

# Management of Work Site Health-Promotion Programs: A Review

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**Abstract.** The review starts with the assessment of needs for health promotion, particularly drawing upon the aging of the workforce in Europe and U.S. Basic intervention models for work site health promotion programs (WHP) are outlined. Recent findings of WHP outcomes underscore the requirement to integrate health promotion into the management system of the organization. Based on the framework of healthy work organization and of Health Management Systems the research project INOPE is described. The objective is the development, implementation, evaluation and transfer of a holistic health management system within the German tax administration.

**Keywords:** Review, occupational health promotion, healthy work organization, health and safety management, tax administration

## 1 Need for health promotion

The aging of the population in Europe, United States and throughout the world is a challenge for many organizations. The baby boomer generation of 78 million, born between the years of 1946 and 1964, is the largest birth cohort in U.S. history and is rapidly moving into the older age groups. The proportion of the U.S. population in the 65 and older age group has grown from 4.0% at the turn of the century to 8.1% in the 1950s and to 12.4% in 2000. Predictions suggest that by 2030 it could reach a level as high as 20.0% (Social Security Administration, 2000).

A significant numbers of older age groups retire, the influx of younger replacement workers will be insufficient to replace those leaving. Several industrial sectors are projecting that a majority of their current workforces will retire within the next 2 decades (e.g. teachers, hospital workers, roofers) raising concerns about the loss of skilled workers along with institutional knowledge und experience. In addition, the movement of large numbers of older workers into retirement will put substantial pressures on social security, pension funding systems, and medicare financing. Public policies will almost certainly need to evolve to encourage workers to stay on the job longer (Musich, McDonald, & Chapman, 2009).

There appears to be a discontinuity in the trend for advanced retirement of older workers, either by choice or force, and their expressed desires to remain actively engaged. The willingness of the 55-years-and-older group to continue working into

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the future or to delay retirement is a multidimensional decision (Karpansalo et al., 2005). Factors relevant to the person's decision to retire or to continue working include the individual's health status, financial considerations (e.g., retirement income, savings, pensions, and social security payments), job satisfaction, work environment, and social support. In contrast, poor health, involuntary retirement, and changes in marital status (e.g. widowhood or divorce) have negative impacts on retirement attitudes.

Although managing one's physical and mental health requires a high degree of personal responsibility in maintaining a healthy lifestyle and positive attitudes, supports within the workplace (e.g., programs and policies) are essential in maximizing health and productivity. Work Site Health-Promotion Programs (WHP) have emerged as a priority topic among those initiatives.

WHP are initiatives directed at improving the health and well-being of workers and, in some cases, their relatives. They include programs designed to prevent the occurrence of disease or the progression of disease from its early unrecognized stage to one that's more severe. At their core, WHP support primary, secondary, and tertiary prevention efforts (Goetzel & Ozminkowski, 2008).

The main driving force behind employers' growing interest in providing WHP services to their workers is undoubtedly rapidly rising health care costs. Employers' health care costs, primarily focused on sickness care, are increasing exponentially with no immediate attenuation in sight. The most recent worksite health promotion survey in Germany in 2004 reports that 20% of the enterprises from a representative panel of 16,000 implemented some form of health promotion activities. Most frequently mentioned were analyses of status of employee's illness, and surveys on health and sickness status (9%), followed by health education (6%), health circles (6%) and other activities (5%) ([www.iab.de](http://www.iab.de)). If structural, e.g., management and environmental activities as well as individually focused health activities are simultaneously considered, less than 10% of the enterprises make use of an holistic approach.

A recent National Worksite Health Promotion Survey (2004) from the U.S. documents that only 6.9% of employers provide all five elements considered key components of a comprehensive program: (a) health education, (b) links to related employee services, (c) supportive physical and social environments for health improvement, (d) integration of health promotion into the organization's culture, and (e) employee screenings with adequate treatment and follow up (Linnan et al., 2008).

## 2 Basic intervention models

WHP cover a wide range of health promoting activities. The selection and implementation of these activities may be associated with the underlying assumptions about the passive or active roles of individuals within a system or a setting. (Whitelaw, Baxendale, Bryce, Machardy, Young, & Witney, 2001). According to the passive or individual model, the setting is seen as a neutral and passive environment that simply offers access to populations and favorable circumstances to undertake a range of individually focused health promotion activities, e.g., using media, health

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counseling and developing personal skills for health. From an active model perspective, the problem still rests within the individual, i.e., the need to change specific health behaviors like smoking or stress managing, however, the nature of solution is broadened to incorporate structural elements of the setting in which the individual lives. The setting is thus seen as an independent and controllable system, which has the potential to contribute to the shaping of individual behavior. Various elements of a health promotion system such as policy development, physical and social environment, information and communication, and skills development are thus set up to deal with specific health problems (smoking cessation, physical activity, dietary fat consumption).

Based on an assumption that over-arching systems are the product of a multitude of processes or individual actions, health promotion in the psychosocial model is mainly seen as the product of psychosocial factors. Organizational communication, mechanism of representation and participation within the setting, and training and development of setting's staff are considered as general representation of health promoting activities. This approach suggests activity that focuses on the ability to strengthen collective participation and action, and that is synonymous with the broad tradition of community development and, in particular, the bottom up approach (Whitelaw et al., 2001).

The structural model tends to bring about direct and significant changes in setting structure and developing culture which in turn will have significant impacts on the behavior of groups and individuals. The potential for profound and sustainable change comes from relatively powerful agents within the system and, as such, the emphasis tends to be more on broad setting's policies and strategies, with the focus on the direct actions of senior management. This approach includes actions as identifying relevant policy attributes, considering factors that may enhance or inhibit policy change; assessing change options, planning the political process of achieving the necessary legislative, regulatory, financial, organizational or educational changes. In case of work organizations, changes generally deal with the way work processes are structured and managed, such as job design, scheduling, management and leadership, information and communication, and policies and procedures.

These models portray health promotion activities in a rather stereotypical way. There may be significant variability within each model and also a considerable overlap and interaction between them. For example, the psychosocial model and the structural model are often seen to be complementary. However, without top level commitment and at the same time without a strong participatory health development process from bottom-up the entire health promotion process is doomed to failure (Zimolong & Elke, 2006). As well as overlap, health promoters may use a choice of models at the same time to tackle specific problems within the organization, where progress in one area facilitates progress in another.

### 3 Recent findings of WHP outcomes

Worksite health promotion programs range from single component to multicomponent programs, facing the multicausal causation of several disorders. In an

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early review on multicomponent WHP and their impact on employee health and productivity, Heaney and Goetzel (1998) examined 47 peer-reviewed studies over a 20-year period. They reported that WHP varied widely in terms of their comprehensiveness, intensity, and duration. Consequently, the measurable impact of these programs varied significantly because different intervention and evaluation methods were employed. Despite the variability in programs and study designs, the authors concluded that there was “indicative to acceptable” evidence supporting the effectiveness of multicomponent WHP in achieving long-term behavior change and risk reduction among workers.

Aldana (2001) performed a comprehensive literature review of the financial impact of health-promotion programming on health care costs. In his analysis, the average Return Of Investment (ROI) of seven studies reporting costs and benefits was \$3.48 for every dollar expended. In the same review, Aldana reported the impact of work site programs on absenteeism. All 14 absenteeism studies reviewed found reductions in employee absenteeism, regardless of the research design applied. In a more recent review of economic outcomes, summarizing results from 56 qualifying financial impact studies conducted over the past two decades, Chapman (2005) concluded that participants in work site programs have 25%–30% lower medical and absenteeism costs compared with nonparticipants, over an average study period of 3.6 years.

A recent review of workplace-based health-promotion and disease-prevention programs was reported by the Community Preventive Services Task Force in 2007 (Task Force Comm. Prev. Serv., 2007). The Task Force examined the literature for worksite programs of 50 studies which qualified for inclusion in the review. Studies include an assessment of health risks with feedback, delivered verbally or in writing, followed by health education or other health-improvement interventions. Additional health-promotion interventions incorporated counseling and coaching of at-risk employees, invitations to group health education classes, and support sessions aimed at encouraging or assisting employees in their efforts to adopt healthy behaviors. Interventions with an environmental or ecological focus cover enhancing access to physical activity programs (exercise facilities or time-off for exercise), providing healthy food choices in cafeterias, and enacting policies that support a healthier work site environment (such as a smoke-free workplace). In most cases, WHP interventions provided at the work site were offered free of charge to encourage participation.

The outcomes included a range of health behaviors, physiologic measurements, and productivity indicators linked to changes in health status. Most of the changes in these outcomes were small when measured at an individual level. For example, the review found strong evidence of WHP effectiveness in reducing tobacco use among participants (with a median reduction in prevalence rates of 1.5 percentage points), dietary fat consumption as measured by self-report (median reduction in risk prevalence of 5.4 percentage points), high blood pressure (median prevalence risk reduction of 4.5 percentage points), total serum cholesterol levels (median prevalence reduction of 6.6 percentage points), the number of days absent from work for the reason of illness or disability (median reduction of 1.2 days per year), and improvements in other general measures of worker productivity.

Aside from changes in health risks, the review reported additional benefits associated with work site programs. These include increasing worker awareness of health topics; increasing detection of certain diseases, or risk for disease at an earlier

stage; referral to medical professionals for employees at high risk for disease; and creation of need-specific health promotion programs based on the analysis of aggregate results.

#### **4 Healthy work organization**

Although there has been considerable discussion of healthy work organization, there have been relatively few attempts to develop or test actual models of healthy work organization. DeJoy and colleagues (DeJoy & Southern, 1993; Wilson et al., 2004) are representatives of some of the work on this topic. The following working definition of healthy work organization guided their model development and test: 'A healthy organization is one characterized by intentional, systematic, and collaborative efforts to maximize employee well-being and productivity by providing well-designed and meaningful jobs, a supportive social-organizational environment, and accessible and equitable opportunities for career and work-life enhancement' (Wilson et al., 2004, p. 567).

The model, which was successfully tested using structural equation modeling, includes three rather distinct domains of work life: Job design emphasizes employees' individual perceptions of their immediate work tasks; organizational climate emphasizes the social and interpersonal aspects of the work situation, while job future concentrates on job security, equity, and career developments.

Zimolong & Elke (2001a) performed a longitudinal study in the chemical industry to identify key practices and systems of healthy work organizations, particularly on OHS management systems that are allied to organization's OHS performance. A total of 18 plants participated, with a size ranging from 200 to 1,500 employees. Research topics were best practices, processes and structures in OHS-related planning and design of work systems, in human resource management, in information and communication management, and in cultural aspects. Other topics addressed the control strategies of the human resource subsystems such as guiding, training, and incentive systems, and the kind of substitutes companies have developed to maintain an efficient control loop. The OHS performance level of companies was measured by the frequency of injury days and ill-health related lost work days.

Companies with world leading excellent records in OHS integrate their general achievement systems based on MBO, appraisal-, reward-, and career development systems with the OHS function. They mainly rely on strong leadership responsibility in OHS, on appraisal, and on reward systems that are combined to a holistic human resource management system. These systems do not only include indicators of business performance, they also address OHS indicators and performance. OHS culture serves as substitute for managerial influence and fosters internalized member commitment. Specific contribution of the OHS culture addresses the development of health resources of employees towards self-sustained health consciousness, commitment and activities. The traditional approach to managing people focuses on selection, training, performance appraisal, and compensation for individuals in specific jobs. When tall organizations become flatter and/or are restructured around teamwork, different forms of team autonomy and OHS responsibilities are emerging.

Selection, performance appraisal, and reward policies are the most likely candidates for change. Contingent pay and peer pressure generated by teams are emerging as substitutes for both managerial influence and internalized member commitment.

From reviews of benchmarking and best-practice studies the following system elements of holistic health programs are described repeatedly as effective WHP practices (Goetzel et al. 2007; Zimolong, Elke & Bierhoff, 2008): (a) integrating WHP into the organization's central operations; (b) addressing individual, environmental, policy, and cultural factors; (c) development of a healthy organizational culture, (d) targeting several health issues simultaneously; (e) implementation of health-screenings, (f) tailoring programs to address specific needs of the population (e.g., provision of a menu-approach), (g) effectively communicating; (h) attaining high participation rates; (i) networking with local and regional healthcare providers and institutions; (j) evaluation and continuous improvement of the program.

The challenge is how to implement those best WHP practices within the work organization to unfold the effects. Basically two approaches are feasible: the organization acquires menu-based health services from health vendors (surface acting) or the organization decides for a sustainable solution and adopts some kind of a health management system (deep action). In this paper we will pursue the management approach.

## **5 Health and Safety Management**

Occupational health and safety has not been recognized by academics as a managerial and organizational research domain (Fahlbruch & Wilpert, 1999). Less than 1% of organizational research published in top journals has focused on occupational safety, a situation that has not changed for more than two decades (Barling, Loughlin & Kelloway, 2002). Contrary to the academic neglect, safety management has been practiced worldwide successfully by a great number of enterprises for decades. Policies, strategies, procedures and practices of excellent enterprises have been reviewed by business consultants, safety practitioners and academics (Bird & Germain, 1987; Zimolong & Elke, 2001b; Zimolong & Elke, 2006).

Management as a function comprises all processes and functions resulting from the division of labor in an organization such as planning, organizing, leading and controlling. In most organizations more or less formalized management systems serve to structure, develop, and direct business processes. Systems differ with respect to branches, nature of business, company size, and human factors such as culture and policy. As firms grow in size management systems gain complexity and become difficult to use, thus resulting in domain-specific systems such as management of health, safety, environmental resources, quality or personnel. Since Health, Safety and Environmental (HSE) management have a number of over lapses and are actually practiced by the same people in an integrated manner, companies are moving towards integrated HSE management systems as a subsystem of the business/operations management.

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OHS management can be understood as a domain-specific management system within a broader risk management domain. Many of the features of OHS management are indistinguishable from the sound management practices advocated by proponents of quality and business excellence. This is reflected in standards usually based on ISO 9000, e.g. BS 7750 and the ISO 14000 series, and in legislative developments in many countries. The British environmental standard BS 7750 and EMAS contributed to the development of the ISO 14000 series 'Environmental Management Systems' standards. Initiatives to launch an international standard for 'Occupational Health and Safety' (OHS) management systems have been delayed. In many countries, national guidelines give guidance on OHS management systems.

The safety management principles of the ISO standards and of the standard textbooks on safety management seem to suggest that science and industry have reasonable models of how safe and reliable organizations work. However, this is not the case. Hale and Baram (1998) conducted a thorough literature review on OHS management and revealed a number of lines of research and isolated studies which seem to have few links with each other. They concluded that literature on OHS can be characterized, at least until the 1980s, as accumulated experience of common sense and as general management principles applied to the specific field of health and safety. The management approach of the ISO standards are based on generic management principles which are derived from different theoretical and organizational perspectives. The elements of the systems are considered to present 'best practices' of successful enterprises. They are designed to be used by organizations of all sizes and regardless of the nature of their activities.

From the research on best practices in OHS management and based on findings from literature a holistic framework of OHS management has been proposed (Zimolong, Elke & Trimpop, 2006). The domain-specific management system must be integrated into the processes of an organization to assure a sustainable effect. OHS activities have to be incorporated into the daily routines of managers, supervisors and employees, and OHS standards and processes into the life cycle of products, services and work systems. Best practices of Human Resource Management (HRM) support long term commitment and involvement of employees to OHS. The system elements to be managed are risk control and health promotion systems. Key elements of the systems are human resources management, management of information and communication, (re)design of work and technology, and development of an OHS supporting culture. Generic management activities include those of the management control loops of the ISO-standards. The health and safety risks associated with the life cycle of systems, products and services are managed by risk assessment in each of the phases of the life cycle and by continuous risk performance measurements as part of the information and communication management.

## 6 Research project INOPE

The objective of the ongoing research project INOPE<sup>1</sup> is the development, implementation, evaluation and transfer of a holistic health management framework within the German tax administration. The German fiscal authority operates 645 local tax offices in all federal states of Germany. The tax administration of North Rhine-Westphalia operates 137 local tax offices counting approximately 30,000 employees. The project INOPE proceeds in nine local tax offices of the tax administration Rhineland, tax offices volunteered to participate in the pilot project. They were chosen according to geographical characteristics and transaction volumes. The tax administration Rhineland employs 15,800 women and men, the nine pilot tax offices cover 2,136 people. Each tax office employs between 138 and 380 employees organized in 10-15 functional units.

The organizational change process followed the dual approach of the structural and psychosocial model drawing on top level commitment and from bottom up on strong participatory support of employees, members of employee committees, and health and safety representatives. Starting point was an update of previous and ongoing work site health activities and programs at the level of the local tax offices, an assessment of their outcomes, a health survey, and the participatory implementation of steering committees in each of the tax offices. Their responsibility was to plan, coordinate, evaluate and improve health promotion activities. Participants of the local steering committees were the senior and deputy manager, first-level managers, employees, members of the local employee committee, and health and safety representatives. Taken together, 8 -12 members joined the local committee. The president of the tax administration Rhineland chaired the central steering committee of the 9 tax offices. This committee incorporated all senior managers of the tax offices, central health and safety representatives, members of the central employee committee and the scientific consultants.

Key elements of the management framework to be implemented incorporated processes (structures) and activities of human resource management, e.g., leadership accountability for OHS objectives linked with appraisal and reward systems, top-down and bottom-up health goal settings and negotiations, setting up of monitoring and feedback systems, promoting of OHS responsibility of self-managed teams and individuals, and training systems linked to managers' and subordinates' needs. Additionally, peer pressure with respect to health activities and positive health attitudes generated by work teams served as supplement for both managerial influence and internalized member commitment.

Managerial tasks in the information and communication domain included the establishment of top-down and bottom-up information and communication channels and platforms on health issues, installation of a web-based communication platform, and the start-off of internal communication processes promoted by incentives and personal communication ownerships. Management of job and work design

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<sup>1</sup> INOPE (Health promotion and prevention supported by Integrated Network, Organizational, and Personnel development) is a project funded by the German Federal Ministry of Education and Research (BMBF, [www.inope.de](http://www.inope.de))

emphasized the allocation of accountability to first line managers and teams. This was linked to an ongoing monitoring and improvement loop with the focus on physical (ergonomic) as well as psychosocial aspects of work place environment. Teams (health circles) developed work process improvements and were encouraged to adjust characteristics of their computer software.

The implementation and continuing improvement of the generic OHS management system was supplemented by health surveys, specifically tailored health interventions (for example, 'Healthy back' program, see Schwennen and Zimolong in this symposium), and ongoing menu offers including physical and psychosocial activities at the local tax offices. A notable part of the offers resulted from networking with local and regional healthcare providers and institutions.

The 'Healthy back' program offered an assessment of health risks with feedback, delivered verbally and written, followed by tailored risk group health education and specific back health-improvement interventions. Health-promotion interventions incorporated counseling and coaching of employees, invitations to group health education and active training classes, and support activities via telephone aimed at encouraging or assisting employees in their efforts to adopt healthy behaviors. Interventions with an environmental focus covered enhancing access to physical activity programs (exercise facilities, time-off for exercise, set-up of training classes such as Nordic Walking), providing healthy food choices in cafeterias, and enacting policies that support a healthier work site environment (such as a smoke-free workplace). In most cases, WHP interventions provided at the work site were offered free of charge to encourage participation.

Comprehensive outcomes from the ongoing research project will be presented at the conference.

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