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Challenges in occupational safety and health from the global market economy and from demographic change—facts, trends, policy response and actual need for preventive occupational health services in Europe

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The last few decades of increasing globalized trade have led to profound changes in enterprise structure and organization. Among the negative effects of global competition and deregulation are the increasing fragmentation of work, the rise of unemployment, informal sector economy, and migration. Decreasing fertility and rising longevity in industrialized nations severely strain social security systems and require measures to decrease the economic dependency ratio (job creation, increased participation of women, extension of worklife, etc). The prolongation of worklife is dependant on good health. Age-related health disorders such as musculoskeletal problems are increasing and have become the leading cause of absenteeism and cost. Better prevention will require an integrated management of safety and health determinants at work that is supported by all stakeholders of organized civil society.

Key terms aging; demographic change; occupational health services; globalization; musculoskeletal disorders.

Major demographic changes in 19th century Europe—the Industrial Revolution, increasing urbanization, disappearance of the "extended" family, and a marked increase in life expectancy—and the social consequences thereof have provoked the introduction of most of the elements of the public social protection system as we still know it today in Europe (old age, disability, health and unemployment insurance, family allowance, worker's compensation, etc). In some cases, occupational health services were introduced at factories even earlier. Major concern at the time were accidents and occupational diseases in the chemical industry and coal mining along with the soon-to-be-prohibited child labor—all of which were fought by introducing and improving safety measures and close medical surveillance of the workforce. The company physician and safety engineer soon found their external counterparts in public labor inspection services. How these services—occupational health services and labor inspectorates—should be structured and function has received much attention ever since and was finally codified into tripartite international labor law, for example, ILO conventions no C 161 (on occupational health services) and no C 81 (on labor inspection) (1). Although not all European countries have ratified these conventions, they are nevertheless widely reflected in national legislation and also in supranational European legislation and current community strategy on health and safety at work.

While occupational health services in the early years were clearly a company bonus (as were subventions for housing and meals) in order to create a dependable stable workforce, it soon became an agreed principle that every worker should have access to such services. The tripartite European Council Framework Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work states nothing less and should have paved the way for equal occupational health services for all workers alike, independent of company size. Despite the tripartite legislative basis, the general transposition into the national legislation of all European member states, and the considerable efforts of all stakeholders of organized civil society, the goal has obviously been achieved, or nearly so, in only a minority of member states. It may then be sensible to ask both why this is the case and where we should go from here.

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Widespread trade liberalization and the rapid expansion of world trade over the past two decades have led to unexpected structural changes that have altered work-life profoundly and brought uncertainty and insecurity to enterprises and the workforce alike. Well-known features include organizational changes allowing for more flexibility to facilitate immediate adaptation to changing market demands (outsourcing, flexible worktime and contracts, etc), a sweeping fragmentation of enterprises rendering the delivery of occupational health services in classical factory style virtually impossible, and, last but not least, an increase in unemployment, underemployment, parallel economies, and strained social security systems.

The overriding need to create jobs to balance and stabilize the economy and also social protection at the highest level possible, combined with a gradual disappearance of classical occupational perils such as child labor, chemical poisoning, and severe accidents, seem to have created a silent accord to leave health issues to the (informed) worker, safety issues to the (informed) responsible employer, and otherwise to promote occupational safety and health as an integral component of high-quality work (2). While these safety-oriented strategies are well underway, "new" work-related diseases of complex etiology—notably musculoskeletal and psychosocial disorders—have surfaced and are now disrupting the work routines of a purposefully slimmed-down workforce. Understandably these disorders are met by employers with considerable suspicion and a certain reluctance to resume the responsibility and associated costs.

Globalization of trade

Since 1990 when globalization became most pronounced, global per capita growth has slowed to around 1% over the last decade compared with over 3.5% in the 1960s. The gap between per capita incomes in the richest and poorest countries has never been wider, increasing from 50 to 1 in the 1960s to over 120 to 1 today. In 1962 the average per capita income in the poorest 20 countries was USD 212, and it has increased slightly to USD 267. The comparable figure for the richest 20 countries in the early 1960s was USD 11 417, and it has tripled to USD 32 339.

Globally, unemployment is at its highest level ever, and over 1 billion people are either unemployed, underemployed, or "working poor", unemployment rates being highest in the age group 15–24 years and in developing countries (3).

On the global market, production lines are easily moved to countries with a less expensive workforce and less stringent regulation, creating local jobs and income but often also new health risks. Lack of work and fear for life cause massive migration from poorer less unstable countries to more affluent ones. The International Labour Organization estimates that, in the year 2000, there were over 86 million economically active migrants worldwide; for the same year United Nation statistics show 175 million people residing outside their country of birth or citizenship (4). The net immigration into the European Union is steadily increasing and has reached an estimated rate of 4.5 per 1000 inhabitants for the current 25 members of the European Union (EU-25) (EU-15 rate: 5.3; Euro-zone rate: 5.7) in 2003 (5), and it is the largest for Spain (17.7 per 1000 inhabitants), where industrial accident rates have continuously increased since 1994 to comparatively high levels, as have precarious and temporary employment.

Small and medium-sized enterprises

The vast majority of enterprises in Europe are small or medium-sized (99.8%). In 2003 there were more than 19 million enterprises in the then-existing 19 member countries of the European Union (EU) providing a job for almost 140 million people, while there were only about 40 000 large enterprises in existence, accounting for only 0.2% of all enterprises. The typical European firm is a micro-firm providing a job for an average of 7 persons (6).

Employment situation and work conditions in Europe

By the end of 2004, 63.7% of the working age population (15–64 years of age) held a job or other business activity in the EU-25 with an employment rate of 71.4% for men and 56.1% for women. Activity rates for young workers and workers aged 55–64 years were considerably lower (37.8% and 40.6%, respectively, both with a similar male-to-female gradient) (7).

Especially in the Eastern European countries, the participation rates of the labor force have fallen sharply and to very low levels. The privatization of state-owned enterprises had a predominantly negative impact on employment, given the need for restructuring and the elimination of excess labor. Increasing market pressure and competition had a similar effect. The creation of small new enterprises has been an important source of new jobs, while, at the same time, large economies emerging in the informal sector are considerably masked in official statistics due to the efforts of the

self-employed to avoid paying taxes and the attempts of the unemployed to compensate for their loss in the presence of weak social welfare schemes.

The increasing fragmentation of work and the informalization of employment is often accompanied by increased employment insecurity and a reduction in the coverage of labor protection and protection systems. The development is reflected in the self-reported perception of work conditions in the European Union (8, 9). While most workers perceive themselves as socially integrated (68% of EU-25, 69% of EU-15), 12% of the population in the first 15 EU countries (EU-15), and 14% in the new member states and acceding countries consider themselves to be outsiders (Bulgaria 29%, Turkey 34%). Unemployed people and people with financial difficulties are much more likely to feel socially excluded (10).

Work in the informal economy provides employment and income; however, safety, health, and environmental hazards are particularly evident in the informal sector and even in many small enterprises. Poor work conditions are interrelated with poor work practices and often poor living conditions. Accident rates are considerably higher in small enterprises. Unemployment, poverty, and social exclusion are interrelated with ill health and a decreased life expectancy that cannot be fully explained by adverse lifestyle habits (11).

The type of employment contract is a key factor associated with the incidence of occupational injuries. Temporary employees are three times more likely than permanent employees to suffer from nonfatal injuries, especially in the construction industry, and twice as likely as permanent employees to suffer a fatal accident (12).

Accidents

In the European Union, serious accidents at work that result in more than 3 days of absence and fatal accidents at work have decreased steadily. Between 1994 and 2001, serious accidents decreased by 15% and fatal accidents by 31%. In 2001, about 4.7 million serious accidents occurred at work in the European Union (13).

Work-related diseases

The magnitude of and trends in the development of occupational diseases in the EU 25 are not easy to assess and interpret; a comparison between countries is even more difficult for various reasons (definition, national regulation, insurance schemes, misclassification, underreporting). ILO estimates a proportional cancer mortality of roughly 55% for established market economies, followed by 26% for circulatory diseases and 6% for respiratory diseases.

The concept of work-related disease is, however, wider, and it includes all ill health caused or aggravated by occupational factors irrespective of the original cause. Musculoskeletal disorders, stress-related ill health, and allergies play increasingly important roles in absenteeism. Causative factors are poor ergonomic work conditions and poor work organization as much as individual characteristics (inherited factors, lifestyle habits, age).

Eurostat has estimated that, during the period 1998 to 1999, almost 8 million people working or having worked in the EU-11 were suffering from health disorders, other than accidental injuries, caused or aggravated by their current or past employment (14). Of these people, 53% had musculoskeletal disorders, which are more frequent in the construction, transport, and health and social sectors, the prevalence in these sectors being 1.2 to 1.6 times higher than the average. Stress, depression, or anxiety represent 18% of the problems, 26% involving 2 or more weeks' absence from work, the rate being double in education and health and social work. During the same period, an estimated 350 million workdays were lost each year in the European Union owing to work-related health problems (in addition to almost 150 million workdays lost due to accidents at work).

German data provide insight into the associated loss in production and national income, musculoskeletal disorders accounting for approximately 25% of the loss (figure 1) (15). Incidentally, age ranks high among the factors contributing to the development of work-related musculoskeletal disorders (figure 2).

Demographic change

The EU population is aging, and old-age dependency rates will increase. Life expectancy is growing, and mortality is increasingly concentrated among the older age groups. As in other industrialized nations, fertility has declined since the late 1970s to below the so-called replacement rate of 2.1 (16). The share of the working-age population (15–64 years of age) in the total population is expected to decrease strongly in the EU-25 countries, from 67.2% in 2004 to 56.7% in 2050, corresponding to 52 million working-age inhabitants, while, on the other hand, the proportion of elderly people (aged 65 years or more) is expected to increase substantially, from 16.4% in 2004 to 29.9% in 2050. This change implies that, whereas in 2004 there was one economically inactive person for every two persons of working age, in 2050 there will be three economically inactive persons for every four working-age persons (17).

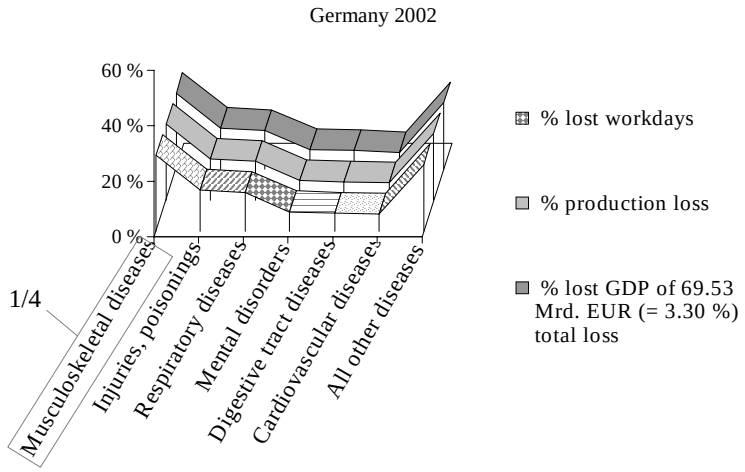

Figure 1. Sickness absence by diagnosis and effect on production and national economy in Germany in 2002.

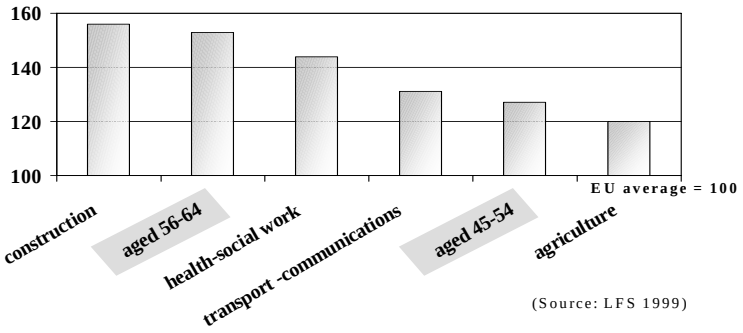

Figure 2. Categories with the highest risks of work-related musculoskeletal disorders (MSD) causing absence from work of ≥2 weeks.

The social and economic consequences of the demographic shift are well known (18). In order to alleviate pressure on pension systems by creating a more-balanced ratio between economically active people and dependent people, the following routes for action are open: (i) increased participation of women, (ii) prolongation of worklife, (iii) replacement migration, (iv) inclusion of the informal economy, and (v) increased job creation (small and middle-size enterprises, part-time work). These strategies, all reflected in EU policy, not only favor skill maintenance or up-grading measures, but also entail several health considerations.

First, for example, women differ from the standard male worker aged 20–40 years in many ways. The work organization has to be adapted and to take into account a better integration of family and worklife. Stress-related disorders are known to be favored by divergent obligations.

Second, employability depends on skills and on health. In addition to needing educational upgrading throughout their worklife (lifelong learning), elderly workers require health surveillance and counseling to promote a healthy lifestyle, since the incidence of common health disturbances (cardiovascular diseases, musculoskeletal diseases, cancer, mental health problems, and neurodegenerative diseases such as Alzheimer's) increases with age. Often a closer adaptation of the individual workplace may be required, likely best to be accomplished by direct communication between the employer and occupational health service.

Third, the integration of migrants into society and worklife is a major problem in many European countries. Poor linguistic (and professional) skills often result in poor quality of work employment in terms of high demands, low control, and failed contractual fairness that are known to be associated with premature morbidity and mortality from accidents, cardiovascular diseases, depression, alcohol dependence, and other health risks. Skill improvement, health surveillance, and promotion measures are essential tools of prevention.

Fourth, improvement in work conditions and the surveillance of workers' health are extremely challenging in small enterprises, for temporary workers and in the informal economy. Effective preventive health services, nevertheless, require a link between individual health and work environment information.

A predominantly safety-oriented approach to occupational safety and health (widespread use of integrated Management Systems for Occupational Safety and Health corresponding to ILO guidance (19) and efficient knowledge management) may be judged as crucial for establishing basic "certainties" in a world of global uncertainty, carelessness, and neglect. While reinforcing established good practice and responsibility, these

instruments, however, do not sufficiently address the complexity of work-related health issues brought on by the demographic changes of the 21st century. The continuing trends towards flexibility and fragmentation in worklife, as well as towards postponing retirement age, will require complementary strategies and action on the part of a wide range of stakeholders (government, employers, trade unions, occupational safety and health professionals, the general health services system, insurance and training institutions, the local community, non-government organizations) to ensure a diverse and healthy workforce and stable pension funds through an integrated management of safety and health determinants at work.

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