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ASSESSMENT OF THE ROLE OF LIFESTYLES IN INFLUENCING WORKERS' HEALTH RISKS

Report on a WHO Consultation

Birmingham
28-30 June 1989

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Note

CONTENTS

The Consultation was convened at the Institute of Occupational Health, University of Birmingham, United Kingdom. It was organized by the WHO Regional Office for Europe and was attended by 16 temporary advisers from 9 European countries.

Scope and purpose

Many of the most common diseases affecting people of working age are associated with various lifestyles such as smoking, alcohol use, diet and drug abuse, and other non-occupational factors including heredity, physiological and pathological factors and various environmental conditions.

Our knowledge of the role of work-related and other factors that might underlie the deteriorating health of those of working age has remained rather limited. There is clearly a need to develop methods for assessing and quantifying the role of these various factors in the health of the working population. They are especially needed for developing effective means of preventing illness and for statistical analyses of occupational and public health importance. The Consultation was convened:

- to define the lifestyle and other major non-occupational factors that influence the risks to the health of those of working age;

- to assess the available information on causes;

- to estimate the impact of lifestyle factors on health risks on the working populations;

- to identify the main direction of preventive measures, gaps in knowledge and areas of research.

The Consultation recognized that the terms "occupational" and "non-occupational" are used very loosely in research and practice. The term "work-related diseases" adopted by the Joint ILO/WHO Committee on Occupational Health is better applied in comprehensive analyses of the relative role of various factors behind the major morbidity and mortality of those of working age. Clearly, for research purposes, this term must be capable of being understood and categorized in a practical way.

It was also recognized that in analysing the role of lifestyles or other factors in mortality and morbidity, one should concentrate not only on peoples' lifestyles but also on the reasons behind them, i.e. the factors leading to excessive drinking, smoking, etc.

The role of lifestyle and other non-occupational factors in occupational morbidity and mortality

The effect on the health of a worker of occupational exposure depends on his or her existing state of health. The many factors that are involved may react independently or may interact with the exposure. Though much has been written about the separate factors, comparatively little firm evidence is available regarding interactions.

The priorities are to establish the major causes of morbidity and mortality and to identify known lifestyle risks. The following non-occupational factors should be considered.

General	Lifestyle
Age	Smoking
Gender	Alcohol use
Genetic	Diet

Social class
Geography
Climate
Pre-existing disease
Drug use
Leisure activities
Personal hygiene

Statistics and research based on statistics as a source of information on occupational and non-occupational factors

Statistics that cover people of working age do not normally allow conclusions to be drawn on the role of occupational and non-occupational factors in morbidity and mortality. Some studies performed on the basis of statistics seem to indicate that the differences in morbidity and mortality of various occupational categories are great. Similar differences may also be found in the mortality or morbidity categorized by social class, education or level of income. Although it may be assumed that several lifestyle or other sociodemographic factors contribute to these differences, there is clearly an urgent need to develop an information system on the health of those who work and on the major sociodemographic factors.

Smoking

Various estimates have been made of the proportion of cancers attributable to occupational exposure. A review of several epidemiological studies on the risk of lung cancer attributable to occupational exposure found values ranging between 0% and 40%, with an average of 10-15%. Occupational lung cancer tends to be concentrated in relatively small groups of workers among whom the risk of developing the disease is high.

The estimated role of smoking in occupational health epidemiology has been based on the rate ratios of male lung cancer mortality. These estimates range from less than 20% to 45%.

Alcohol and health promotion

There are new developments in health promotion programmes at the workplace. A system of training of supervisors in dealing with alcohol problems was discussed on the basis of increasing knowledge of the use of alcohol and its consequences. Basic knowledge of the implications of alcohol misuse should be offered, using occupational health personnel, to allow staff to make informed choices. An agreed alcohol policy can be offered as a guide to discussion and consideration by any new employees. New educational techniques seem valuable tools in improving communication in any alcohol-related health programmes.

Statistics as information sources

Statistical sources available to epidemiologists vary from one country to another. Some countries, more developed in this respect, have registers ranging from national central population registers to specific registers covering such areas as cancer, inpatients and mortality. Some countries have also developed special occupational registers that allow links between the employment classification register and the national health-related register. With these facilities, specific studies have been pursued such as the relationship between occupational formaldehyde or wood dust exposure and nasal cancer.

Drugs and occupational health risks

Many prescribed drugs will interact with workplace chemicals and alcohol. Tranquillizers, benzodiazepines and sleep-inducing drugs are known to be potentiated by alcohol, organic solvents and other workplace chemicals. This can be important in that the effects of a single dose may last up to 20 hours. Workers who are driving or performing other skilled work need to be warned of the effects of their medication and identified. Discussion showed that there may be a need for biological monitoring of drug levels in certain occupations, such as airline pilots or workers in the nuclear power industry. Blood alcohol levels have also been screened, on some occasions in connection with accidents at work.

Diet, exercise and other factors

Diet affects the risk of ischaemic heart disease (IHD), particularly the fat content. Owing to biological variation, measurements of blood pressure and serum lipids must be made in series rather than as single measurements.

Physical fitness is difficult to measure, and the effects of exercise on IHD incidence are not clear. Available data suggest that vigorous leisure activity is beneficial but this is as yet unproven. The data available on the British Regional Heart Study on 8000 men are being followed up for eight years. The study includes computation of a risk score based on systolic blood pressure, smoking history, age, body mass index, pre-existing disease, diabetes and cholesterol level. It may serve as an example of how problems of this kind may be tackled.

Unemployment can cause considerable health-related problems, though much depends on whether it is due to redundancy or retirement, and on the age and social class of the individual. Further discussion centred around food: whether governments should have a healthy food policy, and whether manufacturers would change convenience foods into a healthier product. Canteens in factories can do much to help: there are examples where campaigns on heart disease prevention include recognition of canteens that provide healthy food. Special attention was drawn to various occupational groups such as shift workers who may be deprived of any choice of food. There is some evidence, for example, that an increase in IHD among night-shift workers is associated with the number of years employed, suggesting that poor diet may be a cause.

Positive health behaviour for health promotion at the workplace

Occupational psychosocial factors originate in work-related social structures and processes, and influence workers' health and wellbeing through four types of closely interrelated mechanism: emotional, cognitive, behavioural and physiological. The outcome is modified by situational factors such as social support, and by personal factors such as coping ability.

There is little direct evidence of a causal relationship between work- and non-work-related social structures and processes, various health-related lifestyles, and the incidence and prevalence of morbidity and mortality in workers. But a substantial body of indirect evidence strongly suggests that such associations exist and emphasizes the need for a better understanding of their role.

Accordingly, both the implementation of existing knowledge and complementary research approaches should aim at being systems-oriented, interdisciplinary, intersectoral, problem-solving, health- rather than disease-oriented, and participative.

Education and training

Details were provided of a course for occupational health specialists, physicians, general practitioners and other health workers. The course would enable them to advise patients on disease prevention and healthy lifestyles.

Conclusions

1. Epidemiological studies relating occupational conditions to the health of workers often contain information on lifestyles and other sociodemographic aspects. These data are not useful, however, for assessing the role of non-occupational factors in workers' health, since they are frequently treated as modifiers or confounders or are not made available in the published papers.

2. By contrast, the information on tobacco smoking and lung cancer indicates that such data are available to analyse the role of occupational and other factors in the causation of major human illness. Interaction may be additive or synergistic; for smoking it is more than additive.

3. Health examinations at work are in principle a valuable source of information on health, lifestyle and other non-occupational factors. In practice, however, the information is gathered locally, often in a non-standardized way.

4. The effects of alcohol on accident rates and on major illnesses such as cardiovascular diseases and cancer are well known. Alcohol and industrial chemicals are also known to potentiate harmful effects and may potentiate or inhibit the rate of metabolism of one another.

5. Drug abuse has become of increasing concern to all responsible for the work environment and the health of those who work. The occupational health services need to develop proper practices for investigating this complex issue, which has important ethical implications.

6. A large proportion of people of working age use various medications for a variety of conditions. To date it appears that we know little of the possible interactions of such medications with concomitant exposure to chemicals at work.

7. A number of dietary factors are known to be important determinants of various cardiovascular diseases and cancers. Very limited epidemiological information is available, however, on the interactions of dietary factors with occupational conditions or exposures.

8. There seems to be a general trend towards the assumption that physical activity in leisure time has a beneficial effect on the risk of coronary heart disease and related disorders. However, it is less certain that this applies to everyone, nor have the putative beneficial effects been scientifically proven.

9. Psychological and social factors, which seem to be important determinants of the health of those who work, act through various mechanisms. Evidently there are complex interactions of these factors at work and in non-working environments such as home and leisure.

10. Occupational health has a vital role to play in promoting the health of working populations.

11. Mental and psychosomatic ill health, including suicide, can be caused by and influence workers' interaction with work and the non-work environment. The reciprocal influences and interactions are not well known and require additional research.

12. The risk factors associated with lifestyle that were discussed obviously concern the past and to some extent the present situation. However, rapid changes are taking place in many countries and these changes could accelerate even further in the future. It is difficult to predict how useful these conclusions will be for the future, and it will thus be important to modify them as necessary at subsequent reviews.

Recommendations

1. Occupational epidemiological research and subsequent data analysis should be encouraged to include analysis of the role of lifestyles and other non-occupational factors, so as to assess the relative importance of such factors.

2. Occupational health examinations should be standardized to include relatively simple information on lifestyles and other non-occupational factors that would allow regional, national or even international compilation thereafter. The purpose would be to collect information on the major determinants of the health of the working population. WHO should take a leading role in producing a standardized form for such purposes.

3. Health examinations performed by occupational health staff should continue to be undertaken solely for the benefit of the health of those who work. However, such examinations should be used to provide help and information on health promotion for those at work.

4. In recent years, educational programmes to decrease heavy alcohol consumption have been developed in a number of industries in Member States, with some degree of success. Such programmes should become an integral and natural part of occupational health practice, taking into account the need to adapt programmes to the culture of the working population in the country concerned.

5. There is a continuing need for innovation in developing alcohol control programmes, owing to rapidly changing working environments. These programmes should also include analysis and proper management of any factors or conditions in the working environment that may contribute to alcohol consumption, or indeed may interact with alcohol consumption.

6. National statistics on mortality and morbidity by occupational groups are already published in some Member States. Such data provide important basic information, and all Member States should be encouraged to produce such statistics.

7. The linkage of such national registers on health outcomes and occupation to other data, some of which may be specially collected, offers the opportunity for hypothesis testing and for investigating rare disorders. Such initiatives should be developed on a cooperative international basis.

8. Health promotion programmes should be an integral part of occupational health practice.

9. Approaches in health promotion should also include means of improving the quality of food to which workers have access during working hours. Special attention should be paid to certain groups such as night workers, drivers, lumberjacks or those in need of special diets, and others who may not have access to properly balanced meals during working hours.

10. Occupational health personnel and other relevant personnel need further education and training in the complex issues of psychological and social factors as determinants of health. A knowledge of these interactions would enable them to participate in the development of healthier workplaces and the work of individuals with other parties concerned, in the management of work or productivity, and in the development of healthier lifestyles.

11. WHO should assist in the development of a system of management for psychological and social factors, their determinants and their interaction with the working environment.

12. WHO should be encouraged to develop a holistic approach to occupational and non-occupational factors and their influence on health.

13. WHO should coordinate a regional network to study ways of providing health care coverage to those of working age, including disease prevention and health promotion.

14. Occupational health professionals should encourage the introduction of smoke-free workplaces, both to protect workers' health and to encourage individuals to cease smoking. Guidelines should be produced enabling the introduction of such a policy, taking into account the needs of individuals and organizations.

Annex 1

LIST OF DOCUMENTS

ICP/OCH 135/6	Non-occupational factors in occupational morbidity and mortality, by Ms S. Shackleton and Professor J.M. Harrington
ICP/OCH 135/7	The role of occupational and non-occupational factors in workers' ill-health by Dr J.O. Järvisalo

[a] Copies are available from the Occupational Health unit, WHO Regional Office for Europe, 8 Scherfigsvej, DK-2100 Copenhagen O.

Annex 2

PARTICIPANTS

TEMPORARY ADVISERS

Ms Cynthia Atwell[a]
University of Birmingham, Institute of Occupational Health, Birmingham, United Kingdom

Dr Elsa Bach
Epidemiology Section, Danish National Institute of Occupational Health, Copenhagen, Denmark

Ms Diana Caudwell[a]
Health and Safety Executive, East Grinstead, West Sussex, United Kingdom

Dr D. Cook
Department in Clinical Epidemiology and General Practice, Royal Free Hospital School of Medicine, London, United Kingdom

Professor J.M. Harrington
University of Birmingham, Institute of Occupational Health, Birmingham, United Kingdom (Chairperson)

Dr Aranka Hudak
National Institute of Occupational Health, Budapest, Hungary

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[a] Participation expenses not paid by WHO.

Professor J. Indulski
Institute of Occupational Medicine, Lodz, Poland

Dr J. Järvisalo
The Rehabilitation Research Centre of the Social Insurance Institution, Turku, Finland (Rapporteur)

Professor L. Levi
WHO Psychosocial Centre, Karolinska Institute, Stockholm, Sweden

Dr J.-J. Moulin
Service d'Epidémiologie, Institut National de Recherche et de Sécurité, Vandoeuvre, France

Dr T. Popov
Institute of Hygiene and Occupational Medicine, Sofia, Bulgaria

Ms Susan Shackleton[a]
University of Birmingham, Institute of Occupational Health, Birmingham, United Kingdom

Professor S.A. Simbirtsev
Rector, Medical Institute for Advanced Training, Leningrad, USSR

Dr R. Welch[a]
Chief Medical Officer, The Post Office, London, United Kingdom

Dr C. White[a]
Occupational Physician, 51 Weoley Hill, Birmingham, United Kingdom

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Dr Eva Zsögön
National Institute of Occupational Health, Budapest, Hungary

WHO REGIONAL OFFICE FOR EUROPE

Dr M. Mikheev, Consultant, Occupational Health

Ms Birthe Havn, Secretary, Occupational Health