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CHAPTER 3

Theoretical perspectives on quality of work and worksite health promotion programs
Relationships between characteristics of the work environment and outcomes in health care employees, such as job performance and well-being, have been at the core of occupational functioning and worksite interventions. In the last two decades a lot of research has assessed the impact of work conditions on job satisfaction and well-being of health care staff (e.g. Elovainio & Kivimaki, 1996; Parker & Kulik, 1995; Taylor, White, & Muncer, 1999; Visser et al., 2003; Gelsema, Maes, & Akerboom, 2007). The effects of unfavorable work conditions are detrimental for both employees (job (dis)satisfaction and burnout) and employers (absenteeism and lowered productivity). Finding remedies for these problems is a desirable objective for health care organizations. Various occupational stress models such as the Effort Reward Imbalance (ERI) model has been utilized to study the impact of reward and effort reward imbalance on well-being outcomes of health care employees (Bourbonnais et al., 2006; Tveito & Eriksen, 2008), while the Job Demands Resources (JD-R) model has been used in many organizations as a tool of human resource management (Bakker & Demerouti, 2006). In numerous studies, the Job Demand Control Support (JDCS) model (Johnson & Hall, 1988; Johnson et al., 1989; Karasek, 1979; Johnson et al., 1995) has been applied as a theoretical framework, in which a set of work characteristics (viz., job demands, control or decision latitude, and social support) predicts employees’ well-being (for reviews see Van der Doef & Maes, 1998, 1999a; Häusser et al., 2010). In the review of chapter 2 it is argued, that the JDCS model has been the most frequently used. Additionally, a problem solving approach was thought to be effective for the implementation process.

In the first section of this chapter the focus will be on the JDCS perspective because this model is the most commonly used and has been tested in over 100 empirical studies (Van der Doef & Maes, 1999a; Häusser et al., 2010). However, the JDCS model has been criticized for explaining only a restricted percentage of variance in health outcomes and measures of psychological strain. It is likely that the quality of work of employees is influenced by more environmental factors than only the work characteristics of the JDCS model. The second theoretical model that is found to be predictive of employee well-being is the Tripod Accident Causation model (Wagenaar, Groeneweg, Hudson, & Reason, 1994; Wagenaar, & Schrier, 1997). This model, that will be discussed in the second section of this chapter, considers especially the elimination of risks in the work environment as the primary strategy for prevention of negative outcomes for the organization. Additional comprehension of occupational functioning requires theories and models that do not only focus on work conditions and organizational risk factors, but also recognize the more goal directed aspects of person-environment interactions. Therefore, in the third section, a theoretical framework – namely the problem solving approach – is described to provide direction for the
implementation processes in worksite health promotion programs directed at quality of work in health care organizations and well-being of health care employees.

Combining the three theoretical perspectives on worksite health promotion programs, a monitoring approach for the implementation of worksite health promotion intervention programs in health care settings directed at quality of work and well-being is introduced. Here, the work conditions of the JDCS model and the organizational risk factors of the Tripod model, on the one hand, represent the content of the intervention program, while the problem solving approach, on the other hand, represents a monitoring approach to guide the implementation process. The practical implications of this approach are discussed in the final section of this chapter.

3.1 A work conditions perspective on quality of work
The Job Demand Control (JDC) model (Karasek, 1979) and its expanded version, the Job Demand Control Support (JDCS) model (Figure 3.1; Johnson & Hall, 1988; Johnson et al., 1989; Karasek & Theorell, 1990) are among the most influential models of occupational stress that focus on the impact of occupational conditions on employees’ physical and psychological health. According to the JDC model the combination of job demands and job control results in the classification of four different types of work, which are labelled as ‘high strain’ work (high demands and low control), ‘low strain’ work (low demands and low control), ‘active’ work (high demands and high control) and ‘passive’ work (low demands and low control) (Landsbergis et al., 1992). Hence, the employees’ health and well-being is considered to be determined by these two features of the JDC model. ‘High strain’ jobs are hypothesized to result in high risk of psychological and physical illness, while ‘active jobs’ are seen as precursors for increased motivation and learning. Jobs with high levels of demands and control are hypothesized to increase motivation, development of skills and learning. The expansion of the model with a social dimension showed that job control is not the only psychosocial resource available to manage demands of the work place. Social support of colleagues and supervisors in the workplace may also operate as a moderator of psychological (job) demands. The social aspect differentiates ‘isolated’ work (with hardly any options for social interaction) and ‘cooperative’ work (in which interaction with colleagues is integrated) (Van der Doef & Maes, 1998).

Job control (also referred to as decision latitude) includes two main aspects: decision authority (determined by the authority of an employee over what has to be done and how to manage the process) and skill discretion (determined by the skills an employee can develop and apply in the job). According to Karasek (1979), job control offers a resource, which can change the impact of the stressors since it permits the employee to make priority choices over job tasks. In addition, job control can be used to develop effective coping strategies to manage the demands related to accomplishing
the task. Earlier research, examining work stress and efforts aimed at its reduction, have shown the importance of job control and social support, two of the three factors of the JDCS model. In particular, the combination of control possibilities together with a supportive working environment seems to be crucial (Van der Doef et al., 2000; Johnson et al., 1995).

Focussing on physical health outcomes and psychological well-being, two hypotheses are frequently explored in the context of the JDC model (or the extended version – the JDCS model): 1) the (iso-)strain hypothesis (the combination of high demands, low control and low support predicts strain), and 2) the buffer hypothesis (control and social support buffer the negative effects of demands on health). In reviews on the JDC(S) model (Van der Doef & Maes 1998, 1999a; Häusser et al., 2010) a considerable amount of support for the (iso-)strain hypothesis has been found. The buffer hypothesis is supported in some studies on cardiovascular disease outcomes and psychosomatic complaints (Johnson & Hall, 1988). However, support for the buffer hypothesis is less consistent for well-being outcomes like depression, anxiety, job satisfaction and burnout. An important difference between supportive and non-supportive studies for the buffer hypothesis seems to be the conceptualization of job demands and control.

Figure 3.1  Job Demand-Support-Control model (Johnson & Hall, 1988, p. 1336)
Marshall, Barnett & Sayer (1997) propose that job control may not serve as a moderator for health care employees. According to Theorell & Karasek (1996) the balance between the three components of the JDCS model is most important. This means that, when job demands are increasing, for instance, because of understaffing, control and support aspects have to improve, ensuring that the competences and skills of all employees are extended. Of course these changes cause problems in organizations and requires flexibility among employees. However, when flexibility is required of the employees, Theorell & Karasek (1996) state that the need to develop job skills occurs as well as the opportunity to exert decision authority over their situation. Furda et al. (1994) found that a change in job conditions was related to a change in health complaints and they concluded that an increase in social support from colleagues prevented a negative effect of increased job demands.

An important advantage of this meaning of control and support for the employee is a sense of security. The paradox of this issue makes it clear that employees at least have to be motivated and competent to become more flexible and extend their decision authority and skills in a way they increase their quality of work. This point of view also implies that lack of motivation and competence of the management to develop a positive work climate may easily result in negative health outcomes for the employees (Ganster & Schaubroeck, 1991). The results of a longitudinal study by Van der Doef (2000) suggest that control and social support are important job conditions to take into account when trying to improve job satisfaction and employees’ well-being. On the basis of the results, the researchers conclude that job redesign should not focus only on these job conditions, because job insecurity and role ambiguity were also important predictors for health care employees’ health and well-being and so should be targeted as well. Based on these findings a new instrument was constructed to measure job conditions and an outcome measure, namely job satisfaction, called the Leiden Quality of Work Questionnaire –LQWQ- (Van der Doef & Maes, 1999b). The LQWQ is used in this study because this instrument provides a comprehensive measure of work conditions that can play a role in well-being outcomes of health care employees. For that reason the LQWQ is more suitable as a screening instrument to guide the construction of a worksite intervention program than a more restricted measure focusing only on the JDCS constructs.

Next to job conditions, organizational characteristics like training opportunities and communication seem to play an important role in the quality of work and well-being of employees. These organizational risk factors even appear to be a predictor for employee health and well-being (Akerboom & Maes, 2006). For that reason the impact of these risk factors will be examined in the next section to decide whether these aspects have to be added to the instrument for screening and evaluation of worksite health promotion intervention programs.
3.2 An organizational perspective on quality of work
A common critique of the JDCS model relates to its supposed simplicity (Akerboom & Maes, 2006). The model examines the determinants of work-related outcomes primarily in perceptions of job characteristics and, thus, includes only a few aspects of the work environment. In many studies the variance explained in the outcome measures is limited and the model’s narrow scope is considered as an important reason for this finding (Van der Doef & Maes, 1999a; Kristensen, 1995). Further, it is argued that the model only outlines how job characteristics influence employees’ well-being, but does not assign importance to the organizational context within which work tasks take place (Parker et al., 2001; Tummers et al., 2002). It has been recognized in models and theories of ‘healthy work organizations’, describing job and organizational aspects, which promote well-being of employees as well as organizational performance, that the organizational environment plays a crucial role in determining employee wellness (Jaffe, Peterson & Portney, 1995; Shoaf, Genaidy, Karwowski, & Huang, 2004). These models have proposed various factors as potential facilitators of organizational health, ranging from criteria for job design – and organizational strategies to support these criteria (Lindström, 1994) – to more macroscopic aspects of the organization environment – its culture and climate (Sauter, Lim, & Murphy, 1996). Empirical work on the topic of organizational health has documented correlations between various organizational characteristics and individual/organizational well-being measures (Lim & Murphy, 1999; Lindström, Schrey, Ahonen, & Kaleva, 2000; Sauter et al., 1996). Moreover, given that most research examines the impact of job characteristics on staff outcomes, research providing a clearer understanding of the significance of organizational characteristics for the well-being of care providers is limited (Akerboom & Maes, 2006).

The organizational characteristics considered in this study are derived from the Tripod accident causation model (Wagenaar, Hudson, & Reason, 1990; Wagenaar et al., 1994), in which contributing causes of accidents are traced back to ‘systemic errors’ in the way the organization functions. The reasons for using this model to identify and measure potential sources of stress at the organizational level are that (a) it offers a hierarchical perspective, which seems in line with arguments raised within the healthy organization approach (Cox & Cox, 1993; Shoaf et al., 2004), (b) it is empirically founded (Wagenaar, Hudson, & Reason, 1990), and (c) it is conceivable that the determinants of safety identified within the Tripod approach also underpin employee well-being. The concept that a set of job and organizational characteristics may improve some organizational and employee outcomes, is not new. For instance, models of healthy organizations take note that organizational performance and employees’ health and wellbeing can be improved by a common set of antecedents (e.g., Shoaf et al., 2004). Barling and Zacharatos (2004) argued in
the same line, that the management of safety is no different from the management of organizational performance, and therefore that many of the determinants of organizational performance are likely to affect organizational safety as well. Drawing on these ideas, we propose that many of the determinants of safety, more specifically the safety-critical factors of the Tripod model, will also affect employee health and well-being.

A diagnostic tool, called Tripod Delta, and based on the Tripod accident causation model for accident prevention, is used to explore which of the organizational risk factors have to be added to the Leiden Quality of Work Questionnaire (Van der Doef & Maes, 1999b) for screening and evaluating the effects of interventions. Tripod Delta has been developed primarily for identifying structural deficits in an organization which incites cognitive failures (Hudson et al., 1995; Wagenaar et al., 1994; Wagenaar et al., 1990). Until the nineties, much of industrial accident prevention was aimed at the direct causes or ‘active failures’ of the accident causation process that often involved human errors.

The Tripod model postulates that unsafe acts take place, not as random events, but as patterns of reasoning or in psychological states of mind, called psychological precursors. These psychological precursors are the result of error promoting conditions elicited by the physical and organizational environment, the ‘latent failures’. Besides the environment it is obvious that ‘latent failures’ are the result of inadequate management decisions. From this point of view, precursors of unsafe actions are the reactions to a situation, not only their source. Latent failures have been classified into eleven categories of inadequate organizational functioning, the General Failure Types (GFTs), which can be measured proactively and reliably with the Tripod Delta questionnaire (Hudson et al., 1995; Wagenaar et al, 1994). For a short description of each GFT, see table 3.1.
Table 3.1. The definitions of the 11 General Failure Types (GFTs) of the Tripod accident causation model (Akerboom & Maes, 2006, p. 24).

<table>
<thead>
<tr>
<th>GFT1</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Design</td>
<td>Ergonomically design of workplace and equipment</td>
</tr>
<tr>
<td>Hardware</td>
<td>Quality, condition, suitability or availability of materials</td>
</tr>
<tr>
<td>Maintenance management</td>
<td>Performance of maintenance tasks and repairs</td>
</tr>
<tr>
<td>Housekeeping</td>
<td>Orderliness and tidiness of the working and storage areas</td>
</tr>
<tr>
<td>Procedures</td>
<td>Usefulness and availability of procedures and instructions</td>
</tr>
<tr>
<td>Training</td>
<td>Quality of job related training and competence or experience among employees</td>
</tr>
<tr>
<td>Communication</td>
<td>Quality and effectiveness of communications between individuals, groups, or departments of a company</td>
</tr>
<tr>
<td>Incompatible Goals</td>
<td>Way safety is managed against a variety of other goals</td>
</tr>
<tr>
<td>Organization</td>
<td>Effectiveness of the organization's structure and processes, and management strategies</td>
</tr>
<tr>
<td>Error Enforcing Conditions</td>
<td>Quality of physical work conditions, work climate, and workers’ physical and psychological condition</td>
</tr>
<tr>
<td>Defences</td>
<td>Quality of safety equipment and contingency planning and procedures</td>
</tr>
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Note*: The scales shown in bold were included in the present study.

Akerboom & Maes (2006) argue that five (bold in table 3.1) of the eleven latent failures identified in the Tripod approach contributed to an extra amount of variance over the job conditions of the JDCS model on the positive outcomes (job satisfaction) as well as the negative outcomes (emotional exhaustion, psychological distress, somatic complaints). These five GFTs are: Communication, Organization, Incompatible Goals, Training, and Error Enforcing Conditions. Communication and training opportunities appeared to be of central importance to carers’ job satisfaction (Akerboom & Maes, 2006). A plausible account for the mechanisms by which GFT’s generate stress and resultant strain is offered by Schabracq (2003). He argued that working in a dysfunctional task environment makes it more difficult for an employee to ‘blindly’ proceed with his or her tasks, threatening his or her task performance or fulfillment of task-related goals, which eventually may lead to stress. A comparable suggestion is presented by Frese and Zapf (1994), and Semmer, Zapf and Dunckel (1995), who argue that conditions in the work environment that hinder regulation capacity (leaving less capacity for task completion) lead to disturbances of the regulation process to attain task-related goals. These disturbances in turn result in reduced well-being of employees.
Thus, it seems that taking organizational risk factors into account, when developing worksite intervention programs, appears to be relevant. In addition to work conditions and organizational factors, which are fairly well known characteristics of the work environment, we now introduce a problem solving approach that might be a fruitful approach to influence quality of work and wellness among employees.

3.3 A problem solving approach on quality of work and well-being

How the change process to improve quality of work should take place has received less attention in the literature. We suggested earlier a problem solving approach to change problematic factors at the workplace (e.g.: Watson & Tharp, 2006; Ziegenfuss, 2002; D’Zurilla & Goldfried, 1971; Austin & Vancouver, 1996; Bandura, 1989; Gollwitzer & Bargh, 1996; Gollwitzer & Moskowitz, 1996). What many of these problem solving viewpoints share is a focus on the goal-directed and monitoring characteristics of behaviour. Explanations for action are sought in dynamic, problem solving techniques like monitoring, feedback, control processes, evaluation and reformulating goals. This problem solving perspective tends to view an organization from a learning and self steering perspective and may therefore be an effective framework for the implementation of worksite health promotion intervention programs. Moreover, the first phase of a problem solving approach is goal-setting, which appears to be an effective ingredient of interventions in solving problematic situations. According to Watson & Tharp (2006, p. 62): “If you don’t set goals, you won’t get started, for there is no destination. Without both long- and short term goals, you won’t keep trying.” Short-term goals provide the start and the long-term goals keep you on the journey (Locke & Latham, 1990, 1994, 2002). In addition, specific goals function as a standard or criterion of progress.

Although a diversity of definitions of problem solving exists, the term is commonly defined as “thinking about the obstacles to your progress and figuring out how to overcome them by defining the problem clearly, think of solutions and predict the consequences of various alternatives” (D’Zurilla, 1986; Kelly, Scott, Prue, & Rychtarik, 1985). For the purpose of interventions, a process definition is preferred over definitions which view problem solving as a personal resource or trait. A dynamic approach facilitates the assessment of problem solving components in terms of mechanisms and related skills, all of which can be influenced by means of systematic interventions. The problem solving perspective can be more specifically defined as a monitoring approach, occurring in four phases: 1) goal setting, shaping the process of change, 2) feedback process evaluation, 3) control procedures, 4) reformulate (realistic) goals), that requires the reflective implementation of various change and maintenance mechanisms that are aimed at organizational goals and performance-
specific outcomes (D’Zurilla & Goldfried, 1971; Watson & Tharp, 2006; Ziegenfuss, 2002).

In a problem solving intervention program both employees and managers assume an active rather than a passive role in the intervention program within the health care organization and this attitude requires more personal involvement than employees displayed earlier, so called bottom up processes (Lavoie-Tremblay, 2004; Lavoie-Tremblay et al., 2005; Arneson & Ekberg, 2005). Furthermore, Bourbonnais et al. (2006) studied the effectiveness of a participatory intervention program, where an active attitude was expected from the employees in the participating organization, and found positive results on job demands and work related burnout. Based on the study of Bourbonnais et al. (2006), it appears that an active, cooperative, problem solving approach of both employees and managers might be beneficial in worksite health promotion intervention programs. A problem solving approach is characterized by phases, beginning with: a) listing the problem, b) brainstorming about solutions, c) choosing a solution, d) thinking about ways to put the solutions into operations and checking the implemented changes (D’Zurilla & Goldfried, 1971).

To conclude, we distinguish three theoretical perspectives in the development and implementation of our worksite health promotion program. First of all, the two perspectives relating to the content of the intervention program: a) the work conditions, as important factors of the content and environment of the job, and b) the organizational risk factors, as important factors of organizational and management risks. In addition, for the implementation of the intervention program, a problem solving approach will be applied as a theoretical guideline for the implementation process of worksite health promotion interventions.

3.4 Practical implications for a problem solving approach in worksite health promotion programs

The following intervention phases may serve to illustrate the potential of a problem solving approach to worksite health promotion:

\textit{Phase 1: goal setting and shaping the process of change}

(1) During the goal selection phase, a screening of all work conditions and organizational risk factors, in order to find the factors that require improvement within an organization. The screening will be done quantitative via questionnaires.

(2) All employees, from every department and function level in an organization, have to be involved in the screening. Bottom-up as well as top down processes are involved. The screening results are translated into goals at every level of the organization.
(3) In the goal setting phase of the program, it is important to explore the perceived costs/benefits of intervention targets, support from important others and the employees perceived competence to achieve the change goals.

(4) In the planning phase a problem solving intervention program is made. The goals that were set as a result of the screening represent the content of the program. The action plan must contain steps towards goal attainment. A support group is created to guide the implementation of the intervention program and to offer assistance to the board, the management and employees from this stage onwards, about what goes according to plan and what does not work well during the implementation of the intervention program.

Phase 2: feedback and process evaluation

(5) An intervention program should contain an inventory of the necessary interventions, barriers and challenges towards goal attainment and a guide with resources that are helpful to the attainment of the goals. Employees, managers and the support group should monitor themselves and their environment to find these barriers and resources. Barriers towards goal attainment can be found by exploring the employees’ and managers’ personal goals and checking whether these goals match those of the organisation. For this reason employees and managers should be encouraged to explore personal or intrinsic goals. These personal goals should be specific, important to the employees, not too easy or too difficult to carry out, and attainable in a restricted time frame. If the organizational goal and the employees’ personal goal do not fit, the likelihood of action towards attainment of the organizational goal will be low. Some personal and/or organizational goals may have to be reformulated according to this problem solving perspective, to achieve a sufficient match between the goals of the organization and the employee.

(6) During the implementation of the intervention, managers and employees need to monitor their environment in order to list internal and external resources. Finding external resources entails asking for support from colleagues, managers, personal coaches or significant others. Employees are also encouraged to discuss, and learn interactive skills, that might help the employees to attain personal goals. Another motivational resource is the support group that monitors the implementation of the intervention program in the entire organization and encourages the employees with difficult tasks.

(7) A consequence of a problem solving intervention approach is the reformulation of goals from the intervention plan, when it appears that new barriers are not considered yet. It is important to inform the employees that if an intervention
goal is too difficult to attain, it is better to reformulate the goal in a more manageable way and teach the employees how to cope with relapse.

**Phase 3: control procedures**

(8) The managers should be assisted in building a specific action plan by asking when, where, and how employees will act in relation to a target or goal. An project group guides the organization in the process of change and can provide feedback.

(9) Employees and managers should be encouraged to use incentives during the implementation. Explore which incentives are most valued by the individuals or groups.

(10) Ask the employees to report and discuss the conflicting or competing goals that arise when striving to attain the set goals, and to try to align these with the organisational higher order goals.

(11) The support group controls whether the intervention is going according to the action plan.

**Phase 4: evaluation and reformulate goals**

(12) After the implementation, an evaluation takes place. The evaluation is performed by means of a second measurement. This measurement is quantitative and serves to evaluate whether initially set goals are reached and whether interventions have been effective in improving quality of work and health/well-being of employees. As a consequence of the evaluation, managers should feel free to reformulate a goal in a more manageable way. When goals are reformulated, a new cycle of the problem solving intervention program can be started.

**Conclusion**

In this chapter the argument has been made that, a theoretical framework that encompasses the content as well as the implementation of intervention programs is not only desirable, but necessary. For this purpose, various perspectives on quality of work and the process of development and implementation were considered and finally combined into a theoretical framework: work conditions, as important factors of the content and environment of the job, the organizational risk factors, as important factors of organizational and management risks, and a problem solving approach for implementing worksite health promotion intervention programs in health care. In the last section practical intervention principles derived from a problem solving approach were formulated to illustrate the potential of this perspective in implementing worksite health promotion programs in this setting.
In the next chapter we turn to the screening of quality of work and well-being of health care employees in order to set the intervention targets for a worksite health promotion program based on theoretical and methodological considerations that follow from chapter two, the review of the literature, and the problem solving approach that was described in this chapter.