

Health Aspects of Wellbeing in Working Places

Report on a
WHO Working Group

Prague
18-20 September 1979

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WHO WORKING GROUP ON HEALTH ASPECTS OF WELLBEING IN WORKING PLACES

Prague, 18-20 September 1979

1. INTRODUCTION

A Working Group on Health Aspects of Wellbeing in Working Places was convened by the Regional Office for Europe of the World Health Organization, in collaboration with the Government of Czechoslovakia, in Prague from 18 to 20 September 1979. The meeting was attended by 13 temporary advisers from 12 countries of the European Region, a representative of the International Labour Organisation and a staff member of the WHO Regional Office for Europe (see Annex).

The participants were welcomed by the Vice-Minister of Health of the Czech Socialist Republic, Professor V. Kusak, who emphasized the importance of achieving higher standards of health and wellbeing in working places in all countries of the Region and wished the Working Group every success in its deliberations.

Dr M.I. Mikheev, Regional Officer for Workers' Health, addressing the participants on behalf of the Regional Director, Dr L.A. Kaprio, referred to the importance of continuing efforts to promote wellbeing in working places in the context of WHO's strategy of "Health for all by the year 2000".

The objectives of the meeting, in relation to wellbeing in working places, were as follows:

- to determine the nature of the problems encountered, paying particular attention to psychological factors;
- to specify the evaluation methods to be used;
- to identify environmental factors having positive and negative influences;
- to determine the role to be played by occupational health services in collaboration with national and local authorities;
- to identify gaps in knowledge and priorities for future action;
- to consider the viewpoints held in different countries and to make recommendations applicable to Member States.

2. WELLBEING

2.1 Definition

Wellbeing in the work setting has been defined as a dynamic state of mind characterized by reasonable harmony between a worker's abilities, needs and aspirations and environmental demands and opportunities.

2.2 General considerations

Wellbeing is a component of health and accordingly is closely related to but not identical with it. A subjective assessment by the subject of his or her wellbeing is the only valid measurement that is available, even though it may not reflect the "objective" view of the situation. For example, a worker may experience a sense of wellbeing while performing a task which is monotonous or potentially dangerous. The primary objective in occupational health must be to control any identifiable factors that adversely affect health. A sense of wellbeing in a worker or a group should not be regarded as a reason for ignoring such factors.

Wellbeing may be affected by the work environment without there being any impairment of health, and the reverse situation, in which wellbeing is not affected in spite of health impairment, may also occur. However, loss of wellbeing may be the first manifestation of a worker's health being adversely affected by occupational factors such as toxic exposures. For example, a feeling of lack of wellbeing may be an indication of early health impairment resulting from exposure to organic solvents, mercury or lead.

3. CHANGING PATTERNS OF WORK AND ORGANIZATION

The worldwide development of large industrial plants, the introduction of complex processes and installations and the use of new chemical compounds in many branches of industry and agriculture have exposed millions of people to potential health hazards. This has led to an improvement in the quality of occupational health services and an extension of their range. The effects of these developments on the health of workers have been varied. In the first place, considerable success has been achieved in industrially advanced countries in the provision of health care at work and in improving the quality of the physicochemical work environment. The number of dangerous workplaces, especially those where there is a hazard of exposure to toxic chemicals such as benzene and carcinogens like benzopyrene, has been substantially

reduced by improved hygienic measures and the introduction of new production methods. In general, the concentrations of airborne contaminants in the work environment are being kept below permissible levels to an increasing extent. As a result, the incidence of occupational diseases is decreasing and their severity has lessened. Far fewer days are now lost from sickness and disability resulting from these diseases and methods for the diagnosis of such diseases have improved. However, new types of physical, chemical and biological exposure are coming into being in modern industry and there is no reason for any country to be complacent about occupational diseases risks.

Secondly, the nature, content and organization of work has changed, and additional health problems are being increasingly recognized by occupational health workers. As a result of mechanization and automation, the physical component of work has been replaced by new functions which also influence health and wellbeing. Poor mental health has many origins, such as anxiety traits, problems of a psychological nature, and interpersonal conflicts (these will be discussed later); there are certain adverse factors which are more closely related to the job itself, namely mental or cognitive loads occasioned by the design of the work situation, from the quality and quantity of the production demanded, and from excessively short periods of training.

Thirdly, the design of modern machinery and equipment is based mostly on the abilities of healthy male workers, yet in Europe, for example, female manpower represents 30%-40% of the entire work force; furthermore, between 15% and 20% of members of that work force have some handicap.

Fourthly, the concentration of work forces in large plants with inadequate channels of communication between management and workers, and the pressures of continuous work, have introduced adverse psychosocial factors. This type of work environment is in direct contrast to that of the artisan in a cottage industry, who works according to his strength and personal convenience and can more readily satisfy his perceived needs.

These fundamental changes in the work environment have significantly altered disease patterns in working populations. While there has been a reduction in the incidence and severity of classic occupational disease in modern societies, there has been an increase in mental and psychosomatic diseases such as neurosis and certain diseases of the cardiovascular system, digestive tract and locomotor system. The continuous and long-term absence of wellbeing in response to work exposure may well be among the factors contributing to this increase.

4. WORK FACTORS INFLUENCING WELLBEING

There are many factors within the work environment which influence wellbeing. Health services should recognize that physical, chemical and biological

factors, together with the physiological and psychological aspects of work, are important causes of mental and physical illness and thus may have an adverse effect on wellbeing. These factors are interrelated. It may be difficult to identify them as separate entities and their effects on people may be similar. Work itself may cause anxiety and frustration, e.g., due to the cognitive and emotional loads it imposes on individual workers. Anxiety plus frustration may also result from interaction between people at work.

These various factors will be considered under the following headings:

- (1) psychosocial;
- (2) physical, chemical and biological;
- (3) physiological and psychological.

4.1 Psychosocial factors

4.1.1 *Definition^a*

Psychosocial factors at work may be defined as those influencing the health and wellbeing of the individual and the group which stem from the psychology of the individual and the structure and function of the work organization. They include social characteristics such as patterns of interaction within occupational groups; cultural characteristics such as traditional ways of solving conflicts; and psychological characteristics such as attitudes, beliefs and personality factors.

These characteristics within the work group are interdependent, and are influenced by national and racial characteristics, for example: sociopolitical systems; the organization and division of work; the values, norms and codes regulating the behaviour of individuals and groups; and the cultural heritage.

4.1.2 *General considerations*

The influence of the modern industrial system on work satisfaction and life adjustment has been widely discussed. Generally speaking, there is concern about the negative influences on work satisfaction which arise in large plants engaged in mass production. More specifically, this concern relates to the threat posed to human dignity by mechanization and bureaucracy, in the form of extremely segmented and constrained tasks for the worker and authoritarian leadership. There is good evidence that similar problems arise in all countries, irrespective of their political system or economic structure.

^a Based on definition given in Report by the Director-General of WHO on psychosocial factors and health (document EB 57/22, 1975).

A reasonable hypothesis based on field studies (1) is that certain types of highly rationalized mass production conflict with fundamental needs, such as:

- some degree of influence and control over one's work;
- perceiving work as meaningful and worthwhile;
- perceiving an affinity with the firm as a social system and having a sense of identity with it through one's work.

If these needs are not satisfied, the worker is frustrated and makes either active or passive adjustments. Active adjustments may be contemplation of change, voluntary termination of service, presentation of grievances or participation in wildcat strikes. In adjustments of a passive or alienative nature, the worker depreciates his work as a source of satisfaction and it becomes no more than a means of earning a wage and so providing resources to achieve his personal aims away from work. There is ample evidence from a variety of studies that psychosocial stress factors due to loss of work satisfaction adversely affect mental and physical health. For example, in tasks where there is emphasis on greater efficiency of operations (rationalization), with a large measure of specialization and more control of the individual's work by machinery, there is increased work alienation and poorer mental health as measured by satisfaction, self-esteem and psychosomatic disease (1).

For white-collar workers the stress factors which are related to pathogenic behaviour and psychosomatic disorders such as hypertension and peptic ulcer are role ambiguity, role conflict, underload and overstimulation (2). There is also evidence that social support through supervisor, co-worker, wife or friend helps to "buffer" occupational stress and reduce its deleterious health consequences (3).

In Sweden nearly one-quarter of blue-collar workers studied (4) reported moderate or high stress levels at work, and a high proportion (12%) had consulted a physician regarding related complaints in the preceding year. In a study of academically trained professionals, 42% reported stress at work (5). Other indicators of stress are the high worldwide incidence of alcoholism, suicide, and mental and psychosomatic disorders. At present the association between these diseases and occupational stress is highly probable but not proven.

A recent experiment in providing an advisory service for Swedish civil servants by a team of physicians, nurses and social workers has given a further insight into the causes of lack of wellbeing. The aim was to reduce maladjustment to work itself and to supervisors and co-workers, to increase wellbeing and thereby reduce absenteeism.

Early on in the experiment 300 employees participated in an extensive psychological study which included testing, completion of questionnaires and interviews with psychologists, as well as a general health check-up. A surprisingly high number of the employees who were leading an active working life

were found to have medical problems or defects. Only 9% of the females and 31% of the males in the sample had no medical problems. Of the various conditions diagnosed, neurotic or psychosomatic disorders were the most frequent, being found in 48% of the men and 66% of the women. The absence records and medical certificates (mandatory for absences of more than 7 days) were checked for this group and here only 3.6% of the men and 9.9% of the women were found to have a psychiatric diagnosis. Thus it was concluded that there was an extensive but largely unrecognized mass of psychosocially-induced health problems among active and seemingly healthy employees.

The team of health workers believed that it would be more rewarding to deal with the causes rather than attempt to treat the disorders themselves. It was also concluded that the causes of fear, anxiety, frustration, anger and disappointment leading to lack of mental wellbeing as well as nervous and psychosomatic disease are multiple and in many instances not easy to identify, because many people in an organization may prefer not to discuss the aspects of working life which produce these reactions.

It is not easy to talk about feelings such as lack of trust and humiliation, particularly as such emotions are often perceived as personal shortcomings that should be hidden, and there are also fears of repercussions if such personal matters are brought out into the open. Thus taboo zones are created and people become blind to their own situation, adapt to it by giving up ambitions for a better life or strive to move away from their present jobs to better ones. Many workers in an organization may not consciously recognize the taboo zone. Others who do see it more clearly prefer to remain silent since they think they are unable to effect any real change. People in power may simply be unaware of it. Yet as the zone expands, the efficiency of the organization is impaired. Contacts are not made, creative contributions are diminished, communication becomes more formal and people suffer and become ill.

In many instances organizational changes and better management techniques increase efficiency, raise productivity and at the same time improve the quality of working life. However, the objectives of an industrial or commercial organization are not always in accord with the personal needs of its members. For example, steps to improve working conditions and meet basic human needs for work satisfaction may call for sacrifices from either management or workers or from both. To make such changes in the interests of promoting wellbeing may cost money which may, but need not, be recovered by increased productivity.

At present the short-term interests of profit and productivity and the size of the wage packet usually take priority. This is because technological and capital resources have been accepted as the determinants of the optimum design of jobs and work systems. Changes have been motivated largely by aspirations of unlimited economic growth and higher and higher standards of living. The judgement of what constitutes the optimum design of jobs and the

choice of work objectives has rested almost wholly with managers and technologists. Collective bargaining, protective legislation and considerations of work satisfaction have made only a limited contribution.

4.2 Physical, chemical and biological factors

4.2.1 *Definitions*

These factors embrace the causes of traditional occupational diseases. They include physical agents: ionizing and nonionizing radiation, noise, vibration, high and low barometric pressures, heat and cold; the increasing range of chemical compounds used in industry and agriculture, and the biological agents of disease to which agricultural workers, health workers, veterinarians and persons handling animal and vegetable products may be exposed.

4.2.2 *General considerations*

Factors in the work environment which damage health may adversely affect wellbeing in several different ways. In the first place, a person suffering from an occupational disease feels aggrieved because the disease could have been prevented, whereas suffering from some other kinds of disease may be accepted as an inevitable consequence of living. This understandable attitude will affect wellbeing. Secondly, the first impact of acute effects of exposure to certain solvents and metals may be on wellbeing.

Thirdly, occupational diseases causing disability, discomfort and pain naturally reduce feelings of wellbeing. Thus, in their aim to promote wellbeing, occupational health services must do everything possible to eliminate occupational disease and this calls for a new approach to the problem.

There are likely to be many types of exposure to noxious factors which have not yet been identified as causes of human disease. This is particularly the case when there is a long time lapse between the exposure and the onset of disease, the consequence being that the disease appears many years after exposure has ceased. The detection of long-term effects of exposure to teratogenic and carcinogenic agents and of the adverse effects of recognized risks calls for improved methods of identifying risks by biological and environmental monitoring, using environmental data as well as data on population morbidity and mortality.

More investigation is needed of the combined action of low levels of exposure to various chemical and physical agents, and of the combined effects of exposures and workloads.

In most working places levels of exposure to toxic hazards are low because of improved hygienic measures. Nevertheless, exposures which by themselves would not have any long-term effects upon workers may trigger

noxious effects in various ways owing to interaction with other work factors, conditions outside the working place and individual factors such as genotype, age and sex, which influence the response to toxic or other agents. Individual susceptibility is being increasingly recognized as an important factor in health control.

The ability to adapt is stronger in some people than in others. Therefore it is necessary to ascertain decreased resistance in those who remain healthy but react more sensitively to the environment and become more susceptible to disease. In such cases the limits of adaptability are more readily exceeded, with a consequent increase in health risk which may lead to an increase in nonspecific disease. Thus the health screening of workers may be a valuable method of detecting early deviations from health standards.

4.3 Physiological and psychological aspects of work

4.3.1 Definitions

Work physiology and psychology are concerned with measuring, evaluating and controlling those factors other than toxic exposures which may adversely affect human performance, comfort and health. They include environmental factors such as lighting, heat, barometric pressure and noise, the level of mental and physical workloads and the consequent demands made on the worker. Equally important are (i) problems of underload, which can lead to boredom and monotony, and (ii) the relationship between man and machine.

4.3.2 General considerations

The general aim is to promote wellbeing and to prevent injury and disease by ensuring that workloads are within the capacity of the worker, bearing in mind the environmental conditions under which the work is done, such as levels of heat and humidity, and the individual characteristics of the worker, such as age, sex and body size. Other important factors are the level of training for the job and, particularly in the case of women, the additional responsibilities of family life.

The promotion of wellbeing requires an evaluation of work demands and the adoption of measures enabling the worker to adjust to work through training and the scheduling of suitable periods of activity and rest in order to avoid excessive fatigue and to control unfavourable environmental conditions. Selection of workers in terms of their physiological and psychological capacities for certain types of work is also important. All these tasks are within the capacity of occupational health and personnel services at the working place. Increasing attention has also to be given by manufacturers to the design of machines and equipment in relation to the workers' health and comfort.

5. METHODS OF EVALUATING WELLBEING IN WORKING PLACES AND IDENTIFYING ITS CAUSES

Wellbeing may be impaired without there being any detectable adverse effects on health, and impairment of health itself may affect wellbeing. Thus evaluation of both wellbeing and health impairment have to be considered.

5.1 Health impairment

A wide range of methods are available for evaluating health impairment and are described in a report by a WHO Study Group (6). The aim is the early detection of health impairment, based if possible on reversible changes that predict the occurrence of manifest signs and symptoms, in order to make it possible to prevent disease and disability.

Criteria of health impairment include:

- (1) changes in biochemical parameters, e.g., porphyrin and glutathione levels in exposure to lead; inhibition of cholinesterase activity in exposure to organophosphorous insecticides; changes in metal concentrations in body fluids; and changes in the levels of various serum enzymes;
- (2) changes in morphological parameters such as chromosome aberrations and abnormal spectrum cytology;
- (3) changes in the physical state and the function of physiological systems, e.g., lungs, hearing, vision and sense of smell; changes in ECG tracings, in physical and mental work capacity, and in nerve conduction;
- (4) integrative changes resulting from effects on several organ systems, which may be detected by behavioural changes, elevated sickness rates and absenteeism, hospital admission rates and mortality rates.

These integrative changes may often be the first indication of hitherto unexpected causes of ill-health.

In this context, adverse health effects resulting from psychosocial factors are particularly relevant and may be classified into two main categories:

- (a) emotional and behavioural changes, including hostility, aggressiveness, anxiety and depression; tardiness, job dissatisfaction, passivity, unnecessary risk-taking, alcoholism or drug abuse, self-destructive (suicidal) behaviour;
- (b) mental or psychosomatic ill-health, including fatigue, headache, muscular pain, peptic ulcer, hypertension, heart disease.

There may also be biochemical changes such as increased adrenal hormone levels in urine, associated with exposure to adverse psychosocial stimuli.

5.2 Wellbeing

Wellbeing can be evaluated in individuals by traditional methods used to detect adverse effects of exposure to toxic or psychosocial factors. This is part of the daily practice of occupational health workers of medical history taking. However, an epidemiological approach is necessary in order to identify factors in the work environment that affect wellbeing and to evaluate changes made to control such factors. Wellbeing can be evaluated in groups through direct questioning and other methods. Since the main emphasis is on its evaluation in relation to psychosocial factors, this will be discussed first.

Comparisons may be made between what workers think are their entitlements and what they think they get. Such evaluations of wellbeing should always be confronted with "objective" knowledge of the environment and its potential risks and of the health status of individuals and groups.

In this context evaluations may be used as follows:

- (1) to make comparisons over a period of time within a group;
- (2) to make comparisons between different groups;
- (3) to evaluate improvements in the work environment;
- (4) to detect environmental causes of loss of wellbeing as well as effects on health, by examining possible associations with other data on work and workers, such as organizational changes, process changes and morbidity;
- (5) to form a basis for work groups starting their own problem-solving processes.

The structured questionnaire is a common method of determining attitudes and feelings about work situations. It may be designed to assess both positive and negative attitudes to work. Questions may be asked about work satisfaction and dissatisfaction or more probing enquiries may be made about the extent to which work meets some of the fundamental needs of wellbeing.

Mailed questionnaires have been used in Denmark (7) to investigate mental stress in various occupations by seeking judgements from a sample of 9000 workers on their work environment, health and stress. Similar studies – on salaried employees – have been carried out in Sweden (8). Other methods include group discussions and unstructured interviews.

Methods of evaluating both desirable and undesirable emotional attitudes and reactions to work need to be developed and validated, as has been done in occupational health for the evaluation of an individual's physical responses to toxic and other exposures. Such evaluations of emotions may be used to determine responses to a whole range of psychosocial, physical, chemical and biological exposures in the work environment. These evaluations of human response may be made in order to relate them to various types of exposure with a view to identifying causes of wellbeing or the lack of it. This is an essential step towards the control of adverse factors and the development of positive factors influencing wellbeing.

5.3 Identification of causes

Identification of causes of the absence or presence of wellbeing is the next essential step in the promotion of wellbeing.

The first indication of a cause may be when an individual worker presents with symptoms which can be related to a specific occupational exposure. However, the epidemiological method may be the only way of identifying occupational causes of health impairment or diseases which commonly occur in the general population, such as fatigue, headache, peptic ulcer, hypertension and heart disease. Causes of health impairment may be detected by studying groups of workers in order to determine the association between the impairment and exposure to an environmental contaminant or a particular pattern of work or style of leadership.

In many instances the causes are obvious, particularly in the case of high levels of exposure to physical, chemical and biological agents, or when there is blatant disregard by management of the accepted methods of communicating with staff. Where control measures are introduced in such cases, it is necessary to evaluate their effects.

The corollary to identification is better control, with the aim of optimizing working conditions. One important aspect of this is the raising of hygiene standards so as to control early health impairment and the absence of wellbeing. Once causes have been identified, protection may be built in at the design stage of a process.

In occupational health practice, these principles are widely applied in the control of physical, chemical and biological agents in the work environment, but their application to the control of psychosocial factors has hardly begun because occupational health services have not developed methods of identifying such factors, nor do they have the expertise to advise management and workers on their control. In the following section particular attention is paid to these factors, which have been studied in recent investigations (1,3,5,9-11).

6. CONTROL OF PSYCHOSOCIAL AND OTHER FACTORS AFFECTING WELLBEING

6.1 Classification (6)

On the basis of the definitions given in section 4.1, psychosocial factors can be classified into three closely related categories concerning (a) work organization, (b) general working conditions and (c) type of work.

Examples of factors relating to work organization and general working conditions include: leadership style, group cohesion, work stability, security, workers' participation, communication between management and workers and between workers themselves, shift work, physical and chemical factors, payment systems, holidays, and conditions of employment of vulnerable groups.

Factors relating to the type of work include: repetitive tasks, physical and psychological overload and underload, degree of responsibility, isolation, and ergonomic factors.

6.2 Methods of control

These various factors may be classified for the purpose of their control in four overlapping and interdependent fields:

- (1) technology used in an organization;
- (2) personnel administration policies;
- (3) organizational structure;
- (4) leadership styles and opportunities for worker participation.

6.2.1 *Technology used in an organization*

It is not the technology itself that is to blame for adverse factors, but the way it is used. There is a tendency to repeat the mistakes of the assembly line systems in computerized planning and steering systems developed more recently. Check-lists may be compiled in the following manner to determine what should be avoided and what should be encouraged.

- (a) To be avoided: machine-paced, repetitive and short cycles; monotonous tasks, with little demand for use of capacities other than manual or muscular ones; isolation, high accident risk, and exposure to physical and chemical agents such as cold, heat, toxic dusts, fumes and gas.

- (b) To be encouraged: techniques promoting understanding, learning, the development of human qualities, decision-making, responsibility, contact and communication with others, influence on methods, work tempo, planning and quality; feedback of results, association between the personal contribution and the overall product, pride in the results, and social support.

6.2.2 *Personnel administration policies*

A personnel policy is that which determines the formal administrative actions taken by an organization in relation to its members. Starting with selection, placement, introduction to the organization, training, promotion and pay, through to termination or retirement, personnel policies should be formulated in collaboration with those for whom they are intended.

Most employees feel insignificant in relation to the organization employing them; many are in a weak position and have to accept the terms set by the organization.

In some countries, national authorities, political parties and trade unions have strengthened the position of workers and employees. Important rights, such as those relating to job security, maternity leave and free time for studies or trade union activities, have been granted by legislation or established as a result of collective bargaining.

Not infrequently these actions have had the effect of strengthening the power of the trade unions rather than that of the individual employee. This development may be welcomed or otherwise, but in general there is still much to be done to secure self-respect, personal development, emotional security, and a feeling of trust in the organization on the part of employees.

6.2.3 *Organizational structure*

Work may be organized in many different ways, each of which creates different conditions for the employees. The traditional bureaucratic hierarchy may lead to frustration, apathy, power struggles and waste of energy. Not only do organizations with such systems often become inefficient, but they may also produce unnecessary strain among their members, possibly leading to mental ill-health or psychosomatic disease.

Other organizational forms such as project groups and a matrix organization have advantages but also drawbacks. In short, there is no ideal organizational form for promoting health and wellbeing. One reason may be that the starting-point is a technical one, i.e., how to promote suitable feedback and the dissemination of information, and not one of human requirements, i.e., planning the kind of organization that would best satisfy the needs of its members.

6.2.4 *Leadership styles and opportunities for worker participation*

The demands of an organization and the needs of its individual members lead to daily confrontations between the chief and his co-workers at all levels. Leadership courses are popular in the western world and most chiefs know what is expected of them, but in actual practice their behaviour is often quite different. Many leaders counteract their own best intentions, sometimes with deleterious effects on the health and wellbeing of their co-workers.

Very few would dispute the need for some coordination of human efforts in a working organization; leadership is obviously needed. Yet many bosses are disliked and many feel uneasy in their role. These problems may be dealt with in two ways. First, laws may be enacted to reduce the power of the leader and to enforce collective leadership. To some extent this has been done in Sweden by a law on codetermination at the working place, and is in line with the strategy, referred to earlier, of strengthening the position of the employee in his organization.

There is another, quite different, approach to leadership problems. Man may be regarded as a rational creature, guided by logical decisions which provide solutions to his problems. Unfortunately, this is rarely the case. Most actions and decisions are semiconscious or even taken unconsciously to solve or avoid problems. This is the taboo zone already discussed on page 6, and found in any organization to some extent. There is reason to believe that many causes of ill-health and lack of wellbeing have their origin here. Anxiety, frustrations, suppressed anger, distrust and other emotions generated in this zone can well be more stressful than the job task itself.

Procedures which favour insight-promoting seem to have a considerable potential to improve mental health and help people and organizations to cope with reality in a better way. Techniques are needed that promote open communication and provide a broader basis for decision-making, resulting in longer-lasting decisions. Such techniques have been developed in group psychotherapy and have been adapted and applied in this field. However, applications of this kind have still to be evaluated.

This is a branch of knowledge known as "organizational development" (OD). Insight-promoting and power-sharing are mutually interdependent. To promote insight, without at the same time providing the power to use the new insight, would be unrewarding. On the other hand, power redistribution without insight will lead to the repetition of former mistakes.

No real learning can take place until old axioms, preconceived ideas and prejudices are openly questioned and reevaluated. It should not be expected that increased insight by the members of an organization will of itself be sufficient to induce alterations in favour of health and wellbeing. The conflict of interests is a reality that has to be reckoned with. Insight-promoting activities must therefore be supported through legislation or collective bargaining in order to promote changes that result in work environments that are more conducive to health and wellbeing.

6.3 Treating the organization, not the individual

One of the most important conclusions reached by the team of health workers investigating psychosocial problems among Swedish civil servants was that it was unrewarding to attempt to treat the individual who had mental health problems. Instead, it was necessary to treat the organization concerned, and for this neither the physician nor the nurse had the necessary skills. Basically, occupational health services needed someone with competence in behavioural sciences — a new type of health expert who could gain insight, promote contacts and communication, and recommend changes in organizational structure.

The function of this expert would not be to solve problems for people, but to help them to solve the problems themselves, and also to foster awareness of human problems and to encourage efforts to change working conditions in the direction of greater humanization by asking such questions as: What unnecessary obstacles in the way of meeting the basic needs to perform satisfying work can be eliminated? Is it possible to build elements into the system that permit more basic needs to be satisfied and allow more people to strive for things that make life worth living as part of their job?

The experts should not impose his own standards, values and preconceived ideas upon the group. Only the people in an organization can identify the elements that must be changed, and only if they decide on the alterations themselves will they be made.

The expert can create forums for discussions, help to trace factors which impede wellbeing and suggest alternatives that will facilitate choices by the group in matters of work technology, work organization, personnel administration and collaborative leadership styles. The expert may also provide data for discussions on productivity, absenteeism, turnover, etc., and help produce insights by distributing questionnaires with thought-provoking questions. The latter step would, however, be unwise if the gained insight was not of value in making changes. Thus, the people in power must be willing to share it with the other members of the organization if any real and lasting change is to take place.

It is also the task of the expert to create a climate in which information is willingly shared. The leaders of an organization may be reluctant to accept this principle, at least if its scope exceeds the interests of the organization's efficiency and productivity.

This type of work calls for a person trained in the behavioural sciences: a psychologist, sociologist, social worker or physician with considerable interest in preventive measures. As well as possessing basic training in behavioural sciences, the expert needs to know about insight-producing techniques such as those used in organizational development or in group psychotherapy, and about work organization, personnel administration and leadership (see section 9). In addition, and even more important, there is a need for increased awareness and competence in these fields at *all* levels of an enterprise.

7. THE TASKS OF GOVERNMENTS

It is the function of governments to provide the means necessary to enable organizations to achieve higher standards of wellbeing in working places with the help of occupational health personnel.

7.1 Reformulation of goals

It may be desirable to reformulate goals by placing more emphasis on the quality of life. This may be defined as the degree to which members of an enterprise or organization are able to satisfy important personal needs through their work experiences. The extent to which working people are able to achieve the desired quality of life depends on national policies with respect to production targets, unemployment, the provision of health care and so on, as well as on what is done by the enterprise itself.

7.2 Application of existing knowledge

Much is already known about the physical, chemical and biological hazards of work. Less, however, is known about the psychosocial hazards of work and their effects on health and wellbeing. Much can be done at national level to document available information and identify gaps in knowledge which need to be filled. WHO and ILO should assist and advise the governments of Member States in these efforts.

The wellbeing of working people is also influenced by a variety of factors outside the place of work, such as transport, housing and social services. Policies which encourage the coordination of efforts by industry and local communities, and particularly the participation of citizens in decision-making, are important in the promotion of wellbeing.

Having compiled, integrated and popularized existing knowledge concerning the wide range of factors which are known to affect wellbeing or are suspected of doing so, governments should promote the widest possible application of such knowledge through the education of management, working people and their representatives and by providing, or encouraging academic institutions and other bodies to provide, training programmes for health workers, particularly in dealing with the identification and control of psychosocial factors at work. Such training programmes are dealt with in section 9.

7.3 Acquisition of new knowledge

This whole field is a dynamic one in which both the causes of impairment of wellbeing and their effects on people are constantly changing. There is a pressing need, therefore, for a continuous reappraisal of existing knowledge and the acquisition of new knowledge.

7.4 Improved methods of identifying and coping with problems

One of the most crucial needs is to evolve and unify methods of measuring all types of environmental factors and their effects on the wellbeing of working people. Such methods should be reliable and sensitive enough to detect early changes and lead to improvements in the identification of problems and to their control or modification. Another important need is to evolve techniques for the evaluation of wellbeing and the psychosocial factors which have negative or positive effects on it. The end result would be interdisciplinary and internationally applicable "methodology kits" comprising, for example, methods of testing low levels of exposure to toxic substances and their long-term effects on wellbeing and health, and methods of measuring psychosocial factors and their effects on wellbeing. WHO could assist by coordinating the efforts of Member States in this field and by arranging meetings of investigators to explore areas where further research is required.

8. LEGISLATION AND EMPLOYER-UNION CONTRACTS

8.1 Legislation

The main responsibility for the control of occupational illness and accidents rests with the enterprise itself through the employer. It is evident from the experience of countries of the Region that State intervention is essential in enforcing even minimum standards, especially under conditions of competition and growth. Most countries have confined their legislation to the control of physical environments which can give rise to accidents and the classic occupational diseases. This type of traditional legislation also controls working hours, workloads and other factors which may have adverse physiological and psychological effects on the worker.

It was the view of the Working Group that such legislation does not give enough support to the promotion of occupational, mental and physical health and wellbeing, and that the further action which the Group recommended should be taken by enterprises to achieve these aims will not be possible without supporting legislation, particularly in countries whose economic systems are based on free competition.

Three examples of recent legislation in this field which might serve as models for other countries are given below. The first two are from Scandinavian countries (Norway and Sweden) and the third is from an eastern European country (Czechoslovakia).

First, the Norwegian Work Environment Act, Section 12, (1977), contains the following provisions:

(1) *General requirements.* Technology, work organization, work time (e.g., shift plans) and payment systems are to be designed so that negative physiological or psychological effects for employees are avoided as well as any negative influence on the alertness necessary for the observance of safety considerations. Employees are to be given possibilities for personal development and for the maintenance and development of skills.

(2) *Design of jobs.* In the planning of work and design of jobs, possibilities for employee self-determination and maintenance of skills are to be considered. Monotonous repetitive work and work that is bound by machine or assembly line in such a way that no room is left for variation in work rhythm should be avoided.

Jobs should be designed in a way that gives possibilities for variation, for contact with others, for understanding of the interdependence between elements that constitute a job, and for information and feedback to employees concerning production requirements and results.

(3) *Systems for planning and control (e.g., automatic data processing systems).* Employees or their elected representatives are to be kept informed about systems used for planning and control, and any changes in such systems. They are to be given the training necessary to understand the systems and the right to influence their design.

(4) *Work under safety risks.* Piece rates and related forms of payment are not to be used where wage systems can influence the safety level.

Secondly, there is the example of Sweden where the legislative approach is twofold. A new Work Environment Act came into force on 1 July 1978. It is a draft law containing general statements, e.g., that working conditions shall be adapted to man's mental and physical capacities, and jobs shall be designed so that the employees themselves may influence their work situation.

This frame has to be completed by specifications from two sources: the Board of Occupational Safety and Health and, perhaps the most important for mental health purposes, the provisions of the Act on Codetermination at Work. This latter act requires that information be given to trade union representatives on all matters, and at all levels, about working conditions. It entitles local unions to negotiate on any matter that may influence their members' job situations. The parties themselves, the managers and the employees at the local plants, shall agree on the job specifications they consider suitable.

It is too early to judge the relative merits of the Norwegian and the Swedish systems. On paper the Swedish system seems more flexible. It gives employees an opportunity for responsibility sharing and personal development within the work situation.

The third example is from Czechoslovakia, where legislation was introduced in 1966 to support the promotion of wellbeing and mental health (Care of People's Health Act). The relevant sections are the following.

Section 35. "Working and ancillary premises, machines and equipment, the technological process and the organization of work, the working environment and other working conditions must fully comply with the natural characteristics of workers and must not only protect them against detrimental influences and excessive and unnatural loads on the human organism, but, if possible, also actively improve their health and promote the development of their creative abilities."

Section 38. "The health of workers must be systematically followed in respect of their working conditions and conclusions must be drawn from the assembled findings with a view to modifying these conditions and promoting the health of workers; to this end, the necessary material and organizational conditions shall be created."

"At work places involving a special hazard of working accidents and occupational diseases, industrial intoxications, a hazard to mental health, or any other detriment to health, only such workers may be employed who have undergone the compulsory initial and periodic medical examinations. The work places to which this applies shall be specified by special regulations or by the organs of the hygiene service."

8.2 Employer-union contracts

In addition to legislation, agreements between employers and trade unions with regard to methods of payment, conditions of work and various amenities may further strengthen the promotion of health and physical, mental and social wellbeing.

8.3 Role of occupational health personnel and other bodies

It is important to consider further the role of occupational health services in this context and, in particular, how to integrate their occupational health knowledge and expertise with that of other bodies.

In Finland, the new Occupational Health Care Act (1979) has paid much attention to the integration of preventive work with other kinds of different activities at the level of the individual enterprise. The model developed for this purpose by Ylikoski and Rantanen (12) is shown in the following table.

The first column lists various possible problem areas which have to be controlled in order to secure mental health and job satisfaction. The second column lists activities which can be used for preventing, solving or managing these problems. In the third column, the relative role of the expertise of occupational personnel (versus other kinds of expertise) is outlined.

Problems of mental wellbeing in working places

Problem areas	Problem-solving activities	Expertise needed	Regulating laws and agreements
Organizational goals (1)	Organization development (1,2)	Expertise of management, personnel administration, linear organization and joint committees	Cooperation Act (1-4)
Organizational climate (2)	Personnel management policy (2) Leadership style (2)		Information Agreement (3)
Knowledge of the goals (3)	Personnel development (2,3) Communication, information (2,3)		Agreement on Education and Training (3)
Work arrangements (4)	Planning, negotiation (4)		Labour Protection Act (4-6)
Special work demands (5)	Job design (5,6) Job placement (5,6)		Occupational Health Care Act (4-10)
Work loads and hazards (6)	Job design, rehabilitation, replacement (7)		
Handicapped workers (7)	Referral to care services, follow-up (8)		
Alcohol problems (8)	Health counsel, referral to case services (9-10)		Expertise of occupational health personnel
Psychosomatic symptoms (9)			
Mental symptoms and illnesses (10)			

Although the lists of problems and problem-solving activities are not exhaustive, they demonstrate the idea of integrating different kinds of knowledge in preventive activities.

The last column identifies laws and agreements which contain guidelines and limits for these various activities.

According to this model, activities dealing with organizational goals and climate lie outside the realm of occupational health care. They are matters for the management, the personnel administration and the joint committee of employer and employees.

However, the integration of occupational health expertise with these and other kinds of activity and expertise is important in planning work arrangements and job design. The role of the occupational health personnel increases when the problems associated with special work demands and hazardous or stressful work are dealt with. As for the problems arising at the level of the individual, occupational health personnel have the main responsibility, but here also problem-solving activities are integrated with other kinds of expertise in the enterprise.

The Finnish Occupational Health Care Act strongly emphasizes primary prevention in relation to the work environment. According to the Act, the first task of occupational health care is the surveillance of the work environment, and the recognition, assessment and control of different health hazards, including psychological ones, associated with the arrangement of work. While most consideration is still given to chemical and physical hazards and to classic ergonomic problems, the prevention of hazards to mental wellbeing is seen as the most important task of the next decade.

Important tasks in this field are to translate existing scientific knowledge into practical recommendations regarding preventive work, and to increase the expertise of occupational health personnel and of those responsible for the work environment at the enterprise level through education.

9. TRAINING PROGRAMMES

9.1 Workers, management and workers' representatives

One of the first needs is to ensure that workers themselves have the knowledge and ability to perceive health problems which arise from adverse psychosocial and other factors in their work environment, and to participate in their control. In this respect, the provision of general training programmes is necessary. These can be along similar lines to those providing health and safety training for workers.

Management and workers' representatives need more intensive training in this field. These tasks could best be considered and promoted by ILO and WHO, which could initiate appropriate activities in Member States.

9.2 Occupational health workers

A new type of skill is required in the occupational health team in order to improve the quality of life and the wellbeing of workers. First, it is necessary for generalist physicians and nurses on the staff of occupational health services to be trained in this field so that they have a greater understanding of these problems which arise in their daily practice. Secondly, there is a need for a higher level of competence among behavioural scientists, particularly those working in the field of organizational psychology and sociology. They require a special training, of more depth than that given to generalists. There are three possible ways of providing these special skills:

- (1) to add a specially trained behavioural scientist to the occupational health team;
- (2) to have consultants appointed jointly by management and workers; or
- (3) to offer special training courses for occupational physicians in behavioural sciences, focusing on occupational mental health so that they themselves are able to provide the expertise.

WHO could assist the governments of Member States by contributing to the dissemination of knowledge to occupational health personnel about the links between working conditions, health and wellbeing, and by outlining plans for training experts, having previously defined their functions and the skills required of them.

It would be necessary for WHO and ILO to collaborate in drawing up their respective training programmes in this area.

10. HIGH-RISK GROUPS

10.1 The handicapped and other groups

A substantial proportion of workers in European countries are so handicapped that their wellbeing at work may be adversely affected. The handicap may be physical, mental or social, or a combination of all three. Other high-risk groups are the young, the aged, women and migrant workers. Their wellbeing at work has been considered in other reports (13-15). The Working Group confined its discussions to the problems faced by working women.

10.2 Working women

Women now constitute a substantial proportion of the work force in European countries. They have special needs for medical and social support. First, their muscular strength is generally less. Secondly, there are sociological aspects to be considered, for example, the training women receive for their work is generally less than that received by men, yet higher skills may be required. Thirdly, many working women have a double work task, because of their domestic commitments. Enquiries have shown that the working day of some women may last as long as 13 hours.

Possible solutions to their problems include:

- (1) better sharing of domestic responsibilities between men and women;
- (2) the development or strengthening of child care facilities near the working place or home.

There are other problems with regard to women's vulnerability to toxic exposures. In some countries the aim is to reduce levels of exposure by improving hygiene standards so that men and women can do the same job. There is still the important problem of protecting the foetus, which means reducing exposure to such levels that the risk of damage to the foetus is negligible. Since the foetus is vulnerable at a very early stage, namely, when the women may be unaware of her pregnancy, this may necessitate maintaining very low levels of exposure to certain toxic agents in plants where women of child-bearing age work. More research is needed on safe levels of exposure with a view to preventing foetal damage.

11. CONCLUSIONS AND RECOMMENDATIONS

1. In a situation of rapid changes in the nature of work, new occupational health problems have emerged in both highly developed and developing countries, while many old ones prevail. Adverse factors affecting the wellbeing of workers may be classified as psychosocial, physical, chemical and biological; all are interrelated and have combined effects.

2. It is primarily the responsibility of work enterprises and their occupational health personnel not only to identify such problems and ensure that the necessary action is taken, but also to promote health and wellbeing, with the cooperation of local communities where appropriate. If work places are small and do not have access to occupational health services, they should be able to get expert advice from the appropriate government authorities at national or local level.

3. It is the task of governments, assisted and advised by WHO, ILO and other interested bodies, to initiate and support activities to ensure that all work places are covered by adequate and comprehensive occupational health services.

4. One of the first tasks of governments, with the assistance of international organizations where appropriate, is to assemble the existing knowledge on the many factors known or believed to affect wellbeing.

5. Governments must then encourage the application of such knowledge as widely as possible, through education, special training, provision of information and legislation.

6. As both the nature and the effects of the factors which impair wellbeing are constantly changing, there is a pressing need for continuous reappraisal of existing knowledge and acquisition of new knowledge, i.e., for basic and applied research.

7. There is a need to develop and harmonize methods of measuring all types of environmental factors and their effects on wellbeing of workers. Such methods should be reliable and sensitive enough to detect early changes, and allow improved identification, control or modification of adverse factors. The aim should be to produce internationally applicable "methodology kits" comprising, for example, methods of testing exposure to toxic substances at low levels, measurement of psychosocial factors and determination of long-term effects on wellbeing and health.

8. Special attention should be paid to the wellbeing of the physically, mentally and socially handicapped, and of other groups, including the young, the elderly and migrant workers.

9. Working women, who have additional heavy responsibilities outside the work place, and young workers who are at an important stage of their development, deserve special consideration.

10. WHO, in collaboration with governments and interested institutions, should stimulate and coordinate research to fill gaps in the knowledge in this field.

11. It is urged that further steps be taken to implement the recommendations of the WHO Expert Committee on Environmental and Health Monitoring in Occupational Health,^a and the resolutions of the World Health Assembly and the Executive Board^b regarding improvements in the work environment.

^a WHO Technical Report Series, No. 535, 1973 (*Environmental and health monitoring in occupational health: report of a WHO Expert Committee*).

^b In particular, resolutions WHA32.14 and EB60.R2.

12. There is an urgent need for governments, in collaboration with WHO and ILO, to compile, integrate, where necessary, popularize and disseminate the current knowledge in this field and to organize training programmes for:

- (1) occupational physicians and nurses, and behavioural scientists,
- (2) management at all levels, and
- (3) employees and their representatives.

13. It is essential for the success of such programmes that workers are encouraged to participate in the identification and control of factors influencing their wellbeing.

14. Several Member States have introduced legislation to promote wellbeing in work places, which generally has the effect of promoting adaptation of working conditions to workers' capacities, needs and expectations. Other Member States are encouraged to consider these experiences in formulating their own laws.

15. Employers and others, such as manufacturers of plant and equipment, should be required by law to consider the wellbeing of workers in the planning or design of new establishments, processes or equipment.

16. It is important to emphasize the humanization of work, which should be seen as man's servant and not his master.

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