

Psychosocial criteria for good work organization

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LINDSTRÖM K. Psychosocial criteria for good work organization. *Scand J Work Environ Health* 1994;20 special issue:123—33. A good work environment and good work organization are defined according to occupational health studies and interventions. Criteria for good work organization include such job characteristics as optimal quantitative and qualitative work loads, opportunities for control at work, clarified work roles balanced by other roles, and supportive social interaction. These characteristics can be promoted independently or in conjunction with strategies used to attain good work organization, such as mastery of work, management of change processes, support of employees by occupational health services, and emphasis on career stage and future perspectives. Typical for these job characteristics and interventive strategies as criteria for good work organization are their dependence on national and organizational culture and values. Their definition as health and well-being promoting is based on empirical research in which they have been associated with indicators of well-being, such as job satisfaction, active life and lack of subjective stress symptoms.

KEY TERMS — change, control, gender, job redesign, job stress, psychosocial, review, roles, well-being.

This article is an overview of criteria for a good work environment and good work organization according to research and intervention conducted by the applied research group in work psychology at the Finnish Institute of Occupational Health during the past 20 years. The criteria comprise work characteristics and interventive strategies associated with health and well-being and the mastery of one's work. This approach represents the Nordic research tradition, which is based on collaboration between both social and behavioral scientists and occupational health experts and employers and employees in order to promote workers' health and a healthy work environment.

The construct of the psychosocial characteristics of work and the work environment refers to the workers' own perception of their work. Outside evaluation of work characteristics has been found to have a weak relation to workers' health and well-being. (See, eg, reference 1.) This weak relation is partly due to individual and life-style factors which modify or moderate the relationship between work characteristics and workers' health and to the interaction of various job demands as such (2). From the point of view of well-being the subjective evaluation or the individual meaning of certain job characteristics is more important than the presence of the factor itself.

The definition of criteria and the means for creating good and healthy work and a healthy work or-

ganization have been the goals of both studies and practical efforts in worklife. (See, eg, references 3 and 4.) Good and healthy work has been defined in many ways. Earlier it meant a lack of exposure with adverse effects on physical health or factors affecting job satisfaction. For example, the two-factor theory of job satisfaction described how hygienic problems are related to job dissatisfaction and motivational factors to job satisfaction (5, 6). During the last 20 years, theoretical stress models dealing with interactions between the person and his or her environment have also been used to explain work-related health effects.

Although the sociotechnical system approach to the improvement of job design and work organization was born in England, most of the earliest interventions were conducted in Scandinavia, in Norway and Sweden, from the mid-1960s on. The collaborative and participatory approach with workers and their representatives was developed in Scandinavia (7). At the same time the "Quality of Worklife" movement began to develop in the United States, where the earlier technological determinism of work conditions changed towards a more holistic approach to job design (8).

In Scandinavia this research began to prosper in the 1960—1970s when social science research and health research combined their efforts in the investigation and reforming of worklife. Bertil Gardell (9), along with some other researchers, were pioneers in this field. The study of the University of Michigan, on job demands and workers' health, had a strong influence on the research approach and on the definition of a good or healthy work environment (10).

In Finland the Scandinavian influence began in the 1970s, although the interventions were based pure-

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ly on job reorganization and redesign traditions without strong employee participation (11). Especially at the end of the 1970s and the beginning of the 1980s research and intervention to promote a good work environment proceeded along the same lines in Finland as in other northern and middle European countries. In the beginning they strongly emphasized well-being criteria and recently also the mastery of work. The orientation towards health was partly due to the close relation to research on occupational health at the Finnish Institute of Occupational Health. The quality of worklife criteria (12), which are to a great extent the same as the main job stressors, have been applied to job redesign and organizational intervention.

The measurement of job characteristics and their relation to health acts as a starting point for health promotion and organizational development, and it continues to intervention influencing these characteristics. In real-life situations at the workplace, contextual factors are important. In traditional empirical research these contextual factors are often excluded. These factors have, however, often proved to be the most central and most important prerequisites of, or hindrances to, successful intervention (13).

Theoretical stress models as bases for good work organization

The research tradition of the Finnish Institute of Occupational Health has its theoretical roots for creating good work organization and a good work environment in the theoretical stress models. This theoretical thinking was adopted by researchers in work psychology in the early 1970s. The study on prison personnel introduced a theoretical framework for stress for use in psychosocial research on workers' health (14).

The theoretical stress model and its concepts are based on the physiological general adaptation model introduced by Selye (15). A systemic model of stress at work by Kagan & Levi (16) had an impact especially on medical and health-oriented research on job stress in Scandinavia. However, the psychological stress theory of Lazarus (17), emphasizing the cognitive and affective functions of a person when perceiving job demands, had a stronger influence on job stress research in Finland. The appraisal of job demands and coping with these demands refers to the individual adaptation to stress situations (17, 18). Jenkins' model of stress (19) had a strong influence on Finnish job stress research at the beginning of the 1980s. His model has similarities with Selye's model, including adaptive capacity and adaptation process and psychosocial factors as modifiers. It differentiates biological, psychological, interpersonal, and cultural levels in the stress process. The interaction between these levels is essential in the case of an individual worker who is a member of a work group,

is employed by a certain type of industry, and whose work tradition is related to the national culture. The theoretical stress models have continued to guide research in work psychology at the Finnish Institute of Occupational Health.

In the study on prison personnel, the pattern of critical job stressors was also defined (14). Job stressors related to work content and work organization, roles in organization, career development, relations within the organization, organizational structure and climate, and the interface of the organization with outside life were measured (eg, in references 20 and 21). In this study, perceived lack of challenges and conflicts in occupational motives and roles were related to stress reactions and health disturbances. The general organizational climate, insecurity, and quantitative work load were related to indicators of perceived stress. Other types of job characteristics were related to job satisfaction rather than to stress reactions and health disturbances (14).

The theoretical paradigm of job stress has been developed and tested since then with empirical research including practical intervention and follow-up. The role of nonwork factors and early psychosocial development have also been studied longitudinally (22). When one considers the health relatedness of the studied job characteristics, the greatest limitation has often been the cross-sectionality of the study design, which neglects selection during the work years, in addition to the effects of primary job selection.

The role of coping strategies and mechanisms was emphasized in the model used in a later study on the mental health and stress of psychiatric health care personnel (23). The model has been developed further, with the mastery of work partly as an outcome factor, like health and well-being, and partly as a moderator between job demands and stress reactions and health (24).

The moderators and modifiers of the health outcomes of job characteristics are important, the most important being control or autonomy and social support. They can be seen at the same time as work characteristics. Organizational roles and cultural context are important, too. Recently, individual health resources, like sense of coherence, have been of interest in a life-long prospective study (25).

Well-being and mastery of work as goals

Psychological and sociological definitions of well-being emphasize subjective experience and functioning and are broader than the biomedical definition of health, which often means only the absence of disease. Well-being involves subjective happiness and life satisfaction and is seen as a result of an active life (26). Various measures of subjective symptoms, job satisfaction, perceived health, and mental competence have been used as indicators of well-being

when the health relatedness of job characteristics is studied.

The General Health Questionnaire and Occupational Stress Questionnaire, combined with some additional questions, have been used to measure subjective symptoms in many studies (25, 27–29). The single questions have been factor-analyzed, and sum scales have been used as indicators of well-being. The content of these scales has differed slightly between the studies, because of some variation in the questions included.

Psychological symptoms have usually been measured by a scale including symptoms of fatigue, nervousness, depression, and lack of energy. A scale of mental competence has also been used as a measure of well-being. It comprises questions on feelings of competence, good concentration, and having performed everyday duties well. A scale called nonspecific somatic symptoms includes questions on headache, palpitation, dizziness, and stomach pain, as well as chest pain. Sleeping disturbances have often been used as a separate measure (14, 28, 30). These four scales are included in the Occupational Stress Questionnaire (OSQ). The OSQ was developed at the Finnish Institute of Occupational Health, and it is based on empirical studies with 25 000 employees from various industries. It is intended for use in occupational health services (28). An additional symptom scale mainly describing physical health and musculoskeletal symptoms has been used as a potential stress indicator (31, 32). In recent studies a Nordic questionnaire measuring the health of the musculoskeletal system has been used (33).

Job satisfaction has been measured by one single question on overall job satisfaction or by a scale of four items indicating various aspects of it (23). Single items have been used to indicate job strain and lowered well-being, for example, overall mental work load and perceived work capacity (34). Acute stress reactions during the workday have seldom been studied because the main focus has been on field studies and indicators reflecting long-term strain.

Diagnosed illnesses and sickness absence data as health indicators have shown to have a low relation to work characteristics and have been used seldom as health indicators (29). In some studies blood pressure and catecholamine levels have been used as stress indicators (35, 36).

Behavioral outcomes have recently been adopted more and more as indicators of well-being. The mastery of work and the work process among paper machine operators was measured by simulated tasks and through subjective evaluations of the workers themselves (24). The mastery of applications for visual display terminals was evaluated by employees in banking and insurance. (See, eg, reference 30.) Increased competence and learning can have a positive impact on perceived strain and symptoms, but can also be seen as independent indicators of well-being

(24). They are both related to the outcomes of productivity, other organizational effectiveness, and other indicators of well-being.

Criteria for a good work environment and good work organization

In Nordic countries a good work environment and healthy work have been a common goal in research, along with practical intervention into worklife. Research has laid the grounds for and produced knowledge about a good work environment. Institutionalized agents like occupational health services or the organization of occupational safety have utilized research knowledge when participating in redesign activities at workplaces (37). The general strategy for implementing criteria for a good work organization has changed during recent years. The role of management as a change agent, together with that of personnel at the worksite level, has become crucial. The experts outside or inside a company or organization offer their knowledge and support the implementation of change. The labor market organizations have played an important role in policy making by taking into account mental health and the psychosocial work environment (38) and by participating also in actual intervention. Their role, however, has been minor in projects carried out at individual workplaces, as outside pressures for change in these organizations have recently been very great and time schedules have been tight.

But what work characteristics and intervention methods have shown to promote healthy work and a better work organization and workplace? The nature of psychosocial factors at work differs from that of physical, chemical, and biological risk factors, and it is important to know that this difference exists when intervention is undertaken. Psychosocial factors can either have adverse effects on health or they can be health promoting. Usually the lack or excess of a factor is adverse for well-being, and the optimum is somewhere in the middle. The meaning of one job characteristic to the health of workers cannot be evaluated separately; instead it is more important to consider a combination of job characteristics and the adaptive resources given by the work situation to moderate or regulate the factors themselves and their possible negative or positive effects. Very seldom can any specific effects of a single job stressor be shown. Especially when an effort is made to create healthy work and a healthy work organization, it is insufficient to focus on single factors. When explaining the variance in health and well-being outcomes statistically with job characteristics, one must be satisfied with a rather low explaining power. When the perspective is psychological, it is often better to rely on the subjective and perceived job stressor than on so-called objective factors.

The classification of psychosocial job stressors by Cooper & Marshall (20) was found to be a fruitful starting point. It comprised factors intrinsic to the job, for example, job content and organization, control at work, organizational roles, interpersonal relations, mastery of work, and learning. Most of these factors are included in the "Quality of Worklife" criteria, which in addition include characteristics of the physical work environment and means of compensation (12). When creating good and healthy work, the management of change, institutionalized support of employees, balance between work and nonwork roles, and stage of life perspective can be added to the list of criteria. They describe processes and actions relevant for good and healthy work. The characteristics of good work organization and strategies to improve it are summarized in figure 1.

According to cross-sectional surveys, the nature of job stressors varies strongly depending on the type of work or occupation. Blue-collar and white-collar occupations have different job stress profiles. Each type of industry, for example, manufacturing, health care work, and public administration, also has its own job stress profile. Therefore the type of occupation or industry also defines the characteristics of a good work environment and good organization. Certain job stressors, for example, those related to the type of patient in health care work, cannot be eliminated or avoided. But promoting job characteristics which can buffer or modify the unavoidable stressors in these occupations will contribute to the health and well-being of the employees. In other words one has to find an optimal combination of factors as a starting

point for workplace reform, and this combination differs according to the occupation and industry. A more-detailed description of the job demands an occupation has is needed as a prerequisite to intervention.

Organizational structure has received more attention as the job demand approach has been widened to include organizational climate and cultural perspectives. Organizational climate is a broad concept which includes many of the job characteristics that have already been described in this presentation. The history and values of the organization play a central role in the organizational culture. (See, eg, reference 39.)

Next the criteria for good work organization and a good work environment are discussed in light of empirical studies conducted at the Finnish Institute of Occupational Health. Results of both surveys and interventions are reviewed.

Need for improving job content and work organization

The factors related to job content and organization include quantitative and qualitative work load. Much work, long workhours, or haste at work all refer to too high a quantitative work load, which can lead to negative effects on well-being. Too little to do can also be a negative job demand. Tasks that are too simple or too difficult, as well as those whose content variety is too low or too high, can result in negative effects on well-being. The nature of work, and also the type of industry, usually has a strong impact on the relevance of the characteristics of work content and organization. But also the work group and the organizational context can be the main determinant of whether a certain job characteristic causes strain.

In various manufacturing tasks the most common job stressors are quantitative overload and qualitative underload. The amount of work to be done and the work pace can cause an inappropriate load; at the same time the level of difficulty can be low and therefore offer very little opportunity to develop and use one's skills. These job stressors appeared in both a subjective evaluation by workers and an outside observational evaluation done by foremen, occupational health personnel, and researchers (1). Among blue-collar workers, the aforementioned job demands were related especially to psychological symptoms and only slightly to nonspecific somatic symptoms (1).

Quantitative overload has been shown to be the main job demand associated with stress symptoms among sales personnel in the service sector, but also the roles (conflicts, responsibility) were important (40). In the banking and insurance sector, high qualitative work load, difficulty of task, and poor supervisory practices were related to elevated psycholog-

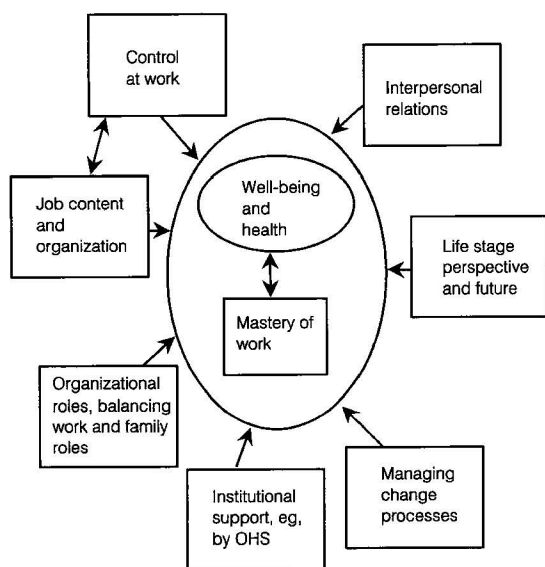


Figure 1. Criteria for good work organization, only the main direction of the relations are indicated. (OHS = occupational health services)

ical symptoms. Lack of mental competence was especially related to the difficulty of tasks. Nonspecific somatic symptoms were more clearly related to the difficulty of tasks, problems in the use of application for visual display terminals, and poor co-worker relations (30).

In hospital work, the main job stressors were related to quantitative overload and to compromise between the amount of work and the quality of work with patients (41).

Job redesign intervention has been used to optimize qualitative and quantitative work load. Quantitative overload can be partly influenced by a reduction in overtime, a reorganization of work processes, and an increase in job control. Usually quantitative overload is affected simultaneously when the qualitative work load is changed. Increasing the content variety of the tasks or teaching new skills can be considered a means for improvement. The early redesign activities in Finland have been summarized by Kauppinen-Toropainen & Hänninen (11). Holistic approaches to workplace reform have included the redesign and reorganization of jobs in order to reduce high quantitative work load (42, 43).

Increasing control and degrees of freedom at work

The level of control or autonomy or the level of self-determination or degrees of freedom at work is an important job characteristic as such, and it is also important as a modifier of stress. Control over one's work situation has been found to be central when the adverse effects of potential job stressors are examined (3, 44).

In the analysis of data from the Finnish Wage Earner's Survey with the use of the Karasek model, different combinations of job demands and control characteristics were found for various occupations (45). Male and female workers in the same occupation were grouped somewhat differently when the classifications of active-passive jobs and high-low strain jobs were used. High-strain jobs with low control and high work load were typical for men in paper making, iron and metal ware work, and construction work, and also for women employed in sewing work, shoe and leather work, the food industry, and textile work. These findings corresponded to those found in other countries (3).

In blue-collar work, the subjective job characteristics differed when they were evaluated by the workers themselves, by outside observers, and by foremen. The opportunities for autonomy and control at work influenced the subjective evaluation of quantitative work load among blue-collar workers, and they were, as such, not an important predictor of well-being, as measured by subjective symptoms. The perceived lack of control was slightly related to nonspecific somatic symptoms, among both men and

women, and among men perceived lack of supervisory support was related to these somatic symptoms (1). The outside evaluation of control at work correlated with perceived job stressors, but not with health and well-being. This finding indicated inter-individual variation in job control, which cannot be evaluated from the outside (1).

Participatory approaches in which both employers and employees are engaged have been applied to increase job control. In an action-oriented study in the paper industry, the supervisors and employees were encouraged to collaborate in tackling the problems revealed by a questionnaire survey. In addition, specific intervention programs were conducted, such as workshops, to improve supervisor-employee relations and communication in office work (46).

Benefits of interpersonal relations and social networks

Interpersonal relations at the workplace include the relations between co-workers, and also the hierarchical relations between supervisors and workers. In addition, many occupations include an ever-increasing number of direct client relations. These interpersonal relations are associated with the health and well-being of employees directly or indirectly, and they evoke both positive and negative reactions. Isolation is an extreme case in which social relations at work are lacking altogether. Social support and networks refer mainly to the positive aspects of social relations at work (47).

Many job stress studies in Finland have concentrated on occupations with customer service or patient care. The rarer types of client service or care occupations, such as prison personnel, psychiatric health care personnel for criminal patients, or day care personnel for handicapped children, have been studied. In all of these occupations, the characteristics of the patients and the conflicting roles of the personnel have been found to be potential stressors (14, 23, 42, 48).

About 10% of workers usually report many problems in social relations at their workplace. Job dissatisfaction has, in many studies, been related especially to poor social relations at the workplace (30). An extreme case of workplace conflict is bullying at work; in such cases an unsolved problem situation has been prolonged and has led to the terrorization of an individual person (49).

In banking and insurance, poor co-worker relations were associated with somatic symptoms and sleeping difficulties, whereas poor supervisory practices were related to psychological symptoms (30). For health care personnel, however, work motivation and well-being were dependent on social relations at work, both in the relations between co-workers and patients and in the opportunities to help people (41). In the paper industry, poor supervisory practices and

problems with cooperation were related to psychological symptoms. Somatic symptoms have been found to be related to poor supervisory practices among office employees in industry and to co-worker relations among blue-collar workers (50). The nature of the occupation and the type of industry probably has an impact on how the relation to measures of well-being appear.

Social support has been found to modify or moderate job stressors and strain (47). It functions as a health resource also at the workplace. In municipal work organization, female employees were found to have broader social networks and more heterogeneous close human relations than men. Social activity and the size of the social networks decreased with increasing age. Those higher in the organizational hierarchy tended to have broader social networks, more social activity, and also more close friends and heterogeneous networks. Low-risk behavior was related to social networks, social activeness, and broader networks of close friends. Social networks and perceived social support were also related to good perceived health and high work motivation (29).

When the job demands were high, social support by supervisors and co-workers was related to a low number of musculoskeletal symptoms, good perceived health, and a low amount of sick leave among municipal workers. The relations, however, were not systematically the same for all of the subgroups, because female employees with many close friends reported an increased number of musculoskeletal symptoms and a greater use of pain killers. This finding may have been due to the care-giving role associated with the female role (29).

Social relations at the workplace are often improved indirectly by work reorganization. Current projects using team building and the development of management and supervisory systems are used to influence interpersonal reactions. Attempts have been made to solve conflict situations and bullying cases by using systematic problem solving, and utilizing, for example, occupational health services in individual cases (49, 51).

Clarity of roles and the balance between various roles

Roles link an individual to the organization. They represent the expectations of an individual and an organization. The determinants of the role-making system at a workplace are technology, sociocultural context, and other persons. Common job stressors related to roles are role conflicts and role ambiguity (14).

The clarity of job roles is usually related to the clarity of the goals of the entire organization. Better knowledge of these goals helps the individual worker to fulfill expectations, as does a better knowledge of

the clients' and customers' needs. The roles can be clarified by employee-supervisor discussions. Such discussions were used by a work group to support the technological change associated with job redesign (43).

The interaction between work and family life has been found to be a possible source of stress. The family situation and leisure-time activities have been investigated from the point of view of their balancing effect on job demands (52). The balance between family and work roles was studied among parents of handicapped children. Flexibility in workhours and work organization were solutions for better balance (53).

Especially gender-oriented research has emphasized the female and male roles in work and the segregation of occupation by gender. Occupations are highly gender-segregated in Finland. Women's jobs often have fewer opportunities for personal development, autonomy, and career development (54). It has been found that women often benefit more from working in male-dominated jobs than men do in female-dominated ones because a man's role in female-dominated occupations is often double bound.

According to Finnish studies integrating work and family orientations and their importance were dependent on the type of work being done. In the health care sector, home orientation was common. Upper white-collar employees were either work addicts or combined their home and family roles in an innovative way. Those who were extremely work-oriented had more stress symptoms. The results supported the idea of multiple roles as a possibility to further well-being. Female work addicts experienced more stress symptoms than did housewives, and this finding indicates a conflicting or burdensome set of roles (55).

Mastery of work through learning and coping

The mastery of work can be seen as a consequence of the opportunities offered by job content and organization or the use and development of skills. It is also a prerequisite for healthy and good work.

In the late 1980s this research orientation, which takes the knowledge and cognitive aspects of job demands more thoroughly into account, became common. In a study among personnel in day care centers for handicapped children, inner mental knowledge structures were analyzed in relation to the goals of the personnels' own work and the children's need for care (48). Emphasis on individuality and on emotional development of the child as a goal of one's own work was associated with lower stress symptoms. Goals related to intellectual and social development were not related to stress symptoms. The large size of the group of children increased job stress, but complex mental explanatory models de-

creased it. A high number of goals without any clear meaning for the employee increased job stress. The findings illustrate how complex the relations between work characteristics and job strain are when the role of cognitive models at work are taken into account. All types of supportive material could be used in supervisory and team discussions among the personnel to help create mental models that are less stressful.

In paper production, the developmental work of paper machine operators revealed the importance of the conceptual and theoretical mastery of the work process. When dealing with complicated and highly automated processes, workers need a mental model to master disturbance situations in their work and work processes. Simulated disturbance handling tasks were used as a part of a developmental program for analyzing the critical tasks of paper machine operators and for modeling the production process. These tasks were found to increase the workers' conceptual mastery of the work process. Their ability to handle the problem situation improved. The increased mastery of the process in the group with a better developmental orientation at the beginning of the study led to better health and well-being, as measured subjectively, as well as to an increase in production (24). In another group with poor developmental orientation low conceptual mastery was related to low job stress. The interrelations were complicated and need further research.

In addition to the mastery of tasks, another health and well-being resource has proved to be the coping resources of individuals in a stress situation. These resources can be internal, for example, intelligence and social skills, or external, for instance, social support (56). Traditionally coping styles have been divided into problem-solving and emotion-focused styles.

Coping with job stress at different career stages was studied among male managers in Finland and the United States. Coping strategies focusing on emotions were usually related to a high number of psychosomatic symptoms, whereas active coping strategies were associated with low symptom frequencies. Coping moderated only slightly the relationship between job demands and psychosomatic symptoms in this group (57).

Among psychiatric nursing personnel two main coping strategies were found that were called growth strategy and pain avoidance strategy (23). Growth strategy was the most common among the employees who had high expectations for their job and interpersonal relations or who perceived their job as difficult and involving a high degree of responsibility. Generally speaking, they saw the situations as challenging. The pain avoidance strategy involved avoiding difficulties and adopting an affective attitude towards them. This strategy characterized those who were vulnerable to strain symptoms, those who had low self-esteem and numerous health problems

and symptoms, and those who experienced many interpersonal conflicts at work (23).

Managing change processes

Turbulence outside the workplace and inner change pressures can be a threat or a challenge to work organization and personnel. The changes can be technological, structural, or social. Technological changes are nowadays usually experienced as positive. Structural changes involving a decrease in size or a fusion of several organizations tend to be the most difficult. A change in top management can also be difficult because it usually means major changes in work organization and company culture.

Change processes include several phases. They mean both technical and structural change and social and human change. The human and social change processes tend to be less planned, although they may be more difficult to master than the technical ones. In many cases attitudinal preparation has been neglected and the participation of the personnel has been insufficient or training for the new task has been lacking.

The implementation of a new data system for salary calculation in public administration demonstrated how shortages in training during the implementation and the lack of participation of the personnel led to poor mastery of the new data system. Especially the transition phase meant that the personnel had less energy to concentrate on problems outside their work, and their leisure-time activities decreased. The change from manual tasks to computerized tasks contributed, however, to a decrease in musculoskeletal symptoms (58). A similar phenomenon was found during the implementation of more advanced data technology in banking and insurance (43). In this case the psychological and somatic symptoms were maximal immediately after the transition to the new data system because of major difficulties in coping and returning to the level of the pretransition period when the new data system was functioning properly.

On the basis of experiences from change processes, a training program was developed for managers who had to carry out a change process in their own organization (59). The development of this training program benefited from the researchers' experiences with individual case banks that had undergone actual organizational change and had been followed by the researchers. Both improved communication and dissemination of information, as well as the commitment of the managers to the planned change, especially had a favorable impact on the well-being and competence of the personnel. In this case the transition period, with many things to be learned and a high quantitative overload, also led to severe psychological and somatic stress symptoms among the personnel. These symptoms could have been

avoided if the interindividual differences of the personnel had been taken into consideration.

Support of employees by occupational health services

A characteristic of Finnish and Scandinavian work-life is that the health and well-being of employees have been taken into account in legislation and in the practical organization of occupational health services. The occupational health care system is preventive in nature and is directed both towards workers and the entire organization (60). The contributions of occupational health services have been crucial in the fight against severe chemical and physical problems at work and their adverse health effects. Now occupational health services also have an important role in diagnosing problems in the psychosocial work environment and in organizing intervention to improve it. This activity occurs usually in collaboration with management and personnel, and is supported by the labor market organizations.

The substance and strategic knowledge for preventive measures at the workplace come from the experts inside or outside the company or organization. Therefore one policy to create a good work environment has been to develop methods for occupational health services to use in diagnosing and monitoring the psychosocial work environment and in implementing improvements.

Two methods have been developed with which occupational health services survey the psychosocial work environment. One is based on outside expert observation (61) and the other involves the subjective evaluation of the employees themselves (28). The methods include measures of both the main potential job stressors and the subjective health outcomes. Their reliability and validity have been investigated also in practice (1).

Pilot studies have been conducted by occupational health services to study the implementation of the criteria for good work organization. These studies have included the training of occupational health personnel in the use of the developed methods, as well as practical pilot projects in companies and organizations. Employees who had difficulties to cope with job demands were supported by occupational health personnel with individual support programs. The support and follow-up lasted for six months to a year and ended in an evaluation of its effects. The main idea of the pilot study was to implement the intervention model into occupational health services for their future activities (51). An actual work group that had experienced major difficulties with organizational change was also chosen for inclusion in the project in order to support the group when it was coping with difficulties associated with a new data system and the redesign of jobs. These intervention studies were carried out in the banking and insurance sector (43).

The role of the psychologist as a consultant within occupational health services was especially developed in a bigger health promotion program in a forest company (50). This pilot study for developing the role of the psychologist focused on health examinations, health education, consultation, and the support of other occupational health personnel, and helping employees in need of mental health care. Usually the occupational health physician, nurse, or physiotherapist is the person responsible for the psychosocial work environment, but in some bigger organizations a psychologist can also be a member of the occupational health team.

Emphasizing life stage perspective and future development

Career development includes both challenges and potential stressors, such as a lack of job security and status incongruence.

Work reorganization solutions and the planning of career development occur usually without the health of an employee being considered in the life-long perspective. At its longest, the perspective covers the period in that specific workplace or task in which the worker is engaged. However, it is also necessary to look at health in the life-long perspective, not only in respect to the short-sighted profit making of today.

Individual life-orientation changes during different life stages are sometimes more home- and family-oriented and sometimes more work-oriented. Therefore a need for flexibility in job demands exists (62).

The qualitative work load and opportunities for control are usually highest in the mid-career phase. Among managers in Finland and the United States, job control seemed to be related differently to health and well-being at different career stages. In general, however, job control benefited the managers, but differently at different life stages and differently in different industries (57, 63).

Job redesign and reorganization have traditionally tried to improve the existing work situation. Recent reorganization approaches emphasize deeper changes in the future paradigms of functioning and the goals of organization. Outside pressures and structural changes usually support changes of this kind. The paradigmatic changes also increase the self-corrective skills of the organization by promoting its learning (64). This kind of cognitive change with a futuristic vision was tried in one ongoing intervention study dealing with the fusion of various organizations with different cultures. For this purpose the so-called organizational transformation method was combined with traditional job redesign and organizational development activity.

Both the career stage perspective at the individual level and the organization transformation method at

the organizational level represent future approaches for sustainable development.

Concluding remarks

The criteria of good work organization were defined on the basis of international research on the health relatedness of various job characteristics and on the basis of strategies by which the criteria can be promoted. The criteria include both characteristics of work and actions and strategies. The presented research results were mainly obtained by work psychologists at the Finnish Institute of Occupational Health during the past 20 years according to theoretical stress models that have been supplemented during the past few years with research on the mastery of tasks.

In the beginning the research was cross-sectional, but follow-up designs have increased partly because of the many intervention study designs applied. These interventions, followed by evaluations, have given more data about the theoretical and practical relevance of previous findings based on cross-sectional studies.

The main criteria for good work organization were work characteristics such as work organization and content, control at work, interpersonal relations, role at work, and the balance between various roles. The criteria forming strategies to be used to promote good work organization were mastery of work, management of changes, support of employees by occupational health services, and emphasis on life-stage perspective and the future. The first four criteria are characteristics that are promoted by participatory job redesign and reorganization methods, and the last four are pure strategies representing various intervention methods and approaches.

The context dependence of the data is an important topic dealing with the psychosocial criteria of healthy work. Local organizational and occupational cultures have to be taken into account when one interprets the results from different studies. The point of time when a cross-sectional study or intervention takes place also influences the results. The general situation of the whole society and the specific occupation affect the subjective evaluation of the effects of intervention by workers.

Efforts to find criteria for a good work environment depend naturally on actual values. Earlier, health and the self-fulfillment of an individual were emphasized; nowadays productivity is stressed. This change in emphasis affects the list of good work characteristics. Although productivity and the health of workers are interdependent, one must keep in mind the values of the whole society. Health and productivity are prerequisites for each other, but at the individual level there are always losers and winners when one changes work or the work organization, especially in the perspective of the long term. The long-term perspective has been taken into account in

the life-stage approach and in the organizational transformation method.

The research data were based on Finnish research on job stress and good work organization during the last 20 years. The results and principles can be generalized to other developed and industrialized societies where advanced technology is applied and the cultural background and history have emphasized similar values.

Future research is needed to develop work organizations and promote individual health even further. In addition to long-term future orientation, some other aspects are central. The criteria for health and well-being are predominantly based on subjective symptom data. Even though health and sickness data have given little relevant information thus far, occupational mental health (eg, the burnout phenomenon, its etiology and therapy) especially needs much more research, because current knowledge is very superficial.

The labor market is becoming more open, and collaborative needs are increasing as a result of increased internationalization. Therefore studies and intervention dealing with increasing mastery of new demands and cultural changes at the work organizational level would be important. Especially the benefits of individual and cultural differences should be used better, and strategies for their promotion are needed. It is no longer a question of only the differences between the young and old or men and women, it has become one of different cultures.

In terms of intervention studies at the workplace level, the acceptance of qualitative case study results, as well as the means with which to generalize from these results, has been criticized. Nevertheless many changes are being dealt with at the individual and organizational level, and these changes affect the quality of worklife and the health of employees. However, they cannot be measured quantitatively. The simultaneous, overlapping change processes that are occurring in individual groups or companies, and also at the national level, are especially good examples.

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