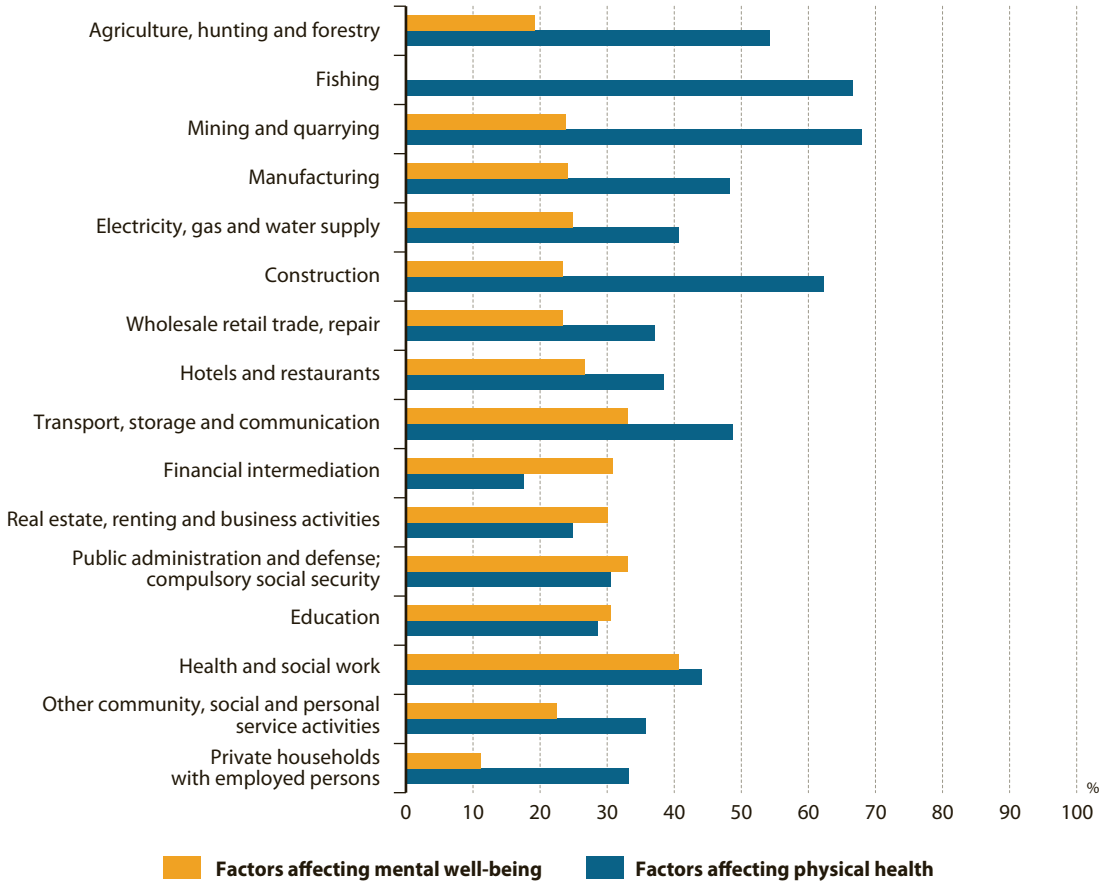


Source: LFS ad hoc module 2007 *Source:* EWCS 2005
*MT and SI not included since main risk factor adversely affecting mental well-being was not assessed

5.2.2 Work-related characteristics

In the LFS ad hoc module 2007, exposure to risk factors adversely affecting physical health and mental well-being varied across sectors. In most sectors, workers reported exposure affecting physical health substantially more often than exposure affecting mental well-being, in particular in 'agriculture, hunting and forestry', 'mining and quarrying', 'manufacturing', and 'construction' (Figure 5.7). Less frequently the reverse was found. Sectors in which more exposure affecting mental well-being was reported were 'financial intermediation', 'real estate, renting and business activities', 'public administration and defense' and 'education'. In the sectors 'health and social work' and 'transport, storage and communication' both types of exposure were reported relatively often.

Figure 5.7: Exposure at work in the past 12 months affecting physical health and mental well-being in different sectors in the EU27 (%)



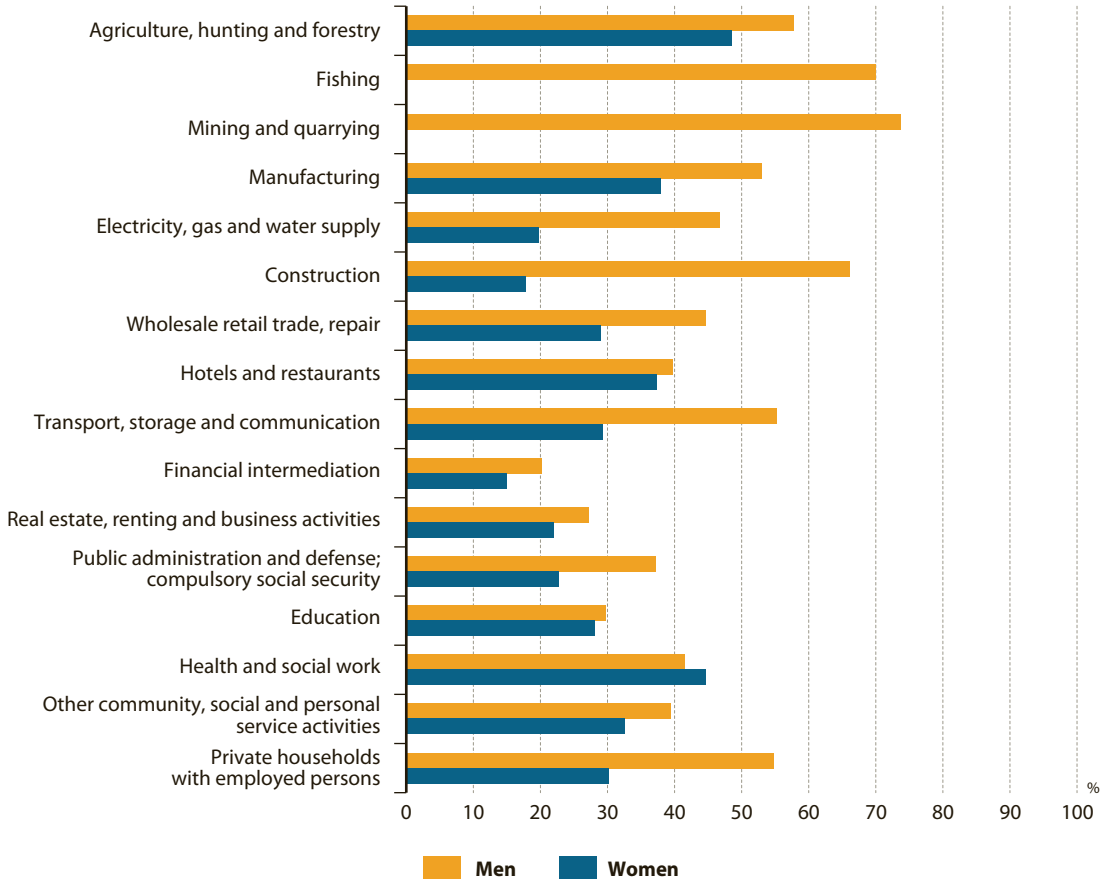
Source: LFS ad hoc module 2007
*sample size below publication limit for fishing (factors affecting mental well-being) and extra-territorial organizations and bodies

In the LFS ad hoc module 2007, sectors differed strongly for the percentage of workers reporting exposure affecting physical health. This ranged from 17.6% of the workers in the sector 'financial intermediation' to 67.9% of the workers in the sector 'mining and quarrying'. Among men, most exposure was reported in the sectors 'mining and quarrying', 'fishing', and 'construction', among women, most exposure was reported in the sectors 'agriculture' and 'health and social work' (Figure 5.8).

The EWCS yielded similar results. In 'construction' the highest level of exposure was reported for all risks, while in 'agriculture' and 'manufacturing' also higher than median exposure was reported. In 'financial intermediation' and 'real estate' the lowest exposure was reported. Workers in 'hotel and restaurants' reported high levels of ergonomic risk but relatively low levels of biological and chemical risk. In the sector 'health', workers reported substantial levels of biological and chemical risk, but very low levels of risks from noise/temperatures[57].

57 European Foundation for the Improvement of Living and Working Conditions. Fourth European Working Conditions Survey (2005). Dublin; 2009.

Figure 5.8: Exposure at work in the past 12 month affecting physical health in different sectors* in the EU27 (%)



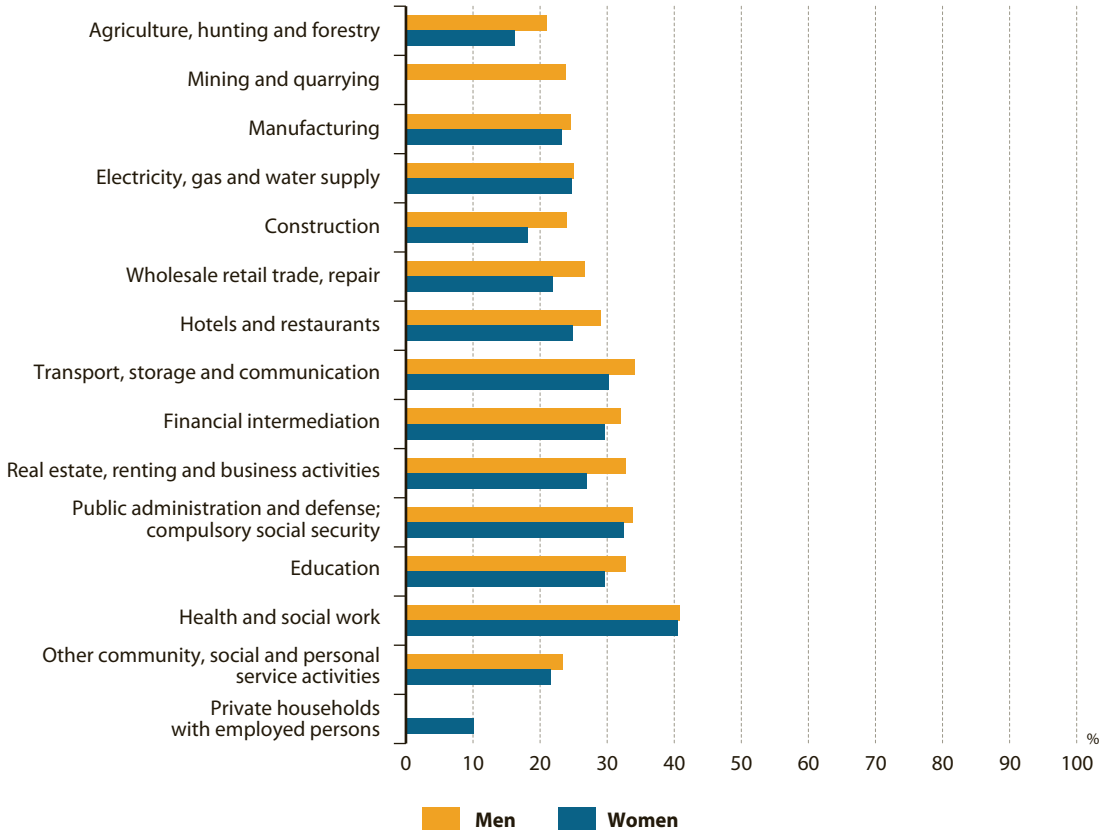
Source: LFS ad hoc module 2007
*sample size is below publication limit 'fishing' (women), 'mining and quarrying' (women) and 'extra-territorial organisations and bodies'

The occurrence of exposure affecting mental well-being ranged from 11.1% of the workers in the sector 'private households with employed persons' to 40.6% of the workers in the sector 'health and social work'. Both for men and women, exposure affecting mental well-being was highest in the sector 'health and social work' (Figure 5.9).

With regard to exposure affecting mental well-being, the EWCS 2005 revealed major sector differences in the incidence of violence and harassment. In many sectors where physical risks were high – 'agriculture', 'construction' and 'manufacturing' – relatively low levels of violence and harassment were reported. The reverse was also found: in sectors where physical risks were low, high levels of exposure to violence and harassment were reported. Workers in the sector 'health' were eight times more likely to have experienced a threat of physical violence than workers in 'manufacturing'[58].

58 European Foundation for the Improvement of Living and Working Conditions. Fourth European Working Conditions Survey (2005). Dublin; 2009.

Figure 5.9: Exposure at work in the past 12 month affecting mental well-being in different sectors* in the EU27 (%)



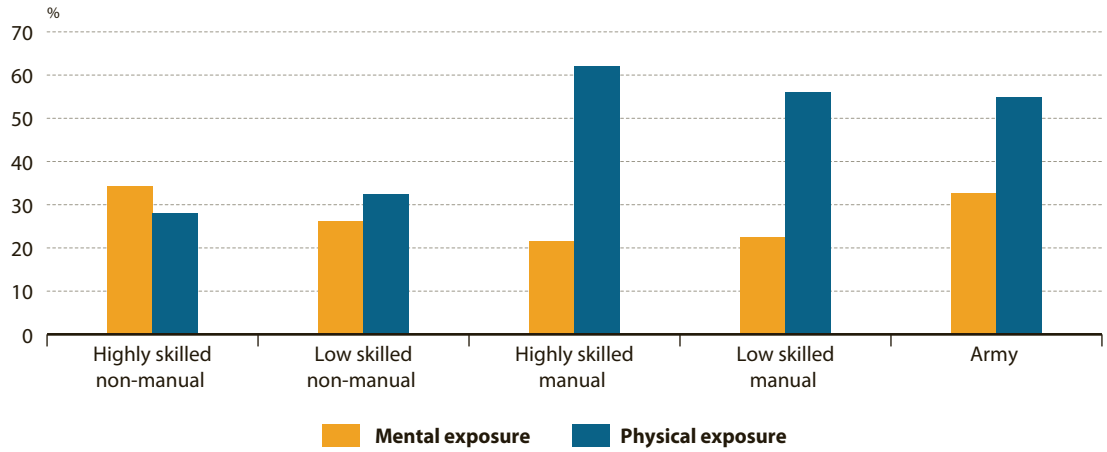
Source: LFS ad hoc module 2007
*sample size is below publication limit for 'fishing', 'mining and quarrying' (women), 'private households with employed persons' (men) and 'extra-territorial organisations and bodies'

Exposure affecting physical health and mental well-being differed among occupational groups (Figure 5.10). Exposure affecting physical health was most often reported by manual workers and workers in the army, whereas exposure affecting mental well-being was highest among highly skilled non-manual workers.

In the report of the EWCS 2005 was concluded with regard to exposure to physical risk factors, that there is a clear differentiation in terms of blue-collar and white-collar jobs. The most exposed occupational groups were craft and related trades workers, plant and machine operators and skilled agricultural and fishery workers[59].

59 European Foundation for the Improvement of Living and Working Conditions. Fourth European Working Conditions Survey (2005). Dublin; 2009.

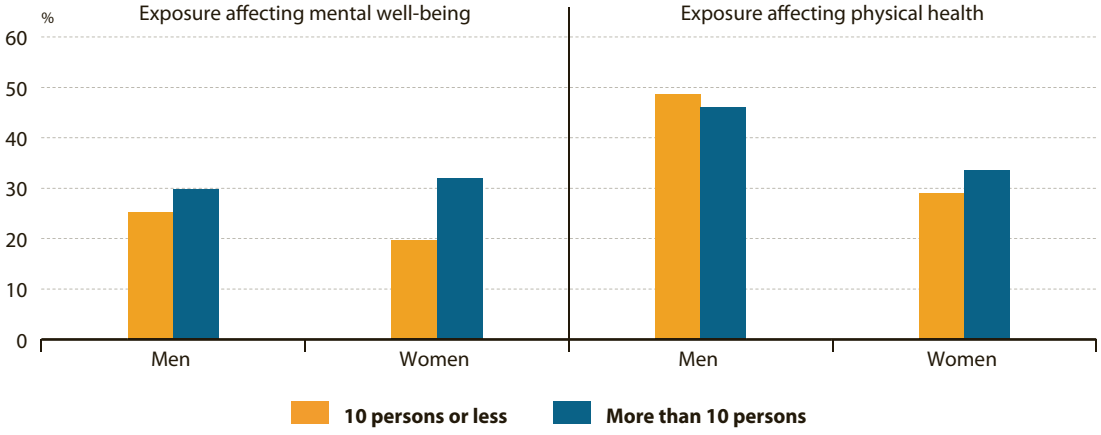
Figure 5.10: Exposure at work in the past 12 months affecting mental well-being and physical health in different occupations in the EU27 (%)



Source: LFS ad hoc module 2007

Figure 5.11 shows the exposure affecting mental well-being and physical health for different sizes of the company: units where 10 persons or less or more than 10 persons were working. It appears that in smaller units, exposure affecting mental well-being was reported less often, particularly by women. The relations found for exposure affecting physical health and company size are smaller and differ in direction between men and women.

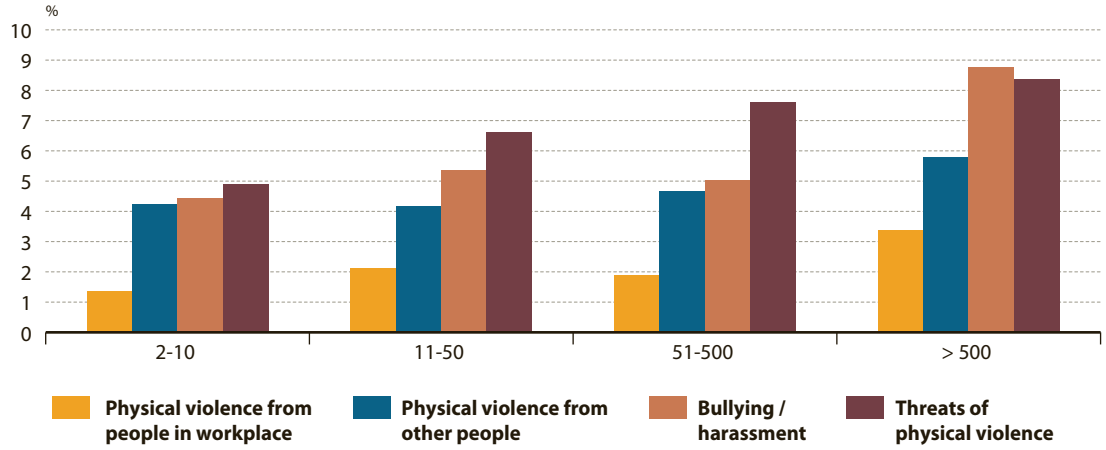
Figure 5.11: Exposure at work in men and women in the EU27 by size of the company (i.e. number of persons working in the local unit) (%)



Source: LFS ad hoc module 2007

In the EWCS 2005, differences in exposure between small and large companies were examined as well. Figure 5.12 shows that in larger companies more exposure to violence and harassment was reported.

Figure 5.12: Exposure to violence and harassment in the EU27 by size of the company (i.e. number of persons working in the local unit) (%)

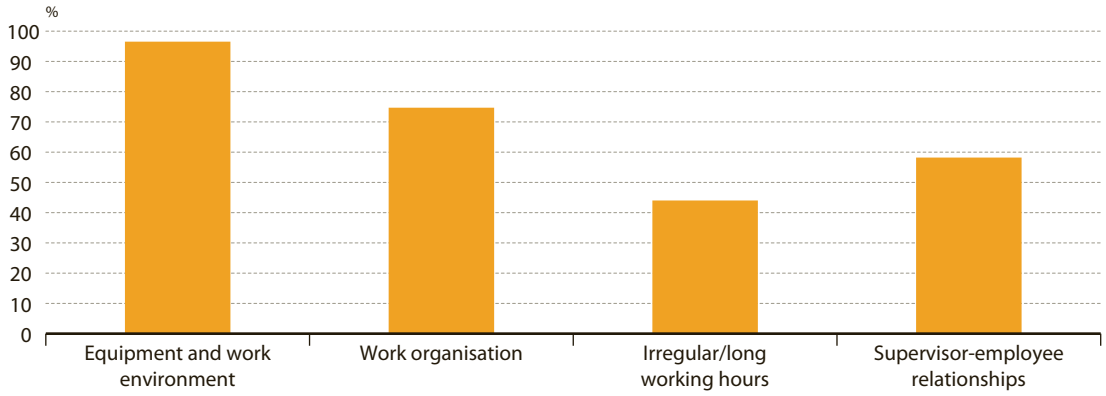


Source: EWCS 2005

Both exposure affecting physical health and exposure affecting mental well-being occurred substantially more often in workers with shift work and atypical working hours (LFS 2007 ad hoc module). Work-related characteristics that reduced the likelihood of exposure affecting well-being were manual work, a shorter time since started to work, part-time work, and a temporary contract. For exposure affecting physical health, manual work increased the likelihood of exposure, whereas non-manual work, a shorter time since started to work, and part-time work decreased the likelihood of exposure[60].

Bearing this in mind, ESENER data on the areas that are covered by risk assessments or similar checks (Figure 5.13) show that these tend to focus more on the physical environment than on psychosocial and organisational aspects, such as work organisation, working hours or supervisor-employee relationships.

Figure 5.13: Areas routinely considered in risk assessments or similar checks, in percentage share of establishments, EU27 (%)

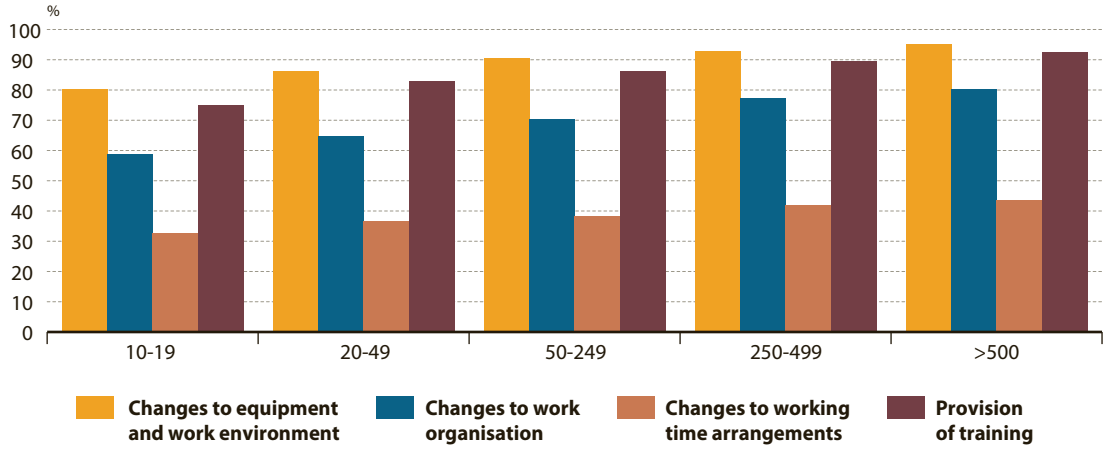


Source: ESENER 2009

60 Venema, A., Heuvel, S. & Geuskens, G. Health and safety at work. Results of the Labour Force Survey 2007 ad hoc module on accidents at work and work-related health problems. Hoofddorp: TNO Quality of Life, 2009.

Building on this, the same pattern seems to hold when it comes to actions taken as follow-up to risk assessments and similar checks (Figure 5.14), as changes to equipment and work environment are the most common type of measures across all establishment sizes.

Figure 5.14: Actions taken as follow up to risk assessments or similar checks, in percentage share of establishments, EU27 (%)



Source: ESENER 2009

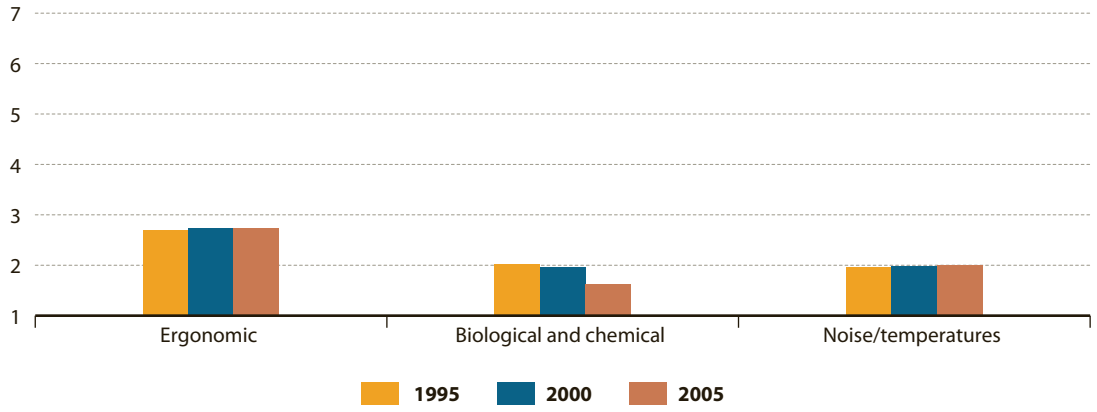
5.3 Trends

Trends were only available for the EWCS, since the LFS 1999 ad hoc module did not include exposure items. For exposure to physical risk factors, all the variables were measured using the same seven point scale (from 1 'never' to 7 'all of the time'). Following the method described in the EWCS-report[61], to summarize exposure to physical risks, the average exposure on a scale of 1–7 was calculated for three composite variables representing exposure to different types of risk: ergonomic, biological/chemical and noise/temperatures[62]. Figure 5.15 shows data of the EWCS 1995, 2000 and 2005. Exposure to biological and chemical risks decreased over time, whereas exposure to the other risk factors remained relatively unchanged.

61 European Foundation for the Improvement of Living and Working Conditions. Fourth European Working Conditions Survey (2005). Dublin; 2009.

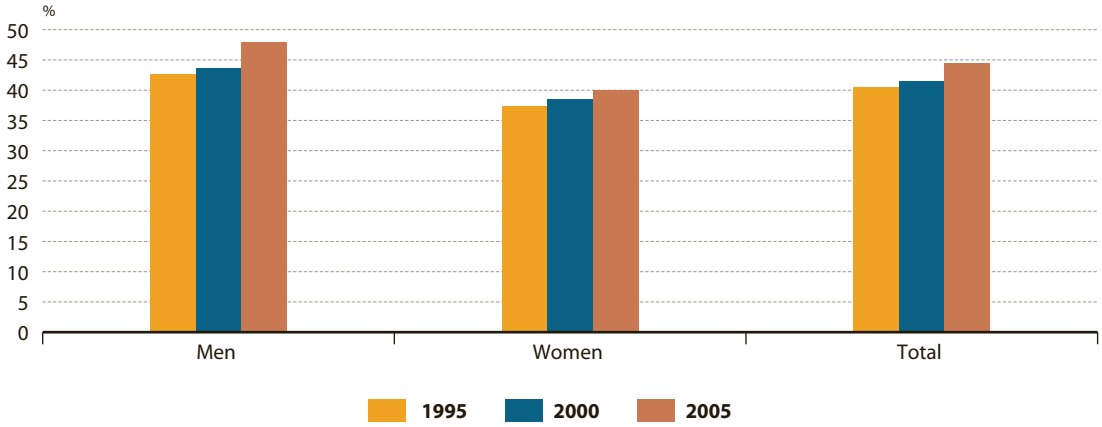
62 Ergonomic risks included exposure to tiring or painful positions, to carrying or moving of heavy loads, to repetitive hand or arm movements, and to vibration from hand tools or machinery; biological and chemical risks included breathing in smoke, fumes, powder or dust and breathing in vapours such as solvents and thinners; noise/temperatures included exposure to noise, high temperatures and low temperatures.

Figure 5.15: Trends in exposure (1 = never; 7 = all of the time) to physical risk factors



Source: EWCS 1995, 2000 and 2005

Figure 5.16: Trends in work intensity (% of work time with high intensity) for men and women (%)



Source: EWCS 1995, 2000 and 2005

One risk factor that may affect mental well-being, available in the EWCS, and described in the EWCS-report is work intensity. Work intensity is an aggregated measure, using the two indicators 'working at a very high speed' and 'working to tight deadlines'.[63] Figure 5.16 shows a small increase of work intensity, both for men and women. However, the trend is most apparent in men between 2000 and 2005.

5.4 Emerging issues

The proportion of workers employed in industrial and agricultural sectors shows a decrease over the years, whereas the services sector is slightly growing. Since the industrial and agricultural sectors are characterized by a higher rate of exposure to physical risk factors (Figure 5.8), the small decrease in exposure to physical factors, as shown in Figure 5.15, might be caused by the shift towards service

63 This index assigns a value of 0 to 'never', 10 to 'almost never', 25 to 'a quarter of the time', etc. The composite index is the average of the two indicators of work intensity.

related sectors. It is expected that this trend will be continued. The opposite is true for exposure to mental risk factors. Those are more common in the services sector, in particular in the sector 'health and social work' (Figure 5.9), which might cause an increase of this type of exposure over time. Figure 5.14 already showed an increase since 1995.

Future exposure levels are also dependent on new technologies. An expert forecast report by EU-OSHA[64] identified as 'top' emerging risks the lack of physical activity, the combined exposure to MSD risk factors and psychosocial risk factors, the complexity of technologies and work processes with complex human–system interfaces, the insufficient protection of high-risk groups against long-standing ergonomic risks, thermal discomfort at industrial workplaces, ultraviolet radiation, and vibration. This list contains physical as well as mental risk factors, and stresses also the burden of the combination of these factors.

Finally, future exposure levels are also dependent on new ways of work organisation. OSHA[65] forecasts an increase in psychological risks on five main topics (new forms of employment contracts and job insecurity, the ageing workforce, work intensification, high emotional demands at work, and poor work-life balance).

64 EU-OSHA. Expert forecast on emerging physical risks related to occupational safety and health. Luxembourg: Office for Official Publications of the European Communities, 2005.

65 EU-OSHA. Expert forecast on emerging psychosocial risks related to occupational safety and health. Luxembourg: Office for Official Publications of the European Communities, Europea, 2007.

Methodological context

6

Methodological context

In this Chapter, the main information sources used in the present publication are described. They constitute the technical background of this publication. All sources emerge from the policy backgrounds described in Chapter 1. The publication focused on the Labour Force Survey (LFS) ad hoc module 2007. Additional data were presented from the LFS ad hoc module 1999, from the European Working Conditions Survey (EWCS), the European Survey of Enterprises on New and Emerging Risks (ESENER), as well as from the European registrations systems European Statistics on Accidents at Work (ESAW) and European Occupational Diseases Statistics (EODS). Furthermore results from the Risk Observatory were used. In the following, these information sources are described in detail.

6.1 Labour Force Survey and ad hoc modules on health and safety at work

The Labour Force Survey (LFS) is a rotating random sample survey of persons in private households[66]. It provides population estimates for the main labour market characteristics and is organised in thirteen modules, covering demographic background, labour status, employment characteristics of the main job, hours worked, employment characteristics of the second job, time-related underemployment, search for employment, education and training, previous work experience of persons not in employment, situation one year before the survey, main labour status, income and technical items relating to the interview. It provides annual information on employment and related variables in EU Member States. The LFS data collection started in 1983. The LFS 2007 covers the 27 Member States of the European Union, Norway and Croatia.

In the LFS the population of working age (15 years and above) is classified in three mutually exclusive groups:

1. persons in employment,
2. unemployed persons, and
3. inactive persons.

The main goal of this survey is to provide descriptive and explanatory data on each of these groups. Respondents are assigned to one of these groups on the basis of the most objective information possible obtained through the survey questionnaire, which principally relates to their actual activity within a particular reference week.

Since 1999 ad hoc modules with questions on specific topics are added to the LFS questionnaire. In 1999 and 2007 an ad hoc module with eleven questions on health and safety at work was included.

The ad hoc modules and the core LFS questionnaire provide for a rich source of survey data that can give important additional policy information which is not available in national registrations. Data collected by means of the modules can be related to labour market and socio-demographic variables in the survey. The data can also be related to the information from other surveys and registrations collected under EC responsibility.

66 epp.eurostat.ec.europa.eu/portal/page/portal/labour_market

Table 6.1: Examples of LFS labour market and socio-demographic variables

DEMOGRAPHIC BACKGROUND	ATYPICAL WORK
Sex Age Nationality Civil status Educational level	Shift work Evening work Night work Saturday work Sunday work
EMPLOYMENT CHARACTERISTICS (main job)	**HOURS WORKED**
Professional status Economic activity of the local unit Occupation Number of persons working at the local unit Time since starting current employment Full-time/Part-time distinction Permanency of the job	Number of hours per week usually worked

6.1.1 LFS 2007 ad hoc module on health and safety at work

The specifications of the ad hoc module 2007 have been adopted in Commission Regulation (EC) No 341/2006 of 24.02.2006. The aim of this ad hoc module is to collect harmonised statistical data on those work-related health problems (including exposures) which are not covered by the administrative data collection methodologies (ESAW and EODS), and to study the health and safety at work data in relation to Labour Market related variables available in the LFS but not included in ESAW and EODS. And in particular:

- to know the number of cases and days lost because of accidents at work and of (non-accidental) work-related health problems;
- to analyse the differences in the occurrence of these accidents and health problems by factors linked to the employment characteristics of the worker and by factors linked to the employer's characteristics;
- to gain insight in the occurrence of factors at work that can adversely affect health.

The target population of the ad hoc module consists of persons aged 15 or more. For accidents at work the additional filter is on everybody who is working or has worked during the past 12 months. For work-related health problems the filter is on everybody who is working or has worked previously. Finally, the filter for exposure to risk factors is on every body who is working at the time of the survey administration.

The ad hoc module is part of the LFS 2007, and contains eleven variables. A Statistics in Focus[67] and an in-depth analysis on quality and of this module and its results was published in 2009[68].

67 epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-SF-09-063

68 Venema, A., Heuvel, S. & Geuskens, G. Health and safety at work. Results of the Labour Force Survey 2007 ad hoc module on accidents at work and work-related health problems. Hoofddorp: TNO Quality of Life, 2009.

Table 6.2: LFS 2007 ad hoc module variables

ACCIDENTS AT WORK
Accidental injury(ies), apart from illnesses, occurred during the past 12 months, at work or in the course of work
Type of the most recent accidental injury at work or in the course of work
Date when the person was able to start to work again after the most recent accidental injury
Job done when the most recent accidental injury occurred (code first that applies)
WORK-RELATED HEALTH PROBLEMS
Illness(es), disability(ies) or other physical or psychic health problem(s), apart from accidental injuries, suffered by the person during the past 12 months (from the date of the interview) and that was (were), caused or made worse by work
Type of the most serious complaint caused or made worse by work
Whether the most serious complaint caused or made worse by work limits the ability to carry out normal day-to-day activities either at work or outside work
Number of days off work during the last 12 months due to the most serious complaint caused or made worse by work
Job that caused or made worse the most serious complaint (code first that applies)
HAZARDOUS EXPOSURE
Whether at the workplace the person has particular exposure to selected factors that can adversely affect his/her mental well-being
Whether at the workplace the person has particular exposure to selected factors that can adversely affect his/her physical health

6.1.2 LFS 1999 ad hoc module on health and safety at work

The LFS 1999 included for the first time an ad hoc module on health and safety at work. All Member States (EU15) were covered except Belgium, France and Austria. Several variables in the ad hoc module in 1999 were identical to the ad hoc module in 2007, and were compared in the present report:

- the occurrence of accidents at work,
- absence from work after the most recent accident,
- occurrence and type of most serious health problem caused or made worse by work,
- days off work due to the most serious work-related health problem.

6.2 Register based statistical systems

The European Statistics on Accidents at Work (ESAW) and the European Occupational Diseases Statistics (EODS) are two important sources of population statistics collected, analysed and communicated by Eurostat. Their setup and development are closely related to policy intentions of the European Commission as formulated for instance in the communications on the Community strategy on health and safety at work 2002-2006 and 2007-2012. Both statistical data systems provide a rich source of population statistics that can be combined with the data of the Labour Force Survey and the ad hoc modules, for instance to provide time series analysis. Data of ESAW and EODS cannot be connected to the LFS or other surveys at the individual level, therefore only descriptive and comparative analysis is possible.

6.2.1 European Statistics on Accidents at Work (ESAW)

The European Statistics on Accidents at Work (ESAW) database contains harmonised data from administrative sources on accidents at work since 1994. Data on accidents at work are available for 23 EU27 Member states and the EFTA-countries Norway and Switzerland. Data collection started in 1994 for the old Member States. Data collection for the new Member States started in 2002, retrospectively from 1998 onwards or earlier. The ESAW variables are presented below. The details of the ESAW methodology are described in "European statistics on accidents at work (ESAW) - Methodology - 2001 edition" - European Communities- Directorate General Employment and social affairs series[69].

Table 6.3: ESAW variables

PHASE 1 AND 2 VARIABLES	PHASE 3 VARIABLES
Economic activity of the employer	Workstation
Occupation of the victim	Working environment
Age of victim	Working process
Sex of victim	Specific physical activity
Type of injury	Material agent of Specific physical activity
Part of body injured	Deviation
Geographical location	Material agent of Deviation
Date of the accident	Contact – mode of injury
Time of the accident	Material agent of Contact - Mode of injury
Size of enterprise	
Nationality	
Employment status	
Days lost	

6.2.2 European Occupation Diseases Statistics (EODS)

The European Occupational Diseases Statistics (EODS) database contains harmonised data on occupational diseases from 2001 onwards. In the European Occupational Diseases Statistics (EODS), case-by-case data on occupational diseases recognized by the national authorities are provided by 22 Member States. The EODS contains the number of newly recorded occupational diseases and fatal occupational diseases during the reference year. Since the occupational origin has been approved by the national

69 KE-36-019-60EN-C. Available in: http://circa.europa.eu/Public/irc/dsis/hasaw/library

compensation authorities, the concept of occupational diseases is dependent on the national legislation and compensation practice. In Table 6.4 the EODS variables are presented.

The details of the EODS methodology are described in "European Occupational Diseases Statistics (EODS) – Phase I methodology", Eurostat working papers, population and social conditions 3/200/E/n°19"[70]

Table 6.4: Variables from the European Occupational Diseases Statistics (EODS), Phase 1 (first reference year: 2001)

VARIABLE
Case number
Country of emergence
Age
Sex
Occupation at time of harmful exposure
Economic activity of employer at time of harmful exposure
European Schedule Reference No (new Schedule only)
Diagnosis
Severity of Disease
Exposure: short or long list
Exposure: use categories
Year for the first recognition
Severity of Disease for first recognition
Total

6.3 European Working Conditions Survey (EWCS)

Every five years, the European Foundation for the Improvement of Living and Working Conditions (EFILWC or Eurofound) conducts a survey to study working conditions in Europe[71]. Until now, the survey was carried out in 1990/91, 1995/96, 2000 (extended to cover the 10 new member states, Bulgaria, Romania and Turkey in 2001/2002) and 2005. Fieldwork for the 2005 European Working Conditions Survey was carried out in all EU25 countries (plus Bulgaria, Romania, Turkey, Croatia, Norway and Switzerland) during autumn 2005. The surveys give an overview of the state of working conditions throughout Europe, and indicate the extent and type of changes affecting the workforce and the quality of work. The recurring nature of the survey gives a picture of trends in working conditions throughout Europe. Topics covered in the survey include working time, work organisation, pay, work-related health risks and health outcomes, and access to training. The survey provides for a rich source of data on harmful exposures, as well as information on health complaints affected by work, and absence due to work-related health problems and occupational accidents. Results can be compared to the data of the Labour Force Survey.

The fourth European Working Conditions Survey (EWCS) was carried out in 2005 and almost 30,000 workers were interviewed. In each country about 1,000 interviews were carried out except for Cyprus, Estonia, Luxembourg, Malta and Slovenia with about 600 interviews per country. Analysis of this data source provided us with relevant additional information regarding the type of harmful exposures at

70 Available in http://circa.europa.eu/Public/irc/dsis/hasaw/library

71 www.eurofound.europa.eu/ewco/surveys

work. Moreover, information on trends can be derived by studying several editions of the survey. Variables from the EWCS that are relevant for this research are presented in Table 6.5.

RELEVANT VARIABLES FROM THE EWCS

Exposure at work to ambient conditions (vibrations, noise, high temperatures, low temperatures, breathing smoke, fumes, powder or dust etc., breathing vapours, handling or being in skin contact with chemical products or substances, radiation, tobacco smoke, handling or being in direct contact with materials which can be infectious)

Ergonomic working conditions (job involves: tiring or painful positions, lifting or moving people, carrying or moving heavy loads, standing or walking, repetitive hand or arm movements)

Job demands (work involves: working at very high speed, working to tight deadlines)

Violence, harassment and discrimination (over the past 12 months subject at work to: threats of physical violence, physical violence from people from the workplace, physical violence from other people, bullying/ harassment, sexual/gender discrimination, unwanted sexual attention, age discrimination, discrimination linked to nationality discrimination linked to ethnic background, discrimination linked to religion, discrimination linked to disability, discrimination linked to sexual orientation)

Health or safety at risk because of work

Work affects health

Way it affects health: hearing problems, problems with vision, skin problems, backaches, headaches, stomach ache, muscular pains in shoulder, neck and/or upper/lower limbs, respiratory difficulties, heart disease, injury(ies), stress, overall fatigue, sleeping problems, allergies, anxiety, irritability, other

Absence days for reasons of health problems (over the past 12 months)

Absence days attributable to: accident(s) at work, health problems caused by your work

Satisfaction with working conditions

6.4 Risk Observatory

The European Agency for Safety and Health at Work has set up a Risk Observatory[72] to draw attention to new and emerging risks and to enable preventive actions.
The goal of the Risk Observatory is to provide an overview of:
a. health at work in Europe,
b. a description of the trends and underlying factors,
c. a description of the risk factors, and
d. anticipation of changes in work and their likely consequences on health.
The Observatory intends in particular to draw attention to new and emerging risks and enables to set up preventive action. The monitoring and forecasting activities are based, as far as possible, on the collection, analysis and consolidation of existing empirical data from national and international data sources. Next to the collection of statistical data, the Observatory also provides more qualitative information to support the identification of new and emerging risks, for instance collected by means of expert forecast and research reviews. The data of the Risk observatory are partly data from European sources such as Eurostat (LFS, ESAW, EODS) and Eurofound (EWCS), but also national representative research and statistical databases are used in order to provide for a more integrated picture. This makes the

72 osha.europa.eu/en/riskobservatory

information in the Observatory explicitly useful for comparison and extraction of background information. The main entry point to the Observatory is via several topics, like for instance noise.

6.5 European Survey of Enterprises on New and Emerging Risks (ESENER)

EU-OSHA's Europe-wide establishment survey[73] asks the responsible actors (managers and workers' health and safety representatives) about the management of health and safety risks at their workplace, with a particular focus on psychosocial risks; i.e. on phenomena such as work-related stress, violence and harassment. The survey aims to assist workplaces across Europe to deal more effectively with health and safety and to promote the health and well-being of employees. It provides policy makers with cross-nationally comparable information relevant for the design and implementation of new policies in this field.

The survey, which involves approximately 36000 interviews and covers 31 countries is asking questions directly to managers and employee representatives about the way occupational safety and health (OSH) is managed and includes a separate interview directed at health and safety representatives. The methodology and specifications used by ESENER are in line with those used in the establishment surveys of the European Foundation for the Improvement of Living and Working Conditions (Eurofound), which offers the possibility of combining the data.

73 www.esener.eu

Abbreviations, codes and classifications

Abbreviations

EODS	European Occupational Disease Statistics
ESAW	European Statistics on Accidents at Work
EWCS	European Working Conditions Survey
ISCO	International Standard Classification of Occupations
LFS	Labour Force Survey
NACE	Nomenclature statistique des activités économiques dans la Communauté européenne (Statistical Classification of Economic Activities in the European Community)

Symbols

%	Percent	u	Reliability limit for publication not satisfied

Country codes EU 27

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

Acceding country

TR	Turkey

Other country codes

HR	Croatia	NO	Norway

Country aggregates

EU	European Union
EU15	BE, DK, DE, EL, ES, FR, IE, IT, LU, NL, AT, PT, FI, SE, UK
EU25	EU15 plus CZ, EE, CY, LV, LT, HU, MT, PL, SI, SK
EU27	EU25 plus BG, RO

Economic activity (NACE)

NACE1D	Section of NACE	NACE 3 digit
Agriculture, hunting and forestry	A	010 to 020
Fishing	B	050
Mining and quarrying	C	100 to 145
Manufacturing	D	150 to 372
Electricity, gas and water supply	E	400 to 410
Construction	F	450 to 455
Wholesale and retail trade, repair	G	500 to 527
Hotels and restaurants	H	550 to 555
Transport, storage and communication	I	600 to 642
Financial intermediation	J	650 to 672
Real estate, renting and business activities	K	700 to 748
Public administration and defense; compulsory social security	L	750 to 753
Education	M	800 to 804
Health and social work	N	850 to 853
Other community, social and personal service activities	O	900 to 930
Private households with employed persons	P	950
Extra-territorial organizations and bodies	Q	990

Occupation (ISCO)

Classification used	Major group of ISCO-88	ISCO-88 4 digits
Highly skilled, non-manual	1, 2, 3	1100 to 3480
Low skilled, non-manual	4, 5	4100 to 5220
Highly skilled, manual	6, 7	6100 to 7442
Low skilled, manual	8, 9	8100 to 9330
Army	0	0100

European Commission

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Health and safety at work in Europe (1999–2007)

A statistical portrait

This report presents a statistical portrait of health and safety at work in Europe from 1999 to 2007. It focuses on accidents at work, work-related health problems, occupational diseases and exposure to risk factors at work.

The publication aims to support the Community Strategy of the European Commission to improve health and safety at work in Europe. One of the main objectives of EU social policy is the creation of more jobs and jobs of better quality. A safe, healthy working environment is a crucial factor in the individual's quality of life and is also a collective concern. Member State governments across the EU recognise the social and economic benefits of better health and safety at work.

Data from different European surveys and register based statistical systems are presented in this report, including the Labour Force Survey (LFS) (more specifically the ad hoc modules on safety and health at work), European Statistics on Accidents at Work (ESAW), European Occupational Diseases Statistics (EODS), the European Survey on Working Conditions (EWCS), and the European Survey of Enterprises on New and Emerging Risks (ESENER).

http://ec.europa.eu/eurostat

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