

PSYCHOSOCIAL FACTORS AT WORK

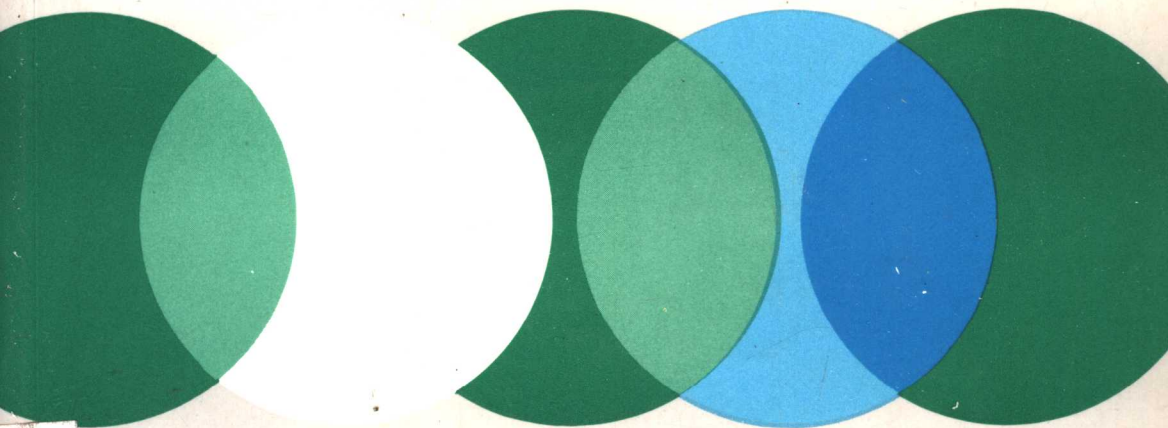
AND THEIR RELATION TO HEALTH

Edited by

Raija Kalimo

Mostafa A. El-Batawi

Cary L. Cooper



WORLD HEALTH ORGANIZATION
GENEVA

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Preface

Since 1974 the Member States of WHO have given increased attention to the question of psychosocial factors in relation to health and human development. The World Health Assembly asked the Director-General to organize multidisciplinary programmes that would explore the role of such factors and to prepare proposals for strengthening the Organization's activities in this field.¹

The working population constitutes a major section of the community and industrialization in the developing countries and the automation of industrial processes in the more developed countries have given rise to rapid changes in the psychosocial environment at workplaces and in the reactions of the workers. Exposure to psychosocial stress at work is associated with a number of health problems, including behavioural disorders and psychosomatic disease.

Little attention has so far been paid, by those concerned with occupational health, to determining and controlling the psychosocial factors at work that lead to adverse health effects. The mental health problems of workers have continued to be regarded from the point of view of established psychiatric disorders requiring referral for treatment, and rehabilitation. In the field of ergonomics, efforts have been made to adapt machines and working processes to human physical and psychological capacities and limitations, but the guiding principles for day-to-day practice in the assessment of occupational psychosocial factors and their effect on workers' health have yet to be considered.

Those working in the occupational health services have therefore to face the fact that, while allowing for differences in the individual life-styles and susceptibilities of the workers themselves, psychosocial factors associated with new working methods are emerging as one of the significant causes of ill-health among working populations.

This book presents a review of the present state of knowledge. It is intended for both policy makers and health personnel, to enable them to establish appropriate occupational health services, develop methods for the monitoring and evaluation of the psychosocial working environment and the health status of exposed workers, and see where further research is needed.

¹ Resolution WHA27.53. *WHO handbook of resolutions and decisions of the World Health Assembly and the Executive Board*, Volume II, Geneva, World Health Organization, 1985, p. 101.

With advances in technological processes and in the control of physical and chemical hazards in the working environment it should be possible to reduce occupational disease. If this could be achieved, and if biological and psychosocial influences could also be controlled, there is no doubt that work in itself would more effectively fulfil its acknowledged role as a major factor in maintaining physical and mental wellbeing.

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Part one

Introduction

In this book the masculine gender has been used when employing a pronoun to refer to "the worker", "the employee", or "the manager" for the sake of convenience only. In most, but not all, instances the feminine gender could equally well have been used.

Psychosocial factors and workers' health: an overview

Raija Kalimo¹

Psychosocial factors are recognized to be critical in both the causation and the prevention of disease and in the promotion of health. This is so for the health sciences in general and for occupational health in particular, since psychosocial factors are among the most important of those that influence the total health of a working population.

Psychosocial factors and the relatedness of work to health

Practitioners in occupational health have observed that working conditions not only cause specific occupational diseases, but may play a much wider role among the many determinants of a worker's health. From this basis the idea of the relatedness of work to health in a broad sense has gradually arisen. While an occupational disease is defined as a disease caused by certain well-defined factors in the working environment, a health impairment said to be work-related may result from multiple causation, the working environment having been one cause to a greater or lesser extent (2).

Careful consideration of the nature of health impairment said to be work-related has resulted in more attention being given to the psychosocial factors. Scientists investigating the human factors involved in maintaining health in the early 20th century were already concerned with certain psychological work-load parameters. Monotony, for example, aggravated by the newly invented methods of scientific management introduced during the period of industrialization had evoked attention and was the subject of experimental studies.

Since that time numerous epidemiological studies have demonstrated that health is related to psychosocial factors at work, and that their role in relation to both health status and the causation of disease is relatively wide in scope. Psychosocial factors can contribute to the causation and aggravation of a disease and affect the outcome of curative and rehabilitative measures. They can also be used as a means of promoting action for health at work. The conceptual aspects of health in relation to working environment are discussed in more detail in Chapter 2.

¹ Institute of Occupational Health, Helsinki, Finland.

Reaction to stress: early symptoms of health impairment

Studies on preventive measures in the area of occupational health have led to an increased emphasis on the detection of early indicators of health impairment. Unspecific symptoms, including diffuse aches and pains, disturbed sleep, apprehension, anxiety, and mild forms of depression, are relatively common among working populations. Although they may be of diverse etiology, they are often indicators of chronic work-related stress. Perceived symptoms may be accompanied by objectively measurable changes in the autonomic nervous system and hormonal function. These dysfunctions, if chronic, may lead to health impairment and a clinically definable disease state. The various effects of occupational stress on psychological, behavioural, and physiological functions are discussed in Part two.

The challenge of change and long-term stressors

Stress as perceived in working people is linked to a diversity of factors in the working environment and in the social setting. Great social changes are taking place in both industrialized and developing countries. While industrialized countries are currently experiencing rapid automation in relation to both production and services, developing countries are at a more fundamental stage of transition, from traditional ways of life to new types of production and methods of work that are often planned by foreign experts. Rapid urbanization is always accompanied by mechanization in industry. A concurrent problem is that different social institutions often seem to develop independently. Lack of coordination among social institutions connected with industrial development, housing, and transportation may lead to problems that are reflected in the health status of the workers. Although industrial development usually raises the standard of living and thus enables many of the basic necessities for a healthy life to be provided, it has its costs in that, sometimes, the resources for adaptation of the workers involved are exceeded.

Psychosocial problems in the field of occupational health cannot, however, be considered only on the basis of the changes currently taking place in working environment and occupational structure, or related social and familial phenomena. In many instances, a second or third generation of workers is involved—e.g., in mass production, using repetitive and monotonous

routines, paced by machines, with little control over what happens at work. In many instances middle-class work ethics are deeply rooted, and professional work practices and organizational structures are firmly established. Still, a considerable number of employees in white-collar occupations are known to suffer from work pressures, such as those resulting from complexity, conflicts in roles and responsibilities, and the challenge of continuous competition.

Many of the stressors that people encounter in their daily working environment and through their social roles are discussed more extensively in Part three.

Individuality: not a hindrance to constructive action

The relation between psychosocial factors at work and health is complicated by a large number of individual and subjective factors. An individual is rarely exposed to psychosocial influences from the working environment in isolation. Past experiences, genetic factors, and current general life conditions form a basis for an individual's own perception and interpretation of the influences from the working environment. Accordingly, reactions to perceived situations and the capacity to cope with, and recover from, periods of stress, are to a certain extent individually determined. This is discussed more extensively in Part four.

Individual differences must not, however, be overemphasized to the extent that group-oriented preventive intervention in working conditions is considered to be of secondary importance. When the influence of a psychosocial factor is strong, individual susceptibility is of lesser importance. An individual has many psychological characteristics and behavioural habits that are shared by others in a working population. This situation is analogous to that in which measures are adopted for controlling a physical disease; individuals may vary in their susceptibility and resistance to a disease for which a known pathogen has been determined, but the importance of fighting against the disease is not lessened because only a part of the population is affected.

Work can be health promoting

From the health promotion point of view, work is invaluable. For example, it gives an individual a sense of belonging to a

part of society considered to be important, needed, and valued; it provides an opportunity to express aptitudes and exercise, enhance, and acquire skills; it allows an individual to enter into the kind of social environment where a place can be found in goal-oriented interaction with others and mutual support in an interpersonal network; it provides opportunities to assume a variety of functions in carrying out daily activities, thus increasing possibilities for realizing different facets of the personality; and it creates a necessary time-frame structure. Work also usually brings the financial reward necessary to provide for the basic necessities. Thus, many of the essential ingredients of life satisfaction, health and wellbeing are inherently interwoven with work and occupation. The positive aspects of work should be awarded the merit they deserve and emphasized. In Part five approaches to promoting health in the working environment are dealt with, as well as the possible action to control known psychosocial health hazards.

Values and knowledge: critical elements in setting priorities

A crucial factor to be considered in planning and implementing psychosocial intervention in the occupational setting is that the situations of working populations in various parts of the world vary considerably. In many countries the work force still has to strive to satisfy the needs fundamental to survival. In others the workers have some freedom to fulfil their own wishes for job variety and participation and have access to working situations that allow for physical, psychological, and social security. No matter what an individual's position is in the hierarchy of human needs and values, psychosocial considerations, in one form or another, must always be taken into consideration. Governments set their own priorities, however, and they may vary tremendously in quality and scope; health in the widest sense could be relatively low in the hierarchy of values influencing the production sphere. While it is understood that economic targets must be reached it should not be at the expense of the quality of life.

Inadequate attention to psychosocial issues may be due to insufficient knowledge. In the past few decades research activities in many countries have produced ample information on the interrelation of occupational factors and health. The task of those who have had experience in the systematic evaluation

of the effect of work stressors on health is to disseminate information on that experience. Although only a very small amount of such information has spread beyond the narrow circle of professional expertise, interest has been raised and the demand is growing. An increasing flow of information through the mass media and widening cross-cultural exchange, making working populations aware of the importance of paying more comprehensive attention to the preconditions for health, will create expectations to which occupational health professionals should be ready to respond.

In recent research activities the important issue of material versus human values—i.e., the prerequisites for productivity and the health and wellbeing of the workers—has been brought to the fore and it has been recognized that they are not necessarily in contradiction. Dissatisfied, unmotivated, and stressed workers tend to have more health problems. Sick people tend to be less productive, to be absent from work more often, and to be more inclined to change jobs. Job satisfaction, health, organizational commitment, and productivity go hand in hand. This is recognized by many companies and employers who are pioneers in the area of occupational health, and who have established psychosocial programmes for organizational development and the humanization of work (1). The methods and the types of action employed in companies by experts in occupational health and by individual workers themselves are discussed in Part five.

Comprehensive participation: essential for psychosocial improvements at work

It is an illusion to think that achievements relating to psychosocial factors at work depend on one-way communication from professional specialists to those who are active in the labour market. Continuous dialogue is the only approach to realistic and meaningful progress; though this is, regrettably, too often forgotten. The idea of workers' health can only be fully realized if the workers themselves participate actively and interact with others, such as managers, personnel administrators, and supervisors. Experts in occupational health have an important contribution to make in this regard. Recommendations on this type of coordination are given in Part five, and on research in Part six.

In spite of the fact that priorities differ from country to country and that, among various occupational groups, the levels

of attainment of valued goals also differ, the number of those who would deny the overall importance of a psychosocial approach to the protection of workers' health is diminishing. It is hoped that national policy makers and legislators will institutionalize protective activities that are constructive and define who is responsible for carrying them out. Some governments are already revising or formulating labour protection laws (see Chapter 16). Such legislative measures oblige those who are otherwise uninformed or who are antagonistic, to strive to protect the health of the working populations with whom they are concerned.

References

- 1 KANAWATY, G. ET AL. *Managing and developing new forms of work organization*, 2nd edition. Geneva, International Labour Office, 1982.
- 2 WHO Technical Report Series, No. 714, 1985 (*Identification and control of work-related diseases: report of a WHO Expert Committee*).

Definitions and the conceptual aspects of health in relation to work

Lennart Levi¹

The evidence that *physical* stimuli in the occupational setting may cause physical disease—in the sense that exposure to them, or avoidance or manipulation of them, increases, decreases, or removes the chance of becoming ill, or reverses ill health when it occurs—is established for a large number of stimuli and diseases. The role of extrinsic *psychosocial* stimuli is not so clear. Before it is reviewed, therefore, some terms will be defined (2, 3, 4, 5, 8).

Definitions

In the context of stress at work, *psychosocial stimuli* originate in a social process within a social structure and affect the organism through the mediation of perception and experience—the higher nervous processes—and may be suspected, under certain circumstances and in certain individuals, of causing disease. A factory, an enterprise, a school, a community, or a family are examples of a social structure. A social process is what is taking place in such a structure—e.g., work, education, care.

Psychosocial stimuli operate on man, and man is characterized by an individual *psychobiological programme*, a propensity to react in a certain pattern—e.g., when solving a problem or adapting to an environment. This propensity is, in turn, conditioned by genetic factors and earlier environmental influences.

The interaction between, or misfit of, environmental opportunities and demands, and individual needs, abilities, and expectations, elicit reactions. When the fit is bad, when needs are not being met, or when abilities are over- or undertaxed, the organism reacts with various *pathogenic mechanisms*. These are cognitive, emotional, behavioural, and/or physiological and, under some conditions of intensity, frequency, or duration, and in the presence or absence of certain interacting variables, they may lead to *precursors of disease*.

Examples of *cognitive* pathogenic mechanisms are restriction of the scope of perception (tunnel vision) or a lowered ability to concentrate, be creative, or make decisions. Examples of *emotional* pathogenic mechanisms are feelings of anxiety,

¹ WHO Psychosocial Centre, Laboratory for Clinical Stress Research, Karolinska Institute, Stockholm, Sweden.