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Monografia

I contesti della promozione della salute: il lavoro

Monitoring work and health in Europe

Monitorare lavoro e salute in Europa

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SUMMARY

Introduction: the world of work and public health are tightly interconnected. With respect to loss of life years, WHO and the World Bank attribute 3% to the work factor. Estimates from Denmark suggest that working conditions cause 20% of total morbidity, 33% of musculoskeletal disorders and 45% of skin diseases.
Objectives: describe a practical, quick and easy to handle European monitoring system in order to assess the policies impact on health.
Methods: the model of political cycle includes process and result indicators. All possible data sources and indicators used have been collected at European and national level and analyzed by a group of experts.
Results: the list of indicators includes: accidents at work; occupational diseases; work-related health risks; sickness absence; disability; disease occurrence; job quality; health promotion activities at the workplace; rehabilitation/reintegration; compliance with OSH regulations, and expenditures on occupational health & safety measures.
Conclusions: the indicators suggested are now included in the Commission's list and will be used in the near future. However, there are still challenges to be addressed in the field of work-related health monitoring in Europe, particularly enhancing the data available at European level.

Parole chiave: monitoraggio, salute, luoghi di lavoro, Europa

RIASSUNTO

Introduzione: il mondo del lavoro e della salute pubblica sono strettamente interconnessi. Per quanto riguarda la perdita di anni di vita, l'OMS e la Banca Mondiale attribuiscono il 3% al fattore lavoro. Le stime provenienti dalla Danimarca suggeriscono che le condizioni di lavoro causano il 20% di morbosità totale, il 33% di disturbi muscolo-scheletrici e il 45% di malattie della pelle.
Obiettivi: descrivere un sistema di monitoraggio della salute di livello europeo pratico, veloce e facile da gestire al fine di valutare l'impatto sulla salute delle politiche.
Metodi: il modello di ciclo politico comprende indicatori di processo e di risultato. Tutte le possibili fonti di

dati e gli indicatori utilizzati sono stati raccolti a livello europeo e nazionale e analizzati da un gruppo di esperti.
Risultati: l'elenco degli indicatori comprende: infortuni sul lavoro; malattie professionali; rischi per la salute legati al lavoro; assenze per malattia; disabilità; insorgenza della malattia; qualità del lavoro; attività di promozione della salute nel luogo di lavoro; riabilitazione/reinserimento; rispetto delle norme di SSL; spese per la salute sul lavoro e misure di sicurezza.
Conclusioni: gli indicatori proposti sono ora inclusi nella lista della Commissione e saranno utilizzati nel prossimo futuro. Tuttavia, ci sono ancora sfide da affrontare nel campo del monitoraggio sanitario legato all'attività lavorativa in Europa, specificamente la necessità di migliorare i dati disponibili a livello europeo.

Introduction

It is increasingly realised that the world of work and public health are tightly interconnected. This is emphasised by the following figures: Estimates from Denmark, published by the Nordic Council, suggest that working conditions cause about 20% of total morbidity, with for example 33% for musculoskeletal disorders and 45% for skin diseases (1). With respect to loss of life years, WHO and the World Bank attribute 3% to the factor work (2). In this way, suboptimal working conditions may also be a considerable cost factor to modern societies. The International Labour Office estimates that work-related diseases and accidents account for economical losses as high as 4% of the world-wide gross domestic product (3). The consequences of poor employees' health in terms of costs arising for the employer (e.g. with regards to lost workdays or productivity losses) have been extensively discussed elsewhere (4,5).

Against this background, the world of work was recently brought into the centre of attention of the European Commission's health monitoring activities. To address the need for a health monitoring system that adequately reflects the impact of work on public health, the WORKHEALTH project ("Establishment of indicators for work-related health monitoring in Europe from a public health perspective") was launched. The aim of the project, as the title suggests, is to establish indicators which can be used in a future work-related health monitoring system at a European level. In traditional public health monitoring schemes at European level, the world of work had so far played only a minor role. On the other hand, traditional monitoring systems from the occupational health and safety perspective usually focus on "traditional" aspects such as occupational diseases and work accidents (although the scope of occupational health and safety has recently broadened considerably).

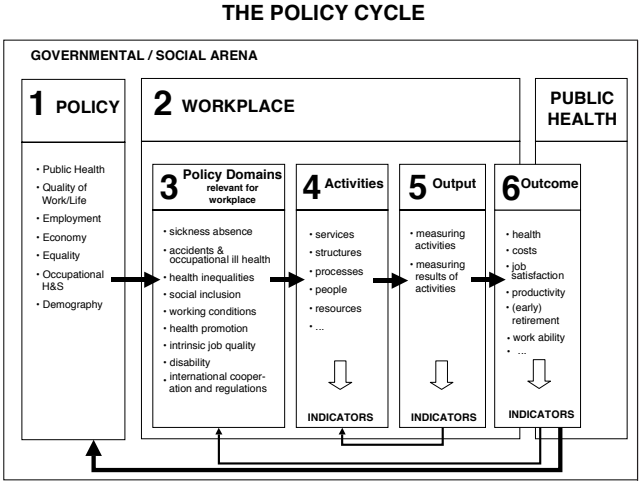
One of the major concerns in this project was to stress the importance of taking an intersectoral approach, which is why in addition to the experts from public health science, there were also experts in the group representing the fields of occupational health and safety, labour inspectorates and social insurance institutions. This ensured that the different professional groups that have an interest in work-related health monitoring were represented in the project and contributed to

the project with their specific expertise.
Work-related health monitoring aims to provide an overview on the health status of the labor force from which the necessary action can be determined, priorities set and recommendations made for activities which address issues relevant to work-related health. Health monitoring can and should be used as tool by politicians to set specific targets and to control the implementation of these targets.

Material and methods

The concept and purpose of "work-related health monitoring from a public health perspective" as defined in the WORKHEALTH project is best described as a policy cycle model, which means that health monitoring is thought to evaluate the health impact of policies and includes indicators on output and outcome (Figure 1).
This model puts the field of work and health

Figure 1 - The policy cycle model of work-related health monitoring from a public health perspective



in the context of the wider political environment: The governmental/social arena sets out policies covering a wide range of fields, including public health, quality of work & life, employment, economy etc. *(1)*. This list is, of course, not exhaustive. Those policies which subsequently have a substantial impact on the setting "workplace" *(2)* and the outcome "health" are relevant for work-related health monitoring.
Some aspects of the general policy domains *(3)* in Figure 1 apply to the work setting, for example sickness absence. These policies create a wide range of activities *(4)* at workplaces. Depending on the policy domain, these activities relate to changing structures and processes at the worksite or provide new services and resources such as training people etc. Output indicators *(5)* evaluate these activities (i.e. processes). They may for example report the number of people trained. As well as just describing the activities carried out, the output indicators also assess the direct effect of the activities (e.g. the knowledge gained by the employees through training or the noise levels at the workplace) which ultimately have an impact on (public) health as the outcome *(6)* of the policies. There are

feedback loops inherent in this model which establish the policy cycle: The knowledge about effects on the health outcome provides feed-back on workplace policies as well as on the super ordinate policies. Additionally, within the workplace, the information provided by output indicators may have an impact on the activities carried out.

For example, the policy domain "improving working conditions" could deal with noise reduction aspects. Several activities are possible here, for example replacing machines with low noise models and installing sound insulation. The percentage of employees exposed to noise above 85 dB could serve as an output indicator. A relevant outcome parameter would be the reduction in noise-induced hearing loss.

This policy cycle serves as the theoretical model for work-related health monitoring. Relevant policies for work-related health monitoring are:

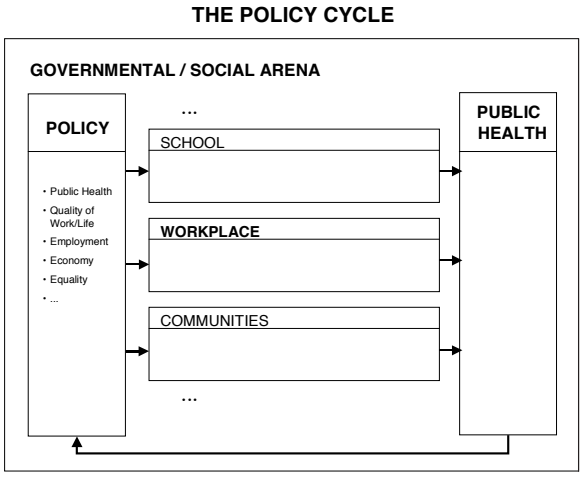
- optimising sickness absence management
- prevention of accidents at work & occupational ill health

combating health inequalities[a]

- promoting social inclusion
- improving working conditions
- advocating health promotion
- increasing effectiveness of disability management
- enhancing intrinsic job quality (job satisfaction)
- enhancing agreement on international co-operation and regulations

A similar course of action can be envisaged for different settings, such as the workplace, communities or schools, where high level strategic policies are adapted to the specific settings and relevant activities are introduced which ultimately have an influence on the people in those settings and on public health in general (figure 2).

Figure 2 - The policy cycle in different settings.



[a] In public health, often the term "inequity" is used to refer to differences in health which are unnecessary and avoidable and are also considered unfair and unjust. In this project, following the wording of the European Commission in the public health programme (6), the term "health inequalities" is used.

Results

Responding to the political request for a practical, quick and easy to handle basic health monitoring system on European level, a short list of indicators for work-related health monitoring in Europe from a public health perspective was agreed upon in the WORKHEALTH project.

These indicators are a selection from a comprehensive list of indicators which included virtually all indicators used at European and international level which are relevant for work-related health monitoring. In this list, indicators from relevant initiatives such as the European Survey on Working Conditions (7), the indicators related to health from the Quality of Work-concept (8) by the European Commission, the indicators proposed in the concepts Health, Environment and Safety Management (9) as well as in the Work and Health Country Profiles (10) by WHO Europe, and all work-related from the ECHI-project are compiled (11).

However, in the absence of scientific regulations for deriving short lists from comprehensive compilations, health and health system outcome indicators were chosen which reflect the effects of working conditions. This means that the indicators partly need to be stratified by economic sectors and occupations in order to illustrate how diseases are related to work. Work-related health monitoring according to the proposed shortlist can give a rough indication of where national and European problems lie with respect to health at work. As a result it is possible to make a more detailed analysis from which action plans can be derived.

In the following, the indicators proposed are described in more detail.

Table 1 - WORKHEALTH short list of indicators

Indicators	*data available at European level**
Accidents at work	X
Occupational diseases	X
Work-related health risks	X
Sickness absence (by diagnosis)	X
Disability	X
Disease occurrence**	--
Job quality	(X)
Health promotion activities at the workplace	--
Reintegration/rehabilitation	(X)
Compliance with OSH regulations	--
Expenditures on occupational health & safety measures	--

* X = data available, (X) = only fragmented data available, — = data not available

** The indicator gives morbidity by WHO (ICD) main groups. This is partly already included in the ECHI short list. From the WORKHEALTH point of view it is essential that morbidity is stratified by occupations and economic sectors. To our knowledge, such information is not available at the moment.

Accidents at work

In the Eurostat ESAW project, an accident at work is defined as "a discrete occurrence in the course of work that leads to physical or mental harm" (12). This definition includes accidents occurring in the course of work but outside the business premises, also those caused by a third party, and cases of acute poisoning. It excludes accidents on the way to or from work, occurrences of a medical origin, and occupational diseases. A "serious accident" is one that leads to more than three days' absence (excluding the day the accident occurred), a "fatal accident" leading to the death of the victim within a year (after the day) of the accident. Data can be calculated as an annual index (with base year 1998=100) of the incidence rate. The incidence rate of serious accidents at work is the number of accidents at work resulting in more than three days' absence per 100.000 persons in employment. The incidence rate of fatal accidents at work is defined accordingly. These incidence rates are calculated for the total of the so-called nine common branches. Because the frequency of work accidents is higher in some branches (high-risk sectors), an adjustment is performed to acquire more standardised incidence rates. The data collection started in 1994 (pilot collection in 1993). The data collection in the new Member States started in 2002, retrospectively from at least 1998 as a year of reference.

Occupational diseases

Occupational diseases, in a strict sense, are those diseases for which the occupational origin has been approved by the national compensation authorities (13). Obviously, this is dependent on the national legislation and compensation practice. Compensation is usually restricted to those cases for which the occupational factor is the only or the most important cause. Eurostat has collected data on recognised occupational diseases in Europe since 2001 (14) although problems of comparability between countries are inherent to this concept, as legislation and compensation practice differs between the Member States. Data are given as an incidence rate of occupational diseases per 100.000 workers covered by the recognition systems. One of the major problems in interpreting these data are the unsatisfactory comparability and underreporting aspects especially for occupational diseases that take decades to develop, such as some respiratory diseases (13).

Work-related health risks

The indicator "work-related health risks" reflects the subjective assessment of risks at the workplace. Data are provided by the European Survey on Working Conditions (7) which in 1990, 1995, 2000 and 2010 included the question "Do you think your health or safety is at risk because of your work, or not?". In the last survey, 27% of the workers considered their health and safety to be at risk, with the highest prevalence in the construction sector, followed by agricultural and fishing workers and those in the transport industry.

Sickness absence

Is a major indicator which provides information on the health status of the employees. Sickness absence figures are often used for example to reveal the need for preventive activities if absence rates are high. At a national level, absence rates are usually examined according to economic sectors to determine what action is necessary. It is also common to consult absence rates at company level in order to determine which de-

partments should be targeted by health promotion activities. The effectiveness of health promotion activities is then often evaluated by the changes in sickness absence rates. Because of the difficulty in comparing social insurance data across the Member States, sickness should be monitored on European level by using the data from the European Labour Force Survey (15). It assesses, with regard to a reference week, if employees were absent from a job or business due to "own illness, injury or temporary disability". The illness is not further specified, i.e. no diagnosis etc. is given. It has to be noted, however, that sickness absence rates not only reflect the actual health status of employees. To some degree, they also depend on national sickness absence and disability regulations, e.g. the length of sickness absence before disability allowance is paid, or could be influenced by social security system incentives (e.g. amount of the sickness benefits). They reflect macroeconomic changes as well, as sickness absence rates for example usually drop with high unemployment rates. This can be attributed to the fact that older and less healthy workers are no longer in employment and that people who feel ill choose to go to work rather than risk losing their job.

Disability

One of the most complex entities in all health related outcomes (16). According to the WHO definition, this term refers to impairments, activity limitations and participation restrictions. At the same time the term describes a status defined in social legislation which is often associated with the premature termination of professional life and subsequent costs to society. Due to the complexity of definitions and differences in practices in the Member States, the comparability of this very important issue is limited at the moment and further standardisation is required. The data provided by the Labour Force Survey (17) and the European Community Household Panel (18) may serve as a preliminary assessment of this issue. For example, figures on the relative probability of being in work for those with moderate or no disability, compared to those with severe disability may reflect the degree of social integration of those with a disability in the labour force in the different Member States (19). The Labour Force Survey ad hoc module 2002 (17) also enables an analysis to be made of the percentage of disabled persons by occupational class or economic sector.

Disease occurrence

This indicator gives morbidity by WHO (ICD-10) main groups stratified by occupations and economic sectors. By stratifying morbidity, the most prevalent diseases suffered by people working in specific occupations and economic sectors become visible, and show the need for preventive action. The stratification also shows how the diseases are related to work: Where a high frequency of disease is prevalent in specific jobs or sectors, it could be seen as an indication of the association between the working conditions in these jobs and morbidity.

Morbidity as such – without the suggested stratification – is already included in the ECHI indicator system (11). To our knowledge, however, no data on morbidity are available at the time being which provide the information necessary for the stratification according to occupations and sectors.

Job quality

Throughout Europe "having a good job" is

ranked as the main factor for a good quality of life. (20) And although the employed enjoy a better quality social life than the unemployed, the quality of job also plays a role: People who work overtime, in high intensity jobs, or in jobs that are physically or psychologically demanding, tend to rate the quality of their family life and social relations negatively. These factors and the degree of autonomy people experience at work also affect general life satisfaction (21).
However, measuring job quality is a complex issue. The European Commission's concept of quality of work contains a suggestion how to assess intrinsic job quality (22). Other methods for addressing the issue of job quality include assessment of working conditions, e.g. such as creating several indices for different aspects of working conditions as conducted by the European Foundation, where indices were established taking into consideration physical working conditions, psychological working conditions, work autonomy, work intensity and working time exceeding 48 hours (21).

Health promotion activities at the workplace
In the European Union workplace health promotion which aims to maintain and improve the health of employees is considered as an important public health issue. Therefore, the level of implementation of health promotion activities at the workplace should be monitored at a European level. Distinction should be made between comprehensive programmes, which according to recent literature reviews (23) are considered as most effective, and single programmes e.g. on smoking, physical activity, nutrition, stress management etc. By monitoring the existence of such programmes, it is possible to evaluate their impact and to identify where the implementation is still unsatisfactory and where relevant programmes are still needed.

Rehabilitation/reintegration
Activities for rehabilitation and reintegration at work after an accident or illness are important not only to the individual but also because of the economic burden placed on many countries in paying benefits to people off sick. It is important to obtain an overview of rehabilitation measures in the sense of best practice models (medical and also vocational rehabilitation) and models on reintegration measures (e.g. adapting workplaces). Legislation in the different countries should also be evaluated by its success on reintegration.

Compliance with OSH regulations
Occupational health and safety regulations are an important measure for protecting the workforce against occupational health risks. However, it is crucial that they are complied with. This can apply to enterprises which violate the legal provisions or on another level, can apply to the way in which Member States implement European regulations on occupational safety and health issues. The extent to which non-binding conventions such as those by ILO are ratified in different countries is another aspect.

Expenditures on occupational health & safety measures
An indicator showing expenditure on occupational health & safety measures (as % of total health expenditure or % of GNP/GDP), can include a variety of different measures and their costs: It could include expenditure by the national work inspectorate, expenditure for the accident insurance in the Member States or expenses carried by enter-

prises to implement OSH measures, or even expenses covered by employees themselves on their personal protective equipment. Comparability of such figures is obviously very limited due to the diverse organisation of European OSH systems. Trends should therefore be examined instead on expenditure developments in the Member States.

Availability and data comparability

Data availability was a major concern when selecting these indicators and an assessment of this is given in table 1 in the column on the right. Nonetheless, the list is not restricted to indicators for which comparable data are available at a European level immediately as this would have meant omitting aspects that are essential from the perspective of the project. Rather, it is hoped that this will stimulate the creation of appropriate data in the remaining areas.

The most important data sources are outlined briefly as follows:

For accidents at work and occupational diseases, data are collected at European level in the projects "European Statistics on Accidents at Work – ESAW" (12) and "European Statistics on Occupational Diseases – EODS" (14). The former data collection covers all accidents at work which lead to an absence of more than three calendar days and fatal work accidents. The latter project deals with occupational diseases and by collecting data from administrative sources in the Member States, aims to obtain gradually harmonised, comparable and reliable data and indicators on occupational diseases in Europe. Both projects try to tackle the problems of comparability arising from the fact that the underlying social law and administrative regulations differ considerably between the Member States.

The relevant survey picturing the world of work is the European Survey on Working Conditions (7) that has been carried out the European Foundation for the Improvement of Living and Working Conditions three times since the early nineties. It provides an overview of the state of working conditions in the European Union and at the same time indicates the nature and content of changes affecting the workforce and the quality of work – including the aspect of work-related health risks.

Data on sickness absence within a specific week are provided by the European Labour Force Survey (15) which aims to provide comparable statistical information on the level and pattern of and trends in employment and unemployment in the Member States.

For disability in connection with employment, a relevant source of information is the 2002 ad hoc module of the Labour Force Survey on employment of disabled people which was carried out in order to provide data for the European Year of People with Disabilities 2003. However, data on disability have been regularly provided by the European Community Household Panel (ECHP), (18) a longitudinal, multi-subject survey covering many aspects of daily life which began in 1994. It included a question on chronic physical or mental health problems, illnesses or disabilities and the negatives effects on daily activities which can be stratified by information on occupational classes and sectors of activities. The new instrument EU-SILC (Statistics on Income and Living Conditions) replacing the ECHP, also includes aspects connected to suffering from chronic (long-standing) illness or conditions and the resulting limitations on normal activities. Linked to these questions is information on the occupation and on the economic sector (24). For

some of the indicators listed, as mentioned above, it is still very difficult or hardly possible at all to get any reasonable data at European level. This applies specifically to the aspect of workplace health promotion activities, compliance with OSH regulations as well as expenditures on OSH measures and disease occurrence stratifiable by occupations and branches. Also for areas where data are available, comparability between Member States is a very challenging and complex issue. A central aspect of health monitoring is the analysis of data by regions. In Europe it is common practice to break down the figures by Member States. With the open method of co-ordination gaining ground also in the health sector, the practice of benchmarking between Member States can be expected to become more important in the coming years. Against this background, it is all the more crucial to be aware of the possible pitfalls in comparing the data suggested for work-related health monitoring (25,26).

With regard to problems in comparability, differentiation should be made between routine/administrative data and survey data. As mentioned earlier, underlying policy and administrative regulations determine occurring data to a considerable effect. An example for the field of work-related data is the issue of occupational diseases. The number and distribution of occupational diseases highly depends on the regulations concerning their recognition as such. Which diseases and under which pre-requisites are recognized as occupational, however, differs considerably between the Member States. Therefore the number of occupational diseases in a country reflects to a large extent the national regulations in this field rather than the actual prevalence of diseases. Against this background it must be accepted that there are still serious reservations about using European data concerning this issue. Nevertheless, the EODS project (14) is trying to tackle these problems and hopefully it will succeed in increasing the explanatory power of this data.

The situation is similar, although less pronounced, regarding accidents at work. Here, a major difference here between the Member States is the reporting procedure, i.e. in some countries benefit payments depend on the accident being reported to the insurer, whereas in other countries there is a legal obligation to notify accidents, although benefits do not depend on them being reported first. Consequently, while reporting levels in the former countries are thought to reach about 100%, they are much lower in the latter (usually 30 to 50%), with the consequence that Eurostat can only estimate the actual number of accidents occurring in these states (12).

Another very complex issue is the routine data on sickness absence often held by health insurers. They are attractive to use as they contain information not only on the precise number and length of the sickness periods for the insured individuals, but also on the cause of absence, usually coded in ICD terms. Yet there are big differences in the amount of social insurance data routinely available in the Member States. Comprehensive data exist in Germany, Austria or Sweden for example and virtually none in the Netherlands. There are other factors as well, in terms of regulations applied by the respective social insurance systems which – apart from the actual sickness – influence absence from work and the number of days people take off. These factors include length of qualifying period, income-related vs. flat rate benefits, necessity to provide a doctor's certificate, just to mention a few aspects

which raise the question of validity when making comparisons across countries. This situation was the reason why routine data are regarded critically as a data source for sickness absence in the WORKHEALTH project. One way of enhancing the comparability of administrative data to be mentioned is to compare trends over a period of time rather than using cross-sectional figures. Another option for health monitoring is to rely more on surveys rather than routine data. Data from surveys are usually regarded as less prone to external factors and more favourable for making comparisons between countries. The prerequisite here for cross-country comparisons is to pay the utmost attention to the wording and translation of the questions, yet there is still no guarantee that questions will be really understood in the same way by people of different cultures. An illustrative example of how linguistic issues and cultural difference influence the comparability across countries can be seen from the European Survey on Working Conditions on exposure to cold: In response to the question "How often are you exposed at work to low temperatures either outdoors or indoors?" the Greeks (44%) and the Portuguese (33%) reported the highest prevalence, whereas, the Finnish (19%) and Swedish (22%) interviewees for example reported less exposure (10). In spite of these cautions, surveys are in general a good source for gathering data which can to a large extent be compared between countries, and should be used if possible in preference to routine data.

Conclusions

During the last years increasing efforts were made, especially at the European level, to reflect the tight interconnection of work and health in public health monitoring activities. Significant progress was made towards a set of European indicators for health monitoring that adequately reflect the impact of work on public health. The indicators proposed by the WORKHEALTH are now included in the Commission's list of indicators which will be put into practice in the near future.

However, there are still challenges to be addressed in the field of work-related health monitoring in Europe. This specifically includes the necessity to enhance the data available at European level. To acquire reliable and comparable data, further surveys and standardised routine data will be necessary as well as further methodological approaches which should be developed for improving the harmonisation and comparability of the data.

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