Georg F. Bauer · Oliver Hämmig

Bridging Occupational, Organizational and Public Health

A Transdisciplinary Approach

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Chapter 1
Bridging Occupational, Organizational and Public Health: A Transdisciplinary Approach

Georg F. Bauer and Oliver Hämmig

Abstract The book aims to better integrate the fast growing, differentiated knowledge base of the fields of occupational, organizational and public health. It intends to broaden the evidence-base, legitimacy and efficacy of related interventions and thus to increase their public health impact. To create an overview and common ground across disciplines, this chapter provides an introduction to the transdisciplinary approach pursued by the book. It shows current trends in economy and society and their implications for employees and their working conditions. The chapter highlights how the fields of occupational, organizational and public health may jointly address these trends—by sharing more positive analytical perspectives and by linking occupational health issues to the larger organizational and societal context. The chapter summarizes the first part of the book highlighting the relevance of psychosocial factors at work, the second part showing strategies to improve them at the organizational level and the last part emphasizing social and political issues to be addressed as part of a larger public health strategy. Based on this summary, specific conclusions for future, more integrative research and practice in occupational, organizational and public health are drawn.

Keywords Occupational health • Organizational health • Public health • Transdisciplinary research • Trends in economy and society • Research implications • Practice implications

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1.1 Background: Current Trends in Economy and Society

Over the past decades, several trends in the economy have strong implications on the nature of work, working conditions and workers' health. Progressing globalization has led to greater competition, a need for increasing efficiency, and greater innovation pressure in products and services. New information, communication, and production technologies have further accelerated and intensified business processes. Particularly in Western countries, there has been a major and still ongoing shift from a production to a service and particularly knowledge society. Companies operating in this economic environment depend more than ever on highly qualified, motivated, flexible, and engaged employees who have a strong customer orientation – broadly expanding the scope of workers' health.

These economic trends have been accompanied by profound changes in society. Collectively shared values and norms have lost much relevance in the course of the individualization of the society and the resulting pluralization of living patterns and family relations. Increased wealth gave rise to post-materialistic values and the desire for self-actualization. In this context, individuals are increasingly seeking self-determination, meaning, social identity and fulfillment both on and off the job – generating a new challenge for a true, qualitative life domain balance.

Regarding the workforce, demographic changes towards a higher educated and aging workforce with a larger proportion of women and part-time workers are key. Further, precarious working conditions are on the rise, such as limited work contracts, jobs sub-contracted to involuntarily self-employed people, involuntary part-time jobs, and poorly paid jobs. To keep the social security system affordable in times of economic crisis and demographic aging, the workability, performance, and productivity of employees need to be maintained until even raised retirement ages.

All these trends have several implications for employees and their working conditions:

- Pace, intensity, and complexity of jobs and of organizational changes increase.
- Employment contracts and labor relations are less binding, resulting in increased job insecurity and precarious job situations.
- Social relationships at work become more unstable due to continuous restructuring in organizations and changing employers.
- Jobs become more emotionally and socially demanding, as employees have to increasingly assure high customer binding and satisfaction.
- Boundaries between the paid job, private activities, and recovery times are increasingly blurred.

1.2 Implication for the Fields of Occupational, Organizational, and Public Health

Taken together, the trends summarized above have major implications for the fields of occupational, organizational, and public health. "The World Health Organization (WHO) predicts that by 2020 five of the top 10 medical problems worldwide will

Table 1.1 Disciplines contributing to occupational, organizational and public health

	Level of analysis		
	Micro: occupational health	Meso: organizational health	Macro: public health
Contributing disciplines	*Occupational psychology*	*Organizational psychology*	*Social epidemiology*
	Occupational health psychology	*Organizational sociology*	*Health sociology*
	Occupational medicine	*Organizational behavior*	*Health promotion*
	Occupational safety & hygiene	*Management sciences*	*Health policy*
	Ergonomics		*Health economics*
Positive analytical perspectives	*Positive psychology*	*Positive organizational behavior & scholarship*	*Salutogenesis*
	Positive health	*Happiness* *Corporate social responsibility*	*Health equity* *Sustainability*

be stress related" (Cartwright & Cooper in this volume, p. 30) – with work and work stress likely playing a crucial role in this development. As a consequence, attention has to shift from physical, chemical, and biological aspects and health hazards at work towards health-related psychosocial and organizational demands and resources. Going beyond maintenance of physical workability, physical, mental, and social health as well as performance need to be promoted simultaneously in a sustainable manner.

In face of the fast changing nature of jobs, organizations, and employment contracts, in the future stable occupational health and safety expert systems will not suffice. Instead, experts in the field need to qualify both organizations and their employees to jointly deal with ever changing work and health issues in a highly volatile environment. All these challenges can only be met by closer linkages between the core levels of analyses and the related disciplines contributing to occupational, organizational, and public health. As Table 1.1 and the contributions in the present book demonstrate, this linkage will be facilitated by an emerging movement towards a positive analytical perspective across the involved disciplines (Bauer & Jenny, 2012).

On a micro-level, the traditional occupational health disciplines (occupational medicine, occupational hygiene and safety, ergonomics) were initially primarily concerned with physical health of employees. Boosted by increasing societal concerns, as of recently mental health is receiving more attention in these disciplines even beyond the specialized fields of occupational (health) psychology. On the macro-level, public health has long been concerned with social determinants of workers' health, from the perspectives of social epidemiology, health economics, health promotion, and health policy. Recently, an increasing concern for public mental health can be observed. On the meso-level, the concept of organizational health is a newer development, building on knowledge from organizational psychology, organizational sociology, organizational behavior, and, more broadly, management

sciences. Moving beyond occupational health and safety expert systems, organizational health aims to link workers' health issues to the larger organizational context and the overall organizational routine and performance.

1.3 Aim of the Book and Selection of Contributions

The book aims to better integrate the ever increasing, differentiated knowledge base of the fields of occupational, organizational, and public health. For researchers and practitioners, this bridging is expected to trigger mutual learning, new ideas for filling knowledge gaps and for more integrated, trans-disciplinary intervention approaches. Overall, this integrative book will help to broaden the evidence base, legitimacy, and efficacy of occupational-, organizational- and policy-level health interventions and thus increase their public health impact.

To achieve this aim, we invited contributions from experts from these fields with diverse and sometimes combined disciplinary backgrounds. To provide for some common ground and to complement the well-established deficit orientation on risks and diseases prevalent in the occupational health literature, we chose in particular authors that share an emphasis on a positive analytical perspective. Further, we chose the contributions based on their innovative approaches to tackling the key challenges in occupational and organizational health summarized above and on their relevance from a public health perspective.

1.4 Book Structure and Scope of the Single Contributions

The contributions are grouped into three main parts: Considering the high mental and social demands in a knowledge-based service-sector economy, the first part of the book highlights the relevance of psychosocial factors at work. The second part provides an overview of how psychosocial factors can be improved by health interventions at the organizational level. Finally, the third part draws attention to key social and political issues to be considered as part of an overarching public health strategy to improve workers health.

The five chapters in the **first part of the book** cover psychosocial factors at work from diverse perspectives. **Siegrist,** as a medical sociologist introduces the public health perspective by showing the strong social gradient of morbidity and mortality in the working population. As this inequality of health can at least partly be explained by inequalities in working conditions, Siegrist provides evidence-based policy recommendations concerning both mandated organizational level interventions for better jobs and macro-structural policies regarding education and

rehabilitation. **Cartwright and Cooper** as stress researchers reinforce the public health relevance of work-related stress. They show that evidence regarding effective interventions is still limited – partly due to a lack of agreement on key dimensions and levels of work stress to be considered among different scholars. They provide a strong justification and specific proposals for moving stress research towards a focus on positive health and on related organizational health interventions. Taking up the call for studying positive health outcomes, the occupational health psychologists **Schaufeli and Taris** provide a seminal, comprehensive update on the development, core assumptions, empirical findings, and future development of the well established Job Demands-Resources (JDR) Model. They show that personal resources play an important role in the JDR model via different pathways - whereas the role of organizational resources has received little attention until now. Besides raising key issues for future research on the JDR model (e.g., reciprocal and multilevel relations), the chapter also illustrates its practical application for tailored analyses in organizations. **Danuser** as an occupational physician introduces musculoskeletal disorders (MSD) that account for over 50 % of all occupational disease in the EU. She covers both the pathogenic path towards developing MSD and the opposite direction of recovery and return to work (RTW). As feeling pain is by itself one of the greatest stressors, and in the case of MSD is threatening the work ability particularly for non-skilled workers, Danuser concludes that MSD interventions are a key public health concern requiring early recognition and good coordination of various stakeholders. Looking beyond the individual worker, **Badura** as a sociologist points out the crucial role of social capital in organizations for health and productivity. He identifies social networks, leadership and culture (shared beliefs, values, and rules) as dimensions of social capital in organizations. Based on large survey and company performance data, he shows evidence that the cultural dimension of shared beliefs and values is most strongly related to performance outcomes in organizations.

That last mentioned chapter leads to organizations as the central level of analysis and intervention. Thus, the **second part** of this volume shows how key psychosocial factors can be improved by health interventions on the organizational level. The first two, related chapters come from the interdisciplinary research division Public and Organizational Health that is editing this book. **Hoffmann, Jenny, and Bauer** introduce the idea that organizational health primarily develops through the ongoing interaction between employees and the organizations they work for. Consequently, occupational health interventions should build the capacities in organizations to continuously observe and improve this ongoing process. They identify key capacities and core capacity building principles to be considered by interventions. Building on this theoretical background, **Bauer, Lehmann, Blum-Rüegg, and Jenny** show how to implement the capacity building approach in practice through systemic consulting, e.g., by accounting for multiple perspectives, strengthening existing resources and supporting the organization in finding its own solutions. Managers are enabled to engage in a participatory optimization/renewal process with their own teams. Linking each step of this systemic consulting to capacity building principles is

expected to enhance the effectiveness of this approach and to allow for a systematic, theory-driven evaluation. **Pelikan, Schmied, and Dietscher** from a health promotion research institute illustrate the organizational health approach by the specific case of health promoting hospitals (HPH). HPH build on an international WHO network founded in 1990 that provides an agreed-upon range of standards, indicators, quality criteria and evaluation approaches. This common ground allows to conduct comparative research, e.g., showing that indeed capacities for health promotion are highly associated with the amount of staff-oriented health promotion activities. The sociologist and social epidemiologist **Hämmig** looks beyond the boundary of organizations by addressing negative and positive spillover from job to family and vice versa. Based on a comprehensive review of previous conceptualizations and empirical findings, he shows that this topic is of highest relevance both for organizational and public health. He summarizes effective intervention strategies and shows that supportive organizational culture and family-friendly climate are key success factors for their implementation.

Since the last chapter already demonstrated that organizations have to look beyond work in order to improve organizational health, the **third part** covers even broader social and political issues that need to be addressed to advance occupational, organizational, and public health in the future.

As mental health problems have strongly increased over the last decades and now constitute a major public health problem, **Keyes,** a sociologist, makes a strong case for promoting and protecting positive mental health. Testing his dual continuum model of mental health, he shows that only 28 % of the variance is shared between negative and positive mental health and that they share only 10 % of environmental influences. Given this strong empirical basis, he calls for stronger investments in population-based public mental health promotion. **Geurts**, a work and organizational psychologist, highlights the crucial role that recovery from work during off-job time plays in the work-stress-health relationship. Stress at work and stress reactions after work can impede recovery, starting a downward cycle resulting in additional need for recovery and poor health. She points to mechanisms that may hamper or facilitate recovery during off-job time, e.g., detachment from work, positive affects and particularly self-determined active leisure. **Jiranek, Brauchli, and Wehner**, occupational and organizational psychologists, look beyond paid work by discussing implications of unpaid voluntary work for society and public health. They show that voluntary work as a potential resource can enrich other life domains and can promote health by influencing coping with work stress and by facilitating active recovery. They end by showing how paid jobs could offer more of the positive qualities of voluntary work. Finally, **Leka and Jain**, occupational health psychologists, point to the policy context as a key factor influencing success or failure of all organizational interventions and thus as the potentially most efficient level of change. To better use this potential in the future, they recommend to systematically consider the process of policy making, its context, and the systematic involvement of stakeholders in future policy research and practice. In increasingly de-regulated societies, 'soft laws' (e.g., voluntary resolutions, codes of conduct) will increasingly complement formal laws and regulations.

1.5 Conclusions for Future Research and Practice in Occupational, Organizational, and Public Health

Based on the various contributions to the present volume, the following conclusions can be drawn for future research and practice in occupational, organizational and public health.

1.5.1 Conceptualization of (Occupational) Health and of Processes of Health Development

Most research in occupational, organizational, and public health only concerns a single dimension of health (e.g., mental health or MSD) in isolation as the outcome of interest and either from a pathogenic or salutogenic perspective. However, a trend towards studying both negative and positive paths to health simultaneously seems to emerge. With the Job Demands-Resources Model, Schaufeli and Taris point to the benefit of studying the health impairment as well as the motivational process in parallel. Similarly, Keyes' dual continua model of mental health suggests that different environmental factors lead to mental illness vs. positive mental health. Cartwright and Cooper state that the processes leading to positive mental health vs. disease require separate, but combined lines of investigation.

This logic could be expanded beyond mental health to study more systematically and simultaneously (a) the pathogenic process leading from job demands to negative (physical, mental, social) health, and (b) the salutogenic process leading from job resources to (physical, mental, social) positive health, as suggested by the 'Job Demands-Resources Health Model' (Brauchli, Jenny, Füllemann, & Bauer, 2013). As a part of this research, it would be interesting to understand how negative and positive health are related over time. For mental health, Keyes has shown that the negative and positive dimension only share some variance, but that positive mental health still can protect from developing mental illness.

The contributions by Geurts and Danuser make the important point that besides pathogenic pathways, more attention should be given to the reversed direction of short-term recovery from work-stress (see Geurts) and long-term recovery from work-related disease (see Danuser) in future research. Here, an expanded, multidimensional Job Demands-Resources Health Model would suggest that recovery processes should be studied not only regarding disease outcomes but also regarding their beneficial effects on positive health.

Such comprehensive occupational health research will require profound development of concepts and related indicators of *work-related positive* physical, mental, and social health. In this volume, Pelikan et al. cite the WHO (1986) definition of health as "a positive concept emphasizing social and personal resources, as well as physical capacities …". Cartwright and Cooper propose purpose and meaning as key elements of mental well-being. Badura's concept of social capital points to

work as an important source of social relationships, suggesting a sense of community and relatedness as possible social health outcomes at work. Most advanced is Keyes' concept and scale of positive mental (and social) health, covering emotional well-being and psychological and social functioning. This generic concept could guide corresponding developments for the specific context of the working environment and could be expanded to include the physical dimension of health. In the long run, agreed-upon indicators will allow to build up a comparable evidence base for positive occupational health research.

In practice, employers and employees should support the simultaneous consideration of negative and positive, multi-dimensional health outcomes, as all contribute to the quality of working life and to employee performance. A comparative analysis of both pathogenic and salutogenic processes would allow for more rational priority setting in ameliorating job demands and resources in organizations. Further, it would help to avoid maximizing one dimension of health (e.g. engagement) possibly at the cost of the others (e.g., recovery from work, or work-related social and physical health).

1.5.2 Moving from Occupational to Organizational Health

Occupational health issues are always embedded in organizations and related knowledge will only be utilized if it connects to key organizational practices and concerns. Thus, these two levels of analysis need to be more systematically integrated in the future. Recently, organizational culture and leadership have been increasingly considered for successfully dealing with occupational health issues as exemplified by research on safety culture (Eeckelaert, Starren, van Scheppingen, Fox, & Brück, 2011). Hämmig points out that successful implementation of organizational work-life interventions and particularly utilization of corresponding offers depend on a supportive corporate culture and in particular on strong leadership support for these issues. Badura highlights the role of the social capital (social networks, leadership, culture) in this regard.

The contributions by Hoffmann et al. and Bauer et al. suggest that organizational health interventions should start out from an understanding of how the health of employees and of the organization is continuously reproduced by the ongoing interaction between individual and organizational capacities – and how this interaction can be improved by targeted interventions. This conceptualization of organizational health development has the advantage that occupational health issues can be linked more systematically to the organization's everyday practices and concerns. Further, it leads to capacity building as a key approach to enabling the organization to address fast-changing occupational health issues in a volatile environment best known to the organization itself. Future research will have to test the feasibility of implementing this approach in practice in diverse economic sectors and identify what process factors will support capacity building for organizational health development. Further, research will have to show what capacities will prove to be particularly health relevant and amenable to interventions.

Pelikan et al. show an approach to organizational health specified for health care institutions. It aims at strengthening the explicitly health promoting capacities and activities in hospitals. This raises the question as to what extent elements of the health promoting hospital approach could be transferred to other economic sectors – e.g., with similarly well-established quality management systems.

In practice, employees need to be prepared for increasingly complex tasks, technological developments, a demanding job pace, and demanding customer relationships. Further, they need to be enabled and motivated to deal with continuous changes in their jobs, social relationships, and organizational environment. They should be empowered to act for their own personal needs – e.g., for recovery, self-determination, self-actualization, and work-life integration. All these needs require much broader capacity building approaches for employees in the future, reaching from traditional training to active involvement in participatory improvement processes in organizations.

Simultaneously, organizations need to be enabled to regularly assess health-relevant demands and resources from their employees' perspective and to improve these in a participatory process. The joint process needs to concurrently consider and balance short-term and long-term interests of employees and organizations. To allow organizations to focus on the most relevant aspects, key performance indicators of organizational health need to be developed that go beyond the currently prevailing absenteeism, accident, and turnover data. Pelikan et al. show that the availability of indicators of staff's health promotion knowledge and participation rates, as well as of their working conditions were associated with more health promotion activities. Higher order constructs, such as work-related sense of coherence (Bauer & Jenny, 2007), or aggregated measures such as psychological capital (Luthans, Avolio, Avey, & Norman, 2007), social capital (Badura), or the job resource/demand ratio (Jenny et al., 2011) are promising approaches to reduce complexity for decision makers in organizations. The case of the health promoting hospital networks demonstrates that all these practical developments could highly benefit from the establishment of company networks, ideally within homogenous economic sectors, facilitating mutual learning and support between companies and allowing the enforcement of common, voluntary standards for organizational health in the future.

1.5.3 Moving from Organizational to Public Health

As various contributions to this volume show, the public health perspective can make important contributions to furthering occupational and organizational health. It allows prioritization of occupational health issues according to their contribution to the overall burden of disease (see e.g., Siegrist; Cartwright and Cooper; Keyes). It suggests that we should look at much discussed issues, such as work-life spillover, its risk factors, and health impact, on a general population level (Hämmig). It allows justification of interventions by strong WHO health promotion

frameworks (Pelikan et al.). And particularly, the public health perspective introduces a perspective of health as a social phenomenon by presenting strong evidence of social inequalities in health and of broader societal determinants of these inequalities, including differences in education and working conditions (Siegrist). The last point provides additional legitimacy to occupational and organizational interventions as contributing to health as a basic human right.

However, this summary demonstrates that most public health research is still bound to a pathogenic paradigm focusing on disease outcomes and epidemiology. Keyes exemplifies that also a salutogenic perspective can be applied to population health data by looking at the distribution and longitudinal development of positive public mental health. Taking this idea further would require to examine how all (physical, mental, social) dimensions of positive health are distributed in our (working) populations - shifting our attention from reducing inequalities in disease towards promoting equity of positive health.

Jiranek et al. show that much could be learned from the research on voluntary work for improving paid work as well. Occupational and organizational health research could engage more proactively in exploring alternative models of organizing work and their impact on health. The idea of introducing a basic income in society independent of a paid job demonstrates that exploring the possible implications of even such a seemingly utopian model can trigger ideas on new ways of working.

Reducing inequalities in health, promoting equity of positive health, and new models of organizing work and the economy all have profound policy implications. In the current anti-regulatory political and economic environment, such policies most likely will have the form of soft regulations. Leka and Jain point out that all policy-level studies should involve the various stakeholders more systematically - to raise ownership, acceptance and support of the resulting policy implications. This approach requires consideration of heterogeneous outcomes relevant to the diverse interests of the involved stakeholders.

In practice, Siegrist shows that macro-level policies, including public expenditures for education and rehabilitation, are well justified based on existing public health data. However, the public and policy makers need to be better sensitized and enabled to act on this knowledge. Introducing the salutogenic perspective, it will be interesting to see how society reacts to showing that highly valued human needs such as self-determination, self-actualization, and meaningful work are probably as similarly unequally distributed in society as are disease outcomes. A key set of agreed-upon organizational health indicators would facilitate requiring organizations to act upon these core issues. The increased visibility, but also the known links between positive health and organizational performance, could trigger larger investments in this area. This trend would meet society's increasing ethical expectation that companies should pursue broader economic, ecological, and social aims.

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Part I
Psychosocial Factors in Occupational and Organizational Health: A Key Public Health Issue

Chapter 2
Social Inequalities in Work and Health in a Globalized Economy

Johannes Siegrist

Abstract Given the rapid spread of economic globalization and technological progress, work and employment have changed significantly. In general, working people are less often exposed to physically strenuous work but more often to psychomental stress at work. Despite improved occupational safety measures, occupational hazards and injuries, shift work, overtime work, and adverse psychosocial work environments contribute to a substantial burden of work-related diseases. This burden of disease is unequally distributed between and within countries, leaving socially deprived groups at higher risk of poor health. This chapter presents updated empirical evidence on associations of adverse work and employment conditions with the health of working people. Moreover, it elucidates the contribution of work and employment to social inequalities in adult health. The concluding remarks address policy implications of scientific evidence, with special emphasis on the role of health-promoting national labor and social policies.

Keywords Occupational hazards • Work stress • Health inequalities • Job strain • Effort-reward imbalance • Labor and social policies

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Some parts of this contribution were written with close reference to the following document: Siegrist, Rosskam, and Leka (2011). Review of social determinants of health and the health divide in the WHO European Region: Employment and working conditions including occupation, unemployment and migrant workers. Copenhagen: World Health Organization (Unpublished report).

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2.1 Introduction

Paid work continues to be of critical importance for population health and health inequalities in developed and rapidly developing countries. This is primarily due to the fact that participation in or exclusion from the labor market determines a wide range of life chances that are mediated through regular wages and salaries. Poverty and relative deprivation are widespread among people who lost their job or were prevented from entering the labor market. In addition, long-term unemployment is associated with elevated risks of morbidity and mortality (see below). As work and employment confer social status and related esteem, they may contribute to health-promoting experiences of self-worth, self-efficacy, and a sense of social identity in adult life. Yet, these potentially positive effects are balanced by the adversities and stressors emerging from dangerous and precarious work and employment.

Against this background, this chapter addresses the following questions: (1) What aspects of work and employment affect workers' health and how?, (2) What is the contribution of work and employment to the development of health inequalities?, (3) Do distinct macro-structural policies related to work and employment matter in this context?, and (4) What are the policy implications of available scientific evidence?

2.2 Unhealthy Work in a Globalized Economy

With the advent of economic globalization, free market principles in conjunction with technological innovations spread over the world, stimulating large flows of transnational capital, trade, and labor force. Whereas economic globalization is often perceived as enhancing gross national product and increasing national employment rates, particularly in rapidly developing countries undergoing industrialization and urbanization, its adverse consequences are less strongly emphasized. Yet, given growing competition and pressure towards an increase in return on investment, a general intensification of work has been reported in the recent past (Eurostat. European Commission, 2010). This intensification often goes along with an increase in job instability and insecurity, due to threat of job loss or redundancy, downsizing, outsourcing, and the privatization of public services (Landsbergis, 2003). Another consequence of economic globalization concerns segmentation of the labor market and a related increase in income inequality. On the one hand, there is a well-trained, skilled, and flexible workforce with fair promotion prospects and adequate earnings. On the other hand, large parts of the workforce suffer from precarious employment, low wages, exposure to hazards, and low safety at work. At the same time, welfare state policies and trade union activities are weakened, thus augmenting the burden of stressful work among the most vulnerable and deprived groups of national workforces (Landsbergis, 2003; Schnall, Dobson, & Rosskam, 2009).

This process of economic globalization was preceded (and critically accelerated) by profound changes in the nature of employment and work during the past century, manifested by a large expansion of service occupations and professions, a growing impact of automation and information technology, and an unprecedented flexibility of employment arrangements and contracts. Although physically strenuous work and exposure to chemical, biological, and physical hazards continue to pose serious challenges to workers' health and safety, the threats of a health-adverse psychosocial work environment are now becoming more visible, and they contribute to a growing burden of work-related diseases.

Broadly speaking, three categories of unhealthy work can be distinguished, in addition to the afflictions resulting from job loss and unemployment: (1) physical, biological, and chemical hazards including occupational injuries, (2) work-time related factors with impact on mental and physical health (e.g., shift work, long work hours), and (3) adverse psychosocial work environments affecting workers' health and well-being either by psychobiological pathways or by health-damaging behaviors. The relevance and impact of these categories on workers' health varies considerably across countries, and most importantly between economically advanced and developing countries. Here, we briefly summarize some evidence of these three categories of unhealthy work, with an emphasis on studies conducted in advanced Western countries.

2.2.1 Occupational Hazards and Injuries

The European-wide panel survey on working conditions indicated that, in 2005, every sixth worker in Europe was exposed to toxic substances at the workplace, and almost one third was exposed to noise at work, at least intermittently. Moreover, 24 % reported exposure to vibrations, 45 % were working in painful, tiring positions, and more than half were confined to repetitive hand or arm movements, mainly due to computer work (Parent-Thirion, Macias, Hurley, & Vermeylen, 2007). Findings from the latest panel wave by and large confirm these trends (Eurostat. European Commission, 2010). It is evident that physical and chemical stressors at work make a significant contribution to the burden of work-related diseases and injuries (Verma, Purdham, & Roels, 2002). Specifically, occupational groups with a high percentage of workers in lower socio-economic positions are at elevated risk of occupational injuries and accidents, such as construction workers, agricultural workers, transport workers, or miners (Arndt et al., 2005). Moreover, unhealthy or restricted posture at work, repetitive movements, and heavy lifting are more prevalent among lower status workers, and these conditions increase the risk of musculoskeletal disorders (Bernard, 1997). Workers exposed to these physically stressful conditions are less likely to be able to work until retirement age (Parent-Thirion et al., 2007), and their risk of needing disability pension is increased by 50–100 % compared to unexposed workers (Blekesaune & Solem, 2005). In addition to unhealthy posture at work, sedentary work was shown to be a risk factor of

reduced health, with particular importance for cardiovascular disease (Olsen & Kristensen, 1991).

Apart from asbestos and related lung diseases and certain carcinogenic substances, a majority of investigations in the field of occupational medicine explored toxic effects at work on the cardiovascular system. Toxic effects include carbon monoxide, nitrates, carbon disulfide (CS2), and nanoparticles and fine particles (PM 2,5) among others. In addition to these chemical factors, physical factors such as cold, heat, vibration, and noise matter for cardiovascular health. Noise is a special case, as it is difficult to disentangle its sound-related physiological effects from the biological effects elicited by emotionally stressful experience (Steenland, 2000). Physical, ergonomic, and chemical hazards at work are often combined with an adverse psychosocial work environment, thus multiplying health risks among exposed people. Few studies have documented the long-term health effects of these cumulative exposures in any detail (Devereux, Vlachonikolis, & Buckle, 2002; Dragano, 2007).

Fewer scientific studies are available on health-adverse effects of these occupational hazards and injuries in less developed, rapidly growing countries, but there is reason to believe that the respective burden of disease is much larger, given generally lower levels of occupational safety and health monitoring, lower investments in the proliferation of occupational health services, and deficiencies in implementing laws, regulations, and protective devices at national, regional, and local levels (Rantanen, 2010).

2.2.2 Work-Time Related Health Risks

In addition to the physical environment, the organization of work, and specifically of work time, plays an important role in triggering occupational health risks, physical and chemical hazards and injuries, and psychosocial adversity. Work-time arrangements differ between occupational groups, and some of these arrangements were shown to have adverse consequences for the health and well-being of workers. This holds particularly true for shift work and long work hours. Globally, there is a high prevalence of overtime work, irregular work, and periods of commitment to extensive work hours. Within European countries, about every tenth male worker reported working regularly more than 60 h per week (Parent-Thirion et al., 2007). For special service occupations and professions, persons performing on-call jobs, freelancers, and several groups having ‘modern,’ less formalized, atypical jobs, it has become increasingly difficult to clearly distinguish work from non-work periods in their daily life. Another frequent work-time related problem concerns shift work. Shift work is frequent in the production sector and in some service occupations and professions. Overall, in the 27 member countries of the European Union, the prevalence of shift work is 17 % (Eurostat. European Commission, 2010). A strong social gradient of shift work is obvious. Twenty-six per cent of low skilled manual workers in the survey, compared to 12 % of skilled manual workers, reported performing

regular shift work. Shift work and long work hours are the two conditions that have been the most widely studied with respect to adverse health effects. Results suggest that the risk of cardiovascular disease in shift workers is about 40 % higher than that risk in daytime workers (Härmä, 2006). Similarly, an increased risk of developing metabolic syndrome was observed among shift workers, with a relative risk of about 1.7 (De Bacquer et al., 2009). Additional investigations demonstrate an elevated risk of accidents, particularly amongst evening and night shift workers (Bambra, Whitehead, Sowden, Akers, & Petticrew, 2008). Reported health effects are contingent on duration of shift work, with marked increases after more than 10 years of continued exposure (Steenland, 2000). Night shifts are particularly relevant as a potential source of work accidents, cardiovascular and gastro-intestinal problems, and eventually cancer (Swerdlow, 2003). Combined effects of shift work and chronic psychosocial stress at work were observed for coronary heart disease and for poor mental health (Bøggild, Burr, Tüchsen, & Jeppesen, 2001; Peter, Alfredsson, Knutsson, Siegrist, & Westerholm, 1999).

Extended or irregular work hours provide an additional occupational health risk. For instance, working more than 11 h a day is associated with a threefold risk of myocardial infarction (Van der Hulst, 2003), and a fourfold increased risk of type 2 diabetes (Kawakami, Araki, Takatsuka, Shimizu, & Ishibashi, 1999). Moreover, in jobs with an overtime schedule the risk of injury is increased by 61 % amongst American workers (Dembe, Erickson, Delbos, & Banks, 2006). In an 11-year longitudinal study with Finnish workers, atherosclerotic plaque growth in the carotid was proportional to number of days worked per week and to annual work hours (Krause et al., 2009). Finally, the risk of coronary heart disease was increased by about 70 % among British civil servants who worked 3–4 h overtime each day for a period of about 10 years, compared to study participants working normal hours (Kivimäki et al., 2011).

Again, the conditions of shift work, irregular work hours, and overtime work are highly prevalent in developing countries, and there are large discrepancies concerning their regulation and control between the most advanced and less developed countries (Rantanen, 2010).

2.2.3 Health-Adverse Psychosocial Work Environments

Psychosocial risks contributing to the experience of stressful work are widely recognized as major challenges to current occupational health. As explained, economic globalization induces work intensification among many occupational groups, often in combination with threats to job security, promotion prospects, and fair pay. Being repeatedly challenged or overtaxed by demands, losing control over one's own tasks, being treated unfairly, and suffering from threats to one's legitimate rewards at work are major conditions that evoke recurrent stressful experiences with adverse long-term effects on physical and mental health. To identify these conditions, which are often embedded in complex and variable work environments, a theoretical

model is needed. Whereas several such models have been developed (Cartwright & Cooper, 2009), only few concepts have been repeatedly tested with rigorous study designs. Among these, three models have received special attention in international research, the demand-control (or job strain) model, the effort-reward imbalance model, and the model of organizational injustice.

The demand-control (or job strain) model identifies stressful work in terms of job task profiles defined by high psychological demands and a low degree of control or decision latitude (Karasek & Theorell, 1990). Stressful experience resulting from this exposure is due to limited experience of personal control and self-efficacy in combination with continued high work pressure. 'Effort-reward imbalance' was developed as a complementary model with a primary focus on the work contract; at the core of the model is the principle of social reciprocity (Siegrist, 1996). Rewards received in return for efforts expended at work include money, esteem, and career opportunities (promotion, job security). The model asserts that lack of reciprocity (high effort in combination with low reward) occurs frequently and generates strong negative emotions and psychobiological stress responses with adverse long-term effects on health. More recently, the concept of organizational justice was introduced, proposing adverse health effects of three aspects of injustice (distributive, i.e., perceived fairness of the distribution of valued resources; procedural, i.e., perceived fairness of decision making; interactional, i.e., perceived fairness of being treated by superiors and colleagues) (Greenberg, 2010; Elovainio, Kivimäki, & Vahtera, 2002).

Several systematic reviews summarized the current state of the art in this rapidly expanding field of occupational health research (Eller et al., 2009; Greenberg, 2010; Kivimäki et al., 2006; Leka & Jain, 2010; Nieuwenhuijsen, Bruinvels, & Frings-Dresen, 2010; Stansfeld & Candy, 2006; Tsutsumi & Kawakami, 2004). A majority of prospective observational cohort studies tested these work stress models with regard to cardiovascular diseases and poor mental health (mainly depression), given their significant contribution to the worldwide burden of disease (for detailed review, see Siegrist et al., 2011). Concerning cardiovascular disease, a majority of at least 30 reports derived from prospective studies document elevated odds ratios of fatal or non-fatal cardiovascular events among persons reporting job strain, effort-reward imbalance, or organizational injustice. Overall, risks are 40 % to 50 % higher among persons suffering from psychosocial stress at work compared to persons who are free of stress at work. Effects are stronger in men than in women and more pronounced in middle-aged than in older working populations. Similar effects are observed in case of re-infarction after survived first coronary heart disease.

In addition, several cardiovascular risk factors are associated with an adverse psychosocial work environment, in particular metabolic syndrome (Chandola, Brunner, & Marmot, 2006), type 2 diabetes (Kumari, Head, & Marmot, 2004), hypertension (Schnall, Belkić, Landsbergis, & Baker, 2000), and health-adverse behaviors (Siegrist & Rödel, 2006). With respect to mental health, major results from prospective investigations confirm elevated risks of depression among employees with work-related stress in terms of these models, and odds ratios vary between 1.5 and 3.6, depending on type of measure, gender, and occupational group under study (Bonde, 2008; Nieuwenhuijsen et al., 2010).

Other health outcomes significantly related to job strain, effort-reward imbalance, or organizational injustice concern reduced physical and mental functioning (Stansfeld, Bosma, Hemingway, & Marmot, 1998), musculoskeletal disorders (Rugulies & Krause, 2008), and disability pension (Dragano, 2007).

It is clear from this brief summary that effects of an adverse psychosocial work environment on health have mainly been studied in advanced Western countries. However, importantly, several recent findings from rapidly developing countries, mainly China (Xu, Zhao, Guo, Guo, & Gao, 2009) and Brazil (Harter Griep, Rotenberg, Chor, Toivanen, & Landsbergis, 2010), are confirming the relevance of these models in explaining occupational health in these countries as well.

In summary, three pathways leading from occupational exposures to physical and mental disorders were described, acting as toxic chemical, physical, or biological stressors, as psychosocial stressors eliciting psychobiological stress reactions in the organism, or as determinants of risk behavior. In many workplaces multiple interactions between these pathways are observed. The prevalence of these pathways differs between economically advanced and rapidly developing countries, and much more scientific evidence and preventive practice is established in advanced countries. Yet, given the universality of underlying mechanisms, there is reason to believe that the burden of unhealthy work in rapidly developing countries in the long run will be similar to the burden observed in Western countries.

2.3 Employment, Work, and Health Inequalities

It is evident from the reported findings that the quality of work and employment follows a social gradient, leaving persons in lower socioeconomic positions in more deprived conditions. This has been documented for risk of long-term unemployment, precarious work (defined by job insecurity, poor safety at work, exposure to multiple stressors, low wage, and lack of control), physical work, shift work, job strain, and effort-reward imbalance (Johnson, 2009; Siegrist & Theorell, 2006). Adverse health effects of unemployment are probably the strongest single determinant of work-related social inequalities in health, at least in a global perspective. This is due to the fact that the risk of job loss and long-term unemployment increases with each step a person moves down the ladder of educational qualifications, with highest risks among unskilled and semi-skilled workers and among less qualified migrant workers. A substantial body of evidence indicates an elevated burden of disease due to long-term unemployment (for a review, see Schnall et al., 2009; Siegrist et al., 2011). More specifically, risks of fatal or non-fatal cardiovascular or cerebrovascular events and risks of all-cause mortality are twice as high. Similar effects were observed for depression, suicide, functional limitations and health-adverse behaviors, especially heavy drinking. In this context, the mortality crisis of men in Russia and other post-communist countries in Eastern Europe deserves special attention, as it is likely that the sudden loss of core social roles in the lives of large numbers of men contributed to stress-associated morbidity and mortality (Stuckler, Basu, Suhrcke, Coutts, & McKee, 2009).

Among working people in lower social positions, occupational injuries and the majority of traditional occupational diseases are more prevalent than among people in more privileged positions. Major chronic diseases in midlife and early old age, in particular cardiovascular diseases, depression, metabolic disorders, pulmonary disease, and certain cancers, were additionally shown to follow a social gradient, with higher burden of disease among the less privileged segments of working populations (Marmot, 2004). Clearly, only a minor part of this burden of chronic disease is attributable to adverse working conditions, but in view of the frequency of unhealthy working conditions and the elevated risks of incidence following exposure to stressful work, their impact is nevertheless considerable (Siegrist & Theorell, 2006).

To analyze more precisely the contribution of an adverse psychosocial work environment to explaining social inequalities in health, two strategies are applied – the mediation hypothesis and the effect modification hypothesis. The mediation hypothesis claims that a substantial part of the strength of the association between socioeconomic position and health is due to the impact of adverse working conditions on health. In this view, stressful work and employment are considered core determinants of social inequalities of health in midlife and early old age. The effect modification hypothesis posits that susceptibility to an exposure (such as health-adverse work and employment) is higher among employees in lower socioeconomic positions compared to higher status people and, therefore, that the effect size produced by the exposure is higher. This hypothesis is based on evidence of poorer material and psychosocial coping resources among persons with lower status, whose exposure to adversities and threats is particularly high.

Currently, there is limited evidence supporting either hypothesis. For instance, using multivariate regression analysis to test the mediation hypothesis, low control at work was independently associated with incidence of coronary disease and with low socioeconomic status in the Whitehall II Study (Marmot, Bosma, Hemingway, Brunner, & Stansfeld, 1997). In a multivariate analysis, low control in the workplace accounted for about half the social gradient of coronary heart disease. Additional studies reviewed elsewhere (Siegrist & Theorell, 2006) were conducted along these lines. An investigation that analyzed hospital injury rates in relation to socioeconomic status and working conditions in different occupational groups of two private hospitals in Massachusetts deserves special attention (D'Errico et al., 2007). Whereas a strong social gradient of injury rates was found, this gradient was greatly attenuated when controlling for psychosocial and ergonomic workplace exposures. These exposures were decision latitude, reward (psychosocial), bending, kneeling, and forceful exertion (ergonomic).

The effect modification hypothesis was tested in several studies, where the effect of job strain and of high effort and low reward at work on health was found to be greater in lower than in higher socioeconomic groups (Johnson & Hall, 1988; Wege et al., 2008). For instance, in a German study, depressive symptoms were almost seven times more frequent in the lowest occupational group scoring high on effort-reward imbalance than in the highest occupational group scoring low on effort-reward imbalance (Wege et al., 2008).

In conclusion, given a powerful social gradient of morbidity and mortality in working age populations and given a clear-cut social gradient of the quality of work and employment, it is obvious that this latter condition has direct impact on health, as analyzed by the mediation and the effect modification hypotheses.

So far, our analysis has been restricted to organizational contexts of unequal work and its effects on unequal health. However, it is important to know whether also the wider macro-political context has an impact on quality of work and employment and thus may indirectly affect workers' health. This question is discussed in brief in the following section.

2.4 Macro-Structural Aspects

National labor and social policies can influence the quality of work and employment within respective workforces by setting rules and regulations which protect workers' health, by investing in active labor market policies including rehabilitation services, and by offering financial support in case of job loss and other income shocks. It is therefore assumed that the mean quality of work and employment is more favorable in countries that developed welfare state measures than in countries with poor welfare state investments.

In a cross-national comparative study, the Survey of Health, Ageing and Retirement in Europe (SHARE), these associations were tested in a sample of 6,619 men and 7,688 women in 13 European countries. Data on mean perceived quality of the psychosocial work environment (low control, low reward) in each country were correlated with the country's performance in terms of three labor policy indicators available from OECD statistics: (a) the percentage of persons aged 25–64 who stated that they received education or training in the last month, (b) the amount of expenditures in favor of education or training, measured as percentage of the gross domestic product, (c) the amount of expenditures in favor of rehabilitation services for people with limited working capacity, again measured as percentage of the gross domestic product (for details, see Siegrist & Wahrendorf, 2011). As Fig. 2.1 shows, consistent ecological correlations are observed between mean quality of work, measured as the percentage of persons reporting poor control (upper part) and poor reward, respectively (lower part in Fig. 2.1), and the amount of the country's labor and social policy investment. Associations are particularly strong with regard to the first and the third macro-policy indicator. In general, the Nordic countries, Switzerland, and the Netherlands display more favorable conditions than southern and eastern European countries, indicating that higher investments in social and labor policies go along with higher mean quality of work. Furthermore, preliminary evidence suggests that mean odds ratios of experiencing poor mental health as a function of low quality of work are higher in countries with low policy investments as compared to odds ratios in countries with substantial policy investments (Dragano, Siegrist, & Wahrendorf, 2011).

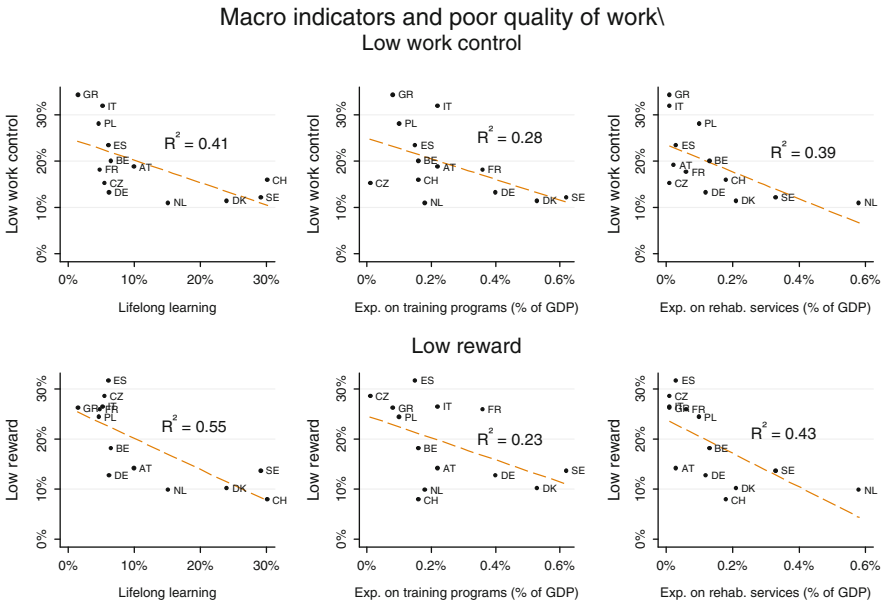

Fig. 2.1 Macro indicators and poor quality of work (based on weighted data) (Siegrist & Wahrendorf, 2011, p. 174). *Exp* expenditure. *Note.* Based on weighted data

These preliminary results support the notion that the analysis of work and employment in the context of health inequalities needs to be broadened beyond organization-level characteristics to include distinct national labor and social policies. Broadening the frames of reference has important policy implications, as will be briefly discussed in the final section.

2.5 Policy Implications

An obvious conclusion from the empirical evidence presented in the previous sections points to the need to supplement organization-level and interpersonal-level measures of worksite health promotion by distinct macro-structural policies. To reduce the social gradient of health in working age populations effectively, national level policies are needed that target the country's overall protection system. These policies should serve as a mandate to individual organizations and workplaces to implement interventions where problems exist. Therefore, national budget and tax policies are recommended that allow the maintenance and further development of active labor market policies. In this process, improved monitoring and risk management systems with regard to occupational health hazards are instrumental. The same

holds true for best practice models that may be available from some pioneering countries. Furthermore, international organizations can provide useful support, such as initiatives from EU agencies, the International Labor Organization (ILO), and the World Health Organization (WHO).

Priorities of national regulations that aim at promoting healthy work and reducing health inequalities concern the protection of workers from job instability and redundancy, the control of long work hours, shift work, and exposure to hazardous chemical, physical, and psychosocial exposures, and the provision of comprehensive occupational health and safety services that also meet prevention and rehabilitation needs of occupational risk groups. Next, at the level of single organizations, companies, or branches, at least the following policy recommendations can be proposed in view of currently available scientific evidence:

- Increase the flexibility of work-time arrangements, including broader opportunities for part-time work and continued training, as well as 'flexicurity' models of occupational careers
- Secure fair pension and retirement arrangements in relation to both lifetime contributions to the labor market and major shocks (long-term unemployment, forced early retirement, disability pension)
- Implement measures of organizational and personnel development that are instrumental in increasing control at work and in providing fair rewards in return for effort expended; these measures concern separate organizations as well as larger bodies of branches, stakeholder associations, trade unions, or even national and transnational legislation.

This latter recommendation could be further specified by pointing to models of good practice that are already available in the context of European-wide initiatives (Siegrist & Wahrendorf, 2011). Measures include the reorganization of division of work, with the aim of developing more complete job task profiles (job enlargement, job enrichment, for example) and more adequate promotion prospects (including job security, more flexible forms of remuneration and non-monetary gratification, enhanced leadership training, and the development of a culture of trust, fairness, and transparency at organizational level). These measures should specifically target lower status occupational groups with an effort to reduce their work-related burden of disease.

In conclusion, within a globalized economy the reduction of poor quality of employment and work and the reduction of their adverse effects on workers' health provide substantial challenges to international occupational public health. But over the past two or three decades we have witnessed a substantial increase of scientific evidence on causes and consequences of unhealthy work, and enhanced policy efforts to tackle these challenges are emerging at international, national, and local levels. Therefore, there is hope that these efforts will ultimately result in a sizeable reduction of health inequalities and the growth of sustainable and healthy work.

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Chapter 3
Towards Organizational Health: Stress, Positive Organizational Behavior, and Employee Well-Being

Susan Cartwright and Cary L. Cooper

Abstract Health is an important resource at the individual, organizational, and societal level. Work can be satisfying and engaging, but it can also be stressful and lead to poor health outcomes. Decades of stress research have identified a range of workplace factors that are potentially harmful to health. This work has been valuable and influential in helping organizations take action to reduce stress and absenteeism. However, rather less research attention has been paid to providing a greater understanding of the factors that promote positive health and well-being. This chapter reviews the contribution of stress research to organizational health and articulates the need for future research to better understand the antecedents and consequences of positive mental health.

Keywords Workplace stress • Positive organizational health • Employee engagement • Positive mental health at work

3.1 Introduction

"The least of things with a meaning is worth more in life than the greatest of things without it." Carl Jung (1875–1961), Modern Man in Search of a Soul Health is a resource that allows people to lead individually, socially, and economically productive lives (MacIntosh, MacLean, & Burns, 2007) and is a key driver of socioeconomic

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progress internationally (Houtman & Jettinghoff, 2007). Work has been identified as an important social determinant of health and hence workplaces considered an appropriate setting in which to introduce interventions focused on achieving changes likely to improve mental health and well-being (Cartwright & Cooper, 2009; Waddell & Burton, 2006). For many years the co-dependence between individual and organizational health and its implications for wider society has been widely accepted (Cartwright & Cooper, 2009; Cooper & Williams, 1994) Poor employee health adversely impacts on job performance, productivity, occupational injuries, and accidents (Clarke, 2009) and ultimately effects the financial health and effectiveness of the organization. Yet, in times of economic recession when the requirement is often to achieve more with fewer resources, organizational investment in health and well-being initiatives is usually one of the first budget cuts to be made.

3.2 Work Related Stress and Health

In 2008/09 1.2 million employees in the United Kingdom (UK) were suffering from an illness they believed was caused or made worse by their work. Moreover, Swedish evidence suggests that as many as one in three employees continue to attend work when they are ill (Aronsson, Gustafsson, & Dallner, 2000) and perform sub-optimally (Stewart, Matousek, & Verdon, 2003). Work related stress has become the second most commonly reported work related ill health problem in the UK (Health and Safety Executive, 2005) and Europe (European Foundation for the Improvement of Living and Working Conditions, 2000). In a survey of 9,000 safety representatives polled by the UK Trade Unions organization, the TUC, stress was named as the top health and safety priority by two-thirds of respondents (Pearson, 2001) In 2004/05, stress related absence accounted for an estimated 12.8 million working days lost in the UK (Health and Safety Executive, 2005), and the World Health Organization predicts that by 2020 five of the top 10 medical problems worldwide will be stress related. Whilst stress is implicated in a variety of physical health problems, the most common stress related conditions are depression and anxiety, which affect one in five of the UK population and one in six U.S. employees (Quick, Macik-Frey, & Cooper, 2007). In the UK the annual costs of mental ill health to the economy have been estimated to be £77.4 billion (Sainsbury Centre for Mental Health, 2007). In the United States, workers with depression are estimated to cost in excess of $44 billion pre year in lost productivity (Wang, Schmitz, Smailes, Sareen, & Patten, 2010).

As Taris and Kompier (2005) observe, the legacy of several decades of stress research emanating from different schools and research traditions is that we now know a great deal about the antecedents and consequences of ill health both from an individual and organizational standpoint. Whilst the potential sources of stress at work are many and various and differ across occupational groups and industry sectors (Johnson et al., 2005), research has consistently demonstrated that certain job features such as high job demands, low control, lack of skill variety, and social support are risk factors associated with stress. As well as environmental factors, stress

researchers have also identified individual characteristics of the employee, such as personality and coping behavior, which increase their vulnerability to stress (Cartwright & Cooper, 2005).

As more has become known about the particular characteristics of both the workplace and the individual worker that have the potential to impact on employee stress and health, Health and Safety legislation in the UK and Europe has broadened its remit to emphasize the responsibilities of employers to assess both the physical and psychosocial hazards to health inherent in the workplace and to take steps to address these by focusing on risk exposure in six key areas: demands, control, support, relationships, role, and change.

3.3 Current Approaches to Manage and Improve Employee Health

As a result, there is a growing body of literature that focuses on the way in which organizations can reduce stress (Kompier, Cooper, & Geurts, 2000). This can take the form of changing the nature of the job or the work environment to make it less stressful by introducing primary level interventions. (e.g., job redesign, cultural change), by changing the attitudes and behaviors of the individual through secondary level interventions (e.g., stress management training and health promotion programs) or by initiating tertiary level interventions to provide support and assistance to hasten the recovery of distressed employees (e.g., employee counseling).

Primary level interventions, as they simultaneously address both the work and the workplace are considered to be the most effective and ethically sound means of reducing stress related ill health (Noblet & LaMontagne, 2006), Cooper, Liukkonen, and Cartwright (1996) found that a primary level intervention designed to improve communication and consultation in a Dutch construction company resulted in a 30 % reduction in absenteeism. Similarly, an intervention focused on improving communication systems and processes in a UK government department resulted in a significant reduction in employee stress levels and increased perceptions of worker control (Cartwright, Cooper, & Whatmore, 2000). However, a review of stress intervention studies found that only nine out of the 74 identified studies involved primary level interventions and that in practice most interventions are individually focused and directed at increasing the responsibility of workers to take better care of their health and to manage stress more effectively.

In a review of stress intervention studies conducted by Murta, Sanderson, and Oldenburg (2007), 79 % took the form of stress management programs focused on encouraging individuals to exercise more control over their health, extend their personal resources, and so increase their physical and psychological resilience to stress.

The evidence on the effectiveness of secondary level interventions remains very mixed, particularly in relation to stress management training and the sustainability of any initial health improvements (Giga, Noblet, Faragher, & Cooper, 2003; Richardson & Rothstein, 2008). However, there is somewhat stronger evidence that health promotion programs present a good return on investment and lead to absence

reduction (Bertera, 1990), decreased medical costs (Astrup, McGovern, & Kochevar, 1992), and reduced staff turnover (PricewaterhouseCoopers, 2008). Recent evidence from the health and fitness campaign launched at a cost of £350,000 by the Metropolitan Police Force in London showed that annual absence levels fell from 10.2 days to 7.1 days over a 2-year period, representing a saving of well over £20million (Millar, 2005).

At the same time, evaluative studies of employee counseling programs have consistently shown that such interventions significantly improve self esteem and reduce depression and anxiety but have a neutral or negative impact on job satisfaction or engagement with the organization. Indeed, counseling is more likely to increase an individual's perceptions of their self-worth and change the expectations that workers have about the type of job and/or organizational culture in which they wish to work and so increase the likelihood of recovered employees to leave their current work environment.

Research within the stress framework has been extremely important in the identification of the aspects of work that result in negative emotional states and lead to ill health and has argued that there is much that organizations can do to make work environments less stressful by intervening to change working conditions and practices. Unfortunately, there has been a lack of evidential studies in terms of both quality and numbers to provide any powerful and persuasive support for a change in organizational attitudes towards primary level interventions, and employers still remain more inclined to attribute health problems to personality and lifestyle factors rather than the work environment itself.

3.4 Towards a Wider Definition and Definition of Organizational Health

The domination of stress in the employee health literature has tended to treat the concept of health in a limited way, i.e., assessed in terms of the absence or presence of stress. McHugh and Brotherton (2000) suggested that the concept of organizational health is ill defined and hence difficult to operationalize and measure in ways other than financial metrics. The kinds of financial metrics typically used to spur organizations to action tend to emphasize the high costs of employee withdrawal and absence from the workplace rather than positive gains which might be incurred by having a healthy and motivated workforce.

In a recent review of the health of the working population, the Black (2008) report to the UK government suggested that around 175 million working days were lost to illness in 2006. The report also highlighted the low rate of return to work amongst those with long periods of absence and the importance of absence management systems and return-to-work policies.

Traditional measures of health status have for the most part continued to adopt a medical perspective and focus on the negative aspects of health by employing measures and indices which take health as the normative baseline and conceptualize ill

health as a measured deviation from that baseline. Self-report measures have been long and widely used by occupational stress researchers and reflect the medical model in presenting employees with a check list of ill health symptoms and asking them to indicate the frequency and/or severity with which they have experienced these symptoms over the last few months (Bowling, 1997; Cartwright & Cooper, 2009). Hence, the traditional paradigm of healthy work is one in which stress and harm are absence.

Quick (1999) suggested that organizational health is characterized by high satisfaction, low absenteeism, low staff turnover, few accidents and grievances, and an absence of workplace violence. In short, that the indicators of positive organizational health represent the mirror image of those associated with stressful environments and poor employee health.

As long ago as 1946, the World Health Organization defined health as "a state of complete physical, mental and social well-being and not merely the absence of disease of infirmity" (World Health Organization, 1946). Bennis (1962) suggested that organizational health was composed of three dimensions – namely, adaptability, coherence of identity, and the ability to perceive the world correctly and not just the absence of threats and health risks. Rosen (1993) considered that organizational health is epitomized by a core set of humanistic values, which include a firm belief in decency and respect of individuals. The recent Foresight (2008) report published by the UK Government Office for Science associates health and well-being with creative thinking, productivity, good interpersonal relationships, and resilience in the face of adversity as well as good physical and life expectancy. In addition, the concept of well-being has different meanings across different cultures (Littlewood, 2008).

According to Quick and Tetrick (2002), the difficulty in reconciling differing views as to what is meant by organizational health and the emergence of a clear definition is that positive health and ill health are two distinct concepts and so may involve different processes. Employers have a broad duty in law to ensure that employees are not at risk of injury or made ill by their work, which is reflected in the growth of Health and Safety legislation across the industrialized countries. Increasingly, organizations are being encouraged to regularly assess the physical and psychosocial hazards in the workplace that present a risk to employee health and take steps to eliminate and/or moderate these risks. Without doubt, occupational stress research has made a significant contribution to increase organizational awareness of the need to take these responsibilities seriously and address negative aspects of the work environment. However, until recently, there has been less research interest in addressing the variables that promote and enhance positive health and a re-examination of the factors that increase worker motivation and job satisfaction and lead to positive health outcomes. Warr (2009) differentiated between positive states such as cheerfulness, enthusiasm, joy, pleasure, satisfaction, or contentment and negative states such as anxiety, depression, stress, strain, and tension. Warr argued that instead of asking people how ill they feel, we should adopt a more appreciative method of enquiry and ask how well they are. Growing interest in the role of positive rather than merely negative emotions at work has reinforced Tetrick's

(2002) view that factors and processes associated with eustress are very different from those associated with distress. As Gable and Haidt (2005) stated, psychological research has been more interested in "learning how to bring people up from negative eight to zero but not as good at understanding how people rise from zero to positive eight" (p. 103).

The increased interest in positive psychology and the creation of "knowledge of what makes life worth living" (Seligman & Csikszentmihalyi, 2000), coupled with the pressing organizational demands to retain a healthy, optimally functioning, and engaged work force suggests that a switch in research direction in the field of employee and organizational well being is necessary.

3.5 The Characteristics of Healthy Organizations and Employee Well-Being

If health is more that the absence of stress and other negative states, then a truly healthy organization is one that aspires to create work environments that engender positive emotional states and so represent the positive end of health continuum. Ryff and Singer (1998) stated that leading a life of purpose, meaning, and quality relationships with others are core features of good health and well-being. Proponents of the positive psychology movement emphasize that work has to provide the conditions necessary for people to flourish and perform optimally and so achieve happiness and well-being. Jeurissen and Nyklicek (2001) suggested that factors such as job demands and autonomy are more strongly related to well-being and health variables than person characteristics.

Well being is a subjective concept experienced through the presence of pleasant emotions such as self evaluated happiness, through engagement in interesting and fulfilling activities, and generalized feelings of satisfaction with life. Despite improved living standards and economic growth across the industrialized countries, popular surveys suggest that individuals have a greater life expectancy but that they are not necessarily happier than they were in the past. Interestingly, the correlation between well-being and personal income is relatively low, suggesting that material wealth of itself does not make people happy (Myers, 2000). Furthermore, a global study conducted by Towers Perrin (2005) found that only 14 % of employees reported that they felt highly engaged in their work.

To some extent well-being is also influenced by personality, values, and individual resilience. Extroversion (DeNeve & Cooper, 1998), agreeableness, and conscientiousness (Judge, Heller, & Mount, 2002) were shown to be correlated with satisfaction. Furthermore, research has shown that job related happiness is lowest within the 30–40 age range. Positive emotions, in terms of active pleasure in work, have been shown to reduced absenteeism (Farrell & Stamm, 1988) and improved cognitive functioning in terms of recall of information and speed of processing (Forgas, 2001; Isen, 1999).

According to the American Psychological Association (Quick et al., 2007) an emotionally healthy workplace is characterized by five key dimensions:

1. Employee involvement in decision making and job autonomy
2. Work life balance through flexible working and scheduling
3. Employee growth and development
4. Health and safety through the provision of physically safe and psychologically secure work environments
5. Employee recognition

Wilson, Dejoy, Vandeberg, Richardson, and McGrath (2004) provided a testable and comprehensive model of a healthy work organization. This model consists of six higher order components broken down in to 26 different measurable dimensions. The six higher order components are:

1. Organizational attributes, comprising values, beliefs, policies, and practices
2. Organizational climate, comprising organizational and co-worker support, participation with others and with supervisors, communication, safety, and health climate
3. Job design, comprising workload, control/autonomy, job content, role, clarity, environmental and physical conditions, work scheduling
4. Job future, comprising job security, procedural and distributive equity, learning opportunities, and flexible work arrangements
5. Psychological work adjustment, comprising job satisfaction, organizational commitment, efficacy, and job stress
6. Employee well-being, comprising psychological health (depression, anger/hostility, somatic anxiety, health risk behaviors, and attendance behaviors)

Based on a cross sectional study of over 1,000 U.S. retail employees, the researchers found support for the model in that employees' perceptions of their organization affected their perceptions of the climate, which in turn impacted on the way individuals related to their job and saw their future in the organization. Such perceptions were shown to ultimately impact on their levels of work adjustment, health, and well-being. However, this model again focuses on measurement of negative emotional outcomes, such as anxiety and depression, and fails to accommodate dimensions relating to sense of purpose and meaning. Given that over one-third of employees cite their manager as the key reason for wanting to leave their organization (Robertson & Flint-Taylor, 2009), it also appears to understate the role of leadership in determining employee well-being and enhancing meaning (Markow & Klenke, 2005).

3.6 Meaning and Engagement

Organizations are increasingly incorporating items relating to engagement in their annual employee attitude surveys. Kahn (1990) conceptualized engagement "as the harnessing of organizational members' selves to their work roles; in engagement,

people employ and express themselves physically, cognitively, and emotionally during role performance" (p. 694). Engagement items are typically concerned with the investment of extra effort, alignment between individual and organizational values, fair treatment, and generalized beliefs that what the organization and their employees are doing is worthwhile and makes a difference. By implication, engagement is perceived as being underpinned by a sense of purpose, energy, and connectivity (Baumeister & Vohs, 2002). High levels of employee engagement have been shown to be associated with low employee turnover, customer satisfaction loyalty, and, to a lesser degree, productivity (Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002) and positive health outcomes (Little, Simmons, & Nelson, 2007).

A sense of meaning is considered to be a central element of engagement. Baumeister (1991) suggested that there are four main needs that must be satisfied for individuals to make sense of their life and feel that their life or an aspect of it has meaning. These needs are a sense that (1) their current activities are purposeful and directed towards desired goals, (2) their actions are right, justifiable, and have positive value, (3) they have control over tasks and are able to complete them, and (4) what they do makes them feel good and worthy individuals. Unmet needs are likely to lead to disappointment, dissatisfaction, and de-motivation. Unmet needs within the workplace may result in negative outcomes such as physical or psychological withdrawal, poor health, and sub-optimal performance.

According to Pahl (1995) meaning is a mechanism for achieving stability in one's life. It is believed that individuals are increasingly searching for meaning in their work because of the decline in traditional sources of community, such as neighborhoods, churches, and extended families and the increased amount of time people are spending at work (Wrzesniewski, McCauley, Rozin, & Schwartz, 1997). Cartwright and Holmes (2006) link this greater search for meaning as a response to transactional employment contracts and the growing trend by employers to regard their workforce as a disposable asset. Whereas employers increasingly consider that it is sufficient to provide employees with merely a job and a chance to increase their market employability rather than long term security and personal growth, this has served to fuel employee cynicism, discontent, and a deeper sense of reflection on what people want from their work.

In a study based on interviews with 100 HR executives, Mitroff and Denton (1999) found that "ability to realize my full potential as a person," "being associated with a good and ethical company," and "interesting work" were the key factors that provided them with meaning in their work. Evidence indicates that search for greater meaning at work is more pronounced among younger workers. In a study of 10,000 young people, Bibby (2001) found that interesting work, a feeling of accomplishment, friendly and helpful colleagues, and adding something to peoples' lives were rated more important than pay. Seligman (2002) suggested that the highest and most lasting state of happiness is only attained when persons feel that they are doing something that has meaning and value. Maslow (1943) considered that meaningfulness is a motivating need that goes beyond self-actualization. Cartwright and Holmes (2006) differentiated between job and social meaning. Job meaning relates to the individual's sense of meaning derived from their job or workplace, whereas

social meaning is derived from relationships with others at work and feelings of belonging. In a study of hospital workers, Cartwright and Hall (2009) found that job and social meaning were linked to health outcomes but were potentially more strongly predictive of job satisfaction. Similarly, Conger (1994, as cited in Ashmos & Duchon, 2000) found that employees performed better when they felt part of a community at work and when they found meaning in this connection.

Balain and Sparrow (2009) argued that employee engagement surveys are used as a feedback mechanism and management control device to ascertain how well an organization seems to be doing and are often regarded as a proxy measure of performance. Assumptions are made that engaged employees will act as good citizens and will go out of their way to provide excellent customer service. Balain and Sparrow were highly critical of the content of many measures of engagement typically used by organizations on the basis that they treat engagement as an attitude, undistinguishable from other similar concepts such as job involvement, commitment, and citizenship behavior rather than an emotional or mental state.

An alternative approach (Maslach, Leiter, & Schaufeli, 2009; Maslach & Schaufeli, 1993) is to perhaps consider engagement more as a continuous variable reflecting the state of mental well-being of an individual. Maslach et al. (2009 define work engagement as a persistent, positive affect-motivational state of fulfillment that is characterized by vigor, dedication, and absorption and is the positive antithesis of burnout. The concept of burnout has a long history dating back to the 1970s (Freudenberger, 1974). Burnout is a psychological syndrome that occurs in response to prolonged exposure to chronic interpersonal stressors at work and is characterized by a loss of energy and a sense of emotional, and often physical, exhaustion. It has been shown to lead to poor job performance, withdrawal behaviors, and poor mental health (Leiter & Maslach, 2005). Burnout is conceptualized as consisting of three dimensions – namely, exhaustion, cynicism (or depersonalisation), and efficacy or the experience of reduced personal accomplishment. Cynicism as a means of creating defensive cognitive distance is regarded as a defensive coping response to exhaustion (Cherniss, 1980; Leiter & Maslach, 2005). Cynicism is associated with a lack of experienced meaning in the workplace and thus confirms the centrality and importance of meaning to positive psychological health.

3.7 Interventions to Promote and Enhance Positive Health

Seligman, Steen, Park, and Peterson (2005) developed a series of individually focused Web-based exercises to increase positive well-being. Their findings, based on 411 predominantly white participants, showed that certain interventions, i.e., an exercise requiring participants to write about three good things that happened each day and why they happened, and another that involved the utilization of individualized feedback resulted in a significant increase in happiness and a reduction in depression level that were sustained over a 6-month

period. The Foresight (2008) report commissioned by the UK government, which started measuring national well-being through the Office for National Statistics in 2011, also prescribed five ways to individual happiness. These health messages encourage the individual to connect with others more, to be active, to be more curious and attentive to the beauty of everyday moments, to learn new skills and knowledge, and to be more giving of their time. In the context of work, there has also been some renewal of interest in the Happy-Productive worker thesis. According to a review by Cropanzano and Wright (2001), happiness has variously been operationalized as job satisfaction, as the absence of negative affect, as the presence of positive affect, as a lack of emotional exhaustion, or as psychological well-being. Cropanzano and Wright concluded that support for the happy-productive worker thesis has remained equivocal because of these differences in the ways in which happiness has been measured. Whilst arguing that in the past the strength of the relationship between job satisfaction and performance has been overly conservative, they highlighted the limited but more supportive findings in studies where happiness is operationalized as (the lack of) emotional exhaustion and psychological well-being. In particular, well-being has been shown to be predictive of performance, even after controlling for job satisfaction, negative and positive affect, and demographic variables such as age, gender, and education (Cropanzano & Wright, 1999).

Whilst Cropanzano and Wright (1999) suggested that future research should address kinds of organizational strategies that employers could adopt to promote positive psychological health, the area still remains under researched, particularly in relation to different generational and occupational groups. This may be in part due to the lack of valid and reliable measures of positive organizational health and well-being. Concepts such as energy, meaning, and passion are easier to describe than to operationalize. Whilst organizations may recognize that they have a duty to ensure that their employees are not made ill by their work, it may be that they feel less comfortable with the notion that they should also be acting to encourage the positive enjoyment of work. Since industrialization the status of work has been seen as necessary but not necessarily pleasant.

Finally, there is the question of what kinds of interventions could be introduced to make work more pleasurable and engaging and also create a sense of meaning. This is a challenge for both organizational leadership and researchers. Whereas some suggest that positive organizational health can be achieved through the adoption of sustainable practices (Bichard, 2009), others emphasize effective work-life balance policies (Poelmans, Odle-Dusseau, & Beham, 2009), fair treatment (Siegrist, 1996) interesting work (Fisher, 2010), supportive organizational cultures and the freedom to express thoughts and feelings without discomfort within a psychologically safe environment (Quick et al., 2007).

It has taken decades of research to establish the antecedents and consequences of work related stress and poor mental health and their relative contribution. It is now perhaps the time to apply the same effort and vigor to establish the job and organizational antecedents and consequences of positive mental health.

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Chapter 4
A Critical Review of the Job Demands-Resources Model: Implications for Improving Work and Health

Wilmar B. Schaufeli and Toon W. Taris

Abstract The Job Demands-Resources model (JD-R model) became highly popular among researchers. The current version of the model proposes that high job demands lead to strain and health impairment (the health impairment process), and that high resources lead to increased motivation and higher productivity (the motivational process). This chapter reviews the assumptions and development of the JD-R model and presents an overview of important findings obtained with the model. Although these findings largely support the model's assumptions, there are still several important unresolved issues regarding the JD-R, including the model's epistemological status, the definition of and distinction between "demands" and "resources," the incorporation of personal resources, the distinction between the health impairment and the motivational processes, the issue of reciprocal causation, and the model's applicability beyond the individual level. The chapter concludes with an agenda for future research and a brief discussion of the practical application of the model.

Keywords Job demands-resources model • Engagement • Burnout • Performance • Interventions • Job stress • Well-being

4.1 Introduction

Since its appearance in the wake of the twenty-first century, the Job Demands-Resources (JD-R) Model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) has gained high popularity among researchers. Currently, the JD-R model is recognized as one of the leading job stress models, along with Karasek's (1979) Job Demands

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Control (JD-C) model and Siegrist's (1996) Effort Reward Imbalance (ERI) model. For instance, a search in Google Scholar in September 2013 revealed that two seminal papers that discussed the JD-R model (Demerouti et al., 2001; Schaufeli & Bakker, 2004) had been cited more than 2,400 times.

How can this popularity be explained? One likely reason is that like the JD-C and ERI models, the JD-R model assumes that employee health and well-being result from a balance between positive (resources) and negative (demands) job characteristics. As these two earlier models had already sensitized the hearts and minds of researchers and practitioners to the notion of balance, the JD-R model fell on fertile ground. Yet, unlike these two models, the JD-R model does not restrict itself to *specific* job demands or job resources. It assumes that *any* demand and *any* resource may affect employee health and well-being (for an overview, see Appendix). Thus, the scope of the JD-R model is much broader than that of other models, because it potentially includes *all* job demands and job resources. The JD-R model is also more flexible and can be tailored to a much wider variety of work settings. The broad scope of the model appeals to researchers, just as its flexibility is attractive to practitioners.

A second, somewhat problematic, explanation for its popularity is the relatively loose way in which the label "Job Demands-Resources model" has been used. As we will show below, there is actually no single JD-R model. Instead of relating well-defined and specific sets of concepts to each other (as applies to the ERI and JD-C models), the JD-R model is heuristic in nature and represents a way of thinking about how job (and recently also personal) characteristics may influence employee health, well-being, and motivation. This implies that even if two studies show no overlap in terms of the study concepts, they could still be based on and test the same assumptions of the JD-R model.

The heuristic use of the JD-R model in combination with its broad scope and flexibility presumably accounts for its current proliferation in both research and practice. Yet, this wide applicability and usefulness do not imply that there is no room for improvement of the model. This chapter starts with a brief history of the JD-R model and then addresses unresolved issues and offers critical comments. The chapter concludes with some implications of the JD-R for improving work and health.

4.2 A Brief History of the JD-R Model

4.2.1 The Early JD-R Model

The JD-R model was first published under that label by Demerouti et al. (2001) in an attempt to understand the antecedents of burnout. Their model drew upon Lee and Ashforth's (1996) meta-analysis, in which eight "job demands" and thirteen "job resources" were identified as possible causes of burnout, and on the "structural model of burnout" that was presented in the Maslach Burnout Inventory test

manual (Maslach, Jackson, & Leiter, 1996, p. 36). Demerouti et al. (2001) defined *job demands* as "those physical, social, or organizational aspects of the job that require sustained physical or mental effort[1] and are therefore associated with certain physiological and psychological costs" (p. 501). Examples of job demands are work overload, heavy lifting, interpersonal conflict, and job insecurity. Following Hockey's (1997) model of compensatory control, the JD-R model assumes that when job demands are high, additional effort must be exerted to achieve the work goals and to prevent decreasing performance. This obviously comes with physical and psychological costs, such as fatigue and irritability. Workers may recuperate from mobilizing this extra energy and the associated costs by taking a break, switching tasks, or performing less demanding activities, for instance. However, when recovery is inadequate or insufficient, the result is a state of sustained activation that gradually exhausts the employee physically and/or mentally (Knardahl & Ursin, 1985). *Job resources* were defined as "those physical, social, or organizational aspects of the job that may do any of the following: (a) be functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; (c) stimulate personal growth and development" (Demerouti et al., 2001, p. 501). Examples of job resources are feedback, job control, and social support.

The early JD-R model proposed two processes for the development of burnout. First, long-term excessive job demands from which employees do not adequately recover may lead to sustained activation and overtaxing, eventually resulting in exhaustion – the energetic component of burnout. Second, a lack of resources precludes that job demands are met and that work goals are reached, which leads to withdrawal behavior. Indeed, withdrawal – or reduced motivation/disengagement, i.e., the motivational component of burnout – acts as a self-protective strategy to prevent further energy depletion. Consistent with this reasoning, research revealed main effects of demands and resources on burnout; whereas job demands were associated with exhaustion, lacking resources were linked to disengagement (see, among others, Bakker, Demerouti & Euwema, 2005; Bakker, Demerouti & Verbeke, 2004; Bakker, Demerouti, Taris, Schaufeli & Schreurs, 2003; Demerouti et al., 2001; Hansen, Sverke & Näswall, 2009; Xanthopoulou et al., 2007).

Next to these main effects, the JD-R model predicts that job resources mitigate the negative effect of job demands on exhaustion. This follows from the definition of job resources, which are assumed to reduce job demands as well as the associated exhaustion. Bakker, Demerouti, Taris et al. (2003) observed that the effect of job demands on exhaustion was especially strong if employees possessed few job resources and, in a similar vein, that the effect of job resources on cynicism was particularly strong if employees encountered many job demands. Subsequent research (Bakker et al., 2005; Xanthopoulou et al., 2007) showed that about 60 % of all possible interactions between individual job demands and job resources were significant and in the hypothesized direction, whereas no significant interaction effects

[1] Schaufeli and Bakker (2004, p. 296) replaced "mental effort" with "psychological (i.e., mental and emotional) effort," thus broadening the domain to include emotional labor as well.

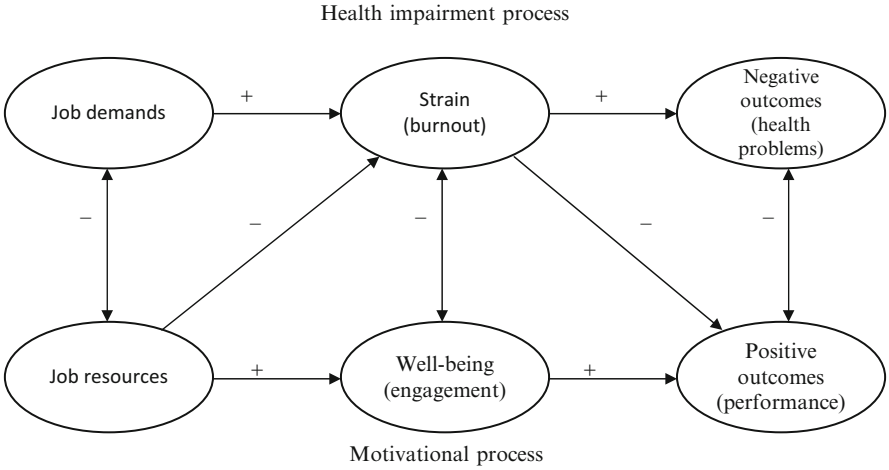

Fig. 4.1 The revised Job Demands-Resources (JD-R) model

ran counter to the expectations. These findings were successfully cross-validated in two private and one public hospital (Hansen et al., 2009), attesting to the robustness of the JD-R model.

Finally, the early JD-R model was extended to include performance measures, which were conceived as outcomes of burnout. Bakker, Van Emmerik, and Van Riet (2008) showed that cynicism predicted the sales performance of teams, whereas Bakker et al. (2004) found that cynicism and exhaustion were related to colleague-rated extra-role and in-role performance, respectively.

4.2.2 The Revised JD-R Model

Three years after its introduction, Schaufeli and Bakker (2004) presented a revised version of the JD-R model (Fig. 4.1). This model included work engagement in addition to burnout and considered burnout and work engagement to be mediators of the relation between job demands and health problems, and job resources and turnover intention, respectively. By doing so, Schaufeli and Bakker (2004) gave a positive-psychological twist to the JD-R model. That is, the revised JD-R model not only sought to explain a negative psychological state (i.e., burnout) but also its positive counterpart (work engagement). Work engagement refers to a positive, fulfilling, work-related state of mind that is characterized by vigor (that is, high levels of energy and mental resilience while working), dedication (referring to a sense of significance, enthusiasm, and challenge), and absorption (being focused and happily engrossed in one's work).

Analogous to the early JD-R model, the revised model assumes that burnout results from high job demands and poor job resources, except that now burnout is

treated as a unitary instead of a two-dimensional construct. Moreover, in line with the burnout literature (e.g., Melamed, Shirom, Toker, Berliner, & Shapira, 2006), it is assumed that burnout will lead to health problems, such as depression, cardiovascular disease, or psychosomatic complaints. Thus, burnout is expected to mediate the relation between job demands and employee health and well-being (at least partly), through the gradual draining of mental resources (i.e., burnout). This is the *energetic* or *health impairment process* of the revised JD-R model.

Similarly, a *motivational process* operates that is sparked by abundant job resources. The revised JD-R model emphasizes the inherently motivational qualities of job resources. Following effort-recovery theory (Meijman & Mulder, 1998), work environments that offer many resources foster workers' willingness to dedicate their efforts and abilities to the work task. Thus, job resources play an extrinsic motivational role, because they initiate the willingness to spend compensatory effort, thereby reducing job demands and fostering goal attainment. That is, job resources are instrumental in achieving work goals. However, they also play an *intrinsic* motivational role, because they satisfy basic human needs for autonomy, relatedness, and competence (Deci & Ryan, 2000; Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008). For instance, feedback may promote learning, thereby increasing job competence, whereas decision latitude and social support satisfy needs for autonomy and relatedness, respectively. In both cases job resources stimulate a fulfilling, positive work-related state of mind (i.e., work engagement), either through the achievement of work goals or the satisfaction of basic needs. In turn, this affective-motivational state fosters positive organizational outcomes, such as organizational commitment and performance. So engagement is assumed to mediate the relation between job resources and organizational outcomes.

4.3 Cross-Sectional Evidence

Most early research on the JD-R was cross-sectional in nature. The first studies on the revised JD-R model were conducted in the Netherlands with call-center employees (Bakker, Demerouti, & Schaufeli, 2003), industrial workers (Bakker, Demerouti, de Boer, & Schaufeli, 2003), and health care staff and white collar workers (Schaufeli & Bakker, 2004) and provided strong evidence for the assumptions of the model. These findings were almost perfectly replicated for other countries, cultures and occupational groups, including Finnish teachers (Hakanen, Bakker, & Schaufeli, 2006), Australian volunteers (Lewig, Xanthopoulou, Bakker, Dollard, & Metzer, 2007), Austrian blue-collar and white-collar workers (Korunka, Kubicek, Schaufeli, & Hoonakker, 2009), Belgian blue-collar and white-collar workers (Hansez & Chmiel, 2010), Chinese blue-collar workers and health professionals (Hu, Schaufeli, & Taris, 2011), and Chinese family-owned business workers (Hu & Schaufeli, 2011). Moreover, the main parameters of the JD-R model were largely invariant across Dutch and Spanish employees (Llorens, Bakker, Schaufeli, & Salanova, 2006). In total these cross-sectional studies included 16 samples, and in only four cases partial

instead of full mediation was found for either burnout or engagement. Moreover, in 13 cases, significant crosslinks were found between either job resources and burnout or between burnout and organizational outcomes.

Hu et al. (2011) conducted a comprehensive study on interactions, focusing on the joint effects of demands and resources on burnout and engagement. Job resources buffered the negative effect of demands on burnout in only one of their two samples of health professionals. Moreover, employees experiencing high job demands and low job resources showed higher risks of burnout and reduced work engagement than employees in more favorable work conditions. However, after controlling for the additive effects of job demands and job resources, the predictive power of this synergetic effect decreased sharply. Apparently, the joint effect of job demands and job resources on burnout and engagement adds little beyond their additive effects.

4.4 Longitudinal Evidence

All in all, the cross-sectional evidence for the revised JD-R model is convincing, although the evidence for joint effects of demands and resources is rather weak. But what about the longitudinal evidence? A 3-year follow-up study among Finnish dentists (Hakanen, Schaufeli, & Ahola, 2008) supported both the motivational process and the health impairment process. Job resources influenced future work engagement, which, in turn, predicted organizational commitment; job demands predicted burnout over time, which in turn predicted future depression. Importantly, no reversed causation was observed – that is, neither burnout nor engagement predicted job demands or job resources. In a similar study among Dutch managers, increases in job demands and decreases in job resources predicted burnout across a 1-year period, whereas increases in resources predicted work engagement (Schaufeli, Bakker, & van Rhenen, 2009). Moreover, burnout predicted future absence duration (an indicator of health impairment), whereas work engagement predicted future absence frequency (an indicator of employee motivation). A 1-year follow-up study among Australian university staff showed that job resources predicted psychological strain (negatively) and organizational commitment (positively) but failed to confirm the effect of job demands on strain (Boyd et al., 2011). Again, no reversed causal effects were detected.

In conclusion, job demands and job resources have an impact over time on burnout and work engagement in the ways predicted by the revised JD-R model. Moreover, indications were found for the mediating role of burnout and work engagement.

4.4.1 The Integration of Personal Resources

Initially, the early and revised versions of the JD-R model only considered characteristics of the work environment. However, because most psychological approaches

assume that human behavior results from an interaction between personal and environmental factors, it was only to be expected that personal resources would be integrated into the JD-R model. Personal resources are defined as the psychological characteristics or aspects of the self that are generally associated with resiliency and that refer to the ability to control and impact one's environment successfully. Similar to job resources, personal resources are functional in accomplishing work goals, and they stimulate personal growth and development. To date, personal resources have been integrated into the JD-R model in five ways:

1. *Personal resources directly impact well-being.* As personal resources are defined in terms of resiliency and control, they may reduce burnout and increase engagement. In a study among Spanish teachers, Lorente, Salanova, Martinez, and Schaufeli (2008) found that emotional and mental competencies at the beginning of the academic year predicted levels of burnout and engagement at the end of that year, controlling for baseline levels of demands and resources. Similarly, Xanthopoulou, Bakker, Demerouti, and Schaufeli (2009) reported in an 18-month longitudinal study that personal resources (self-efficacy, optimism, and organization-based self-esteem) predicted later work engagement, next to job resources (control, supervisory coaching, feedback, and opportunities for development).

   Interestingly, Xanthopoulou et al. (2009) also found that work engagement predicted personal resources across time. This reciprocal relation points to a dynamic interplay of resources and engagement across time and, hence, to the existence of a gain cycle – that is, the (perceived) availability of resources fosters engagement, which in turn has a positive impact on (either the presence or the perception of) resources, etc. (Salanova, Schaufeli, Xanthoupoulou & Bakker, 2010). This notion of gain cycles originates from Hobfoll's (2002) Conservation of Resources theory, a motivational theory that explains how people strive to maintain and accumulate resources of various kinds, including job resources.
2. *Personal resources moderate the relation between job characteristics and well-being.* The definition of personal resources implies that they may buffer negative effects of job demands on burnout and exacerbate positive effects of job resources on engagement. This reasoning was supported in a study with a representative sample of Dutch employees, where intrinsic work motivation strengthened the negative effect of learning opportunities on exhaustion and increased the positive effect of job autonomy on work engagement (Van den Broeck, Van Ruysseveldt, Smulders, & De Witte, 2011). Further, Brenninkmeijer, Demerouti, Le Blanc, and Van Emmerik (2010) found that the detrimental effects of workload and interpersonal conflict on exhaustion were more pronounced for employees having a strong prevention focus (i.e., who are concerned with obligations and responsibilities). However, instead of exacerbating the positive effect of job resources on engagement, a strong promotion focus (i.e., high concern with possibilities for growth) was associated with lower levels of engagement. Brenninkmeijer et al. suggested that this may be due to a ceiling effect, since employees having a strong promotion focus already experience high levels of engagement, which may preclude further increases in engagement.

3. *Personal resources mediate the relation between job characteristics and well-being.* Conservation of Resources theory (Hobfoll, 2002) proposes that resources tend to accumulate. For instance, employees working in a resourceful environment are likely to develop feelings of self-confidence and optimism about their future at work. In turn, these personal resources will be positively related to work engagement. Three cross-sectional studies tested these expectations. Supporting this reasoning, Xanthopoulou, Bakker, Demerouti, and Schaufeli (2007) found that self-efficacy, optimism, and organization-based self-esteem partially mediated the positive relation between job resources and work engagement. Similar results were reported by Vink, Ouweneel, and Le Blanc (2011), who focused on four personal resources that constitute the concept of Psychological Capital (PsyCap): self-efficacy, optimism, hope, and resilience. Finally, Van den Broeck et al. (2008) reported that satisfaction of basic psychological needs (i.e., competence, autonomy, and belongingness) mediated the relations between job demands and exhaustion, between job resources and vigor, and between job resources and exhaustion. Apparently, job resources satisfy these basic needs, whereas job demands preclude their satisfaction. If these basic needs are satisfied, employees are likely to feel less exhausted and more vigorous.

   These findings were confirmed by two longitudinal studies. A study in a laboratory setting found that efficacy beliefs mediated the association between task resources (i.e., time and method control) and task engagement (Llorens, Schaufeli, Bakker, & Salanova, 2007). A recent three-wave study among Italian teachers supported these results: Job resources and self-efficacy affected work engagement both across a short (4 months) and a longer-term (8 months) time interval (Simbula, Guglielmi, & Schaufeli, 2011). Similar to the study by Xanthopoulou et al. (2009), these two longitudinal studies also provided evidence for reciprocal relations. Llorens et al. (2007) reported that engagement increased efficacy beliefs, which was in turn associated with increasing task resources over time. Simbula et al. (2011) found that engagement was associated with higher levels of self-efficacy across time. Again, these findings suggest the existence of a positive gain spiral in which efficacy beliefs play a central role.
4. *Personal resources influence the perception of job characteristics.* Social Cognitive Theory (Bandura, 1997) proposes that personal resources (such as self-efficacy) shape the way people understand their environment and react to it. In a somewhat similar vein, Judge, Bono, and Locke (2000) argued that employee core self-evaluation – a combination of self-esteem, generalized self-efficacy, locus of control, and low neuroticism – determines the way they perceive their job characteristics, which in turn would impact on job satisfaction and performance. In line with these ideas, Xanthopoulou et al. (2007) showed that job resources mediated the relation between personal resources (i.e., self-efficacy, optimism, and organizational based self-esteem) and work engagement.
5. *Personal resources act as a "third variable".* Finally, because personal resources may affect both perception of job characteristics (see point 4 above) and

employee well-being (see point 1 above), they may act as "third variables" that could explain the relation between both. This was investigated by Bakker et al. (2010), who hypothesized and found that extraversion among Australian academics was positively related to job resources and to organizational commitment, thus partly explaining their relation. Similarly, neuroticism was positively related to job demands and psychological strain.

These findings show that it is safe to assume that personal resources play a role in the JD-R model. However, which place they should take is as yet unclear. At present there is no systematic study of the role of personal resources available that tested and compared different conceptualizations of the relations between personal and job resources, job demands, and outcomes. Moreover, the results discussed above suggest that findings may vary across different types and different combinations of personal resources, job resources, job demands, and outcomes.

4.4.2 The JD-R Model as a Source of Inspiration

Instead of *testing* the JD-R model per se, many researchers have been inspired by it. Below we show (1) how the JD-R model has been used as an overall conceptual framework to integrate various studies, (2) how the model has been elaborated and refined, (3) how specific parts of the model have been studied, and (4) how diary studies have been used to investigate the dynamics of the model.

4.5 The JD-R Model as a Conceptual Framework

In a narrative review, Huhtala and Parzefall (2007) used the revised JD-R model as a conceptual framework for integrating empirical studies on employees' propensity to innovate. They argued that work-related resources influence employee innovativeness and creativity via work engagement. Whereas a certain level of stimulation (i.e., job demands) is beneficial, too high a level of challenge may turn into a stressor and subsequently lead to burnout and hinder innovativeness. Nahrgang, Morgeson, and Hofmann (2011) used the revised JD-R model to test a meta-analytic model of safety behavior at work. In their study of 203 samples, job demands (i.e., risks and hazards, physical demands, and complexity) and job resources (knowledge, autonomy, and a supportive environment) were indirectly associated with safety outcomes (such as accidents, injuries, and unsafe behavior) via burnout and engagement. Thus, consistent with the JD-R model, support was found for the health impairment process and the motivational process, as far as safety outcomes are concerned.

4.6 Elaborations and Refinements of the JD-R Model

A 46-sample meta-analysis by Crawford, LePine, and Rich (2010) differentiated two categories of job demands: "challenges" (such as workload, time pressure, responsibility) and "hindrances" (among others, role conflict, role ambiguity, and "red tape"). They argued that whereas both challenges and hindrances tend to be demanding, challenges have the potential to promote mastery, personal growth, and future gain, whereas hindrances could thwart personal growth, learning, and goal attainment. As expected, both types of demands were positively related to burnout. However, the relations between demands and engagement varied with the nature of the demand: Hindrances related negatively and challenges related positively to engagement. Moreover, and consistent with the JD-R model, job resources were negatively related to burnout and positively related to engagement. Similar findings were obtained in two independent Dutch and Flemish samples (Van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010), although here the relation between challenge demands and exhaustion (a core dimension of burnout) was non-significant. These findings show that job demands may relate differentially to specific outcome variables.

Two studies applied the JD-R model to safety behaviors at work; both studies added novel constructs to the model. Hansez and Chmiel (2010) examined violations of safety behavior as outcomes of the health impairment and motivational processes, assuming that perceived management commitment to safety would affect these violations as well. Job demands and job resources were indirectly related to routine violations (i.e., using "short cuts" in which safety rules and regulations are surpassed) and situational violations (i.e., organizational failings regarding tools or equipment that provide an easier way of working), through job strain and work engagement. Dollard and Bakker (2010) examined the psychosocial safety climate (the organization's policies, practices, and procedures for the protection of worker's psychosocial health and safety) as an organizational resource that influences the work context. For instance, the lack of a psychosocial safety climate could lead to poorly designed jobs and chronic job demands, whereas a good climate would foster growth in other resources such as job control. Dollard and Bakker showed longitudinally that a good psychosocial safety climate predicted a decrease in psychological strain through lower job demands (work pressure and emotional demands) as well as an increase of work engagement through higher resources (skill discretion). Similar to Nahrgang et al.'s (2011) meta-analysis, this research shows that the JD-R model can be used successfully in studying workplace safety.

4.7 The Piecemeal Examination of the JD-R Model

Some studies explicitly referred to the JD-R model but included only job characteristics (demands and resources) and work engagement. For instance, Hakanen, Bakker, and Demerouti (2005) investigated the relation between job demands, job resources, and work engagement among Finnish dentists, focusing on four job

demands, five job resources, and the 20 corresponding demand-resource interactions. Four of these interactions were significant, showing that job resources (e.g., variability in professional skills) mitigated the effects of job demands (such as qualitative overload) on engagement. Similar findings were reported by Bakker, Hakanen, Demerouti, and Xanthopoulou (2007) in a study among Finnish teachers. They found that job resources (social support and appreciation) buffered the negative effect of job demands (pupils' misconduct). Moreover, job resources boosted engagement particularly when job demands were high. Both of these studies highlight the importance of job resources for dealing with demands and staying engaged.

Other studies focused exclusively on the health impairment process or the motivational process of the JD-R model. For instance, Rothmann and Essenko (2007) confirmed among South African university support staff that burnout mediated the relation between job demands and job resources on the one hand, and ill-health on the other. Likewise, Knudsen, Ducharme, and Roman (2009) showed that emotional exhaustion partly mediated the relation between job demands and job resources and turnover intention among leaders of addiction treatment organizations in the United States. Both sets of findings are clearly in line with the JD-R model. Further, a Finnish study on the impact of job demands and skill variety (a resource) showed that both were associated with burnout levels 13 years later (Hakanen, Bakker, & Jokisaari, 2011), confirming the predictions of the JD-R model.

Finally, using Spanish and Dutch samples, Salanova and Schaufeli (2008) focused on the motivational process and showed that in both samples work engagement fully mediated the relation between job resources and personal initiative. A Finnish longitudinal study (Hakanen, Perhoniemi, & Toppinen-Tanner, 2008) not only replicated this finding but also showed that personal initiative, in turn, had a positive impact on work unit innovativeness. Most importantly, positive reciprocal relations were observed across time between job demands and work engagement, and between work engagement and personal initiative. This points to the existence of gain spirals at work, in which two concepts mutually reinforce each other.

4.8 The Day-to-Day Dynamics of the JD-R Model

Most studies on the JD-R model employed between-group designs – that is, differences *between* employees were evaluated. However, recent work has investigated how the relations between job characteristics, psychological states, and outcomes develop *within* employees across time. This research usually takes the form of diary studies, in which a group of employees is followed during a small number of consecutive days. Each day all participants complete a brief questionnaire (typically at the end of the working day) that assesses the daily (state) level of the study variables. Usually the participants fill out another questionnaire at the start of the study that assesses the more general (trait) level of the same variables. This procedure allows for studying changes in day-level variables, controlling for their baseline levels.

This allows questions to be examined such as: Is the level of work engagement higher on days when more job resources are available as compared to days with fewer resources, independently of the employee's base-line level of work engagement?

Relevant to this issue, Kühnel, Sonnentag, and Bledow (2012) showed that day-specific job resources (positive psychological climate and job control) and personal resources (being recovered in the morning) promoted work engagement over the course of one working week. Moreover, on days when employees perceived high job control, day-specific time pressure was positively associated with work engagement, whereas on days when less control was perceived, time pressure was negatively associated with engagement. This demonstrates that job control facilitates employee coping with job demands and also that the co-occurrence of demands and resources boosts engagement. The latter agrees with findings from between-subjects research (e.g., Bakker et al., 2007; Hakanen et al., 2005).

In a diary study among staff at a Greek fast food company, Xanthopoulou et al. (2009) also found that daily fluctuations in job resources (autonomy, supervisory coaching, and team climate) were positively related to daily levels of work engagement across one working week. On days with more available resources, employees were not only more engaged, but they also felt more optimistic and self-efficacious, and they performed better in terms of financial turnover than on days when these resources were low. Thus, the more supportive the boss was, the more engaged the employees were and the more food was sold. In a similar study among flight attendants, Xanthopoulou, Heuven, Demerouti, Bakker, and Schaufeli (2008) found that work engagement mediated the relation between colleague support and in-role performance.

These three diary studies exemplify the dynamic nature of the motivational process of the JD-R model as it unfolds across time. It appears that day-specific work engagement varies over the working week and that these variations can be explained by day-specific job demands and job resources. Moreover, day-specific work engagement mediates the relation between daily job resources and daily performance, and job resources and personal resources have a joint effect on work engagement. These findings fully agree with the predictions of the JD-R model.

4.9 Critical Comments and Unresolved Issues

Now that we have seen how the JD-R model has evolved over time and what kind of research it has generated since its introduction at the turn of the century, it is time to make some critical comments and to point put some unresolved issues that might fuel future research. Six issues stand out as especially important and/or interesting.

4.9.1 First Issue: The Epistemological Status of the JD-R Model

As illustrated above, the JD-R model is an open, heuristic model rather than a specific model that includes well-defined sets of particular demands, resources, mental

states, and outcomes. In previous research, job demands, job and personal resources, and outcomes have been represented by quite different concepts, as can be seen from the Appendix. The fact that all sorts of demands, resources, and outcomes can be included is a strength as well as a weakness of the model. It adds to its flexibility, in that it can be used in many different contexts, but this comes at the cost of limited generalizability. For instance, when a time pressure × control interaction effect on work engagement is found (see Kühnel et al., 2012), this does not imply that similar interactions exist between *all* demands and *all* resources for *all* outcome variables.

In fact, additional explanatory theoretical frameworks are usually needed to argue why *particular* demands interact with *particular* resources. For instance, in Kühnel et al.'s (2012) case, Karasek's (1979) JD-C model fulfilled that role. Other theoretical frameworks have been used in similar ways to substantiate the psychological role of particular demands, resources, and outcomes in the JD-R model. Example frameworks are Hobfoll's (2002) Conservation of Resources Theory, Fredrickson's (2001) Broaden-and-Build Theory, Bandura's (1997) Social Cognitive Theory, and Deci and Ryan's (2000) Self-Determination Theory. These and other psychological theories are needed to *explain* the underlying psychological processes that are involved given the specific demands, resources, and outcomes that are included in the JD-R model at hand. Thus, rather than being an explanatory model, the JD-R model is a *descriptive* model that specifies relations between classes of variables without providing any particular psychological explanation, except that (1) *by definition*, job demands consume energy and may therefore eventually lead to exhaustion and related health problems (the health impairment process), and (2) *by definition*, job resources have motivational potential and may therefore lead to work engagement, which may result in positive organizational outcomes (the motivational process). These theoretical claims of the JD-R model follow from the way job demands and job resources are conceptualized and therefore do not explain the relations under study.

Summarizing, the JD-R model specifies *what kind* of job and personal characteristics lead to *what kind* of psychological states and outcomes but does not tell us *why* this would be so. The fact that the model only provides limited insight into the psychological mechanisms involved might be considered an important limitation. At the same time, this lack of explanatory power can easily be remedied by drawing upon alternative theoretical frameworks. On the plus side, the JD-R model provides an elegant and parsimonious description of the way demands, resources, psychological states, and outcomes are associated. As such it can be used pragmatically in many occupational settings to improve employee health and well-being and organizational effectiveness (see below).

4.9.2 Second Issue: The Nature of Job Demands and Job Resources

The conceptual difference between job demands and job resources is not as clear-cut as it may seem at first glance. For instance, consider the situation in which an employee experiences a lack of resources. This implies that more effort has to be

spent to achieve work goals. Since the JD-R model argues that the expenditure of effort is a hallmark of job demands, this reasoning leads to the paradoxical conclusion that lack of resources may be construed as a job demand. But why – despite this conceptual indistinctiveness – do job demands and job resources usually constitute two separate factors? Most likely this is because demands are *valued* negatively and resources are *valued* positively. The latter is in line with the definition of resources in the COR theory – namely, as things that people centrally value (Hobfoll, 2002). The value-based nature of demands and resources would call for a redefinition of these concepts, namely: (1) job demands are *negatively valued* physical, social, or organizational aspects of the job that require sustained physical or psychological effort and are therefore associated with certain physiological and psychological costs, and (2) job resources are *positively valued* physical, social, or organizational aspects of the job that are functional in achieving work goals, reduce job demands, or stimulate personal growth and development.

This redefinition also solves the problem that not all job demands in the JD-R model seem to be equal. It is an empirical fact that the relation between job demands and engagement is usually not statistically significant, but occasionally it may also be positive or negative. In an attempt to explain this equivocal finding, Crawford et al. (2010) distinguished between challenges and hindrances that are appraised by employees as positive and negative, respectively. Crawford et al.'s meta-analysis showed that hindrances were negatively related to engagement, whereas for challenges a positive relation was found. Thus, the relation between demands and work engagement depends on the nature of the demand. In our redefinition, "challenges" would be conceptualized as "resources," because they are valued positively. As a result, the assumption of the JD-R model would still be valid that job resources (now including challenging demands) are positively related to engagement and negatively related to burnout. Note that the additional assumption should be made that job demands (now excluding challenges) are negatively related to work engagement.

Analogously, for certain employees a resource like job control might be experienced negatively, i.e., as a threat rather than as an opportunity for learning and development. According to our redefinition, a negatively appraised resource (threat) would be conceptualized as a demand. It should be noted that *as a rule* demands are appraised negatively, whereas resources are appraised positively, but occasionally demands can be challenging and resources can be threatening.

To investigate the validity of this redefinition of demands and resources, future research should focus on "challenges" (positively valued demands) and on "threats" (negatively valued resources). For instance, the amount of effort (i.e., the amount of energy spend) and the appraisal (i.e., its positive or negative valence) of demands can be assessed. In that way, typical "challenges" can be identified.

4.9.3 Third Issue: The Role of Personal Resources

As discussed above, personal resources may play at least five different roles in the job characteristics – well-being nexus. These roles are not mutually exclusive, and

for all of them some empirical evidence exists. Hence, personal resources can be integrated into the JD-R model in various ways; at present there is no single best way of extending the JD-R model to include personal resources. For instance, they can be integrated as mediators, moderators, "third variables," antecedents of job demands and job resources, or as any combination of these. Different types of explanatory models (see above) can be used to specify the role of personal resources. This illustrates the heuristic nature of the JD-R model once more: Personal resources do matter, but the specific explanatory framework determines how they should be integrated into the model.

So far only personal resources have been integrated into the JD-R model, but personal vulnerability factors (such as neuroticism, workaholism, and pessimism) could also be included. Again, it is likely that there is no single best way to integrate vulnerability factors of this kind into the model. It is possible that workaholism leads to more job demands, because workaholics are actively looking for more work (Machlowitz, 1980). However, workaholism may also moderate the relation between job demands and burnout; for people scoring high on workaholism this relation would be stronger, because workaholics do not recover appropriately from their work (Law, Sweeney, & Summers, 2008).

4.9.4 Fourth Issue: The Distinction Between the Health Impairment and the Motivational Process

The JD-R model suggests that the health impairment and motivational processes are independent, but it is quite possible that they represent two sides of the same coin. That is, when health and well-being deteriorate, motivation decreases, and vice versa. In the first part of this chapter we mentioned that most studies on the JD-R model found negative relations between (1) job demands and job resources, (2) burnout and engagement, and (3) job resources and burnout, thus confirming the link between both processes. This implies that in order to understand one process, the other process should also be taken into account, and vice versa. Stated differently, the health impairment and motivational processes should be studied *jointly*. However, especially the motivational process has been studied in isolation (see above), whereby the role of job demands and burnout has been neglected.

For a proper understanding of the motivational process, future research should also acknowledge the direct and indirect impact of job demands on work engagement. This applies even more strongly when adopting the value-based redefinition of job demands given above, because positively valued demands should have motivational potential and are therefore likely to boost work engagement.

4.9.5 Fifth Issue: Reciprocal Causation

The JD-R model proposes straightforward unidirectional causal relations among demands, resources, and outcomes. However, many longitudinal studies demonstrated

reciprocal causation, particularly regarding the motivational process (e.g., Hakanen, Perhoniemi, & Toppinen-Tanne, 2008; Llorens et al., 2007; Schaufeli et al., 2009, Xanthopoulou et al., 2008). This suggests the existence of gain cycles in which resources (job and personal) and work engagement mutually influence each other. This reciprocal causation underlines the dynamic nature of the JD-R model. Obviously, assuming linear causation is overly simplistic, meaning that future research should focus more systematically on the dynamic relations among the concepts in the model. For instance, Social Cognitive Theory (Bandura, 1997) suggests that superior job performance boosts engagement and self-efficacy, because it promotes motivation-enhancing mastery experiences. Future research could also address gain spirals. For such a spiral to exist, there should not only be reciprocal causation but one variable (e.g., a specific job demand) should also increase the *level* of another variable (work engagement), and vice versa (Salanova et al., 2010).

4.9.6 Sixth Issue: Multilevel Issues

Essentially, the JD-R model presents an individual-level approach, but it has also been applied to higher aggregation levels. For instance, Bakker et al. (2008) and Xanthopoulou et al. (2009) applied the JD-R model to employees working in teams. However, in doing so they violated the compatibility principle (Ajzen, 2005), which stipulates that all variables in a model must be operationalized at the same level of specificity. For example, collective constructs (e.g., team resources) should be studied in relation to other collective constructs (e.g., team engagement or team performance). Recently, Torrente, Salanova, Llorens, and Schaufeli (2012) examined the associations between resources, engagement, and performance at the team level. They followed the compatibility principle by using a referent shift from individual to team level when operationalizing their constructs; for instance, by referring to “my team,” instead of “I.” As predicted by the JD-R model, team work engagement mediated the association between social resources perceived at the team level and team performance as assessed by the supervisor.

The fact that the JD-R model also applies at the supra-individual level (i.e., in teams and perhaps even in entire organizations) assumes social-psychological processes involving shared perceptions (e.g., regarding team demands and resources) and shared experiences (e.g., collective engagement and burnout). One example is the process of emotional contagion that might explain the cross-over of burnout and work engagement in work teams (Bakker, Van Emmerik, & Euwema, 2006). Instead of merely aggregating individual scores of job characteristics, psychological states, and outcomes, future research on the JD-R model at the team and organizational level should use commensurate collective measures and consider the social-psychological principles accounting for these collective perceptions and experiences.

4.10 Practical Implications

How can the JD-R model be used to improve employee health and well-being? Its most important practical contribution is a broad and flexible framework for assessing job and personal characteristics that affect employee health and well-being and their associated outcomes, including job performance. Unlike other approaches such as Siegrist's (1996) Effort-Reward Imbalance model and Karasek (1979) Demand-Control model, the JD-R model:

(1) Is *non-limitative* in terms of the study concepts. That is, rather than focusing on a very specific array of factors that are presumed to account causally for a specific set of outcomes, it is potentially applicable to an extremely wide set of job and personal characteristics and outcomes thereof. Practically, this implies that *the model can be tailored to the specific needs of an organization, given any specific situation*. This adds greatly to the model's relevance across a wide variety of settings. For instance, in a hospital setting undergoing organizational change, specific demands (e.g., role conflict, downsizing, job insecurity, harassment by patients), resources (e.g., trust in management, task variety, communication and information) and outcomes (e.g., turnover intention, service quality, organizational commitment, injuries and accidents) can be included. In an industrial setting the focus can be on different demands (e.g., physical demands, work overload, time pressure), resources (e.g., financial rewards, job challenge, feedback) and outcomes (e.g., absenteeism, in- and extra role performance, workability). Thus, the variables in the JD-R model can be selected on the basis of the specific needs of a particular organization;
(2) Considers both negative (burnout, strain, health impairment) and positive (engagement, productivity) outcomes and processes (i.e., the health impairment and motivational processes). *This balanced approach increases its recognition and, hence, acceptability by employees, unions, teams, supervisors, managers, and executives alike* – a very desirable feature when applying the JD-R model in organizations;
(3) Appeals to different occupational groups involved in the management of the human resources of an organization. That is, whereas the "negative" stress perspective appeals to occupational health professionals, the "positive" motivational perspective is attractive to human resources professionals. Thus, *the JD-R model may bridge the gap between occupational health management* (which is concerned with reducing sickness absenteeism and occupational hazards, and improving employee well-being) and human resources management (which is concerned with increasing employee motivation and performance). The two perspectives are not only equally valid from the perspective of the JD-R model, they are also intertwined. As the JD-R model considers the health impairment and motivational processes as two sides of the same coin, it is perfectly suited to guide the integration of occupational health and human resources policies in organizations (i.e., Integral Health Management approach; see Zwetsloot & Pot, 2004); and

(4) *Complements (and in a sense encompasses and integrates) previous approaches and ideas concerning the relations between work characteristics.* As indicated above, as a jack-of-all-trades, the JD-R model is also a master of none: Its generality comes at the cost of lack of specificity, in that additional explanatory theoretical frameworks are needed to account for the associations between specific demands, resources and outcomes. That is, the model helps researchers and practitioners to obtain a quick grasp of what they may expect in a particular situation and what concepts should be targeted to improve worker health, well-being, and performance. However, whereas the JD-R model provides researchers and practitioners with a relatively simple framework that informs them roughly about the associations among concepts, to understand the precise mechanisms underlying these associations more specific frameworks are needed, e.g., that describe *why* feedback and instrumental support would increase job engagement. This implies that the JD-R model *complements, encompasses, and integrates* rather than *replaces* older theory on the associations between work and personal characteristics and work outcomes.

4.10.1 The JD-R Monitor

As an example of the practical usage of the JD-R, we briefly discuss a JD-R-based on-line tool that is currently used commercially in the Netherlands (Schaufeli & Dijkstra, 2010). A large pool of reliable and valid short scales that assess job demands, job resources, personal resources, psychological states, and positive and negative outcomes is available and can be included to "dress up" the JD-R model, depending on the information needed. Based on the online tool, several kinds of information are provided: (1) immediate *online personal feedback* in the form of a comparison between the respondent's scores on each scale with the scores of a benchmark (e.g., a national average or the average score of employees working in the same occupation or sector), (2) relative scores of *organizational units* (e.g., teams, departments, plants) on each scale, compared with those of other units and the entire organization, (3) relative scores of the *entire organization* on each scale as compared with the national average and/or similar organizations, and (4) a specific set of job demands, job resources, and personal resources that are identified as possible *antecedents of employee well-being and organizational outcomes*. This type of information might be used for drafting interventions at personal, team, and organizational level. The JD-R monitor is used in a specific seven-step cyclical process for evidence-based organizational consultancy (Fig. 4.2).

4.10.1.1 Step 1: The Problem

An organization may have a very general question, such as: How do the employees experience their work? But the problem could also be more specific, such as: How

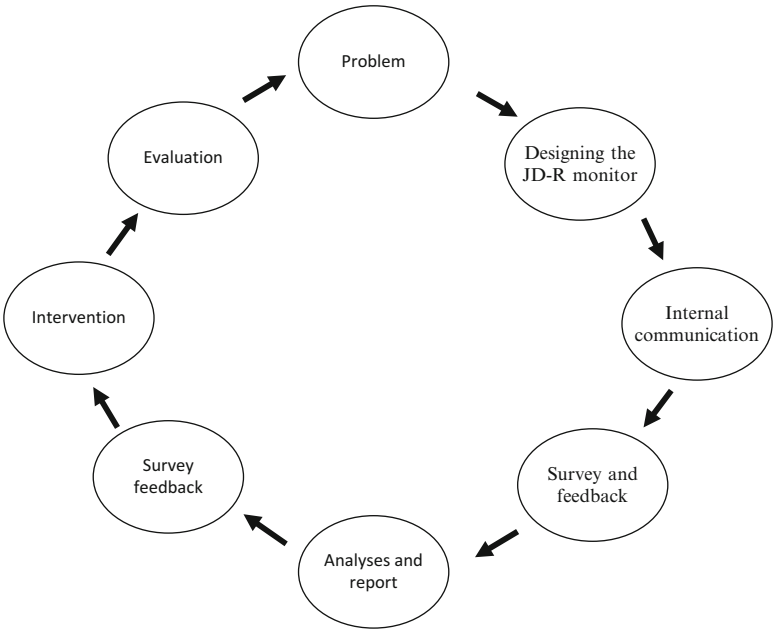

Fig. 4.2 The process of using a JD-R survey

can employee's levels of work engagement be increased? What are the risk factors for burnout? How can we retain our employees? Or, how can we keep older employees fit for work?

4.10.1.2 Step 2: Designing the JD-R-Monitor

Together with key persons, such as HR officers, management, work council members, and occupational physicians, the most relevant job stressors, personal and job resources, stress reactions, and outcomes are selected and included in the JD-R monitor. No matter what the final content of the JD-R-monitor will be, its basic stature remains the same (see Fig. 4.1).

4.10.1.3 Step 3: Internal Communication

Before carrying out the survey, an internal communication campaign is launched. This usually includes holding a kick-off meeting with all employees, sending out flyers and announcements via the company's intranet, and publishing background articles in the company's magazines. The basic goal of the campaign is to emphasize the importance of the survey and to underline the commitment of various stakeholders, including top management and unions.

4.10.1.4 Step 4: Survey and Individual Feedback

All employees receive an e-mail with a link to the online JD-R monitor. It takes employees approximately 15–30 min to complete the survey, and response rates usually range from 65 % to 85 %, depending how well the project is communicated to the employees. Anonymity is guaranteed, and nobody in the organization has access to the data of the employees. Immediately after completing the JD-R monitor, the employee receives an automatically generated feedback report, which compares the employee's scores with a benchmark's scores (see above). Moreover, in case of an unfavorable score, the feedback text invites the employee to take action. For instance, if a score indicates a poor career perspective, a weblink to the company's career counseling service is provided for making an appointment.

4.10.1.5 Step 5: Analysis and Reporting

The company report is based on aggregated data, which means that average scores for the entire company and for its various units are calculated. Like the individual feedback report, the company report gives an overview of the scores for each element of the JD-R monitor, including a comparison with a benchmark (see above). Based on these benchmarks and on an in-depth analysis of possible antecedents, the report gives recommendations for improvements in terms of reducing job stress, stimulating work engagement, and improving organizational outcomes.

4.10.1.6 Step 6: Survey Feedback

The report is discussed throughout the company at various levels, not only in the board room but also with employees at the team or department level, or in focus groups. Feeding back the results and discussing these critically with management, supervisors, and employees is crucially important to build commitment and trust for implementing interventions.

4.10.1.7 Step 7: Interventions

In principle, based on the results of the JD-R monitor, two types of measures can be taken. First, the employees can take measures themselves (see step 4) to improve their own personal or job resources or decrease their demands. Our experience shows that about 10–15 % of the employees do so spontaneously; they talk to their bosses or their colleagues to address certain issues, contact a career counseling service, or consult their occupational physician. But also team and organization-based

interventions can be implemented. These may take on many different forms, ranging from the training programs for employees and supervisors to team-building, job re-design, or culture change.

4.10.1.8 Step 8: Evaluation

After the intervention, the organization can go through steps 1–7 again, for example to check whether the implemented intervention has been effective. The JD-R monitor is then utilized in a second cycle to investigate, for instance, if work engagement has indeed increased as a result of the measures taken. By comparing the scores before and after the intervention an unambiguous answer to this question can be given. In the ideal case, the JD-R monitor is integrated in the annual HR cycle to monitor the quality of the company's human capital, so that evidence-based HR policy decisions can be made.

4.10.1.9 Concluding Remarks

This chapter discussed (a) the development of JD-R model, (b) the empirical research that tested its assumptions, (c) the model's limitations and issues for future research, and (4) its practical application. Perhaps the most distinctive feature of the JD-R model is its generality and flexibility, meaning that the model can be used in a broad array of situations. However, this comes at a cost. Whereas the JD-R model provides a conveniently simple classification of job characteristics in terms of demands and resources and can easily be extended to include other concepts, in-depth understanding of the processes accounting for specific associations between study concepts requires that researchers draw on theories that specifically pertain to these concepts. This usually presents no major issue, as such theories are readily available today.

As regards the future of the JD-R model, there is no reason to assume that the popularity of the revised model among practitioners and researchers will diminish in the short run. However, in this chapter we identified six issues that must be addressed; they may have implications for future development and practical application of the model. Chief among these are reconceptualization of demands and resources in terms of positively and negatively valued work characteristics, extension of the model to include personal resources (and vulnerabilities) and reciprocal causation, including the notion of gain spirals. Note that we do not argue that these issues discredit the JD-R model. Rather, we consider these issues and ideas as clear evidence of the flexibility of the model; clearly, it can accommodate many different ideas and findings, and may even generate new ideas and approaches. As such, it seems to serve its initial purpose of being a *heuristic* model very well.

Appendix

Job Demands	Job resources
• Centralization	• Advancement
• Cognitive demands	• Appreciation
• Complexity	• Autonomy
• Computer problems	• Craftsmanship
• Demanding contacts with patients	• Financial rewards
• Downsizing	• Goal clarity
• Emotional demands	• Information
• Emotional dissonance	• Innovative climate
• Interpersonal conflict	• Job challenge
• Job insecurity	• Knowledge
• Negative spillover from family to work	• Leadership
• Harassment by patients	• Opportunities for professional development
• Performance demands	• Participation in decision making
• Physical demands	• Performance feedback
• Problems planning	• Positive spillover from family to work
• Pupils' misbehavior	• Professional pride
• Qualitative workload	• Procedural fairness
• Reorganization	• Positive patient contacts
• Remuneration	• Quality of the relationship with the supervisor
• Responsibility	• Safety climate
• Risks and hazards	• Safety routine violations
• Role ambiguity	• Social climate
• Role conflict	• Social support from colleagues
• Sexual harassment	• Social support from supervisor
• Time pressure	• Skill utilization
• Unfavorable shift work schedule	• Strategic planning
• Unfavorable work conditions	• Supervisory coaching
• Work pressure	• Task variety
• Work-home conflict	• Team cohesion
• Work overload	• Team harmony
	• Trust in management
Outcomes (negative)	Personal resources
• Absenteeism (self-report and company registered)	• Emotional and mental competencies
• Accidents and injuries	• Extraversion
• Adverse events	• Hope
• Depression	• Intrinsic motivation
• Determination to continue	• Low neuroticism
• Unsafe behaviors	• Need satisfaction (autonomy, belongingness, competence)
• Negative work-home interference	• Optimism
• Physical ill health	• Organization-based self-esteem
• Psychosomatic health complaints	• Regulatory focus (prevention and promotion focus

(continued)

(continued)

- Psychological strain (General Health Questionnaire, GHQ)
- Turnover intention

Outcomes (positive)

- Extra-role performance (self- or other-rated)
- Innovativeness
- In-role performance (self- or other-rated)
- Life satisfaction
- Organizational commitment
- Perceived health
- Positive work-home interference
- Service quality
- Team sales performance
- Workability
- Happiness

- Resilience
- Self-efficacy
- Value orientation (intrinsic and extrinsic values)

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Chapter 5
The Role of Psychosocial Factors in Musculoskeletal Disorders

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Abstract Musculoskeletal disorders (MSD) are the most prevalent pain disorders in industrialized countries, and their costs can represent up to 2 % of gross national product. MSD are often work associated and recurrent and may lead to disability. In occupational health we are interested in the opposite process: in the return to work (RTW). Different models of disability and RTW exist with different conceptions of psychosocial factors. We therefore propose to analyze the influence of factors from work, patient, health care providers, and broader societal domains along the different phases of the MSD process, adopting a biopsychosocial approach. The analysis of risk factors for the different phases of MSD indicate that work stress factors have an impact on the occurrence of MSD and RTW with MSD, but their effect is low to moderate and nonspecific. Physical work demands, work place adaptation, and pain experience are much stronger predictors of RTW. Lack of modified or adapted work is one of the major factors that hinder RTW. The longer the pain lasts, the longer the patient is out of work, the more personal factors and broader context factors become dominant. There is a clear lack of RTW studies concerning neck and upper limb pain. MSD and especially chronic MSD should be viewed as public health concerns, implying a wider socio-economic and insurance and disability problem. Adequate medical support tailored to the different dimensions and phases of MSD must be on offer, and work accommodations must be promoted and supported.

Keywords MSD • Psychosocial factors • Work • Return to work models • Biopsychosocial • Context factors

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5.1 Introduction

Musculoskeletal disorders (MSD) are the most prevalent pain disorders in industrialized societies/countries, and their costs can represent up to 2 % of gross national product. They have to be viewed as a major public health concern. Most MSD are self-limiting, but about 20 % of persons with MSD remain on sick leave, and about half of them will stay on prolonged sick leave or have sustained restriction in function, leading to considerable costs and individual suffering (Waddell, 2004).

In Switzerland, low back pain (LBP) alone has been estimated to generate 2.6 billion euros in direct medical costs, representing 6.1 % of total healthcare expenditure. Productivity losses were estimated between 2.2 and 4.1 billion euros. The total economic burden of LBP in Switzerland was between 1.6 % and 2.3 % of GNP (Wieser et al., 2011). A recent report by the State Secretariat for Economic Affairs (Läubli & Müller, 2009) estimated that work-related MSD costs the Swiss economy over 4 billion Swiss francs per year, with this estimate not including the health care and health insurance costs associated with MSD. Notwithstanding these worrying figures, and even after the famous Carol Black report (Black, 2008), MSD and their consequences are still not on the list of political priorities in Switzerland's public health program. This is also despite the considerable efforts undertaken by researchers in the domains of rheumatology, rehabilitation, and occupational health (see, for example, www.fitforworkeurope.eu or www.fitforworkswiss.ch).

MSD are understood to be caused by a multitude of factors including physical-mechanical, personal, and psychosocial factors. There is substantial and consistent evidence that MSD are strongly work-related (Mehlum, Kjuus, Veiersted, & Wergeland, 2006; Punnett & Wegman, 2004; Räsänen, Notkola, & Husman, 1997). MSD are a major source of disability and lost work time (Buckle, 2005), particularly among blue collar workers (Horneij, Jensen, Holmstrom, & Ekdahl, 2004; Morken et al., 2003) and account for over 50 % of all occupational diseases in the European Union (European Foundation for the Improvement of Living and Working Conditions, 2007). The contribution of psychosocial factors and psychosocial factors at work has been discussed for over 25 years (Bongers, de Winter, Kompier, & Hildebrandt, 1993).

MSD are generally recurrent, and about 10 % become chronic and lead to disability. A prognosis is dependent upon, among other factors, the time since the last pain event (Dunn & Croft, 2006). MSD have therefore been viewed as an illness process in itself, and this can be accompanied by a disability process. In occupational health we are interested in the opposite process: in the return to work (RTW). Therefore, the influence of psychosocial factors has to be analyzed considering their different phases (onset, process of chronification, etc.) and the two concepts (disability and RTW).

When discussing musculoskeletal disorders and psychosocial factors, we must have a clear understanding of both the terms and their relationship. The terms musculoskeletal disorders and psychosocial factors are both based on underlying research concepts and models of health or disease, and the interaction of human

beings with their environment, especially at work. Furthermore, does the "and" imply a unidirectional relationship or a bidirectional one (causal or moderating)? This chapter will therefore revise the different definitions of MSD and psychosocial factors and will discuss the influence of different factors applying a biopsychosocial conception on the different stages of MSD, especially low back pain and neck/upper limb pain.

5.2 What Are MSD?

MSD are the most prevalent, costly, and commonly researched conditions in relation to the workplace. MSD involve an injury to the muscles, tendons, ligaments, joints, cartilage, or spinal discs (Schultz, Stowell, Feuerstein, & Gatchel, 2007). MSD, in a broad sense, are defined as pain phenomena; work-related MSD are defined as pain phenomena in relation to work (experienced at or after work). In most epidemiological studies evaluating causal factors of MSD, they are examined as pain phenomena, sometimes categorized by pain location, i.e. back pain, neck pain and upper limb pain.

The term MSD as a pain definition encompasses very different clinical phenomena, from specific diagnoses with clear bio-medical manifestations (such as inflammatory rheumatic diseases or ankylosing spondylitis) to unspecific symptom groupings (such as pain in the lower back or upper limbs). In case of LBP, only 15 % can be related to a specific cause, whereas 85 % fall into the unspecific category. As also the factors that influence chronification and patients' ability to work differ between these categories (Boonen, 2006; Bräm, 2011; Verstappen et al., 2004), epidemiological studies commonly distinguish between specific and nonspecific MSD. This chapter will primarily focus on nonspecific MSD, such as nonspecific LBP and neck and upper limb pain, but other studies are included, as the definitions are overlapping and reviews or meta analyses have integrated different pain locations. We will distinguish between LBP and neck/upper limb MSD, because (1) work related factors may not be the same for these two locations, (2) upper limb pain encompasses quite specific diagnoses (carpal tunnel syndrome, tendovaginitis, and so on), which are accepted as occupational diseases in most countries, and (3) the quantity and quality of data for these two locations are very different. There are far more good prospective studies and reviews for RTW of LBP patients than for MSD of the neck and upper limbs. MSD of the lower limbs are not taken into account in this chapter. Nevertheless, the influence of psychosocial factors in how MSD has been defined will be taken into account. How MSD are conceptualized also depends on the study approach (see section on psychosocial factors). To illustrate different definitions and their prevalence, Table 5.1 shows different study results from Switzerland. The severity of pain is sometimes also assessed, either as the duration of pain/discomfort or as the frequency of pain events. Assessments vary enormously and make it very difficult to compare and pool studies, and this is also true for the stages of the disease (acute, subacute, chronic) or the RTW process.

Table 5.1 Prevalence of different MSD definitions in Switzerland

Pain location	Population/study	Question	Results	Comments
LBP	Swiss population in general (Wieser et al., 2011)	LBP in the last 4 weeks	50 % (for 90 % the duration was around 4 weeks)	18 % under medical treatment
Work-related LBP	Swiss working population (Graf et al., 2007)	Back pain in the last 6 weeks	18 %	
Work-related pain, other locations	Swiss working population (Graf et al., 2007)	Pain in the last 6 weeks	13 %	Swiss working population 2010: work related neck and upper limb pain: 54 %[a]

Note. [a](Swiss) State Secretariat for Economic Affairs: Data from the 2010 Swiss Working Conditions Survey (summary of the results available online: http://www.seco.admin.ch/dokumentation/publikation/00008/00022/04921/index.html?lang=en)

MSD are the most common health problems in the general population and the health problems most often perceived as work related (Mehlum et al., 2006; Räsänen et al., 1997). Mehlum, Veiersted, Waersted, Wergeland, and Kjuus (2009) showed that compared to an expert assessment, individuals' attribution of their problem to their work did not seem exaggerated. The definition of work-relatedness may differ according to the purpose. The World Health Organization (WHO) defines work-related diseases as multifactorial diseases, in which work (the work environment and the performance of work) contributes significantly but as one of a number of factors in the causation of the disease. Physical factors at work, such as lifting, strenuous positions, highly repetitive tasks, tiring positions, vibrations, noise, and temperature, have been recognized as factors contributing to MSD for several years (Punnett & Wegman, 2004), and there is clear evidence that MSD can be caused directly by strenuous working conditions. Work-associated diseases can also be understood in a more general sense. A disease is work associated, when the cause, development, or treatment is hindered by work or interacts with work. In this sense, most MSD can be considered work-associated diseases.

In Switzerland, MSD are the second most common grounds for consulting a doctor, the most important cause for long-term absenteeism, and the second most common reason for receiving a disability pension (Quadrello, Bevan, & McGee, 2009). Over 40 % of the working population reported MSD pain in relation to work (Graf et al., 2007). MSD are technically and operationally linked with disability. MSD in general are often recurrent, and recurrence should be considered in disability or RTW research, as the study by Kolb, Canjuga, Bauer, and Laubli (2011) showed that with back pain the probability of recurrence depends on the consecutive years of pain. Work disability is usually defined operationally as time off work, reduced productivity, or working with functional limitations as a result of traumatic or non-traumatic clinical conditions.

5.3 Psychosocial Factors and Psychosocial Factors at Work

The broad term 'psychosocial factors' is based primarily on psychiatry research and general disability research. It encompasses the psychological factors of the individual concerned, such as beliefs and behaviors (e.g., fear avoidance concept) and coping styles. This model is increasingly expanded, and contextual factors are integrated, such as the medical care system, insurance and compensation systems, and formal and informal support (for example, family).

In occupational health research psychosocial factors at work are treated as risk factors at work that have their origin in the organizational, psychological, and social work environments. Organizational factors include the fast pace of work, monotonous tasks, working time (length; atypical hours, such as night work), and high workload or overload in terms of volume or hours. How health and safety at work are managed is also an organizational factor. Adaptations or modifications to a job are largely organizationally determined. The psychological factors at work are job satisfaction, perceived job demands, social support at work, conflicts at work, and perceived job stress. Psychosocial factors at work represent a non homogenous group of factors. They can act as resource and as stressor, and they can interact with each other as well as influence people's relationship with their work environment and their behavior in their work environment. Many of these factors have been researched with respect to MSD via various approaches. The dominant research approach is limited to factors of work stress using Karasek's model (Karasek & Theorell, 1990) or more recently Siegrist's model (Siegrist, 1996) (for a review of stress models, see Semmer, 2010). Neither of those measurement tools takes into account all the work-related psychosocial risk factors as defined above, and this is equally true for organizational factors and psychological factors. Furthermore, both tools are based on a specific conception of stress (psychological demands – control or effort – reward model), which is also one of their strengths. Unfortunately, the contributions of individual factors cannot be analyzed based on these analyses, which would be helpful for elaborating preventive measures. Especially for a better understanding of RTW, research should be designed with newer 'stress' models that include also resources and not only strains.

Several possible pathways through which psychosocial factors at work might contribute to MSD have been suggested (Bongers, Ijmker, van den Heuvel, & Blatter, 2006): First, psychosocial factors may increase real physical loads, through highly demanding jobs, for example, which may increase the frequency and duration of exposure. There are indications that this is the case. For example, in the study by van den Heuvel, van der Beek, Blatter, Hoogendoorn, and Bongers (2005), the estimated effects of psychosocial factors at work on neck and upper limb disorders decreased after adjusting for the physical exposure associated with highly demanding jobs.

A second pathway would be that highly demanding jobs increase psychosocial stress and that responses to stress enhance the susceptibility of developing MSD

e.g. due to continuous, stress-induced muscle tensions. In some studies on neck and upper limb MSD, a mediating effect of that kind emerged, but mostly the relative risks of highly demanding jobs remained considerable, indicating that the role of demanding jobs in the etiology of MSD is partly but not fully mediated by the symptoms of stress. Third, MSD are a stress experience for the individual and enhance the influence/perception of psychosocial factors at work. Although stress research provides some indication that such a pathway exists (called adverse causation), this question is rarely researched in MSD.

In a seminal paper, Engel (1977) proposed that to truly understand a patient's illness, it is not sufficient to simply focus on the pathophysiology of the disease. The healthcare provider must consider the social context and psychosocial factors that might have contributed to the illness or influenced its exacerbation or the maintenance of a clinical problem. Engel termed this the biopsychosocial concept of disease.

A shift to a more holistic understanding of long-term work absences due to MSD has taken place – from a biomedical model to a broader biopsychosocial model. This has been advocated strongly by Feuerstein (e.g., Feuerstein & Thebarge, 1991), Waddell (2004), and Loisel et al. (2005). At the same time, MSD, work absences, and work disability have come into the focus of other research disciplines and stakeholders: sociologists, economists, insurance specialists, social policy and disability researchers, and so on. Three major theoretical schools influenced the models and definitions of occupational disability: biomedical, social construction, and biopsychosocial (Imrie, 2004). More recent models are mostly overlapping and enriched by other approaches (e.g., economics; see Schultz et al., 2007 for details). Table 5.2 shows the main models (following Schultz et al.) of a disability or RTW process and the understanding of psychosocial factors in these models. Depending on the different interpretations of psychosocial factors in the different models, different factors are studied to understand and influence these factors.

The classic **biomedical and forensic** model continues to be the standard framework in acute health care and proves effective in dealing with acute diseases and their treatment. The focus is on individual, accurate diagnoses implying an identifiable pathology, which is central for further action. The determinant for RTW or disability (especially in insurance terms) is medical impairment. In practice, this means that a medical examination and determination of impairment defines disability – a model on which current insurance compensation is still based. Due to the recognition that there is often a weak relationship between impairment and function and the increased recognition of the many factors influencing disability (see above), the purely biomedical approach is no longer perceived to be accurate. Disability insurance/compensation systems have recently become more focused on rationing treatment and on effective case management rather than on the determination of ever elusive causation of impairment approaching a more holistic model (Schultz et al., 2007). Recent developments in the forensic model include the integration of gains and losses in the disability process, which may have an impact on the interaction between the injured worker and the disability insurance system.

Table 5.2 Synthesis of RTW models concerning the understanding of psychosocial factors, based on Schultz et al. (2007)

Basic model	Focus	Understanding of psychosocial factors
Biomedical forensic (insurance)	Individual, diagnosis, impairment. Evolving to rationing treatment and effective case management	Primary: no psychosocial factors. Evolving to individual psychosocial factors (motivations, cognitions)
Psychosocial (psychiatry)	Individual; evolving to system factors; diagnosis not relevant	Subjective drivers for disability, individual psychosocial factors primarily dominant, but system factors are more and more taken into account
Ecological/case management Economic (insurance)	System/system–individual interaction; diagnosis not relevant	System factors including work, individual psychosocial factors, and psychosocial factors at work
Biopsychosocial	System–individual interaction; diagnosis relevant	System factors (including work), individual biopsycho- social factors/capacities and biopsychosocial factors/ demands at work

In recent years, the **psychiatric/psychosocial** perspective of disability has evolved enormously and has shifted away from a focus on psychopathology and diagnostic dominance to a broader psychosocial model. In this model RTW is understood as a behavior, and the cognitive-behavioral perspective is the most commonly applied and benefits from the most consistent support (Karjalainen et al., 2003). The bases of the psychiatric model are that the person's beliefs, perceptions, expectations, and coping factors represent the underlying mechanism of disability. In the broadest models, occupational disability is viewed as the result of a complex set of conditions, activities, and relationships that rely on the person's social surroundings, including health care, the compensation system, the family, and other institutions (the workplace is sometimes also taken into account). This broader psychiatric/psychosocial model is very close to a biopsychosocial model. The important factors for this research and intervention approach are: expectation of outcomes, beliefs, coping factors, and more recently health care and compensation systems, formal and informal support (the family and other institutions).

Although originating from different perspectives, the **ecological, case management, and economic** models have merged and share similarities. Importantly, they all take a stakeholder perspective: The drivers are the overwhelming societal and financial costs of the failure of RTW decisions and processes for society, employers, the economy in general, and the insurance business. The development of disability assumes an interaction of personal factors with a mesosystem (such as workplace, health care system, insurance system) and a macrosystem (such as

economic and legislative factors). The work relation model – as a very advanced type of case management model – focuses on workplace characteristics, such as physical job demands, work organization, and adaptations, and on effective RTW case management, and includes the health care system and legislative and insurance aspects. Loisel's conceptual model of RTW (Loisel et al., 2005) represents a case management model that is biopsychosocial all at once. Studies driven more by economic concerns focus on macro-systemic factors, such as labor force participation, labor market themselves, shifts in labor demands, economic incentives, and long-term economic impact. Investigation of the role of professional care providers is an important contribution.

In practice, in Switzerland, the case management approach is still very much focused on the management of the insurance and clinical factors. Workplace factors are rarely taken into account.

The psychosocial and case management models tend to omit medical factors as likely to be non-contributory. According to Schultz et al. (2007), this is of concern, as the assumption is a priori and requires verification. The **biopsychosocial** theory advocates the integration of individual characteristics, including biological impairment, in a system-based approach. RTW is viewed as the consequence of the interaction between the individual biopsychosocial capacities and the biopsychosocial demands of the environment (including work), and this interaction is shaped by macro-systemic factors. The biopsychosocial model strives to best explain the disability–RTW continuum by understanding both the individual and the system factors involved, and their interactions. Due to this complexity, the biopsychosocial approach is difficult to fully conceptualize in a single research paradigm. Early biopsychosocial models (e.g., Feuerstein & Thebarge, 1991) already proposed and showed a modulation of the discrepancy between physical capacities and the demands of work, through the ability to manage pain, psychological readiness to RTW, fear of re-injury, or expectations towards RTW. A significant contribution to the biopsychosocial models is the recognition of dynamic and time or phase-based dimensions of the RTW process (Linton et al., 2005).

Psychosocial and systemic factors are well represented in all of the models except the classic biomedical and forensic model, but the focus on different factors varies strongly. The different models have evolved by integrating factors from other models and have started to converge. We will therefore apply a biopsychosocial model and analyze the factors from the individual dimension, the health care provider dimension, the work dimension (physical, psychosocial and organizational), and broader context or macro dimensions, such as insurance, compensation, and labor market participation. The influence of these factors will be analyzed along the different phases of disability and RTW. The attribution of a factor to one dimension or another is not unambiguous, as job security, for example, could be attributed to either the work organization or the macro dimension (labor market) or even to the individual (in general, an individual with sought-after skills has higher job security).

5.4 Influence of Different Dimensions/Factors on the Different Phases of MSD

Table 5.3 provides a schematized layout for the existing evidence regarding factors deriving from the work environment, personal domain, health care provider, and macro systemic dimension in a biopsychosocial understanding. The influence of these factors on the different phases of MSD – occurrence, pain chronification, RTW acute, RTW subacute, and disability – will be discussed below. The process of pain chronification is distinguished from the RTW process, as predictors of disability and predictors of RTW seem to differ (Gauthier, Sullivan, Adams, Stanish, & Thibault, 2006; Schultz et al., 2002). Research on long term disability due to MSD and failure to return to work are also integrated.

Table 5.3 Evidence for influence of work and personal and broader context factors on different phases of MSD, especially of LBP

Dimension	Influence factor	Occurrence	Pain chroni-fication	RTW <6 w	RTW 6 w	Disability
Work						
Physical	Physical factor	++		++	+	
Psychosocial						
	Stress (Karasek)	+	+	+	(+)	
	Support	(+)			(+)	
	Job satisfaction	–			(+)	
Organization	Work accommodations			++	+	
	Job stability			+	+	+ (duration of absence from work)
Person	Age			–		
	Sex	+				
	Genetic	+				(+)
	Pain experience/ duration		++	++		++
	Fear-avoidance		+		(+)	+
	Depression	–	(+)	–	–	+
	Expectation recovery		+	++	++	
	Health care providers		+	+		++
Macro						
	Informal support		+			
	Compensa-tion		(+)			(+)
	Socioeco-nomic status	+				++

Note. – evidence of no effect, (+) conflicting or insufficient data, + some to moderate effect, ++ clear effect

5.4.1 Occurrence

By 1993, Bongers had already shown that psychosocial factors favor the emergence of MSD. Sultan-Taieb, Lejeune, Drummond, and Niedhammer (2011) calculated the percentage of disease attributable to the effect of Karasek's job strain on MSD of different locations based on a systematic review. The relative risk for MSD varied between 0.94 and 2.5. Using data from the French SUMMER study, Sultan-Taieb et al. then calculated the percentage attributable to job strain (individuals with high job demands and low decision latitude), which was from 3.4 % to 20 % for both sexes. For women, the percentage attributable to job strain was significantly higher.

Most studies on the occurrence or prevalence of **LBP** show a higher risk for men, although interestingly, sex is seldom considered in most of the reviews. Socioeconomic disparities have been identified in the prevalence and occurrence of LBP (Dionne et al., 2001; Kaila-Kangas et al., 2006). Plouvier, Leclerc, Chastang, Bonenfant, and Goldberg (2009) analyzed the role of biomechanical and psychosocial work factors in the GAZEL cohort (employees of the French national energy company). The prevalence of LBP lasting longer than 30 days was 13.6 % and was significantly higher for blue-collar workers and clerks than for managers. The number of socioeconomic disparities observed was significantly reduced when biomechanical strains were taken into account. Adjusting for psychosocial factors measured using the Karasek model (high psychological demands, low decision latitude, and low social support) had little impact. A review by Pope, Goh, and Magnusson (2002) showed that mechanical load is the most influential factor on the occurrence of LBP, but psychosocial factors can influence LBP disability. Hartvigsen et al. (2009) found moderate evidence for no association between LBP occurrence and perception of work, organizational aspects of work, and social support at work and insufficient evidence regarding a positive association between stress at work and LBP occurrence. The influence of genetic factors on spinal pain was estimated using data from the Danish Twin Registry (Hartvigsen et al.): "Genetic susceptibility explained ~38 % of lumbar pain, 32 % of thoracic pain, and 39 % of neck pain" (p. 1343). Hartvigsen et al. concluded that there is moderate to strong evidence for a common genetic basis for many spinal pain syndromes and that the effect is higher in women. But overall, environmental factors including physical and psychosocial work factors had a greater influence than genetics. The study showed genetic factors to have a strong influence on disability. A study conducted by Nyman, Mulder, Iliadou, Svartengren, and Wiktorin (2011) and administered by the Swedish Twin Registry investigated whether a high physical workload is associated with LBP and/or neck-shoulder pain (NSP) when taking into account the influence of genetic and shared environmental factors: "In the cohort analyses, the association between high physical workload and the group with any one symptom (LBP and/or NSP) was OR 1.47. The co-twin control analyses indicated that the association was not confounded by genetic and shared environmental factors …. Concurrent LBP and NSP was the only group that showed a stepwise decrease of the point estimates of the cohort analysis and co-twin analyses …. High physical workload was associated with LBP and/or NSP even

after adjusting for genetic and shared environmental factors. Only for concurrent LBP and NSP, genetic and shared environmental factors seemed to have an influence on the association with high physical workload" (Nyman et al., p. 395).

We have clear evidence that physical demands at work and being male are risk factors for the occurrence of LBP. Concerning sex, the influence of specific gender-related work tasks and family tasks should be better analyzed and taken into account. We have some evidence that genetic factors and socioeconomic class (which may be mediated by the associated biomechanical load) may be risk factors, and low to moderate evidence for stress, especially for high psychological demands/efforts. There is evidence of no association for support at work.

In their exhaustive review, Bongers et al. (2006) showed that in longitudinal studies, high work demands and little control at work (measured by Karasek) are related to **MSD of the neck and upper limbs**. High effort and low reward was also related to MSD symptoms scores. Perceived stress has not been studied as well but is more consistently related to neck and upper limb symptoms. Bongers et al. concluded that psychosocial factors at work contribute to MSD, although the effects are moderate and nonspecific. A large review (Panel on Musculoskeletal Disorders and the Workplace, Commission on Behavioral and Social Sciences and Education, National Research Council, Institute of Medicine, 2001) concluded that there was strong evidence for a causal relationship between neck disorders and highly repetitive work, forceful extension, heavy static loads, prolonged static loads, extreme postures, and a combination of these factors. There was insufficient evidence on vibration effects on neck-shoulder disorders.

Larsson, Sogaard, and Rosendal (2007) reviewed the risk factors for work-related neck-shoulder pain. There was clear evidence that women suffer more from neck-shoulder pain. The review confirmed evidence for repetitive movement, high force demands, and work posture, whereas there was still insufficient evidence concerning vibration. There was some evidence for a relationship between stressful jobs with high demands and upper extremity disorders; however, jobs with low control and low support showed conflicting results, and the magnitude of influence was low to moderate. Limited evidence was found concerning computer use. MSD are mostly measured using symptom/pain scores: Studies with a more specific clinical disease definition that examine the influence of the psychosocial factors at work are still lacking.

There is clear evidence that gender and the demands of physical work have an influence on neck and upper limb MSD. There is moderate evidence for the influence of genetic factors and psychosocial factors at work, and the effect is nonspecific. Recently, stimulated by the overcommitment concept developed by Siegrist et al. (2004), work style has become a focus of both MSD and stress research. For example, van den Heuvel et al. (2005) found a positive relation between overcommitment and MSD, largely mediated by work style. At present, these types of studies are cross-sectional, and it is impossible to draw firm conclusions. Work style is often seen and discussed as a personal trait, as is overcommitment, but this should be viewed as an assumption, because work organization and psychosocial factors can modify work style, too (Rochat, Gonik, & Danuser, 2011).

5.4.2 Pain Chronification

Kopec and Sayre (2004) studied risk factors for the development of chronic pain involving MSD and migraine in a cohort of the general population. Work-related stress (high demands and low decision latitude) was a risk factor for developing chronic pain, but no association was found for physician-diagnosed chronic back problems or arthritis.

The evolution of LBP (over 52 weeks following current pain at baseline) and the influence of beliefs about inevitability and fear avoidance beliefs was studied by Elfering, Mannion, Jacobshagen, Tamcan, and Muller (2009). Mean recovery time was 12 weeks. Duration of LBP at baseline was < 4 weeks in 63 % (acute low back pain) and < 12 weeks in 15.5 % (subacute) and > 3 months in 20.1 % (chronic). Work-related fear avoidance beliefs predicted greater weekly pain and impairment. Recovery was faster for participants who reported less fear avoidance and fewer negative beliefs in general.

Ramond et al. (2011) reviewed the influence of psychosocial factors for the transition from acute to chronic low back pain and found some evidence for depression, stress (measured by Karasek), passive coping, and fear avoidance behavior. Evidence was found for perceived risk by the patients themselves and by the care providers. Furthermore, in a review Kikuchi (2008) found evidence that the relationship between doctors and patients affects both treatment outcomes and patient satisfaction. Moderate evidence was found suggesting that informal social support (families, friends, social groups) influences the prognosis of spinal back pain (Campbell, Wynne-Jones, & Dunn, 2011). The authors showed with the help of Kaplan-Meier curves, that the time to improvement of MSD is dependent on the time since the last pain-free month. Memory of the duration of LBP episodes was an independent predictor of time to improvement and was associated with pain, disability, and psychological status of people in a cohort of general practitioners' consultants (Dunn & Croft, 2006).

There is some evidence that stress and care providers influence the pain chronification process: moderate evidence concerning informal social support, passive coping, and depression, and growing evidence that the duration of pain events is a risk factor for chronification. Concerning fear avoidance beliefs, the results of different reviews are contradictory (see Elfering et al., 2009), and the findings seem to depend on the population and outcomes studied and on whether the fear avoidance beliefs are measured in general or are specifically work-related.

5.4.3 RTW

Steenstra, Irvin, Mahhod, and Hogg-Johnson (2011) recently published a very well done and conclusive review on the prognostic factors of acute LBP (> 1 day to 6 weeks) for return to work. Strong evidence was found that the following factors

influence RTW: workers' recovery expectations (personal prediction of how likely it is that they will return to work), radiating pain, self-reported pain, modified duties and physical work factors in the workplace, and treatment related factors. Moderate evidence was found for the psychosocial work environment, claim-related factors, and treatment-related factors (not related to the care provider: for instance, clinical examination results). No evidence was found for depression and age. Psychosocial predictors of failure to return to work in non-chronic, nonspecific LBP (baseline measure within 12 weeks of onset of LBP) were reviewed by Iles, Davidson and Taylor (2008). The review focused on psychosocial factors and did not evaluate other work factors. Strong evidence was found that recovery expectation is predictive of failure to RTW; depression, job satisfaction, and stress are not predictive. Moderate evidence was found that fear avoidance beliefs are predictive of work outcome, but that anxiety, as such, is not. The researchers conclude that for compensation and locus of control, the evidence of prediction is insufficient. Bethge (2010) reviewed prognostic work-related psychological factors in acute and subacute LBP and found evidence for low decision latitude and high psychosocial demands and low support.

Heitz et al. (2009) reviewed the risk factors predicting return to work with subacute (2–10 weeks) and chronic (10–24 weeks) nonspecific low back pain. The pattern of risk factors (biomedical and psychosocial) did not change markedly with increasing duration of symptoms. A higher rate of modifiable psychosocial factors at earlier stages, as compared to later stages, was observed, in accordance with the findings by Waddell, Burton, and Main (2003). Heitz et al. showed that at the subacute stage, psychosocial factors (using a broad definition, including context factors) play an important role in the development from subacute to chronic LBP.

Most studies concerning RTW with MSD have unclear or large inclusion criteria concerning duration of absence of work, and the results are hard to interpret according to acute, subacute, or chronic state. In the last two decades several studies have been conducted on the management of workers absent due to MSD, especially back pain (Loisel et al., 2005; Campbell et al., 2007; Durand et al., 2007; Elders, van der Beek, & Burdorf, 2000; Franche, Baril, Shaw, Nicholas, & Loisel, 2005; Staal et al., 2002; Williams, Westmorland, Lin, Schmuck, & Creen, 2007). These results have modified our understanding of long-term absences due to MSD. Hindering factors for RTW are not only associated with the causal illness but more strongly to broader psychological and social factors, including job environment, job loss, and duration of work absences. Expectations of the affected individuals concerning RTW and expectations of the health providers are contributing factors for chronicity. On the other hand, job stability was found to facilitate RTW.

An interesting qualitative study from Canada (Soklaridis, Ammendolia, & Cassidy, 2010) aimed at a better understanding of the psychosocial factors in RTW using focus groups with various stakeholders (employers, injured workers, unions, health care providers, and compensation boards). The majority of the study participants described how psychosocial factors were the product of wider systemic or organizational issues (including issues of work organization). Soklaridis et al. concluded that "although it is important to understand how psychosocial factors

affect RTW, organizational structures within our social context seem to play a role in shaping how all stakeholders see and emotionally respond to LBP and RTW, as well as the degree to which they can envision taking action on them" (p. 1557). Wales, Matthews, and Donelly (2010) provided a comprehensive review of the published literature and policy documents in Australia on workers with chronic pain. The researchers identified a variety of contextual factors influencing RTW for people living with persistent pain. They found that conceptual models underpinning the rehabilitation system are driven by a strong focus on early RTW but are based on medical determinations of impairment and rehabilitation planning applying a biomedical model, as prescribed by the compensation jurisdiction. "Professionals are influenced by, and in their turn influence, the context in which chronic pain is experienced" (Wales et al., 2010, p. 167) and may therefore accentuate the chronic pain experience for the injured.

There is clear evidence that workplace factors such as physical demands and workplace accommodations, as well as pain experience, expectations of recovery, and health care factors all influence RTW in the acute and subacute phase of MSD, especially LBP. The longer the absence from work, the more that macro context factors (socioeconomic status, the health care providers, and system) and personal factors become important. There is a clear lack of RTW studies concerning neck and upper limb MSD.

5.4.4 Disability

In an editorial, Valat (2005, p. 193) wrote: "patients with no noticeable improvements after 6–8 weeks are at very high risk for progression to chronic disease." In recent analyses of a MSD cohort recruited by general practitioners concerning prognostic factors for poor outcome, unemployment and high pain intensity were found to be the strongest predictors (Dunn, Jordan, & Croft, 2011). Eighty-five percent of poor outcomes were explained when combining these two factors. Depression, anxiety, catastrophizing, and fear avoidance beliefs did not contribute to the final model in a significant. Socioeconomic factors, especially work status (not in work) predicted functional disability (Moffett, Underwood, & Gardiner, 2009) in another cohort of consulting general practitioners for MDS. In a 6-year follow-up study Chibnall and Tait (2009) showed that long-term adjustment was worse for people with lower socioeconomic status, particularly for economically disadvantaged African Americans. The duration of absences from work and job loss are strong predictors of disability (Linton, 2000; Waddell et al., 2003). In a 6-month prospective study of the general population, Leeuw et al. (2007) studied the influence of fear of movement, pain catastrophizing, and functional deficits on LBP disability. Chronic LBP was defined as suffering from LBP during both measurement periods. The study was unable to demonstrate a mediator relationship between fear of movement and pain catastrophizing, as pain catastrophizing was not related to disability/loss of functions.

Melloh et al. (2009) undertook a review to identify prognostic factors for chronicity in patients with LBP by analyzing different screening instruments and examining their predictive effectiveness for the dependent variables of work status, functional limitations, and pain. Melloh et al. observed that studies' time spans were varied and often not well defined, making sound conclusions difficult. The strongest predictors for work status were occupational structures and psychological structures. For functional limitation and pain, individual psychological structures dominated.

There is clear evidence that work status, time off work, and socioeconomic status influence the disability process.

5.5 Discussion and Conclusions

The term psychosocial factors should be avoided if at all possible, as different models and definitions exist. We propose to group all the different factors into environment/work, personal, health care provider, and broader macro factors, analogous to Engel's (1977) understanding of biopsychosocial factors. Applying this approach allowed us to better understand these different factors and their interactivity.

The analysis of risk factors for the different phases of MSD indicate that work-stress factors have an impact on the occurrence of MSD and RTW with MSD, but their effect is low to moderate and nonspecific. Concerning subacute LBP there is even evidence that stress factors, support at work, and job satisfaction have no influence on RTW (Iles et al., 2008). Physical work demands and work place adaptation, as well as pain experience, are much stronger predictors for RTW. Lack of modified or adapted work is one of the major factors that hinder RTW (Soklaridis et al., 2010; Waddell & Burton, 2005). It is also of interest that the factors influencing pain chronification are not the same as the RTW factors. Fear avoidance and catastrophizing, as well as depression, show moderate evidence for influence on pain chronification but do not significantly influence RTW. On the other hand, fear avoidance behavior is related to disability, but it is less related to functionality (Valencia, Robinson, & George, 2011). The dominant personal factors are clearly pain experience (frequency, duration, and pain intensity) and expectations of recovery and return to work, and there is growing evidence that genetics play a role as well. Both the patient's and the care provider's expectations about RTW have an important influence on RTW outcomes. The longer pain lasts, the longer the patient is out of work, the more disability furthering behavior is observed, and person-related factors and broader context factors, such as the health and social insurance system and the economic situation, become dominant. There is a clear lack of RTW studies concerning neck and upper limb pain.

The assembled evidence indicates that organizational structures within our work and broader context factors shape how individuals respond to MSD and RTW. Truchon (2001) proposed viewing the process of disabling MSD as a stress process and suggested in particular that the stress caused by pain could have a negative impact on the outcome: either indirectly through the negative emotional responses

that it produces, which can cause biological or behavioral changes, or directly through biological or behavioral changes, which can in turn negatively affect the emotional response. Feeling pain is one of the greatest bodily and psychological stressors, inducing a cascade of biological responses. Having MSD primarily calls into question an individual's physical room to maneuver: In some people this may induce fear avoidance behavior, whereas others will force themselves on. Both behaviors seem to be of importance in the development of chronic pain (Ehrlich, 2003). Having a physically demanding job and experiencing pain and discomfort, especially in relation to one's work, will enhance a person's stress just when their ability to work is threatened, as well as their work status and income. Managers with recent regular episodes of LBP might be able to adapt their workplace as well as their work load and style. And they can return to work on reduced duty when necessary. Fundamentally, their ability to work is not put into question. Non-skilled workers dependent on being physically active who experience MSD face a much deeper problem with regard to their perceived ability to work. This threat is much bigger for persons with a lower socioeconomic standing or with a lower level of education, as they often only qualify for physically demanding jobs. When the doctor prescribes reduced duty but the employer says that the employee can only return to work when 100 % fit, and such a belief can be also part of the occupational role understanding, the injured parties will stay at home and find their doubts concerning their ability to work confirmed.

Nevertheless, managers with enormous workloads and conflictual relationships with their superiors, which do not allow them to modify their work, may also find themselves in a risky situation. In the French literature on stress the notion of 'marge de manoeuvre' or room to maneuver has been in use for a long time; it is very well conceptualized for the workplace by Durand et al. (2008). I propose enlarging the notion of room to maneuver to include all dimensions studied: the work and work organization and social surrounding encompassing social class, education, and insurance or compensation system. The room to maneuver is a result of the individual's capacities and self-regulation abilities on one hand, and the means given to the individual and the demands on him, on the other. When this room to maneuver is respected, the person should be healthy and productive. Having pain limits a person's room to maneuver a priori, and when other factors are added to this stress, a disability processes is more likely. Different ways of increasing a worker's room to maneuver include: reducing work intensity and working at one's own pace, delegating work, working fewer hours, or a modified job description, and so on. When workers can temporarily accept a lower income without it threatening their longer term financial stability, that is also increased room to maneuver. All of these factors have to be taken into account and assessed when we wish to successfully intervene and expand the injured person's room to maneuver and to avoid a process leading to disability. This means that further research on RTW with MSD should apply a strain and resources perspective that includes larger context factors.

In line with this dynamic, multifactor concept, the latest review of the effects of multidisciplinary interventions on RTW in patients with LBP (Norlund, Ropponen, & Alexanderson, 2009) shows that the effect depends on the definition of the prior

sick leave; the reviewers concluded that multidisciplinary interventions showed evidence of having a clinically relevant effect on RTW outcomes in LBP patients and that this effect was even stronger for subacute stage LBP (Norlund et al.). Taking into account the recurrent nature of MSD, more studies adopting a dynamic, time-sensitive paradigm of the pain experience and RTW or remaining at work are needed.

Participatory ergonomics aims to improve the room to maneuver of workers by giving them tools to adapt their workplaces. In a review concerning injury prevention, Rivilis et al. (2008) concluded that there was partial to moderate evidence that approaches incorporating participatory ergonomics improve workers health: Fewer MSD symptoms, injuries, and workers' claims and sickness absenteeism are reported, but the magnitude of the effect was unclear. Participatory ergonomics seems to be an intervention that gives persons with LBP more room to maneuver and should be the subject of further research.

The longer the disease and recovery process last, the more RTW seems difficult and disability factors dominate. Early recognition and intervention are therefore imperative. This therefore raises the questions of who is responsible for recognizing the risk of chronification in MSD patients and what measures should be taken to prevent chronification. This process must be defined within a health care system that focuses on recovery and not on RTW. Danuser et al. (2009) showed that organizational and broader context factors even have a strong influence on the recruitment design and process of an RTW study. Coordination between the different domains of work, health care, or broader contextual factors has to be developed to successfully prevent longer-lasting disability. Interventions should be tailored to the dominant strain factors and should take more account of the resources and abilities of the patient and the phase of the process. Tackling the problem of work-related MSD requires an integrated public health approach, from awareness-raising to training to policy development, which implies involving employers and organizations as well as the medical and compensation system.

Chronic MSD especially should be viewed as public health concern, implying a wider socioeconomic and insurance and disability problem. It is of crucial importance to strengthen society's commitment to getting injured employees back to work. Adequate medical support tailored to the different dimensions and phases of MSD must be on offer, and work accommodations must be promoted and supported.

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Chapter 6
The Impact of Social Capital on the Health and Performance of Organizations

Bernhard Badura

Abstract How can better jobs be created as a key element of a European public health strategy? To answer this question, an essential precondition is that we have an adequate understanding of organizations – their structure, processes, and outcomes. Our data confirmed the hypothesis that social capital plays a vital role in the performance of organizations and the health of their members. The data basis of our study consisted of a survey of 5,000 employees (45 % response rate) and productivity and quality data from the participating companies. By combining these two data sets, we found significant correlations between the social capital of the participating organizations, the organizations' performance, and the health status of their employees. The results demonstrate that intangible factors of organizations can be measured and have a significant impact on the health and commitment of employees.

Keywords Social capital • Diagnosis at the organizational level • Workplace health management

6.1 Introduction

The Whitehall Studies, conducted by Michael Marmot and colleagues and named after the administrative center of the UK government in London, perhaps represent the most influential research on organizations and health up to the present day. Since 1967, the health status of thousands of government employees has been repeatedly analyzed in this long-term study. The study's main result was that an individual's position in the hierarchy of an organization determines his or her mortality. More

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specifically, the higher a person's rank within the hierarchy, the higher their life expectancy was found to be. This correlation persists after it is controlled for age, gender, and several medical risk factors. Marmot (2004) considered hierarchy, rank, and control as central categories for the analysis of the Civil Service: "The nature of the hierarchy is less control the lower you go" (p. 129). Based on this assumption, an ambitious approach evolved at the University of London, which investigated the relationship between society, morbidity, and mortality. Even after taking other concepts such as "education" and "social networks" into consideration, the control paradigm remained central for the prediction of morbidity and mortality (p. 2 ff.) and for the attempt to transfer the results from the Whitehall Studies to other areas. Marmot referred to the "exquisitely stratified nature" of the Civil Service and assumed that the results can be applied to wider parts of the working world (p. 40). Such a generous interpretation of findings, derived from the UK Civil Service, provokes a necessary discussion on how to create better jobs as a key element of a European public health strategy. To provide an evidence base for this strategy we should find answers to the following two questions: What is the impact of the ongoing transformation of our economies on health and well-being? What is the impact of health and well-being on economic performance? We need to stress that health is an important part of human capital and that promoting health at the work place is an investment that helps to improve both the competitiveness of European economies and the quality of life of the citizens.

The reduction of organizations with thousands of members and complex tasks to concepts like hierarchy, rank, and control needs to be reconsidered. The management of organizations by instructions from the hierarchy is, of course, one of its main characteristics. Nevertheless, management also occurs by other instruments that are increasingly ascribed a vital role for the success of organizations. These include qualifications, material incentives, culture, and cooperation within self-organized projects, teams, or social networks. These forms of indirect coordination have been neglected within the Whitehall Studies. In addition to this, neither the potential influences of the analyzed branch nor the differences between the provision of public services and the private production of goods have been considered. The influence of health on productivity has been totally neglected. Finally, the interpretation of the findings also raises doubts. The concept of "control" is equated with the concept of "status". Status, which is considered as the central factor, is measured by income, education, and job-related prestige. There is no question that they are essential for the prediction of quality of life and life expectancy. However, is it possible to reduce them to Marmot's (2004) understanding of status and control? And do "status" – considered as one's position in a hierarchy – and "control" – considered as a management function – not mean two different things?

Marmot and colleagues deserve credit for their sound criticism of the medical lifestyle and risk factor concept and for their emphasis on the importance of social inequality for morbidity and mortality. Nevertheless, an appropriate analysis of the relationships between the working world and employee health as a scientific basis for a new public health strategy has yet to be accomplished.

6.2 Organizations as Hierarchies, Markets, and Communities

An adequate understanding of organizations and their structures, processes, and objectives is essential for the analysis of the complex relationships between the working world and employee health. In our understanding, organizations are institutions of goal-oriented cooperation. The production of goods or the provision of services requires material equipment, qualified employees, and trustful cooperation. Goal-oriented cooperation is the central characteristic of every organization. For goal development and goal-oriented management of working processes, leadership is required. Management by objectives and control is just one way of leadership. In modern organizations, it is supplemented or even replaced by management through model behavior of superiors, material incentives, and shared beliefs, values, and norms (culture) in the context of lean hierarchies and informal (self-organized) coordination. Trustful cooperation is the core of any successful organization.

If we suppose that the main challenges and health risks of today's working world no longer occur at the interface between human beings and machines but instead at the interface between different human beings, cooperation is the main problem. What factors facilitate or impede cooperation? Why do we seek to cooperate in certain contexts and seek to avoid cooperation in others? What side effects does cooperation have on the well-being and health of the persons involved? From our point of view, these are important questions that need to be addressed to improve the evidence base of Occupational Health.

Human beings are biologically predisposed to cooperation (e.g., Insel, 2003; Rizzolatti & Sinigaglia, 2008; Tomasello, 2009; Wilson & Wilson, 2007). However, in addition to this predisposition, cooperation needs the establishment of shared ideas, values, and aims as well as accepted rules for cooperation. These aspects are commonly referred to as culture. For example, the ability to speak is innate, whereas the development of rules concerning semantics and grammar is considered a cultural product. Sociologists assume that society, which is understood as a predominantly peaceful way of living together, requires a moral order of shared beliefs, values, and rules. There are two other basic concepts that are applied in the social sciences to understand how modern societies work: Thomas Hobbes' model of the state claiming a monopoly of force in Leviathan (1651/1985) and Adam Smith's model of the market in The Wealth of Nations (1776/1976).

In Hobbes' model of society, cooperation is enforced by hierarchy or law (state). In Smith's model of society, cooperation is motivated by material and particularly financial incentives and through competition (market). In the community model of society (Gemeinschaft), cooperation depends on intrinsic motivation: on emotional ties and shared beliefs, ideas and aims as well as agreed-upon rules. The alternatives to cooperation are confrontation, anarchy, and war.

The assumption that the management of organizations and of cooperation within organizations is encouraged by financial incentives is at the core of economic thinking.

In contrast to this, sociological thinking places emphasis on social relationships and culture. The concept of social capital is used in our research to operationalize and to measure the impact of culture and networks on the performance of organizations and the health of their members.

6.3 The Concept of Social Capital

The concept of social capital aims at the basic principles of cooperation, at conditions that impede or facilitate peaceful cohabitation on this planet. What are the sources and preconditions of cooperation? What types and patterns of cooperation are predominant? What are the outcomes of cooperation? And what are the consequences and side-effects in terms of collective achievements and in terms of the well-being of the people involved? These are questions that we suppose to be most interesting in social capital research. Important pioneers in this field are sociologists, for example James S. Coleman (1988), and economists, for example Douglas C. North (1990). Research carried out by political scientist Robert Putnam on the impact of social capital on regional development in Italy provided the most influential contribution for a considerable number of years (Putnam, 1993). More recently, Elinor Ostrom was awarded the Nobel Prize in Economics 2009 for her research on the economic success of self-organized projects as instruments of development aid policies in developing countries. Ostrom (2000) examined questions like "why the 'primitive' irrigation systems built by the farmers themselves significantly outperform those that have been improved by the construction of modern, permanent, concrete and steel headworks (funded largely by donors and constructed by professional engineering firms)" (p. 192). Ostrom defines social capital as "shared knowledge, understandings, norms, rules, and expectations about patterns of interactions that groups or individuals bring to a recurrent activity" (p. 176). According to Ostrom, social capital is formed (a) by reciprocal learning ("how to work better together"), (b) by agreeing on someone as the leader ("to follow someone else's command"), and (c) by the belief in the validity and truth of commonly accepted assumptions and values (p. 176). These arguments seem rather unpretentious, but become revolutionary against the background of the "simple combination of rationality and individual greed that provides the behavioral foundation of most economics" (Solow, 2000, p. 7). Along with Douglas C. North, Francis Fukuyama (1999) and others, Ostrom represents the cultural variant of the social capital concept, which can be traced back to Max Weber and Emile Durkheim.

A second version focuses on social networks: on social relationships and patterns of interactions and on their impact on psychological and biological processes and behavior. The most prominent advocates of the social network-approach come from social epidemiology (e.g., Berkman & Syme, 1979; House, Landis, & Umberson, 1988) and from sociology (e.g., Granovetter, 1973). Our own research tries to integrate these different versions (Badura, 2006; Badura, Greiner, Rixgens, Ueberle, & Behr, 2008; Badura & Kickbusch, 1991, Badura et al., 1987).

6.4 Social Capital, Health, and Economic Performance

The social capital of an organization consists – as we would propose – of the quality, the quantity, and the scope of interpersonal relationships (social networks), of the amount of shared beliefs, values, and rules (culture), and of the quality of goal-oriented coordination (leadership). Social capital helps the members of the organization to trust each other and to experience their work as meaningful, comprehensible, and manageable. Social capital facilitates cooperation, advances a feeling of commitment to each other and the organization as a whole, and increases the appeal of a company to job seekers. Social capital "drives" human capital, because it promotes learning, health, and economic success (Fig. 6.1). Management based mainly on orders and material incentives may, in the long run, turn out to be rather harmful in terms of damaged health, low productivity, and increasing costs for health care and pension funds.

An interdisciplinary group at the Department of Public Health at the University of Bielefeld worked on these assumptions. Wolfgang Greiner, Petra Rixgens, Max Ueberle, Martina Behr, and this author conducted this research (Badura et al., 2008), which was financed with the help of the European Union and the state of North Rhine-Westphalia. We examined four producing companies and one bank. The data basis consisted of a survey of 5,000 employees (response rate = 45 %) and of productivity and quality data from the participating companies. By combining these two data sets we found significant correlations between the social capital of an organization, the health status of its employees, and its economic success.

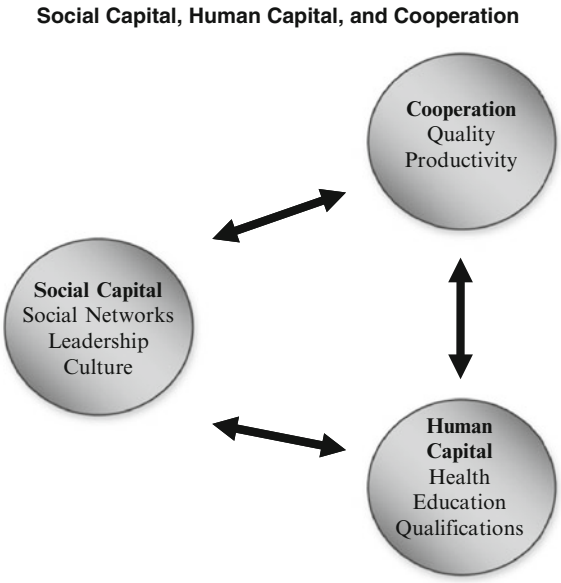

Fig. 6.1 Interrelations between social capital, human capital, and cooperation

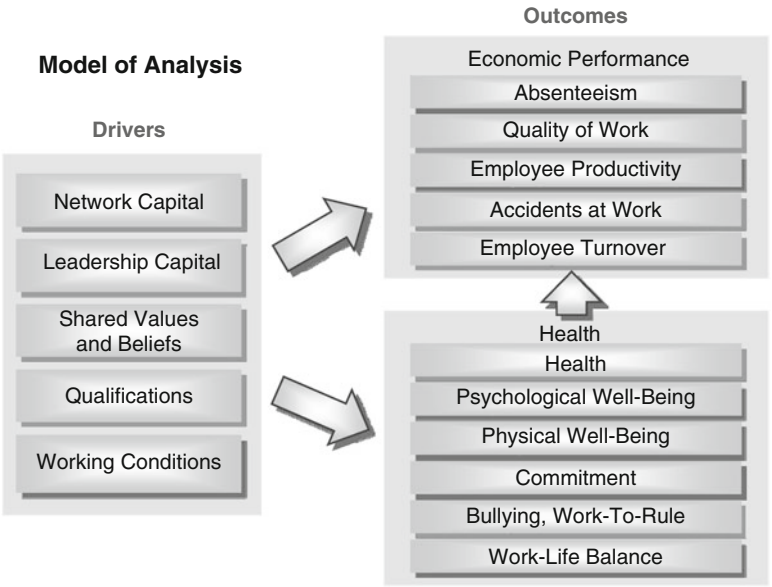

Fig. 6.2 Model of analysis: drivers and outcomes (Badura et al., 2008, p. 32)

The results demonstrate that intangible factors can be measured and in fact play a vital role in the health and commitment of employees.

Our model of analysis differentiates between five "drivers" and two different kinds of outcomes (Fig. 6.2). Besides the three subsets of the social capital (network capital, leadership capital, shared values and beliefs), these "drivers" include working conditions and employees' qualifications. The health indicators are employees' psychological well-being and physical health, employees' commitment, organizational problems such as bullying and work-to-rule, and work-life balance. Economic-indicators include absenteeism, accidents at work, employee turnover, and other performance indicators.

Immaterial working conditions, such as the meaningfulness and clarity of work tasks, opportunities for participation, and decision latitude are highly correlated with employees' commitment and self-esteem, their well-being, and their perceived quality of work. Network capital, e.g., trust within the team, sense of unity and social support within the team, is highly correlated with organizational illnesses like work-to-rule or bullying and with work-life balance, the perceived quality of work, psychosomatic well-being, and self-esteem. Leadership capital, e.g., the quality of one's superior's communication, the superior's fairness and justice, and employees' faith in the superior, is correlated with the health indicators already mentioned as well as with the performance indicator perceived quality of work. Shared values and beliefs, e.g., sense of unity, perceived appreciation of employees' merits by the management, the existence of shared beliefs and values, and trust in the quality of leadership, is strongly correlated with depressive mood, psychosomatic symptoms, and well-being (Table 6.1).

Table 6.1 Correlations between the different factors of the model of analysis (Source: Badura et al., 2008, p. 85)

		Health									Economic performance			
		Psychosomatic complaints	Physical health	Depressive mood	Well-being	Self-esteem	Bullying	Work-to-rule	Work-life-balance	Commitment	Absenteeism	Work performance	Perceived quality of work (Company)	Perceived quality of Work (Team)
Working conditions	Opportunities for participation	–,299	,226	–,312	,337	,206	–383	–,281	,202	,380	–,136	,326	,339	,243
	Work load	,261	,187	,289	–,350	–,313	,197	,159	–,310	–,168	,031	–,283	–,228	–,219
	Time pressure	,300	–,210	,298	–,258	–,082	,139	–,069	–,499	–,127	,006	–,247	–,135	–,147
	Clarity of work tasks	–,178	,123	–,243	,299	,342	–,239	–,108	,256	,229	–,019	,210	,437	,232
	Decisions latitude	–,208	,153	–,226	,269	,250	–,242	–,269	,153	,281	–,114	,226	,239	,175
	Meaningfulness of work	–,273	,226	–,322	,402	,414	–,264	–,277	,209	,503	–,091	,319	,465	,301
	Satisfaction with work organisation in general	–,382	,288	–,320	,310	,128	–,323	–,125	,297	,402	–,093	,353	,326	,339
Network capital	Extent of unity within the team	–,307	,223	–,326	,377	,265	–,593	–,279	,260	,403	–,129	,363	,535	,300
	Quality of communication within the team	–,233	,246	–,269	,300	,250	–,442	–,149	,200	,280	–,140	,295	,398	,256
	Social fit of the team	–,289	,243	–,313	,360	,247	–,568	–,244	,284	,378	–,117	,337	,508	,291
	Social support within the team	–,242	,215	–,274	,308	,236	,465	–,184	,214	,346	–,070	,292	,534	,290
	Trust within the team	–,216	,168	–,242	,300	,244	–,455	–,232	,179	,337	–,070	,267	,510	,243

(continued)

Table 6.1 (continued)

		Health									Economic performance			
		Psychosomatic complaints	Physical health	Depressive mood	Well-being	Self-esteem	Bullying	Work-to-rule	Work-life-balance	Commitment	Absenteeism	Work performance	Perceived quality of work (Company)	Perceived quality of Work (Team)
Leadership capital	Employee-orientation	–,247	,221	–,275	,283	,242	–,505	–,222	,256	,384	–,097	,306	,445	,237
	Social control	–,022	,062	–,057	,035	,096	–,040	,080	,028	,089	,024	,049	,248	,062
	Quality of communication	–,196	,187	–,221	,240	,209	−501	−224	,250	,325	–,049	,270	,410	,228
	Acceptance of superior	–,216	,193	–,239	,250	,229	–,478	–,190	,221	,334	–,084	,277	,432	,252
	Trust in superior	–,249	,191	–,278	,282	,226	–,477	–,181	,259	,322	–,068	,304	,430	,239
	Fairness and justice of superior	–,245	,207	–,271	,275	,186	–,520	–,186	,245	,323	–,081	,288	,380	,235
	Power orientation	,189	–,152	,211	–,218	–,143	504	,294	–,223	–,268	,097	–,259	–,249	–,141
Shared values and beliefs	Shared norms and values	–,299	,265	–,324	,345	,280	−337	−152	,216	,598	–,108	,314	,464	,346
	Practiced corporate culture	–,304	,232	–,326	,351	,155	–,326	–,138	,278	,520	–,096	,345	,359	,302
	Quality of conflict resolution	–,344	,278	–,365	,382	,180	–,442	–,116	,296	,513	–,117	,360	,357	,322
	Sense of community	–,296	,273	–,334	,369	,192	–,347	–,116	,203	,637	–,134	,324	,440	,332
	Perceived justice	–,361	,295	–,381	,409	,185	–,448	–,127	,310	,530	–,119	,393	,371	,337
	Employee appreciation	–,329	,288	–,343	,389	,247	–,373	–,126	,255	,286	–,111	,348	,400	,334
	Trust in one's management	–,276	,220	–,293	,305	,270	–,252	–,096	,244	,483	–,081	,292	,342	,264

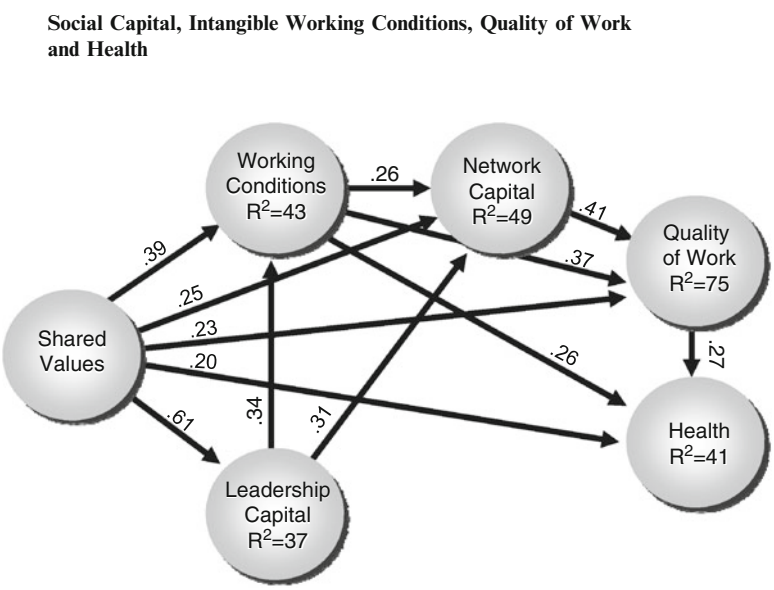

Fig. 6.3 Relationships between social capital, immaterial working conditions, quality of work and health (n = 2,287; RMSEA: 0.058; RFI: 0.936; CFI: 0.951) (Badura et al., 2008, p. 106)

Having applied multivariate methods of analysis, we found that shared beliefs and values had the strongest influence of all drivers, followed by working conditions and leadership and network capital (Fig. 6.3).

The analysis of the relationship between social capital (collected by employee survey) and performance indicators (data extracted from the participating companies) generated the subsequent results: Immaterial working conditions, particularly opportunities for participation, decision latitude, and the meaningfulness of work tasks, clearly influence absenteeism. The perceived leadership qualities of one's superior have a distinct impact on goal achievement, the quality of work, and increases in productivity. Network capital, in particular, has an influence on absenteeism, employee turnover, and accidents at work.

Our data confirm the assumption that social capital plays a vital yet still severely underestimated role for the success of companies. Organizational culture, network capital, and leadership qualities can in fact be measured and evaluated quantitatively. Social capital is a central condition for both health-promoting and profitable cooperation. Furthermore, an intervention study (Baumanns, 2009) that was conducted within one of the companies from the original study substantiated that investments in social capital can lead to increases in productivity that outweigh the costs of the intervention significantly.

Following the completion of our study, the employee questionnaire was applied at three other companies. With this extended final data set (n = 3,200) the "Bielefeld Social Capital Index" (BISI) was developed. The number of items has been drastically reduced and the new index has been tested for consistency, reliability, and validity (see Rixgens, 2010).

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Part II
Improving Public and Organizational Health

Chapter 7
Capacity Building as a Key Mechanism of Organizational Health Development

Susanne Hoffmann, Gregor J. Jenny, and Georg F. Bauer

Abstract As a targeted change process within organizations, organizational health development (OHD) builds on and develops individual and organizational health capacities. This chapter shows how the generic capacity building (CB) approach gainfully can be adapted as a key mechanism of OHD. CB for OHD covers both the development process and its outcomes, comprising health-oriented interventions on multiple levels. CB refers to systemic thinking, as it views organizations as complex social systems and enables the organization and its members to deal with health-relevant issues and gain autonomy on this issue. Further guidance for CB is provided by the underlying OHD model, which describes six capacities as relevant targets and outcomes of CB for OHD: individual competencies, motivation, and identity, as well as organizational structure, strategy, and culture. Overall, CB contributes to OHD, as it offers an appropriate, generic guidance for company-driven health intervention planning, program design, and communication as well as for theory-driven evaluation of the targeted OHD process.

Keywords Organizational health development • Organizational development • Capacity building • Workplace health promotion • Occupational health • Intervention planning

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7.1 Introduction

Organizational health (OH) is an evolving construct in the occupational health sciences (Bennett, Cook, & Pelletier, 2010; Shoaf, Genaidy, Karwowski, & Huang, 2004; Tetrick & Quick, 2010). Cox (1988) defines organizational health as seeing the "health and viability of the organization as more than the sum total of health of its employees" (p. 1). Shoaf et al. (2004) emphasize that OH connects both individual well-being and organizational performance. It "blends the pursuit of individual wellness with organizational effectiveness to yield a strategy for economic resilience" (Shoaf et al., 2004, p. 81). OH can be considered a reciprocal concept, because an organization always affects the health of its members (Noblet & Rodwell, 2010; Tetrick & Quick, 2010) and at the same time employees' health contributes to the performance of an organization (Lindstrom, Schrey, Ahonen, & Kaleva, 2000; Sauter, Lim, & Murphy, 1996).

To more clearly distinguish the determinants and outcomes of OH on both the individual and organizational level, Bauer and Jenny (2012) define the development of organizational health to be "both the ongoing re-production and targeted improvement of health in organizations as social systems, based on the interaction of individual and organizational capacities" (Bauer & Jenny, 2012, p. 8).

With their definition, Bauer and Jenny (2012) point to individual and organizational health capacities as key interacting determinants of both individual and organizational level OH outcomes. Further, it suggests *capacity building* (CB) as a starting point of targeted organizational health development. This conceptualization supports the argument by Hodgins, Battel-Kirk, and Asgeirsdottir (2010), who note: "The need to build capacity in workplace health promotion cannot be overstated" (p. 66).

In this chapter, we develop the idea of capacity building as a basic approach of targeted organizational health-development interventions. In its origins, the concept of capacity building represents a multi-level development approach. We will show that CB adapts and contributes to organizational health development (OHD) and offers guiding principles at the heart of OHD interventions.

The following section consists of three parts. (1) We recapitulate the understanding of CB in its two main applications: CB in foreign aid and CB in health promotion. (2) We identify key issues and characteristics of CB. (3) We show how CB contributes to OHD and guides OHD interventions. In conclusion, we propose that CB can be applied as a key mechanism at the heart of organizational health development (OHD).

7.2 Origins of the Capacity Building Approach

The following section clarifies CB in its two main applications: CB as a general development approach in foreign aid and CB in health promotion (HP). Several capacity building concepts and definitions coexist in both applications.

7.2.1 Capacity Building Defined as a Development Approach

CB has been used since the 1970s as a general development approach in the fields of community development and foreign aid (Hristova, 2009; Kühl, 2004; Lusthaus, Adrien, & Perstinger, 1999; Nickel & Trojan, 2011). In this context, CB is defined as a "process through which individuals, organizations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives over time" (United Nations Development Group, 2008; United Nations Development Programme & Capacity Development Group, 2008). The concept of CB is closely linked to the term capacity development. Both terms are often used interchangeably. Today, the United Nations pursues capacity development as a core approach to assure national development strategies: "Capacity development is critical for ensuring national ownership of development plans and effective resource management" (United Nations Development Group, 2008, p. 3, further definitions and terminology in Hristova, 2009, p. 12 ff. and Lusthaus, Adrien & Perstinger, 1999). In this context, CB covers universal processes of (social) change. As a general development approach, CB is not restricted with regard to its content, e.g., health issues, or to its intervention levels (Crisp, Swerissen, & Duckett, 2000; Eriksson, Falch, Lisznyai, & Ritoók, 2003; Gugglberger & Krajic, 2009; Guijt, 2008; Leeder, 2000).

7.2.2 Capacity Building Defined in the Context of Health Promotion

The need for CB in Health Promotion emerged from several evidence-based preventive programs that could not be implemented as intended. The concept of Capacity Building was identified as a way of increasing and sustaining the effectiveness of health promotion programs (Hawe, 2000; Hawe, King, Noort, Jordens, & Lloyd, 2000). Thus, in the field of health promotion, capacity building is defined "as the development of knowledge, skills, commitment, structures, systems and leadership to enable effective health promotion" (Smith, Tang, & Nutbeam, 2006, p. 341). According to Kickbusch (2008), CB "refers to the process of enhancing the ability of an individual, organization or a community to address their health issues and concerns. The process of capacity building relies heavily on collaborations and partnerships" (p. 59). While emphasizing the important role of partnerships and collaborations, CB transgresses traditional health sector boundaries and encourages inter- and cross-sectoral partnerships. Thus, the World Health Organization integrated CB into the Jakarta Declaration on Leading Health Promotion into the Twenty-first Century as a strategy for community strengthening and individual empowerment (World Health Organisation, 1997). Today, CB is a well-known and largely accepted concept within the field of health promotion.

7.2.3 *Interim Conclusion*

In its origins, capacity building is an expression of a political strategy: CB has now been integrated into the political agendas of the United Nations and the World Health Organization. Both of these assume the existence of capacities as a precondition for planned development, change and action. CB is consequently conceptualized as a multi-level intervention and development concept (Hailey, James, & Wrigley, 2005). Further, the UN definition of CB draws our attention to the issue of ownership in and of development processes. In the context of health promotion, CB emphasizes the issue of collaborations and partnerships.

7.3 Key Principles of Capacity Building

Since CB is rooted in the political agenda, there have been initiatives to implement the concept into practice. Thus, a growing body of CB concepts, frameworks, guidelines and approaches has appeared from research and practice (Crisp et al., 2000; Lusthaus, Adrien, & Perstinger, 1999; Potter & Brough, 2004; United Nations Development Group, 2008; Watson, 2006).

The strengths and weaknesses of CB stem from the elasticity of the concept. The literature provides sufficient and extensive material to understand its complexity. In recent years, various concepts of CB have emerged, but there is no consensus on any one CB method or approach (Guijt, 2008). Due to the scope and overlapping contents of CB integrating and subsuming several similar concepts, it is also considered as an umbrella concept (Kühl, 2004; Morgan, 1997), or as Lusthaus, Adrien, and Perstinger (1999) conclude: "The lack of clarity about capacity development encourages people to use the term as a slogan rather than as a meaningful concept to improve an understanding of the process" (p. 9).

Therefore, in the next section we will explore and identify recurring and overlapping principles between coexisting CB concepts and describe CB in terms of key principles and main characteristics.

7.3.1 *Capacity Building as a Multi-Level Intervention Approach*

In all its applications, CB is defined as a multi-level approach comprising micro-, meso-, and macro-levels. Only the level designations and placements differ. The following three examples show these contrasts: (a) Some authors address CB only at individual, organizational, or community level (Chinman et al., 2005), (b) Soko

(2006), who describes a capacity building approach to transport and infrastructure development in rural South Africa, distinguishes individual, institutional, and system levels, (c) for the health sector, Brown, LaFond, and Macintyre (2001) distinguish health-system, organizational, and human resource levels. They additionally introduce an individual or community level.

Interestingly, the accentuation of particular levels shows up in the sequence of level listing: bottom-up or top-down. In practice, CB is often limited to the implementation of specific, delimited single-level CB measures. Thus Brown et al. (2001) remark that "most capacity building interventions focus on the organizational or human resources/personnel level and the literature and measurement experience is dominated by experience in these areas" (p. 7). Despite the multi-level-perspective, the focus is placed on the most tangible levels which conform more easily to research and measurement criteria. However, Potter and Brough (2004) state that the less tangible levels, such as structure, systems and roles, are the most important ones. Furthermore, CB raises expectations as to general, multi-level outcomes (Watson, 2006).

It is still unclear whether all levels should be considered equally or, as Potter and Brough (2004) suggest, a hierarchy of capacity building needs should be accepted.

7.3.2 Capacity Building as a Systemic Approach

Most authors treating CB concepts refer to systemic thinking, an approach which has also been widely proposed in health promotion and public health (Best et al., 2003; Leischow et al., 2008). Thinking systemically implies accepting different and sometimes contradictory perspectives (Kesting & Meifert, 2004). As already shown, CB is a multi-level approach whose levels can be observed independently or on the basis of uni-directional, causal assumptions. However, systemic thinking calls for reciprocal relationships between these levels and multi-level integration (Bauer & Jenny, 2012), the latter being justified by stakeholder involvement and participative decision-making (Hailey et al., 2005). Especially in development projects, CB promotes partnerships and interrelationships within organizations, for instance via active target-group involvement (Storey, 2004) or the consideration of informal social rules (Woodhill, 2010).

7.3.3 Capacity Building as an Enabling Approach

CB requires project ownership regarding the issues to be addressed and multi-level enhancement of problem-solving ability, aiming at freedom from external support over the long term. This can be achieved via participative decision-making,

stakeholder involvement, knowledge transfer, and mutual support. Through these strategies, CB builds on and rebuilds existing capacities as a key resource in an iterative procedure. Some authors refer to this procedure as an improved problem-solving capacity (Hawe et al., 2000; Leeder, 2000; Morgan, 1997). Overall, enabling aims to ensure maintenance, sustainability, and continuous improvement of the capacity building approach (Dooris, 2006; Hawe et al., 2000; Honadle, 1981; Leeder, 2000; Lusthaus, Adrien, & Perstinger, 1999; Morgan, 1997).

7.3.4 Capacity Building as a Process and an Outcome

CB is a developmental approach (Crisp et al., 2000; Gugglberger & Krajic, 2009; Leeder, 2000). Accordingly, some authors emphasize the ability to anticipate, influence, and manage change (Honadle, 1981). Change represents an endogenous and emerging process of transformation (Hristova, 2009; Kühl, 2004). Thus, CB can be described from either a dynamic or a static perspective. In conclusion, CB has a "dual nature": It covers either the process of CB or the resulting "built" capacities (Baser & Morgan, 2008; Van den Broucke, 2007). Consequently, CB appears as a process, an outcome, or both. Regarding capacities as the relevant outcome, these have to be specified depending on the context (e.g., organizations) and aim (e.g., health) to which CB is to be applied. Interestingly, in the context of organizations, change is strongly linked to collective learning processes. Thus, some authors refer to the concept of organizational learning as a key process of organizational CB (Hristova, 2009; Jones, 2001).

7.3.5 Capacity Building has to Be Adapted to the Context

CB is a generic concept that leaves the issues or aims to be addressed by the built capacities open. Even if the aims (e.g., health or economic development) are specified, CB still needs a precise description of the context: the targeted levels, applied processes, and intended outcomes (capacities). The literature provides several approaches for organizational capacity assessment as well as capacity indicator requirements (overview in Guijt, 2008; Hailey et al., 2005; Hawe et al., 2000; Lusthaus, Adrien, Anderson, & Carden, 1999; McKinsey & Company, 2001; Watson, 2006). Hawe et al. (2000) suggest that CB be broken down into several action areas, such as organizational development, workforce development, and resource allocation. CB also taps into culturally related principles and values, e.g., reducing social inequalities and empowerment. In conclusion, CB has to be specified, translated, and adapted to the particular context.

7.3.6 Interim Conclusion

Multiple, co-existing concepts have emerged in the process of converting CB from policy into practice. Although these CB concepts are expressed at a high level of abstraction, it should be possible to derive shared key principles of CB. We propose the following working definition:

Capacity building is an intentional developmental approach adapted to and specified with respect to the relevant context:

1. Addressing both process and outcome(s) of the development process,
2. Comprising multi-level-interventions,
3. Referring to systemic thinking, and
4. Enabling all relevant stakeholders.

7.4 Capacity Building Applied to Organizational Health Development

In the following, we apply CB to organizational health development (OHD), adapting it to the OHD context as required by the working definition. We then show how CB contributes to OHD on the basis of the key principles.

7.4.1 Capacity Building Adapted to the OHD Context

As shown above, OHD "is both the ongoing re-production and targeted improvement of health in organizations as social systems, based on the interaction of individual and organizational capacities" (Bauer & Jenny, 2012). It consequently refers to a naturally ongoing process between individual and organizational health capacities as well as to a targeted process of change within organizations that builds on and develops these capacities. To implement the latter process, all key principles of CB (see above) can be adapted to the context of organizational health development.

Adapted to and specified for the context of organizational health, capacity building is an intentional and targeted OHD approach that:

1. Addresses both the process ("building") and the outcomes of OHD ("health capacities"),
2. Comprises health-oriented and health-relevant interventions on multiple levels, i.e., the organization, its units and teams, its members (individuals) as well as relevant environments such as families, customers, governmental agencies, etc.
3. Refers to systemic thinking by viewing organizations as complex social systems in which reciprocal relationships and multiple perspectives are to be considered, and
4. Enables the organization and its members to deal with internally defined health-relevant issues and become free from external support.

7.4.2 *Conceptual Framework for Capacity Building in the Context of OHD*

As a conceptual framework for further specifying CB in the context of OHD, the Organizational Health Development Model by Bauer and Jenny (2012) is presented. This model has been developed for research and evaluation purposes (Bauer & Jenny, 2012; Jenny et al., 2011; Jenny, 2009; Bauer & Jenny, 2007). It links the perspectives of the health sciences, psychology, sociology and economics. The model builds on a general model of health development (Bauer, Davies, & Pelikan, 2006) and the New Management Model of St. Gallen (Rüegg-Stürm, 2004), which is committed to the more recent systems theory (Luhmann, 1984) and structuration theory (Giddens, 1984). The OHD model depicts factual and social working processes as interactions between organizational and individual capacities: These capacities shape and guide the working processes and are, in turn, influenced and shaped by these processes. Following the logic of the Job Demands-Resources model (see section X by Schaufeli & Toon in this edition), the OHD model classifies these working processes into job demands and job resources. In expansion of the original Job Demands-Resources model, the OHD model defines a pathogenic path leading to negative health and a salutogenic path leading to positive health, respectively. Following again the conceptualization of the Job Demands-Resources model, both the negative and positive health paths jointly contribute to sustainable performance of the organization. Although the OHD model depicts only the impact of the negative/positive health paths on sustainable performance, it also allows us to explicate and study immediate, not health-mediated effects of factual and social work processes and of the individual and organizational environment on sustainable performance.

The model broadly defines six dimensions of capacity, i.e., three individual and three organizational health capacities that are relevant to OHD: the organization's structure, strategy and culture, and – in a mirrored way – the competence, motivation, and identity of its members (Fig. 7.1).

The dimensions of organizational health capacities (structure, strategy, culture) are derived from the underlying New St. Gallen Management Model (Rüegg-Stürm, 2004). The individual health capacities (competence, motivation, identity) refer amongst others to an integrative framework of salutogenesis (Antonovsky, 1997; Faltermaier, 2005) comprising individual health resources (e.g., coping skills, self-efficacy), identity (e.g., health awareness and knowledge, sense of coherence) and behavior (e.g., general and specific health behavior). Regarding latter, the model concentrates on the motivational aspect of readiness for change (Weiner, Lewis, & Linnan, 2009).

All organizational and individual health capacities can be measured by generic or context-adapted, evidence-based indicators. They include (e.g.,) formal latitude and rigidity of roles (structure), transparent goals (strategy), employee orientation (culture), job-crafting skills (competence), readiness for change (motivation) and a sense of coherence (identity). Further examples are given in section X of this edition (Bauer, Lehmann, Blum-Rüegg, & Jenny), which covers a systemic OHD consultancy approach guided by the model.

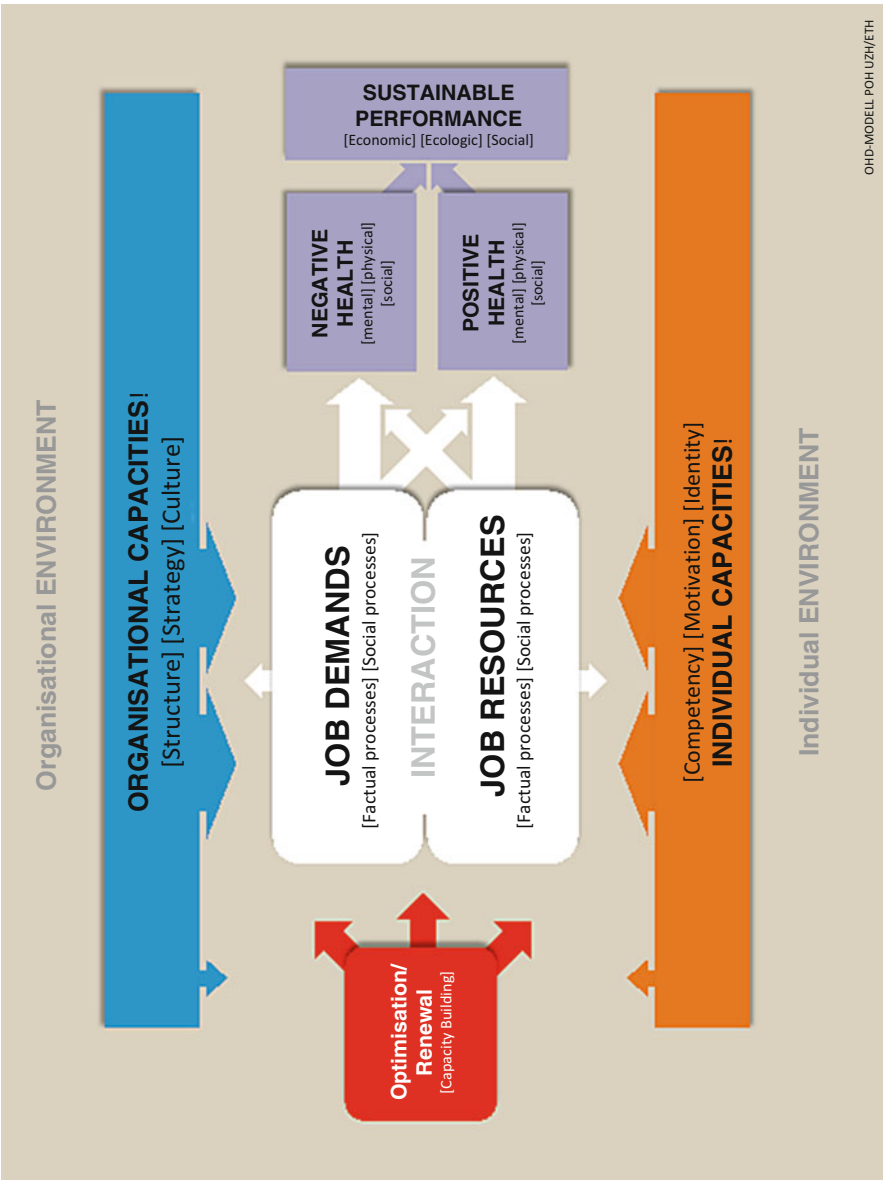

Fig. 7.1 Organizational Health Development Model (schematic version for research and evaluation purposes; Bauer & Jenny, 2012; Jenny et al., 2011)

7.4.3 Capacity Building Contributes to OHD

Applying the principles of CB to the context of OHD highlights and justifies several elements of this model. The first CB principle of *addressing both the process* ("building") and the *outcome* of OHD ("health capacities") makes it necessary to

specify, assess, and build on both individual and organizational health capacities as relevant targets to be enhanced by the CB process.

CB as a *multi-level approach* is a reminder to combine health-oriented interventions on multiple levels, as well as interventions targeted at relevant "environmental" issues, such as work-life balance, customer satisfaction, laws on health, and safety regulations, etc. On an organizational level, CB refers to a cross-level and a cross-hierarchy approach that supports OHD by increased networking within organizations (European Network For Workplace Health Promotion, 2001; Hemsley-Brown, 2004) and by intra-organizational dissemination of OHD-related actions across hierarchies.

As a *systemic approach*, CB also highlights strong participation and good communication between the members of the organization, respecting multiple (even contradictory) perspectives and awareness of reciprocal relationships (Bauer & Jenny, 2007, 2012; Nielsen, Randall, Holten, & Gonzalez, 2010; Noblet & Rodwell, 2010; see also Chap. 8 in this edition by Bauer, Lehmann, Blum-Rüegg, & Jenny).

The *process* of CB as an *enabling approach* reduces the dependence of companies on external support. Workplace health promotion and occupational health interventions are traditionally dominated by expert-oriented approaches (Bauer & Jenny, 2010), i.e., a consultant or advisory agency usually accepts a contract from a company to improve the health of their employees. Consultants connect to the company, focus on relevant health issues – more or less interactively with the employees, and disconnect from the company when the intervention is completed. This tends to lead to non-sustainable implementation of OHD interventions. In contrast, CB aims to build up and ensure a self-driven optimization process (Bauer & Jenny, 2012) that is driven and owned by the organization – and only supported by external agencies and experts. In this process, the OHD model with specified organizational and individual health capacities helps to reflect key action areas, e.g., individual competencies or organizational strategies, and related processes for CB to be considered during the interventions. The model assures consistent communications between professionals and non-professionals on potential health issues and relevant targets during every phase of the OHD process. It proposes a common wording and a mapping of organizational health issues adapted and specified for each company, promotes project ownership by the organization, encourages it to set priorities and to decide how and to what extent capacities should be improved. Accordingly, there is no predefined and determined level or value for the capacities, nor any suggested minimum or maximum – although expert knowledge might help to prioritize health-relevant capacities.

As the *CB process* builds on existing capacities, it can be seen as a resource-oriented approach that supports the inherent salutogenic perspective of OHD. Furthermore, since the quality of change processes in general influences employee health both directly and indirectly (Müller, 2011; Polanyi, Frank, Shannon, Sulliban, & Lavis, 2000; Van den Heuvel, Demerouti, Schaufeli, & Bakker, 2010), the resource-oriented and enabling nature of CB processes could have a health-promoting quality of their own.

As a generic development approach, the intended *aim of CB* could cover all organizational targets and objectives, not only health outcomes. When specified within

the OHD model, organizational and individual health capacities are built up to contribute to reduced negative health and improved positive health of the individual as well as to the "organization's effectiveness and sustainability in relation to its mission and context" (Hailey et al., 2005; James, 2001).

7.5 Conclusion

OHD as a targeted change process within organizations builds on and develops individual and organizational health capacities. Following this idea, this chapter showed how the CB approach can be adapted gainfully as a key mechanism of OHD. Originally a generic development approach, the concept of CB bridges knowledge of change processes from areas such as economic development, public health, and health promotion with the organization-specific OHD approach.

Reviewing the CB literature, we identified several guiding principles of CB that can be applied to OHD as a sustainable development and intervention approach. Accordingly, CB for OHD covers both the development process and its outcomes, comprising health-oriented interventions on multiple levels. CB refers to systemic thinking, because it views organizations as complex social systems and enables the organization and its members to deal with health-relevant issues and gain autonomy on this issue. Further guidance for CB is provided by the underlying OHD model, which describes six capacities as relevant targets and outcomes of CB for OHD: individual competencies, motivation, and identity, as well as organizational structure, strategy, and culture.

Overall, the CB approach contributes to OHD as it offers an appropriate, generic guidance for company-driven health intervention planning, program design, and communication. It offers guiding principles for OHD interventions, reflecting critically on multiple levels, reciprocal relationships, different perspectives, as well as enablement and ownership issues. In practice, applying and adapting the CB approach to the specific context will assist organizations in gaining long-term ownership of and influence on "their" OHD. For research purposes, following the CB approach for OHD facilitates well-structured, theory-driven intervention and evaluation research.

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Chapter 8
Systemic Consulting for Organizational Health Development: Theory and Practice

Georg F. Bauer, Katharina Lehmann, Anita Blum-Rüegg, and Gregor J. Jenny

Abstract The present chapter outlines the practical steps of a targeted organizational health development (OHD) process. It summarizes the theoretical background of capacity building (CB) for OHD of the previous chapter X and introduces principles of consulting based on systems theory as a useful practical approach to CB in organizations. It then shows how this theoretical background transfers into practice. The initiation phase includes contracting between the consultant/client system, developing a project architecture that specifies which perspective is involved in which phase of the project, and finally building competence of managers of the organization for going through the second phase of a participatory optimization/renewal process with their teams. This second phase builds on existing team structures and applies a common four-step project cycle of analysis, planning, implementation, and evaluation. For each of these steps of systemic consulting it is specified how it contributes to CB for OHD in organizations – supporting practical implementation and theory-driven evaluation of this approach.

Keywords Organizational health • Organizational health development • Capacity building • Systemic consulting • Consultant/client system • Optimization/renewal cycle • Cockpit • Indicators • Intervention theory

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8.1 Introduction

In Chap. 7 of this book, Hoffmann, Jenny, and Bauer presented a basic conceptualization of organizational health development (OHD) as "both the ongoing re-production and targeted improvement of health in organizations as social systems, based on the interaction of individual and organizational capacities" (for the original source, see Bauer & Jenny, 2012). To pursue the targeted improvement of health in organizations, the authors suggested basing OHD on the generic concept of capacity building (CB). Chapter 7 outlined the overarching concept and principles of CB and adapted it to the specific context of OHD, defining CB principles for OHD. However, the chapter did not show the practical steps to be taken in this type of process of targeted OHD based on CB principles. Thus, the aim of the present chapter is to outline the practical steps of a targeted OHD process and thereby introduce systemic consulting as a useful approach to building health capacities in organizations.

In part I, we briefly outline the theoretical background of CB for OHD and of systemic consulting. In part II, we show how this theoretical background transfers into practice and how systemic consulting contributes to CB for OHD in organizations. The chapter overall and particularly the second part result from the in-house research/practice partnership in our research division, which includes an OHD consulting center that regularly implements systemic consulting for OHD in various public and private organizations.

8.2 Part I: Theoretical Background

8.2.1 OHD and Capacity Building Principles

In Chap. 7, the concept of CB was proposed to guide the sustainable improvement of OHD in organizations. CB was defined as an intentional and targeted OHD approach that (1) addresses both the process ("building") and the outcomes of OHD ("health capacities"), (2) comprises health-oriented and health-relevant interventions on multiple levels, i.e., the organization, its units and teams, its members (individuals), and relevant environments such as families, customers, governmental agencies, etc., (3) refers to systemic thinking by viewing organizations as complex social systems in which reciprocal relationships and multiple perspectives are to be considered, and (4) enables the organization and its members to deal with internally defined health-relevant issues and become free from external support.

As an intentional and targeted OHD approach, CB requires in most cases (at least initially) external support and consulting of organizations. Systemic consulting offers a suitable practical approach to implement the principles of CB mentioned. In the following, principles of the systemic consulting approach will be described before outlining its practical implementation.

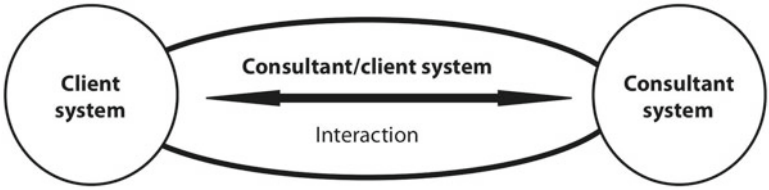

Fig. 8.1 Consultant/client system (Köngiswieser et al., 2006)

8.2.1.1 Systemic Consulting

Sociological systems theory points to organizations as *self-organizing* systems, reproducing themselves over time within their own logic (e.g., Luhmann, 1984). In the process of consulting, a *consultant/client system* emerges (see Fig. 8.1), in which consultants view the client system with their own logic models but also become part of the client system themselves (see second-order cybernetics, von Förster & Pörkson, 2003). Taking up this view, systemic consulting does not try to influence the organization's (self-declared) problems directly but rather supports it to find its own solutions (Willke, 1999). Consultants explicate their own views and models and offer them to the client system as one possibility of many. Particularly, systemic consultants work with *hypotheses*, i.e., assumptions about key relationships and perspectives to be addressed during the consulting process. The hypotheses are offered to the client system and trigger differential replies by various stakeholders (Königswieser & Exner, 2006). As the consultants work with differing logic models and possess diverging blind spots compared to their client system, *new perspectives* emerge (Wimmer, 1995), which provides opportunities for organizational learning. Mostly, systemic consultants design this process of change and simultaneously offer specialized expert knowledge, integrating *process and expert consulting* (on complementary consulting, see Königswieser, Sonuç, & Gebhard, 2006).

Within all phases of systemic consulting, the same cycle applies: Based on the collection of data, hypotheses are formulated and interventions planned and conducted, whereupon the same process repeats itself again – i.e., new information is collected constantly, upon which any further action will be based (*systemic loop*). Königswieser et al. (2006) describe the dynamics as follows: When consultants pose a question at initial contact, they do it on the basis of more or less vague prior information on and assumptions about the client's wishes and the part the consultants ought to play. Simultaneously, the consultants build hypotheses about possible answers to and larger consequences of their questions – guiding the selection of appropriate questions. Thus, consultants do not make an "objective" analysis of the organization and its problems but construct an initial perspective in conjunction with the client system. This will then be further refined in interaction with additional stakeholder groups in the client system.

In relation to the CB principles, systemic consulting of organizations considers multiple levels in the organization and in its environment, strengthens systems

thinking by introducing hypotheses that account for multiple perspectives and reciprocal, non-linear relationships, and enables the organization by triggering responses to externally offered hypotheses as well as by providing support to the organization in finding its own solutions. By repeatedly going through systemic loops, systemic consulting also emphasizes CB as a process in organizations. However, the capacities to be built up in organizations as the desired outcome of CB are not specified by the systemic consulting approach. This missing element is provided by linking the approach of systemic consulting of organizations to the concept of OHD. Part II below outlines how systemic consulting is applied to OHD in practice.

8.3 Part II: Systemic Consulting for OHD in Practice

Traditionally, health-oriented intervention approaches in public health (Institute of Medicine, 1988), health promotion (Godin, Gagnon, Alary, Levy, & Otis, 2007), organizational development (Noblet & LaMontagne, 2009), and occupational health (Nielsen, Randall, Holten, & Gonzalez, 2010) follow several phases. Typically, these phases include analysis, planning, implementation, and evaluation of interventions.

In systemic consulting for OHD, the initial contracting and organizational assessment as well as developing the appropriate project architecture are additional key elements for building a well-functioning consultant/client system. Further, practical experience shows that first an initial top-down awareness raising and competence development of the managers for OHD is needed to obtain their broad buy-in into the following actual 4-step cycle. This cycle follows the typical steps of analysis, planning, implementation, and evaluation. Following the new St. Gallen management model (Rüegg-Stürm, 2003), an improvement cycle of this kind might encompass more superficial optimization or more in-depth renewal of the organization, depending on the degree of need for change.

Thus, systemic consulting for OHD encompasses an initiation phase with the first three steps as well as a subsequent optimization/renewal cycle with four steps that in a first round is also accompanied by external systemic consulting (see Fig. 8.2).

To convert the initial, externally supported OHD process into ongoing, company-driven OHD, both the initiation phase and the initial optimization/renewal cycle are based on the four principles of CB (namely, considering process and outcomes, multiple levels, systemic thinking, and enablement) to the greatest possible extent. CB is particularly facilitated by the step-by-step introduction of an underlying OHD model into the client system. This model serves as common conceptual ground and action theory for the consultant/client system. In the following, each step of systemic OHD will be described and summarized with a short note on its contribution to CB for OHD.

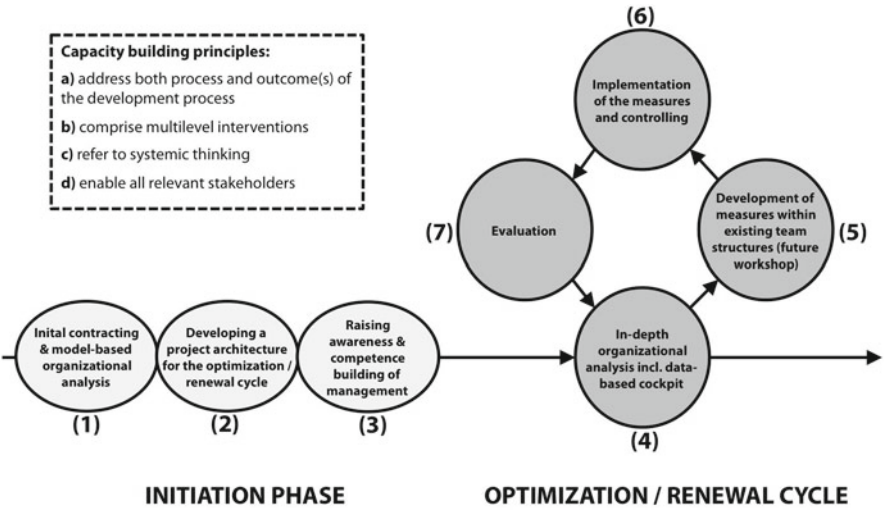

Fig. 8.2 Systemic consulting to build capacities for organizational health

8.3.1 Initiation Phase

8.3.1.1 Initial Contracting and Model-Based Organizational Assessment

Initial contracting refers to the need for primary clarification of the OHD assignment, where external consultants and internal experts and decision-makers discuss and clarify (a) the goals to be achieved with OHD, (b) the potential scope of measures to be taken, (c) their respective roles in the project, and (d) their respective degree of commitment to the project.

Based on this contracting, consultants are entitled to conduct an initial organizational assessment in regard to OHD. The OHD model (See Fig. 8.3 and Fig. 7.1 in Chap. 7; Bauer & Jenny, 2012; Jenny et al., 2011) is introduced as a mind map for structured data collection, e.g., via document analysis, key informant interviews, or focus groups. On the level of organizational capacities, the initial assessment covers, for instance, the system's employee and health orientation (culture), participatory decision-making structures (structure), or strategic corporate governance and organizational readiness for change (strategy). On the level of individual capacities, the educational level and job-related skills of employees (competency), individual readiness for change (motivation), and personal values relevant to OHD such as health orientation (identity) are assessed, for example. Further, prevailing job demands and job resources and related health and performance outcomes are identified.

Regarding existing organizational optimization and renewal processes to build on, both structural and strategic elements such as OHD-relevant management systems (e.g., human resources management, quality management, occupational

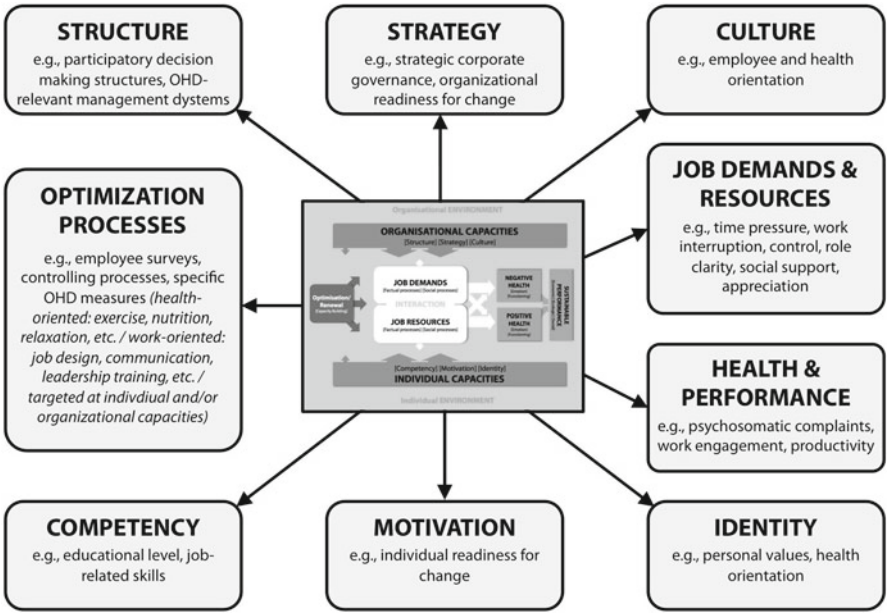

Fig. 8.3 Initial organizational assessment regarding OHD; for the core model at the center, see Fig. 7.1 in Chap. 7

safety/health protection) and ongoing OHD-relevant processes and activities (e.g., employee surveys, controlling processes, specific OHD measures) are assessed. The specific OHD measures are differentiated into explicitly health-oriented measures (e.g., exercise, nutrition, relaxation) and work-oriented measures (e.g., job design, communication, leadership training), targeted at individual and/or organizational health capacities (see Fig. 8.6, at left). Here it is of importance to consider to what extent existing OHD measures are well justified based on the results of preceding organizational analyses and targeted towards common, clearly defined aims.

The initial organizational assessment identifies both the strengths to build on and the weaknesses to be reduced through targeted capacity building for OHD. The OHD model allows for mapping and structured communication of the key results of the initial appraisal. Further, the mapping identifies knowledge gaps – potential blind spots of the organization to be filled by later in-depth analysis of organizational health. Finally, the model facilitates the development of hypotheses concerning how key dimensions of the OHD model are interrelated and what dimensions need to be improved to achieve the initially agreed-upon OHD aims.

Contribution to CB: Mapping and building on existing health capacities and OHD activities per se is a genuinely capacity-oriented approach. More specifically, initial organizational analysis introduces an OHD mind map into the client system that reflects the CB principles. The mind map facilitates systemic thinking by viewing organizations as complex social systems; it shows multiple levels (individual, organization, environment) to be addressed by OHD, shows individual and organizational capacities as outcomes to be achieved through CB processes, and enables the organization to engage in self-observation and to reduce blind spots regarding OHD.

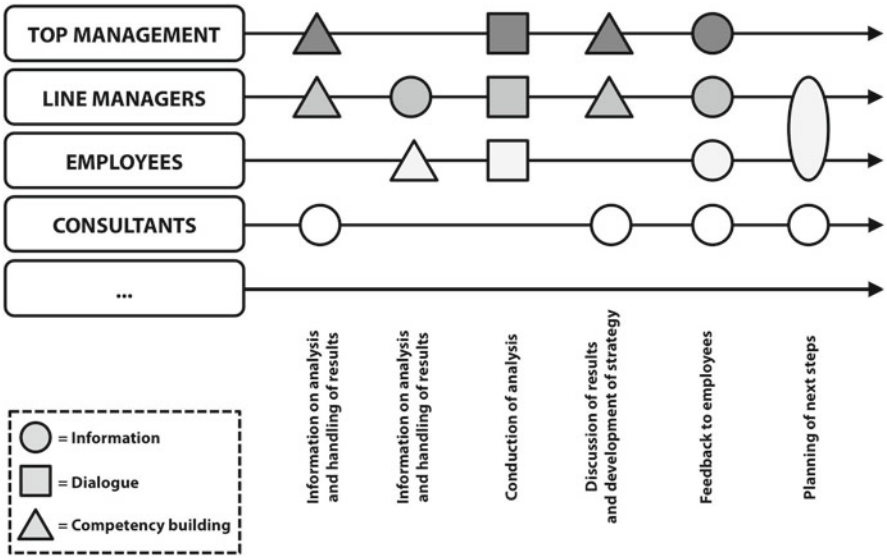

Fig. 8.4 Project architecture example, analysis phase. *Left column*: perspectives to be involved; *bottom*: detailed steps; symbols: degree of involvement

8.3.1.2 Developing a Project Architecture for the Optimization/Renewal Cycle

Based on the appraisal's findings, a project architecture suitable to the client system is created. The project architecture determines for each step of the initiation phase and optimization/renewal cycle of OHD what stakeholder groups or perspectives (top management, line managers, employees, consultants, etc.) are to be involved. The degree of complexity of the project architecture will depend on the organization's size and number of hierarchical levels and units. Following Königswieser and Exner (2006), Fig. 8.4 shows an excerpt from an example project architecture. We recommend adding an indication of the degree to which the respective stakeholder groups (horizontal lines) are to be involved: just to receive information, to engage in a dialogue, or to go through a competency building process.

In this way, an overview is established of who is involved at what stage and in what way and thus whether the relevant perspectives have been considered or which perspectives were left out. Visualization of this architecture can also be integrated into the OHD-related communication strategy of the company to prepare members for the role assigned to them in the project.

It is important to point out that the project architecture of OHD differs from previous project architectures in the field of worksite health promotion. Traditionally, problem-solving groups such as "health circles" (see Aust & Ducki, 2004) or design teams (Henning et al., 2009) are established as a structure parallel to pre-existing group structures in organizations. Within these mostly externally moderated problem-solving groups, employees from diverse organizational units jointly draft health- and

work-oriented measures to be implemented by the organization. However, our previous experiences particularly with health circles showed that managers were often taken by surprise by the amount and scope of measures developed by their employees – and by the degree to which they might interfere with existing operational procedures and corporate culture. Since managers often have little experience with this kind of bottom-up, participatory improvement processes, they can easily perceive the health circle itself and the proposed measures as a threat to their own decision-making authority. Although these threats can be ameliorated by step-wise involvement of decision makers in the various sessions of the health circles, application of a parallel structure of this kind still impedes the translation of this participatory improvement process itself into everyday practice of the organization.

Therefore, the systemic consulting for OHD presented here aims to acknowledge and build on existing social and decision-making structures in organizations, such as regular leadership, team, or division meetings. To still make a difference in the routine functioning of the organization, managers are systematically prepared for taking a more employee-oriented and health-oriented approach in future regular group processes, as outlined in the following steps.

If regular social and decision-making structures do not as yet exist, introducing them as a non-transient, continuous structure will be the first step of developing structural capacities in the organization. Further, the project architecture needs to consider if the subsequent optimization/renewal cycle may be implemented in the entire organization at the same time. Particularly in organizations with little experience with such participatory optimization processes it is advisable to first run a pilot project in parts of the organizations to slowly build up this capacity for participation. After the evaluation of the pilot, the organization may decide to roll out the OHD process in the entire system.

Contribution to CB: By means of the project architecture, involvement of multiple levels and the exchange of multiple perspectives of the organization as a social system are explicated and facilitated. Planning explicit steps for competency building, such as implementation of management training and development of participatory decision-making structures, will further enable the organization for OHD.

8.3.1.3 Awareness Raising and Competence Building of Management

In the first two steps, the systemic consulting for OHD is limited to a few members of the organization, including the internal project leader, top decision maker(s), and key informants involved in the initial organizational analysis. In order to obtain the buy-in and active support of the entire management, in step 3 this group is activated for OHD by means of awareness raising and competence building workshops. During the development of the project architecture, the consultant/client system will have decided on the number and duration of these workshops and who will participate. To facilitate the transfer of knowledge from these workshops to the routine functioning of management teams in the future, ideally existing meeting structures are to be used for the workshops (e.g., regular board meetings, line managers' meetings).

Within *awareness raising workshops*, the relevance of OHD for organizations and their members is highlighted. Discussion of the OHD model (Fig. 8.3) fosters a shared mind map on OHD within the organization. In many companies OHD is initially limited to safety issues and health offers that focus on individuals (e.g., regarding exercise, nutrition, relaxation). The OHD model serves as a visual to explicate and broaden the perspective to include individual and organizational health capacities and their effects on individual health, job quality, and organizational performance. Further, the project architecture is presented to show at what stage and how the diverse stakeholder groups including the managers themselves will be involved. Potential benefits and threats of OHD are discussed from the managers' perspective to overcome possible resistance to OHD. Now managers can reach a well-considered decision concerning the extent to which the organization and specifically their own management unit wish to become involved in a comprehensive OHD process.

Competency building workshop: The aim of the systemic consulting for OHD is to enable managers to continuously go through organizational, health-oriented, participatory optimization/renewal cycles as part of their management routine. This enablement takes place in two phases: First, a competency building workshop prepares them to develop measures themselves in cooperation with their employees. Second, consultants accompany managers in the first round of this participatory optimization/renewal cycle, applying the format of a future workshop described in step five.

The half- to full-day competency building workshop provides managers with the opportunity to reflect upon their own job demands and resources and more generally on organizational aspects relevant to their health and performance. On this basis, they can develop general ideas for improving their own work situation. Further, managers are introduced to how to conduct a future workshop with their own employees and their exact role in it. If a full day is available for the workshop, ideally these two elements of the competency building workshop are combined. In this case, managers themselves go through the process of a future workshop in interaction with their supervisors and moderated by the external consultant. Thus, they can directly experience what attitude and leadership behavior their employees might expect if they jointly go through a similar process in the next step. Also, managers may reflect more generally upon their own leadership style in a protected and supportive setting.

Further, potential benefits and threats of following the OHD cycle and increasing participation in their own leadership unit can be discussed. Managers frequently fear that expectations – for example, regarding wages, personnel resources, and additional infrastructure – on the part of the employees are too high and cannot be met. A related, frequently discussed issue is that employees should take on their share of responsibility for change and not leave everything to the management. Strategies are developed jointly to overcome these potential difficulties, for example by declaring clearly existing restrictions, i.e., not changeable boundary conditions in the organizations to be acknowledged during the later future workshop.

It is clearly emphasized that managers will play a double role during the future workshops: as supervisors and as moderators. Should conflicts be anticipated in this

respect, the organization should give managers the option to rely on external consultants to take over the moderation in their managerial units. Following the consulting approach of systemic loops, information from the awareness raising and competence building workshops will be integrated into refining hypotheses and project aims and into further planning of the project architecture.

Contribution to CB: During awareness raising, the systemic, multilevel mind map for OHD is strengthened. An OHD strategy emerges that is oriented towards building individual and organizational capacities for OHD as key outcomes – to the degree acceptable to the organization. During competency building, managers are enabled to play a leadership role in OHD in their own organizational units. Also, the prior "test run" of a future workshop, including in-depth reflection, eases managers' subsequent interaction with their own employees, fostering exchange of perspectives and joint development of measures.

8.3.2 Optimization/Renewal Cycle

8.3.2.1 In-Depth Organizational Analysis Including Data-Based Cockpit

Depending on the results of the initial organizational assessment, it can be decided what additional information is needed from what perspectives. If available, results of pre-existing, routine employee surveys can be mapped into the dimensions of the OHD model – to show areas with currently existing blind spots that should be filled by further analysis. As the data quality of routine surveys is mostly limited, in most cases an in-depth employee survey is recommended covering all relevant dimensions of the OHD model and relying on scientifically validated scales. To strengthen the company's reflections about their own company as a multidimensional social system, the OHD model is visualized on the questionnaire to show what dimension of the model is covered in each part of the survey.

During analysis, data are aggregated into organizational units and subperspectives that are meaningful to the organization. Well-planned feedback to these stakeholder groups and discussion of the findings are of utmost importance. Processing of the findings highlights different perspectives and initiates dialogue and thus has an activating impact and motivates people in terms of a health-oriented change process (for more details on change-oriented organizational analysis, see Inauen, Jenny, & Bauer, 2011).

A clear advantage of collection and analysis of employee survey data based on the OHD model is that the results can be mapped into the model as well. This leads to an "OHD cockpit" (Fig. 8.5) that highlights key areas of strengths and of improvement opportunities in the organization in a comprehensible way. Figure 8.5 shows the key dimensions of the OHD model, with each dimension operationalized by one or more mostly validated scales. Beyond the results from the employee survey, the OHD cockpit can be fed with other existing data, such as absenteeism or performance data.

The cockpit can show mean values for the entire company or can be split into sub-cockpits with data for individual departments and teams, depending on the pre-set

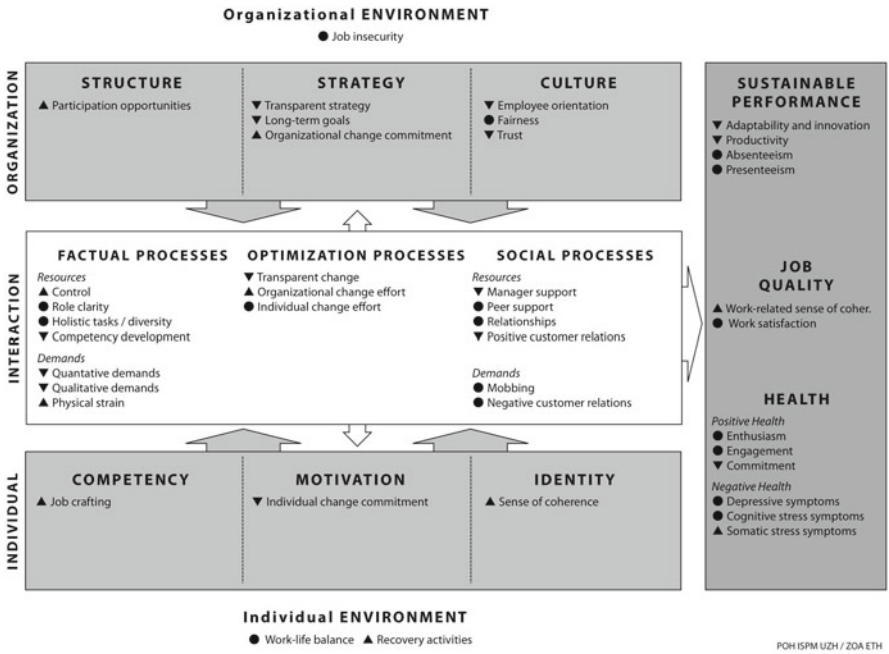

Fig. 8.5 OHD cockpit; see text for details. Icons: ▼ urgent need for improvement, ● middle value, to be discussed and further observed, ▲ assets to be maintained. In this example icons are assigned to dimensions for illustrative purposes only

degree of differentiation and considering the system's inner borders. Visualization of need for improvement (i.e., enhance low resources and/or decrease high demands) and need for maintenance (i.e., maintain high levels of resources) can make use of simple icons: ▼ for urgent need for improvement, ● for OHD dimensions scoring on a middle level and thus to be discussed and further observed, ▲ for OHD dimensions to be considered as assets to be maintained (Fig. 8.5). Comparing results across sub-units of the organization allows identification of common issues to be addressed on the overall organizational level and unit-specific issues to be addressed on this sublevel.

The OHD cockpit aims to support managers in setting up well-justified OHD priorities together with their employees and in making health a binding, institutionalized issue that is given explicit attention within the company. As it shows likely relations between different dimensions of the OHD model, the cockpit can serve as a tool for reducing the complexity of OHD for all members of the organization and particularly for decision makers. For the experts responsible for OHD in an organization, it can serve as an instrument for observation, coordination, and evaluation of OHD across the company. The existing OHD measures mapped during the assessment phase (Fig. 8.6, at left) can be contrasted with the need for action depicted in the OHD cockpit (Fig. 8.6, at right) to analyze whether current action priorities still meet the current need for improvement.

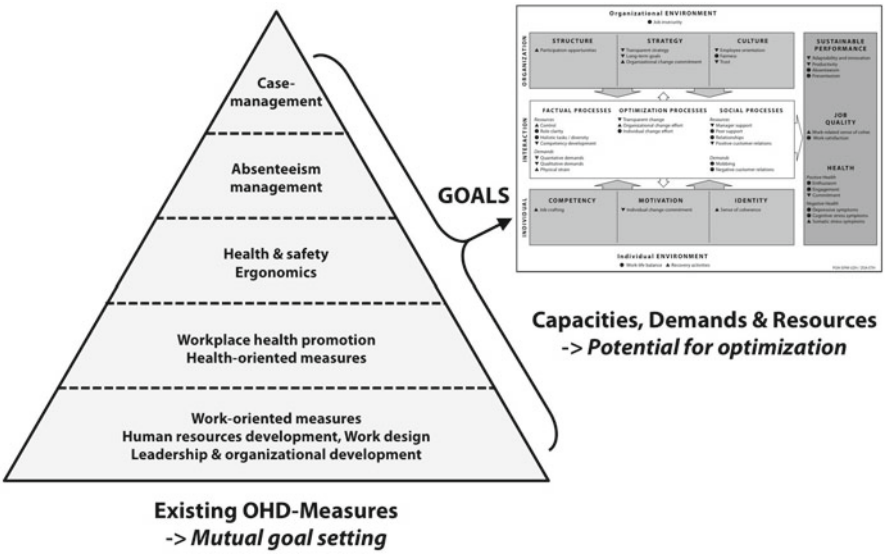

Fig. 8.6 Relation between existing OHD measures and strengths/weaknesses identified in organizational analysis

8.3.2.2 Development of Measures within Existing Team Structures (Future Workshop)

As explained above, in systemic consulting for OHD the design of the 1-day *future workshop* is preferable to traditional small-group processes where only 1–2 representatives of organizational units may participate at a time. A *future workshop* is a large group process with up to 100 participants. Thus – depending on its size – an entire company or at least entire departments may participate simultaneously. This approach guarantees involvement of everyone – that is, everyone who was designated to be involved when building the project architecture – potentially allowing for integration of many different perspectives and broad know-how. Since executives and employees alike are on site, communication across hierarchical levels can be promoted and the adoption of different perspectives fostered. Specific solutions have to be developed for manufacturing plants or health services with shift work.

At the beginning of the 1-day event, the executive of the participating unit(s) explicates the aims and boundary conditions to be considered during the process. Afterwards, together with their employees, team leaders implement what they have learnt in the competency workshop and moderate the development of the measures in their teams themselves. As mentioned, if conflicts are anticipated or lack of trust inhibits communication and change of perspectives, this process should be supported by external moderators, who in any case ensure the smooth order of events at the workshop. Further, in each team, networkers are appointed; their task is to collaborate with other teams during the future workshop and to bring back helpful ideas to their own team. This promotes networking among the teams, which

activates synergies and the mutual adoption of other perspectives and the uncovering of blind spots.

During the development of measures, building up both organizational and individual health capacities is considered, as conveyed through the OHD model and cockpit. When developing measures for building/maintaining resources and/or reducing demands, it is considered what *organizational* and what *individual* health capacities contribute to these job demands and resources. The *future workshop* results in specific, structured action plans containing issues to be addressed, responsible actors, and time line. At the end of this workshop, the main results are presented to the executive, who makes initial comments regarding the feasibility of the developed measures.

Contribution to CB: Managers and their teams are enabled to exchange perspectives and to jointly improve their job demands-resources by building individual and organizational capacities within and beyond their team. Applying the OHD model further strengthens multilevel, systemic thinking – reflecting on the most effective measures and their possible desired and undesired outcomes.

8.3.2.3 Implementation of the Measures and Controlling

The action plans resulting from the future workshops specifically define the measures to be taken and who will be in charge of them. Thus, the implementation is primarily left to these designated actors. However, team leaders are in charge of controlling the implementation of measures and reporting back the state of affairs to their teams and to their superiors on a regular basis. This includes clearly communicating why certain measures can be implemented and why others cannot.

Approximately 8–10 months after the implementation of the measures, a half-day *refresher for managers* (participants of the competency workshop – see above) takes place, where achievements, challenges, and barriers are discussed and the follow-up event to the future workshop is planned. At this half-day *refresher of the future workshop*, the participating teams assess the degree of implementation of the earlier planned measures and how this process could be enhanced in the future. They form hypotheses on why certain objectives were not achieved, for instance, or why job demands could be optimally reduced. Further, new job demands and resources can be collected and appropriate measures developed.

Contribution to CB: The systematically controlled implementation of the developed measures is expected to finally build up the identified key individual and organizational capacities influencing job demands-resources and health in the organization. Further, the refresher for managers of the future workshop is intended to build capacity for continuous self-observation and self-improvement in organizations, increasing the likelihood that the health- and productivity-oriented optimization or renewal cycles will be ongoing.

8.3.2.4 Evaluation

To further assure that the health- and productivity-oriented optimization or renewal cycles will be ongoing, an additional, more formalized evaluation is recommended

as a complement to the controlling mechanism and refresher workshops mentioned above. Ideally, the broad employee survey and/or other data collection methods used during the initial organizational analysis will be reapplied approximately 1–1.5 years after the first analysis. This will allow the assessment of the extent to which the initial goals of the project have been achieved and whether they should be modified or replaced for the following improvement/renewal cycle. To this purpose, the results of this follow-up evaluation can again be entered into the OHD cockpit.

Contribution to CB: The evaluation will refresh the picture of OHD in the organization – including the key individual and organizational capacities to be improved. This will trigger the next, targeted optimization/renewal cycle – for which the capacities have been built up through all the earlier steps taken together.

8.4 Conclusion

In the field of human resource management (Delery & Doty, 1996; Grawitch, Gottschalk, & Munz, 2006), three intervention approaches are distinguished: (a) the universalistic approach: practices which are effective regardless of the setting to which they are applied, (b) the contingency approach: the effectiveness of an organizational practice is dependent on its consistency with other organizational components such as structure and strategy, and (c) the configurational approach: the total system of organizational practices needs to be improved (i.e., reconfigured to an ideal, synergistic pattern of factors).

Classifying our approach of systemic consulting to build capacities for OHD according to this system shows that it best corresponds to the configurational intervention approach (Bauer & Jenny, 2012). As a previous study already summarized key steps and success-factors in a contingency approach (Nielsen et al., 2010), this chapter highlighted those aspects that are key to a configurational approach. Specifically, we presented central steps to be taken by (mostly external) consultants to build capacities for ongoing, sustainable OHD in organizations. In sum, the initiation phase plays a key role in initial CB in the organization by providing good contracting, introducing model-based organizational assessment, developing a project architecture that involves diverse perspectives appropriately, and raising managers' awareness and competence for OHD.

However, it should be noted that CB is continued during each step of the optimization/renewal cycle, as outlined above. Thus, in the end, when the consulting system disconnects from the client system, the organization should be ready to continue the cycles on an ongoing basis on its own.

As explained in the section on the project architecture, there is one particularly important difference compared to other approaches for OHD, such as health circles or ergonomic design teams that purposefully build parallel structures outside of existing power relationships to overcome barriers of change. It was pointed out that this advantage might be diminished by limited acceptance of the resulting measures and impeded translation of this participatory improvement process into everyday

practice of the organization. Thus, our systemic consulting to build long-lasting capacities for OHD uses existing social and decision-making structures in organizations, such as regular leadership, team, or division meetings. In order to still make a difference in the routine functioning of the organization, managers are systematically prepared for taking a more employee-oriented and health-oriented approach in the future. Also, introducing the OHD cockpit, related employee surveys, and structured future workshops is expected to expand the scope of self-observation to include previous blind spots and to assure that participatory improvement/renewal cycles become binding routines in the organization.

Although this approach demands a much more active role of already very busy managers, building their individual capacities for OHD is envisaged to facilitate their general leadership task by making them better able to deal with complexity. Also, the approach is expected to improve managers' relationships with their team members by making them being better able to engage with diverse perspectives, practice participatory decision making, and receive more recognition for their improved leadership skills.

As the extent to which these expected advantages set off potential disadvantages of this more management-driven OHD approach is currently unknown, it needs to be thoroughly studied by means of systematic process and outcome evaluation in the future. This kind of intervention research will be facilitated by the fact that the "systematic consulting to build capacities for OHD" approach is based on a clearly defined intervention theory that is presented in this chapter and in the previous chapter on CB principles.

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Chapter 9
Improving Organizational Health: The Case of Health Promoting Hospitals

Jürgen M. Pelikan, Hermann Schmied, and Christina Dietscher

Abstract This chapter presents the case of Health Promoting Hospitals (HPH) as one specific approach to dealing with health and organizations. The case will be presented by first clarifying the basic relationships between health, health promotion, and organizations, then by describing main characteristics of the development of the concept and network of HPH and health services, followed by sketching the problems and approaches of implementing health promotion in hospitals up to now. HPH implementation methodology will be summarized by the theoretical PRICES-HPH evaluation model, which has a strong focus on the role of capacity building in implementing health promotion interventions. This model guided the data collection and analysis in an international evaluation study on HPH networks and member hospitals (PRICES-HPH). Empirical results from the study will be presented to illustrate the relationship between capacity building and the implementation of workplace health promotion in HPH. The chapter will close with a short discussion comparing organizational health development and HPH.

Keywords Health promoting hospitals • Workplace health promotion • Health management • Organizational capacity building • Staff health • Hospitals • Health promotion • Setting approach

9.1 Health, Health Promotion, and Organizations

This book is about bridging different aspects of health – occupational, organizational, and public – in relation to organizations, including both economic enterprises oriented at making profit and not-for-profit types of organizations. In this

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context, hospitals are a rather specific case, because health care is their specific main core business, independently of their legal status as public, not-for-profit, or private-for-profit organizations.

Therefore, for developing the case of HPH, it is necessary to explicate how the main guiding concepts of this book, health and organizations, will be used in this chapter. How will we use health? Health as a property is usually applied to living beings, animals, including human beings and plants. But in a metaphorical sense, health can also be applied to other kinds of autopoietic systems, which also have to successfully reproduce themselves in order to further exist in time, or die. This holds true for all kinds of social systems, including different types of social organizations. Thus, organizations can be viewed regarding their health status, leading to the term healthy organizations (e.g., Sorge & van Witteloostuijn, 2004), and there also exists a discourse in organizational sociology that focuses on the pathology of organizations (Dreitzel, 1971).

Therefore, in the context of organizations and health, we distinguish between two differing perspectives or discourses. The first perspective refers to organizations as being viewed (by themselves or others) with regard to their impacts on the health of living beings, especially people, in their relevant environments, where their health is affected directly or indirectly, intentionally or as an unintended consequence, by the existence and the dealings of the organization. In this respect, organizations can impact the health of people, who can have quite different roles in relation to organizations as staff or clients/consumers, relatives of these role incumbents, neighbors or by-standers, and pre- or post producers. Thus, organizations affect the health of people as relevant environments for living or reproduction in different ways: by the health-relevant quality of their products or services, and by the health-relevant quality of the structures and processes by which they produce their products and services. In this perspective of health-affecting or promoting organizations, health impacts can become a criterion within the quality management systems or corporate social responsibility schemes of an organization.

A second perspective focuses on the health of the organization, or the healthy organization, as an autopoietic (Maturana & Varela, 1980) social system (Luhmann, 1986) itself, i.e., on those characteristics of an organization that are related to the chances of successful survival of the organization in its relevant environments. For many organizations this includes foremost and primarily the economic or financial "health" status of the organization but also other aspects or production factors, such as human resources, learning and knowledge management, and organizational design and culture.

Interestingly enough, the two perspectives can be combined, in so far as the health of staff can be understood as an asset for better organizational survival in the future. For this reason, it may be in the well-understood self-interest of an organization to take its health impacts systematically into consideration within its quality management and strategic planning and to invest in health promotion as a strategy to improve its sustainability in the future.

But in society there are also other stakeholders having a legitimate interest in the impacts of organizations on the health of individuals and national and global populations. These include ministries of health in nation states and the World Health

Organization (WHO) on the global level. WHO, which is a specialized agency of the United Nations with the mandate to protect, maintain, and improve population health worldwide, can be aligned to the first perspective, since, according to Article 1 of the Constitution of the WHO, "The objective of the World Health Organization … shall be the attainment by all peoples of the highest possible level of health" (World Health Organization [WHO], 1948, p. 2).

In choosing and propagating strategies to enhance health, WHO took up and developed the concept of health promotion (World Health Organization [WHO], 1986) and connected it to organizations by its strategy of the health promoting setting (World Health Organization [WHO], 1998), with hospitals or health care institutions as one specific kind of setting, among others.

As compared to the dominant medical paradigm, the WHO strategy of health promotion constitutes a real paradigmatic shift in understanding health. Health promotion is based on a specifically comprehensive concept of health, on specific assumptions on how health is produced and influenced by social determinants, and on a specific definition of health promotion as an intervention, and it emphasizes specific consequences and implications of health for different spheres of life. Health is understood in the comprehensive meaning of the earlier WHO definition as "a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity" (WHO, 1948, p. 1). That definition introduced a more comprehensive concept of health that includes, besides the traditional disease-focused aspects, also a concept of positive health (Pelikan, 2007, p. 263). Health is seen as a "resource for everyday life, not the objective of living … a positive concept emphasizing social and personal resources, as well as physical capacities … to reach a state of complete physical, mental and social well-being" (WHO, 1986, p. 1). Health has to be produced by everyone for themselves and not by experts, be these medical doctors, public health, or health promotion professionals. According to the WHO Ottawa Charter, for this kind of health production, "an individual or group must be able to identify and realize aspirations, to satisfy needs, and to change or cope with the environment" (p. 1). Health is influenced in equal measure by risks and resources as relevant determinants. Therefore, health promotion – as an intervention – is "the process of enabling people to increase control over, and to improve, their health" (p. 1), respectively aims at "ensuring equal opportunities and resources to enable all people to achieve their fullest health potential" (pp. 1–2). Thus, health "is not just the responsibility of the health sector, but goes beyond healthy lifestyles to well-being" (p. 1) As far as consequences are concerned, "Good health is a major resource for social, economic and personal development and important dimension of quality of life" (p. 1) The Ottawa Charter lists four general strategies ("build healthy public policy; create supportive environments; strengthen community action; develop personal skills") that can be applied to every organizational setting and one ("reorient health services") that specifically relates to health care organizations (WHO, 1986, pp. 2–3).

These strategies can best be integrated and implemented in combination following WHO's comprehensive and complex approach of health promoting settings. It defines "settings for health" as "the place or social context in which people engage

in daily activities in which environmental, organizational and personal factors interact to affect health and wellbeing" and as:

> where people actively use and shape the environment and thus create or solve problems relating to health … Actions to promote health through different settings can take many different forms, often through some form of organizational development, including change to the physical environment, to the organizational structure, administration and management. (WHO, 1998, p. 19)

With the settings approach, a model is offered that makes it possible, from the beginning, to integrate the individual and group with the organizational level for different stakeholder perspectives and also to take into account relevant environments of individuals and groups, of the organization and relevant stakeholders. For settings-based interventions, as for any type of health promotion intervention, seven principles should be followed: Interventions should be empowering, participatory, holistic, inter-sectoral, equitable, sustainable, and multi-strategy (Rootman, 2001). "Examples of settings include schools, work sites, hospitals, villages and cities" (WHO, 1998, p. 19). With health promoting work sites or workplace health promotion, WHO created a specifically staff-focused and cross-cutting settings approach (Chu et al., 2000) that addresses one important aspect existing in every organizational setting, whether school, university, prison, or hospital.

9.2 Health Promoting Hospitals

With the health promotion paradigm WHO opened up a new and more radical understanding of health and organizations that not just bridges but integrates occupational, organizational, and public health aspects of organizations or settings. In the following, this will be demonstrated for the case of hospitals. For hospitals, the somewhat too ambitious goal or end to "reorient health services" as compared to the limited resources or means of health promotion has been made more realistic with the concept of the health promoting (not healthy!) hospital or health care service organization.

Based on the Budapest Declaration on Health Promoting Hospitals (World Health Organization [WHO], 1991), Health Promoting Hospitals, the child of WHO and its Ottawa Charter, were officially defined as follows:

> A health promoting hospital does not only provide high quality comprehensive medical and nursing services, but also develops a corporate identity that embraces the aims of health promotion, develops a health promoting organizational structure and culture, including active participatory roles for patients and all members of staff, develops itself into a health promoting physical environment and actively cooperates with its community. … Health promoting hospitals take action to promote the health of their patients, their staff, and the population in the community they are located in. … Health Promoting Hospitals are being implemented since 1988. An international network has developed[1] to promote the wider adoption of this concept in hospitals and other health care settings. (WHO, 1998, p. 11)

[1] Since 1990.

Later definitions of this network include:

> A Health Promoting Hospital and Health Service (HPH) is understood as an organization that aims to improve health gain for its stakeholders by developing structures, cultures, decisions and processes. HPH is focused primarily on patients and their relatives, with a specific focus on the needs of vulnerable groups, hospital staff, the community population and – last but not least – the environment. (World Health Organization [WHO], 2007, p. 6)

And, according to Article 1 of the Constitution of the International HPH Network,

> The Health Promoting Hospitals and Health Services of the International Network shall work towards incorporating the concepts, values, strategies and standards or indicators of health promotion into the organizational structure and culture of the hospital/health service. The goal is better health gain by improving the quality of health care, the relationship between hospitals/health services, the community and the environment, and the conditions for and satisfaction of patients, relatives and staff. (International HPH Network, 2010)

These definitions reiterate aspects that can already be found in the earlier definition but in addition introduce the improvement of health gain as the leading goal of a health promoting hospital setting, explicitly linking health promotion to quality and more strongly relating to the environment as a further stakeholder or to environment-friendliness as an additional goal.

When the international network, initiated by WHO in 1990, became an international association under Swiss law in 2008, it opened up to other health services than hospitals and broadened its name to "International Network of Health Promoting Hospital and Health Services" (HPH). The network has still a specific relationship to WHO by a Memorandum of Understanding comprising annual action plans (WHO-Euro, 2009). Currently, HPH consists of 41 national/regional networks in 28 countries on 5 continents plus more than 60 individual members. In total, HPH has more than 900 members, mainly hospitals, worldwide.

9.3 Implementing Health Promotion in Hospitals

Due to specific characteristics of hospital organizations, the implementation of health promotion in hospitals is an exceptional challenge. What are these specific characteristics? Hospitals are hybrids of still rather hierarchical bureaucratic and science or evidence-based (multi-) professional and multi-disciplinary organizations (in Mintzberg's (1980) terms: "professional bureaucracies") offering health-oriented people-changing and partly people-processing and people-sustaining (Hasenfeld, 1983) services. And for hospital staff, there is a tendency characterizing all helping occupations to overlook their own needs, in our specific case, their own health! Different requirements follow from these characteristics: Because of the hierarchical organization, top management has to be involved adequately so as to sustainably support interventions, and a top-down approach has to be combined with bottom-up elements. Because hospitals are bureaucratic organizations, clear rules and standardized tools are important. Because of hospitals being science-based, health promotion interventions, too, need to be evidence-based. Since hospitals are

also multi-professional organizations, in addition to top management of the local hospital also different universalistic professional institutions (including professional associations and bodies and organizations of academic education and permanent education) have to acknowledge health promotion and make their specific contributions. And from hospitals health-oriented or, more correctly, still rather disease-oriented clinical services, it follows that health promotion's paradigm of reorientation really challenges the dominant traditional understanding of hospital core business, and therefore needs to be very well argued by a well-founded business case. The consequence of hospitals' people-changing function, finally, is that not just the compliance of patients is the problem (as is often argued by doctors) but that the challenge lies in offering empowerment for participatory co-productive processes for all parties involved.

All these aspects have to be understood well and taken into consideration, so that health promotion interventions (especially for patients) will be accepted by hospital staff and be integrated sustainably into hospital structures and processes by hospital management. Besides that, like any other organizational change, the sustainable implementation of health promotion is a matter of adequate change management and should better follow established principles and methods of different approaches of change management (Röthlin, in press).

As far as a general theoretical concept of organizational settings – and, more specifically, the concept of HPH – is concerned, systems theory-based approaches have been proposed for a heuristic understanding of the functioning of organizations/settings, of targeted interventions into these, and for their evaluation (Dooris, 2006; Dür, Pelikan, & Waldherr, 2010; Pelikan, Dietscher, Schmied, & Röthlin, 2011; Pelikan & Halbmayer, 1999).

Health promotion implementation within the International HPH Network dealt with all these challenges differently in different phases of the network. The early phase was the Vienna WHO-Model Project "Health and Hospital" from 1989 to 1997 (Nowak, Lobnig, Krajic, & Pelikan, 1998), which inspired the Budapest Declaration on Health Promoting Hospitals (World Health Organization [WHO], 1991) as the guiding framework for the international European WHO-Pilot Project on Health Promoting Hospitals (EPHP) in which 20 hospitals from 11 countries participated from 1993 to 1997 (Pelikan, Garcia-Barbero, Lobnig, & Krajic, 1998). In this early phase, implementing the concept was understood as organizational development (OD) or organizational learning or learning organization (e.g., Levitt & March, 1988; Pelikan & Wolff, 1999; Senge, 1990), oriented towards specific health-relevant content and organized in the form of projects following principles of project management. Thus, owners, leadership, and management (together with staff representatives) had to decide and commission content, structures, and resources (including external consultation) of a general OD project and more specific sub-projects, which followed a problem-solving or quality cycle. They started with some kind of assessment of relevant problems that could be "solved" by health promotion, following the well-established medical principle "no therapy without diagnosis." Based on these assessments, specific tailored health promotion measures were selected/developed and implemented, and progress was monitored continuously. At the end, based on (external) evaluation, the management had to decide if

and how to institutionalize the project results in routine operations of the hospital. The approach of the two initiating HPH projects, therefore, combined health promotion practice with action research through a strong emphasis on systematic assessment and evaluation. Understanding HPH as organizational development or learning made implementation flexible and adaptable to the needs of the hospital and at the same time allowed consideration of health promotion principles like participation or empowerment (Rootman, 2001). By using principles of project management, open processes of OD became structured and accountable.

During the EPHP, benchmarking with other hospitals was an integral part of the enterprise. After the termination of the EPHP, the results of which were formulated in the Vienna Recommendations on Health Promoting Hospitals (World Health Organization [WHO], 1997b), this benchmarking aspect was partly substituted by hospitals being part of a regional or national network supporting implementation in one way or other, as the WHO Regional Office for Europe (WHO/Europe) had declared the establishment of national/regional HPH networks the major strategy for further disseminating the concept in 1995.

Towards the end of the EPHP Project, quality management and evidence-based medicine increasingly made their way into hospitals and health care in Europe. Organizational development and project management were experienced as overly loose frameworks and processes, and procedures of standardization were introduced. These followed Donabedian's (1966) philosophy of quality, which had been developed with a focus on health care organizations. By consensus processes, an international working group (Pelikan, Dietscher, Krajic, & Nowak, 2005), defined the content of health promotion in hospitals as 18 strategies and, for implementation, recommended seven strategies based on a quality philosophy (Pelikan, 2007). Following recommendations by the International Society for Quality in Health Care (ISQua), another international working group developed five more selective standards, with indicators and measures; their feasibility was tested empirically, which led to adjustments and shortenings of the tool (Groene, 2006). Further, more general models of strategic management have been used by health promoting hospitals as a framework for integrating health promotion targets and measures, e.g., the EFQM model (Brandt, 2001) or the Balanced Score Card (Brandt & Schmidt, 2005). Another kind of integration has been developed for green or sustainable hospitals (Weisz, Haas, Pelikan, & Schmied, 2011) or for the concept of salutogenic organizations (Pelikan, Dietscher, & Schmied, 2013).

As far as the connection to evidence-based health care is concerned, specific examples of evidence-based health promotion in clinical practice include patient education for patients suffering from chronic diseases such as COPD, early rehabilitation after stroke, preoperative smoking cessation and alcohol intervention for patients undergoing elective surgery, and integrated rehabilitation programs for diabetic patients (Groene & Garcia-Barbero, 2005; Møller, Villebro, Pedersen, & Tønnesen, 2002; Nielsen, Jørgensen, Dahl, Pedersen, & Tønnesen, 2010; Tønnesen et al., 1999).

Capacity building or development, a concept which has been used in the areas of developmental aid and community development since the 1970s, was introduced into the health promotion discourse by the Jakarta Declaration (World Health Organization [WHO], 1997a) and was later on adapted to health promotion by more

specific discussion and development (Bell Woodard, McLean, Green, Moore, & Williams, 2004; Hawe, King, Noort, Jordens, & Lloyd, 2000; Hawe, Noort, King, & Jordens, 1997; Hawe & Shiell, 2000; Pelikan et al., 2011; Smith, Tang, & Nutbeam, 2006). Even if the concept may still lack definite clarity, it specifically highlights three aspects of relevance for helping or development relationships: By making current investments in the capacities of those helped, instead of directly solving a selection of their current problems, the helpers or developers enable those being helped to build up capacities for problem-solving in the future. Accordingly, for health promotion in the settings approach, it is necessary to invest primarily in building up capacities, i.e., in infrastructures and resources that will enable continuous and comprehensive health promotion action within the setting, instead of just implementing single specific health promotion measures. For health promoting hospitals, due to the early link of the concept with the quality approach, this was not so new, since in Donabedian's (1966) understanding of quality, the quality of outcomes is dependent on adequate quality of structures and processes, which therefore have to be secured. The same holds true, of course, for the total quality management approach or continuous quality improvement approach. For this reason, it was quite easy to integrate the capacity-building concept into the evaluation model of an international HPH evaluation project (PRICES-HPH; see the following section).

In addition to these methodological developments, the general concept of HPH has also been further specified for hospitals or hospital departments serving specific groups of patients (psychiatric patients, children and adolescents, migrants, respectlivly baby-friendly and age-friendly) and by an integration of concepts and tools for specific health issues (tobacco, alcohol, nutrition & physical activity, environment) into HPH theory and practice.

9.4 Theoretical PRICES-HPH Evaluation Model

For guiding the evaluation of the implementation of health promotion in member hospitals of national/regional HPH networks and the role of networks in supporting this implementation, the "Project on a Retrospective, Internationally Comparative Evaluation Study on HPH" (PRICES-HPH) developed an evaluation model (see Fig. 9.1) (Pelikan et al., 2011). This model uses and integrates concepts from different discourses: quality in health care, evaluation and capacity-building in health promotion, and specific HPH conceptualization. The model distinguishes between member hospitals and national/regional HPH networks as the two kinds of actors or systems whose structures, processes, and outcomes (following Donabedian's (1966) quality paradigm) can be observed and evaluated for their health promotion-related qualities. Following Donabedian's paradigm and also using Nutbeam's (1998) outcome model for evaluating health promotion progress, the PRICES-HPH model understands health promotion structures and processes of HPH hospitals and networks as relevant determinants of health as the desired outcome, which can be measured but not directly influenced. Following Nutbeam,

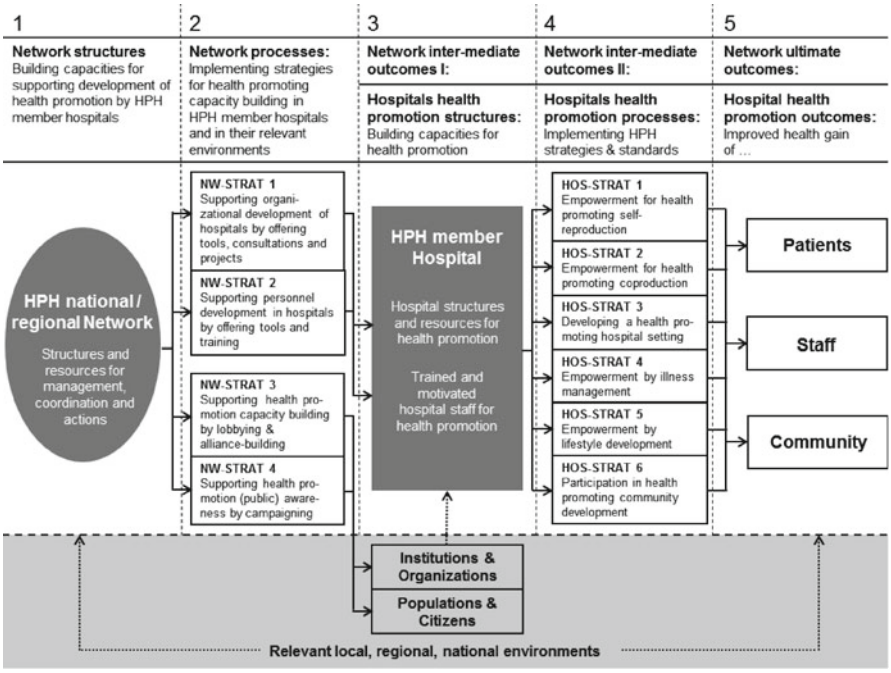

Fig. 9.1 The PRICES-HPH evaluation model for national/regional networks and member hospitals. *HPH* health promoting hospital, *NW-STRAT* network strategy, *HOS-STRAT* hospital strategy

the model also differentiates between intermediate and ultimate outcomes of health promotion interventions, either by hospitals or networks. Health promotion interventions, which in Donabedian's terminology are processes, too, cannot directly influence population health as the ultimate outcome but have to tackle relevant determinants of health instead. The model also relates to the debate on capacity building in health promotion (e.g., Bell Woodard et al., 2004; Hawe et al., 1997) by acknowledging that for health promotion interventions to be effective, adequate infrastructures and resources for health promotion have to be developed first. The PRICES-HPH evaluation model can also be related to the Vienna Organizational Health Impact Model (VOHIM) (Dür et al., 2010; Pelikan, Dietscher, Röthlin, & Schmied, 2011).

The ultimate outcomes of the model (see column 5) are defined by the HPH goal to "become a stronger resource for health" (Milz & Vang, 1989, p. 425) and, through that, to improve the health gain (see the 2008 Constitution of HPH (International HPH Network, 2010)) of mainly three target groups of people (or stakeholders) whose health can be affected by the functioning and operation of the hospital, i.e., patients (and their relatives), staff (and their relatives), and the residents of the community that the hospital serves.

Health promotion processes are needed to achieve this goal, and many different dimensions and measures of health promotion interventions in and by hospitals

have been proposed (such as Milz & Vang, 1989; WHO, 1991, 1997b). These have been systematized into 18 HPH core strategies, resulting from six general strategies (HOS-STRAT 1–6 in column 4) for each of the three target groups (Pelikan, 2007, p. 266; Pelikan et al., 2005; Pelikan, Krajic, Dietscher, & Nowak, 2006). The first three of the six general HPH core strategies relate to improving the health promotion quality of traditional hospital structures (developing a HP hospital setting) and processes within hospitals (empowerment for health promotion self-reproduction/self-management and for health promotion co-production). The other three strategies define additional health promotion services that should be offered by health promotion hospitals, two directly for people (illness management/patient education and lifestyle development/health education) and one for the community setting (participation in health promotion community development). Of the five HPH standards (Groene & Garcia-Barbero, 2005), standard 1 focuses on the general health promotion capacity of the hospital, and standards 2–5 cover selected parts of the 18 core strategies.

To implement the health promotion strategies and health promotion standards effectively, efficiently, and sustainably, HPH have to invest in capacity building for health promotion preconditions in their own organizations (Röthlin, Schmied & Dietscher, 2013), i.e., health promotion structures, and also in their relevant environments, especially national, regional, and local institutions and citizen populations (see column 3), in the model via HOS-STRAT 6. The seven implementation strategies (Pelikan, 2007) and standard 1 (Groene, 2006) recommend necessary structures and processes for health promotion capacity building in hospitals.

What can national/regional HPH networks do to support effective health promotion action by their member hospitals? They can use four types of support strategies (NW-STRA 1–4 in column 2) to support health promotion implementation in and by hospitals. Two of these address hospital structures and resources, as well as the health promotion-related knowledge and skills of staff: Networks can support the development of organizational structures and resources for health promotion by offering tools and consultations and by organizing (benchmarking) projects. And they can support the development of health promotion literacy and competencies of personnel by offering tools and training. The two other strategies address the relevant environments of hospitals: Here, networks can support the development of furthering preconditions for HPH in communities and (political) institutions by lobbying, alliance building, and campaigning (these strategies also relate to capacity-building concepts such as described by Bell Woodard et al. (2004)).

But networks can only be effective supporters of their member hospitals, if they invest sufficiently in their own capacities first. Networks, too, need infrastructures and resources for management and coordination and for supporting their actions (see column 1). From the perspective of national/regional HPH networks, therefore, their member hospitals' health promotion structures (capacity building for health promotion action) and processes (the implementation of health promotion core strategies) can (partly) be understood as intermediate outcomes of health promotion network support strategies. Following this model, the PRICES-HPH collected data for columns 1–4, but not for column 5. PRICES-HPH is a systematic empirical

evaluation of networks and member hospitals of the international HPH Network, based on the evaluation model introduced above and realized by the WHO Collaborating Centre for Health Promotion in Hospitals and Health Care at the Ludwig Boltzmann Institute Health Promotion Research.

9.5 Capacity Building and Implementation of Workplace Health Promotion in Health Promoting Hospitals: Empirical Results from the PRICES-HPH Study

The following results on effective capacity building for health promotion in hospitals are based on hospital data from the PRICES-HPH study. For the survey on member hospitals, a questionnaire was developed and pre-tested in due consideration of existing health promotion assessment instruments. The project invited 529 HPH coordinators of member hospitals to participate in the online survey, 180 of which completed the questionnaire (34 % response rate). Data collection started by the end of October 2009 and was completed by the end of February 2010. To gain more reliable results for HPH hospitals in a European health care context, the analysis presented in the following will be based on a sub-sample of 139 European HPH acute hospitals in 16 countries (non-European hospitals and hospitals with an average length of stay for inpatients > 15 days were excluded).

The main research question guiding the analysis is to detect if (and which) of the health promotion structures and capacities established in hospitals have a significant positive impact on the implementation of health promotion activities for hospital staff. Theoretically, the analysis is based on Donabedian's (1966) quality paradigm, Nutbeam's (1998) hierarchical model of health promotion outcomes (which Nutbeam developed to guide health promotion evaluation) and on capacity-building approaches in health promotion (e.g., Bell Woodard et al., 2004; Hawe et al., 1997). All three concepts postulate a similar kind of link between specific organizational structures or capacities (in the form of adequate infrastructures and policies as well as personal skills, knowledge, and other resources) on the one side and the processes, activities, and outcomes on which they impact on the other side. Together, these concepts form the theoretical background for the PRICES-HPH evaluation model (Pelikan et al., 2011).

The PRICES-HPH hospital questionnaire (http://www.hph-hc.cc/projects.php) includes 30 questions on potentially developed structures for health promotion in hospitals and 105 items to assess the degree of implementation of a variety of health promotion measures. These measures or criteria are deduced from the concept of the 18 HPH core strategies (Pelikan et al., 2005). The concept defines six strategies, respectively, for three target groups – patients, staff, and community – of health promotion in and by hospitals. The following analysis is based on indicators relating to staff-specific health promotion interventions.

As a first step of the analysis, the impact of health promotion structures and capacities, as reported by hospital HPH coordinators, on all staff-oriented criteria

Table 9.1 Efficient capacities for workplace health promotion activities in hospitals

CAP 1:	**HPH Coordinator's Functions**
	HPH Coordinator is responsible for planning, coordinating, and evaluating health promoting activities in the hospital
CAP 2:	**Organizational Roles and Structures for HP**
	There is a minimum of one specific organizational structure for health promotion in the hospital in place (HP unit, team, steering committee, or working group)
CAP 3:	**HP Policies and Strategies**
	There are written policies and strategies for staff-related health promotion issues
CAP 4:	**Financial "Sources" for HP**
	There is a minimum of one specific financial "source" for health promotion (e.g., internal HP budget, funding by governmental initiatives, or health insurances programs)
CAP 5:	**HP Quality Assessment**
	There is a specific health promotion quality assessment routine in place (e.g., 5 HPH Standards)
CAP 6:	**Monitoring of HP Indicators**
	The hospital routinely captures specific data to monitor the quality of health promotion activities for staff (These are: staff's participation rates in health promotion activities, staff's health promotion knowledge, and working conditions)
CAP 7:	**Strategic Cooperations for HP**
	The hospital cooperates with professional associations, staff unions, and research centers in line with its health promotion activities

(measured by an index composed of 30 items) was tested. Seven capacities whose existence in a hospital correlates significantly with a higher degree of implementation of staff-oriented health promotion activities could be identified statistically (see Table 9.1).

The identification of a HPH coordinator is mandatory for each HPH member hospital, but HPH has no regulations for the amount of work time the coordinator should invest or for the coordinator's duties. The PRICES-HPH hospital questionnaire, therefore, assessed the coordinators' officially allocated working time and asked about their responsibility for ten potential areas of work. Our analysis shows that HPH coordinators are an effective capacity for the implementation of health promotion measures only if they are responsible for planning, coordinating, and evaluating health promotion activities in the hospital (CAP 1). As these specific functions resemble the typical steps of a quality circle, it seems plausible that the actual capacity of relevance for health promotion implementation is not the existence of a hospital HPH coordinator but rather a systematic quality approach towards health promotion implementation.

Specific organizational roles and structures for health promotion – such as an official health promotion unit, team, working group, or steering committee – can also strengthen the implementation of health promotion in a hospital (CAP 2). Hospitals that have at least one of these structures in place differ in their health

promotion activities from hospitals without such structures, whereas the existence of more than one type of organizational structure seems to bring no additional gain with regard to health promotion implementation.

The existence of written policies and strategies for staff-related health promotion issues – e.g., family-friendly workplace, safety at work, addressing mobbing and workplace violence, supporting a healthy lifestyle, work satisfaction, and supporting an aging workforce – are a very important capacity (CAP 3). The more policies a hospital has in place, the better its implementation of health promotion activities.

The existence of at least one specific financial source for health promotion was clearly identified as a further supportive capacity (CAP 4). Hospitals with an internally earmarked health promotion budget or specific types of external funding for health promotion activities do better than hospitals that have no financial resources available or that cover their health promotion-related expenditures out of the overall hospital budget.

The regular use of a health promotion quality assessment routine in the hospital also increases the health promotion activities (CAP 5). Two-thirds of hospitals reporting to have a quality assessment routine in place use the official HPH self-assessment tool, the "five standards" for health promotion in hospitals (Groene, 2006). Some national networks have made regular self-assessment using these standards mandatory for national/regional HPH membership. A few HPH networks, e.g., the Swedish HPH network, developed their own additional tools and indicators for the self-assessment of their members' health promotion orientation. And the effect is almost twice as high if the HP assessment routine is integrated in the regular organization-wide quality management system (e.g., EFQM, Joint Commission, KTQ).

The regular monitoring of indicators of relevance for health promotion, which can be understood as part of a comprehensive health promotion quality approach, was identified as an additional capacity (CAP 6). Especially three types of indicators, if regularly monitored, have a positive effect: the participation rates of staff in hospital health promotion activities, the assessment of staff's health promotion knowledge, and data concerning the working conditions of staff. No additional statistical effect on health promotion activities was found to be associated with other data like staff satisfaction, staff absenteeism, or the health status of staff.

The last capacity found to make a difference is strategic cooperation with local partners in the context of the hospital's health promotion activities. Of cooperation with 20 potential partners assessed in the questionnaire, only cooperation with professional associations, staff unions, and research centers was associated with a higher degree of health promotion activities (CAP 7), and activities were highest in hospitals that cooperated with all three.

As far as prevelance of capacities is concerned, "Personnel and Structures" (CAP 2) is the most predominant capacity, with more than 87 % of the hospitals having some institutionalized personnel or health promotion structures in place. In contrast, "Monitoring of Health Promotion Indicators" (CAP 6) and "Strategic Cooperations" (CAP 7) are the capacities with the lowest prevalence, being established in slightly more than 40 % of hospitals, respectively.

Summing up, seven capacities were identified that have an impact on the dependent variable, i.e., the index of 30 single items measuring staff-oriented health promotion in hospitals as introduced above. These capacities can therefore be seen as relevant preconditions for a broad range of staff-oriented hospital health promotion interventions.

Against this background, a second step of the analysis was to differentiate this index into various staff-oriented health promotion topics to find out more about the role of capacities for the implementation of well-defined fields of workplace health promotion. The aim is to formulate practical recommendations for hospitals concerning which capacities to invest in to achieve specific health promotion objectives. By assessing which of these 30 Likert items (each asking "In how far does the hospital meet a specific staff-oriented criteria?") could be aggregated into Likert scales, the existence of specific sub-dimensions within the six staff-oriented health promotion strategies was empirically tested. As the requirements for the aggregation of a scale, a minimum of three items and a Cronbach's Alpha ≥ 0.7 were selected. The statistical analysis created six dimensions or scales, as are shown in Table 9.2. Only 20 items of the original 30 found their place in one of the scales. The six dimensions of HPH core strategies identified widely correspond to the six normative strategies defined by Pelikan et al. (2005), with the exception of items relating to strategy 1 ("empowerment of staff for health promoting self-reproduction"), which could not be integrated into one scale, and strategy 2 ("health promoting co-production in work processes") (ACT 1, ACT2), which was found to consist of two independent dimensions.

The dimensions were interval-scaled from 0 (not at all) to 10 (fully). Table 9.2 shows that the mean values for each dimension lie somewhat under or over 5 ("partly met"). Only the dimension "workplace safety" (ACT 3) has a mean value of 8.54 points, which means that the majority of hospitals meet most of the criteria in this dimension to a high degree. The table also lists the standard deviations (SD) for each dimension, which are mostly ≥ 2 (again with the exception of workplace safety). This means that the hospitals differ considerably with regard to the degree of their health promotion activities. As pointed out above, in this study the assumption and hypothesis is that these observed variances can be explained at least to some extent by the degree of capacities for health promotion that are in place in the hospitals.

So far the analysis yielded seven potential capacities for supporting health promotion in hospitals and produced six specific staff-oriented health promotion dimensions. The next step of the analysis was to test how the existence of the identified capacities would impact on the six health promotion activity dimensions. For this purpose, the hospitals were divided into three groups (characterized by only few, numerous, or many health promotion capacities), and the mean values for their health promotion activity scores within each activity dimension were compared. Figure 9.2 shows that in comparison to the other two groups, the hospital group having only few organizational capacities has significantly lower means in five of the six health promotion activity dimensions. In the majority of cases, the activity score of hospitals in this group is just above "hardly" implemented. In contrast, the group

Table 9.2 Dimensions of staff-oriented health promotion activities (N = 139 Hospitals)

		Cronbach's Alpha	Mean (0–10)	SD
ACT 1:	**Staff Participation**	**0.75**	**4.93**	**2.36**
1.1	Staff are systematically informed about workplace health promotion goals and concepts			
1.2	Staff are systematically involved in the development of workplace health promotion goals and concepts			
1.3	Feedback mechanisms are in place to assess the "health promotiveness" of work processes			
ACT 2:	**Leadership and Communication**	**0.85**	**5.64**	**2.26**
2.1	Executive staff are routinely trained in specific leadership competencies (e.g., conflict management)			
2.2	Continuous measures to improve the communication between professions, organizational units, and levels of hierarchy are in place			
2.3	Team coaching, support for team conflict management, or other forms of team development are available			
ACT 3:	**Workplace Safety**	**0.82**	**8.54**	**1.55**
3.1	The hospital fulfils all national / regional legal requirements concerning health and safety at work			
3.2	Occupational risk management is in place (e.g., accidents and injuries, contamination, or contact with harmful materials)			
3.3	Ergonomic devices are available (e.g., ergonomic chairs, lifting aids)			
3.4	Non-smoking staff members are protected against smoke			
ACT 4:	**Prevention of Occupational Diseases**	**0.83**	**5.28**	**2.17**
4.1	Education and training to prevent / manage musculoskeletal disorders			
4.2	Education and training to prevent / manage any other physical health problems related to work			
4.3	Education and training to prevent / manage psychological health problems (e.g., mobbing, burnout)			
4.4	Staff are offered stress management training			
ACT 5:	**Lifestyle Development**	**0.84**	**4.41**	**2.38**
5.1	The hospital has routines to identify the lifestyle related health promotion needs of staff			
5.2	The hospital provides education, counseling, or training for staff to improve the self-management of lifestyle issues and risk factors			
5.3	The health promotion interventions for encouraging staff's health promoting lifestyle are developed in partnership with staff members			
ACT 6:	**Supporting Healthy Leisure Activities**	**0.84**	**4.98**	**2.74**
6.1	Staff are encouraged to engage in physical activity (e.g., fitness rooms, using bicycles as means of transport)			
6.2	The hospital cooperates with community institutions (e.g., fitness centers) to support healthy leisure activities of staff			
6.3	The hospital supports staff leisure meetings and activities			

with many capacities has clearly higher mean values, with scores between "partly" and "widely," In four cases, this is also significantly higher than the means for the middle group with "some" capacities. The differences between the degrees of health promotion activities in the dimensions "Staff Participation" (ACT 1), "Leadership & Communication" (ACT 2) and "Supporting Healthy Leisure Activities" (ACT 6)

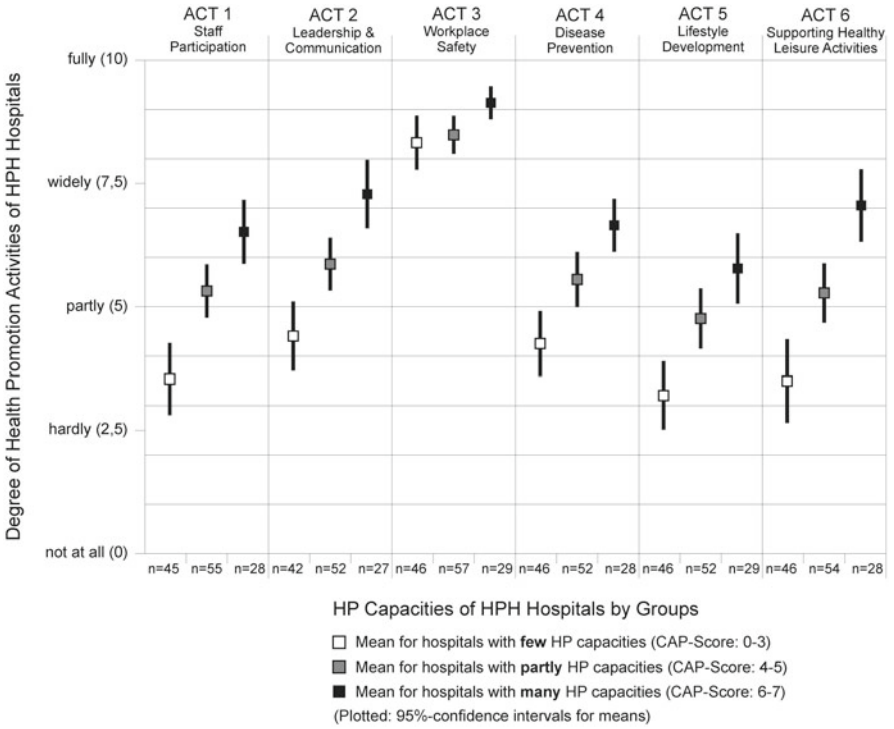

Fig. 9.2 Impact of organizational capacities on specific staff-oriented health promotion activities in HPH hospitals ($N = 139$ hospitals)

are especially high. Only in the dimension "Workplace Safety" (ACT 3) are all three groups close together, because nearly all hospitals were found to fulfill the related requirements near "fully," independently of the extent of health promotion capacities they have in place.

Since according to the analysis, the degree of organizational health promotion capacities evidently supports the implementation of most staff-oriented health promotion activities in hospitals, a further question – how strong do single capacities impact on the activities? – becomes of interest. For this third step of the analysis, the hospitals were divided into two groups according to whether they had established any specific health promotion capacity or none. Again, the mean values for the health promotion activities of both hospital groups were compared. The means were calculated across all six staff-oriented dimensions (ACT 1–6).

Figure 9.3 shows that each established capacity dimension generates a significant difference between the groups, with two exceptions: "Personnel & Structures" for health promotion (CAP 2) and "Financial Sources" for health promotion (CAP 4). The highest effect is related to written "Policies & Strategies" for health promotion (CAP 3).

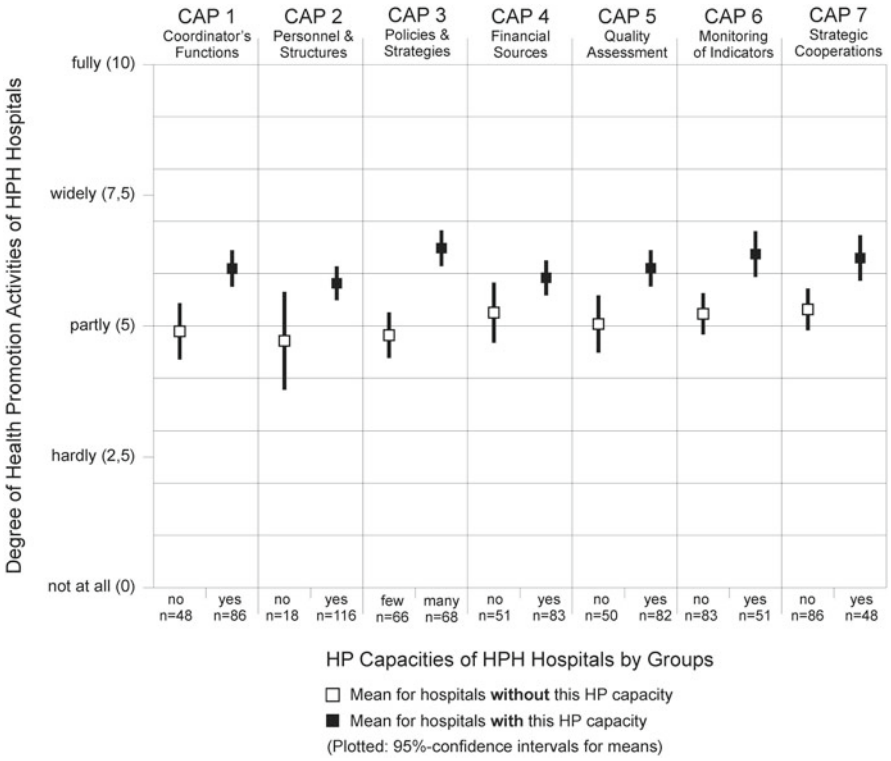

Fig. 9.3 Impact of specific organizational capacities on all staff-oriented health promotion activities in HPH hospitals ($N = 139$ hospitals)

So far the analysis demonstrates that the existence of seven specific health promotion capacities in hospitals supports six identified types of staff-oriented health promotion activities (with the exception of workplace safety). Vice versa, five of seven capacities have a significant impact on the staff health promotion activities in general.

A final step of the analysis addressed the question whether the impact of single capacities on health promotion activities is additive or substitutive. An additive impact would imply a positive correlation between an increase in capacities and an increase in health promotion activities. As Fig. 9.4 below shows, this type of positive correlation does in fact exist. The slope of the regression line indicates that each additional capacity increases the health promotion activity scale by 6.15 %. The coefficient of determination (R^2) – a measure to predict the impact of the number of capacities on health promotion activities in hospitals – is 0.327, which is quite high in the context of social sciences.

In summary, this empirical analysis, based on the PRICES-HPH evaluation model, identified specific organizational capacities that are supportive for the implementation of health promotion measures in regard to staff's health. The same kind

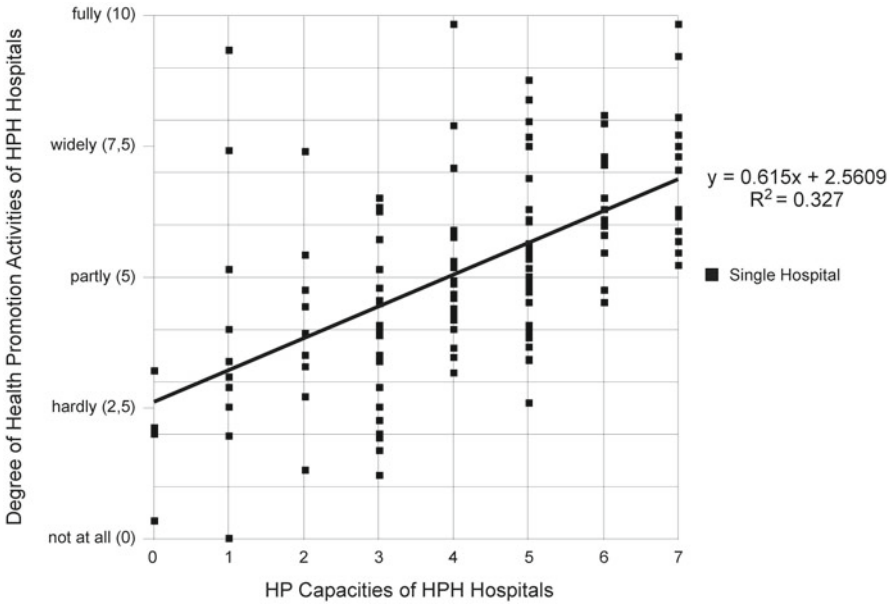

Fig. 9.4 Correlation between capacities and health promotion activities in hospitals (N = 139 hospitals)

of analysis was conducted for health promotion measures for patients and communities, in principle with similar results. This offers empirical evidence for the validity of the capacity-building approach in organizational health development.

9.6 Conclusion

HPH was initiated and developed starting not from the perspective of organizational health but from a public health and health promotion approach. Nevertheless, from its beginning the settings approach of health promotion was always connective and applicable to organizational settings. But how exactly can HPH be related to organizational health development? And what can the two approaches learn from each other? In summary, *health promotion in general, and also Health Promoting Hospitals (HPH)*, on the one side, can offer a more comprehensive understanding of health and of health promotion interventions. The HPH concept and its strategies for implementation are stronger and more explicitly related to quality management and evidence-based interventions. As far as underlying models used are concerned, the HPH evaluation model addresses different health promotion intervention strategies in more detail, be it on the organizational level of the hospital or on the level of HPH networks, a combination that makes the model rather unique.

On the other side, the *organizational health development model (OHD*, see Hoffmann et al. and Bauer et al. in this edition*)* follows the tradition of workplace

health (promotion) and occupational health, and therefore has a stronger, more explicit, and more detailed focus on specific factors affecting staff's positive and negative health. The OHD research model explains the factors by which organizations contribute to the negative and positive health of their staff, whereas the HPH evaluation model explicates the health promotion strategies hospitals (and HPH networks) can apply to improve the health gain for different stakeholder populations (including staff) affected by hospitals.

Since both models share a systems theory perspective on organizations, an understanding of health that includes positive health and a participatory, and an empowering methodology for interventions, it would make a lot of sense to work on an integration of specific aspects of both models.

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Chapter 10
Integration of Work and Personal Life as a Key Factor for Individual, Organizational and Public Health

Oliver Hämmig

Abstract In recent years work-family spillover, or, more generally, interaction and reconciliation of paid work and personal life, has become an issue of great importance for employees and employers, politics and the public, and particularly the health sciences. After having focused for a long time mainly on negative spillover and conflict between different roles and life domains and on work- and health-related outcomes, the research has recently switched over to a more inclusive integrated perspective by examining also work-family enrichment and positive spillover effects on work and health. Since negative (and positive) spillover between work and family or personal life is quite prevalent, at least in Switzerland, and is found to be strongly associated with various health-related risk behaviors and with widespread health problems and major diseases, it is of great relevance to public and organizational health. Not only employees but also employers benefit from organizational initiatives that aim to facilitate work-life integration. But organizational work-life offers and supports will not be beneficial and will not be utilized enough without meeting employees' needs, improving the degree of job control or autonomy at work, and being supported by supervisors and a corporate culture that encourages the use of policies, practices, programs, and offered services that help to balance or integrate work and personal life.

Keywords Work-family spillover • Work-family (work-life) conflict • Work-family (work-life) enrichment • Work-life integration • Public health • Worksite health promotion

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10.1 Introduction

Over the past decades public and scientific interest in the interplay and integration of job and family has grown continuously. The background and reason for this are profound changes in workforce demographics.

In the course of the globalization of the economy and the resultant and increasing deregulation of the labor markets, the nature of work and employment has changed gradually but fundamentally and irreversibly in most Western societies and industrialized countries. In addition, changes can be observed in collectively shared values, women's aspirations, family structures, living patterns, and particularly gender roles. Whereas in the past men were solely responsible for providing family or household income, the traditional role model of the single male breadwinner has lost much of its relevance today. Step by step, the model of "dual earnership" has become the norm for families and couple households.

These and other social and demographic changes, such as the process of demographic aging and, hence, rising elder-care responsibilities, have resulted in an increasing number of single-parent households, dual-earner families, dual-career couples, and "sandwich" employees who have responsibility for both child care and elder care. Dual-earner families and couples have become more common than single-income families and couples in Western Europe, except in a few countries like Greece, Italy, and Spain (Organisation for Economic Co-operation and Development [OECD], 2007). In other words, there are growing numbers of married women, mothers, and sole parents in employment and with responsibility for children and/or their own parents in need of care.

The key component of these changes in workforce demographics is a steadily increasing proportion of women in the working population. More and more women and particularly mothers have entered the workforce over the last decades. The labor force participation of women has increased dramatically in Switzerland, where it is now one of the highest in Europe, and in most other developed countries. Whereas in 1970 less than 50 % of all women in Switzerland aged 15–64 years were engaged in paid work, in 2010 more than 75 % of the female working-age population was gainfully employed. This increase is the most pronounced for women with child care responsibilities, namely and particularly, for women with preschool or school-age children. Today, the employment rate of all sole parents in Switzerland is 84 %, and the employment rate of mothers is now around 70 % (OECD, 2007). This trend of women's and mothers' increasing participation in employment is seen more or less across all member countries of the Organisation for Economic Co-operation and Development (OECD), where on average more than 70 % of all sole parents and 62 % of mothers with school-age children are in paid work (OECD, 2007).

Women's increased labor force participation has been accompanied by a rise in part-time employment and an erosion of so-called 'normal' work (full-time employment with social security and unlimited contract). Simultaneously, there has been an intensification of work and a transition to more and more flexible and precarious working arrangements and employment contracts (e.g., atypical working hours,

alternate work schedules, short-term jobs, limited contracts, on-call work, night or weekend work).

As a result, the boundaries between work and home or private life have become increasingly blurred. And the number of people juggling "child and job" or "babies and bosses" and struggling with both increased work demands (e.g., long hours, high time pressure, low control over work schedule, job insecurity) and family commitments (e.g., child care, elder care) has grown rapidly. Hence, the proportion of employees who face considerable difficulties when they try to reconcile their work obligations with their family commitments and/or other personal life responsibilities or activities (e.g., social life, sporting or leisure activities, political office, community or voluntary work) has increased in Switzerland as in most other European and North American countries.

10.2 Issue of High Significance and Salience for Politics, Business, and Science

These cross-national trends and changes in work and workforce demographics have generated a great deal of political, economic, and particularly scientific attention to the issue of reconciling paid work with personal life.

First, since in the past an increase in women's employment usually came along with a decline in fertility and birth rates that compromised the social welfare institutions, government and politicians began to recognize the importance of supporting families and particularly mothers in their return-to-work decisions and particularly in combining work and family and the need for political action in this area. As a result, public spending on family benefits (e.g., child allowances, paid maternity and parental leave, extra-familial child care) has increased substantially in many countries since the 1980s (OECD, 2007).

Although in a European comparison fertility rates are now and by trend the highest in countries that have higher-than-average female employment rates, like Sweden, Norway, Finland, Iceland, Denmark, and the United Kingdom, suggesting successful balancing of work and family of a large proportion of the working populations, this does not apply to Switzerland, Germany, and Austria, where women's employment rates are substantially above, and fertility rates of around 1.4 children per woman are measurably below, the OECD average (OECD, 2007). For this reason, in Switzerland better compatibility of work and family now ranks high on the political agenda, and the government (Federal Council) has explicitly declared measures for improvement a political priority.

Second, business companies and primarily major enterprises have also recognized (from the employers' perspective) the relevance of family-friendly workplaces, i.e., family-supportive working practices, workplace policies, and organizational cultures (Badura & Vetter, 2004; Burke, 2006; Hammer, Cullen, & Shafiro, 2006; Lewis & Cooper, 2005), for the benefit of employees and their well-being,

organizational attachment or commitment and work performance, and ultimately for their own benefit as regards productivity, turnover, and absenteeism rates and their attractiveness and competitiveness as employers particularly for women. Many major enterprises now allow or actively offer a variety of flexible working models, e.g., part-time work, flexible working hours and shift schedules, or individually tailored work arrangements. However, in practice this kind of awareness and family-supportive offers and benefits have not been broadly disseminated in small and medium-sized companies or in all business sectors.

Third, in consequence of the increasing participation of women in the workforce and particularly due to the increasing representation of dual-earner families and couples and single-parent households, research on work-family interaction and spillover and particularly on the work-family conflict emerged in the mid 1980s; since then the research literature on the topic has grown rapidly and substantially (Greenhaus & Allen, 2011). For a long time, this research focused mainly on negative spillover between work and family. In recent years, it has been supplemented and extended by research on positive spillover effects of combining work and family roles, i.e., on positive transfers between work and family with beneficial instead of adverse effects on the two life domains (Greenhaus & Allen, 2011; Greenhaus & Powell, 2006).

10.3 Backgrounds and Concepts of Work-Family Research

Work-family research has its roots in psychology. Today it is most common in occupational health psychology, which is concerned with work-related health problems, i.e., with psychosocial working conditions and work characteristics that may be related to health impairments and adverse health behaviors. This research originally began in the United States and Canada more than two decades ago and still originates mostly from North American countries. In German-speaking countries like Switzerland, this research has just started, but it is anchored in a long tradition of research on the relationship and interplay of the work and the non-work domains.

The tradition started with studies on the relationship between work and leisure, with the relationship being characterized by separation and segmentation. Paid work and employment were seen as the dominant life domain, having priority over leisure as the secondary life domain, which served only as compensation and recovery from work. In light of the predominant traditional gender role model, this research focused exclusively on industrial male workers (Hämmig & Bauer, 2010; Hoff, Grote, Dettmer, Honer, & Olos, 2005).

The research then went on to study the relationship between work and family, which was characterized by the combination and cumulation of job and children or, stated more generally, work and family roles. Reflecting the incipient change towards more egalitarian gender roles, this research focused mainly on the double role and burden of working women and mothers, and its scope and findings were restricted accordingly (Hämmig & Bauer, 2010; Hoff et al., 2005).

Finally, a new paradigm shift took place and led to the current research on the integration and interaction of work and family and particularly on the reconcilability and reciprocal spillover of the two life domains. For the first time, special attention was given to both working men and women alike (Hämmig & Bauer, 2010; Hoff et al., 2005). But this research was largely limited to employees with their own families, i.e., employees with spouses and living with children.

As mentioned above, until recently the research focused mainly on the negative side of the work-family interface and failed integration of work and family life. Theoretical considerations in this branch of research are largely dominated by the role strain perspective and a scarcity hypothesis postulating that multiple roles and responsibilities from different life domains compete for limited resources, such as time or energy (Grzywacz & Marks, 2000). Based on this hypothesis, participating in different roles may lead to incompatible role pressures and experiences in one life domain interfering with experiences in another life domain. Work-family conflict is therefore defined as role pressure incompatibility or inter-role conflict that occurs when the requirements and expectations associated with one role are incompatible with, or make it difficult to comply with, the requirements and expectations of another role, or, more precisely, when participation in the family role is made more difficult and performance is reduced due to participation in the work role and vice versa (Greenhaus & Beutell, 1985). Role expectations (e.g., work demands, family responsibilities) that affect a person's time involvement, strain experience, and behaviors within a role can produce conflict between that role and another role (Greenhaus & Beutell). This negative carryover or spillover from one role or life domain to the other is multidimensional (with time, strain, and behavior-based forms of conflict) and particularly bidirectional, i.e., runs from work to family and from family to work (Carlson, Kacmar, & Williams, 2000; Greenhaus & Beutell, 1985; Netemeyer, Boles, & McMurrian, 1996).

More recently and following the role enhancement hypothesis (Grzywacz & Marks, 2000), the positive aspects of the work-family interface have gained more attention and research interest. The concept of positive spillover, also referred to as work-family enrichment, enhancement, or facilitation, suggests that participation in multiple roles provides additional opportunities and resources and that individuals can also benefit from combining work and family through the transfer of resources or positive affect (Greenhaus & Allen, 2011; Greenhaus & Powell, 2006; Grzywacz & Marks, 2000). Work-family enrichment or facilitation is defined as the extent to which participation and experiences in one role improve the quality of life in the other role (Greenhaus & Powell, 2006) or as the extent to which involvement in one life domain provides gains that contribute to enhanced functioning, role-taking, and performance in another life domain (Wayne, Grzywacz, Carlson, & Kacmar, 2007).

Although studies on the positive synergies and benefits of multiple role memberships are growing rapidly in number and importance (McNall, Nicklin, & Masuda, 2010), the conflicting relationship between employees' work and family lives still remains the most studied concept, and it continues to dominate the work-family literature (Greenhaus & Allen, 2011). The vast majority of the work-family research literature still deals with the difficulty of combining work and family roles and

commitments and with interference between work and family that leads to role overload and results in a variety of negative work-related and health-related consequences (Allen, Herst, Bruck, & Sutton, 2000; Greenhaus & Allen, 2011).

As the term 'work' refers to paid employment and the term 'family' to child care responsibility, studies used to be largely restricted to working parents living together and with underage children. Singles, single parents, and dual-career couples without minors living at home were not the focus and were excluded a priori from these studies for a long time (Casper, Eby, Bordeaux, Lockwood, & Lambert, 2007; Hämmig & Bauer, 2009; Hämmig, Gutzwiller, & Bauer, 2009). Since it is increasingly recognized that people may be involved not just in family roles but also in multiple roles outside their family life that can just as well interfere with the demands or role expectations of their work life, the more inclusive terms 'work-life conflict' or 'work-life balance' have come into use (Hämmig et al., 2009; Jones, Burke & Westman, 2006). However, these terms are disputed and misleading due to the suggested contrast between 'work' and 'life,' given that life as an umbrella term at bottom includes work (Hämmig & Bauer, 2010; Resch & Bamberg, 2005).

There is also a controversy about the balance metaphor that reflects the ambiguity of the meaning and the lack of a common definition of the concept. Some researchers simply see balance as the absence of work-family or work-life conflict, others regard balance as a high degree of involvement or engagement in multiple roles or consider it to be an equal and adequate distribution of one's personal resources of time or energy across all life roles, and finally, others view it as positive affects, highly satisfying experiences, and good functioning in all life domains (Greenhaus & Allen, 2011). As a result and in particular because the term 'balance' implies equal commitment and time investment in both life domains, which may not be the desired situation or optimal segmentation for everybody, the term 'integration' is being used increasingly and alternatively (Jones, Burke, & Westman, 2006; Lewis & Cooper, 2005).

10.4 Health Consequences of Work-Life Conflict and Enrichment

There is a great body of research literature on the topic. Numerous studies investigated the negative aspects of the work-family interface. Some of these studies gave special attention to the concept and measurement of work-family conflict, or rather work-life conflict as the more inclusive term and concept (see inter alia Carlson et al., 2000; Greenhaus & Beutell, 1985; Netemeyer et al., 1996), and others explored either its causes or rather antecedents (see the meta-analysis by Byron, 2005) or its work and health-related consequences (see the systematic and comprehensive review by Allen et al., 2000). Yet other studies examined both antecedents and consequences (Frone, Russell, & Cooper, 1992; Jansen, Kant, Kristensen, & Nijhuis, 2003; Kinnunen & Mauno, 1998; Steinmetz, Frese, & Schmidt, 2008).

Recent studies, which are growing in number, are more concerned with the positive side of the work-family interplay and interaction. Research in this area is not yet very extensive but has examined both predictors or antecedents of work-family enrichment (see the synopsis by Greenhaus & Allen, 2011) and positive effects or consequences of work-family enrichment (see the meta-analytic review by McNall et al., 2010).

Providing a complete overview and summary of the predictors explored and all outcomes related to work, family, and stress or health of the work-family/life research literature is beyond the purpose of this contribution. Here I want to focus particularly on health outcomes or correlates of negative and positive spillover from one life domain to the other.

Consistent findings from numerous studies show associations of work-family/life conflict with domain-specific satisfaction and with various mental and physical health outcomes, including health-related behaviors (Allen et al., 2000; Greenhaus & Allen, 2011; Greenhaus, Allen, & Spector, 2006). The strongest evidence was found for negative effects on work satisfaction, marital satisfaction, and life satisfaction (Adams, King, & King, 1996; Allen et al., 2000; Ford, Heinen, & Langkamer, 2007; Judge, Ilies, & Scott, 2006; Kinnunen, Geurts, & Mauno, 2004; Kossek & Ozeki, 1998; Perrewé, Hochwarter, & Kiewitz, 1999). Other health-related outcomes found were psychological stress, depression and mental disorders, burnout syndrome, and other psychosomatic symptoms, including lack of appetite, sleep disorders, headaches, and fatigue (Allen et al., 2000; Brauchli, Bauer, & Hämmig, 2011, Frone et al., 1992; Frone, Russel, & Barnes, 1996; Frone, 2000; Greenhaus & Allen, 2011; Greenhaus et al., 2006; Grzywacz & Bass, 2003; Hämmig et al., 2012; Hämmig et al., 2009; Hämmig & Bauer, 2009; Hammer, Saksvik, Nytro, Torvatn, & Bayazit, 2004; Innstrand, Langballe, Espens, Falkum, & Aasland, 2008; Jansen et al., 2003; Kinnunen et al., 2004; Smith Major, Klein, & Ehrhart, 2002; van Rijswijk, Bekker, Rutte, & Croon, 2004, and many others). Our own research recently and additionally found initial evidence for an association between work-life conflict and musculoskeletal disorders such as (low) back pain and neck or shoulder pain (Hämmig, Knecht, Läubli, & Bauer, 2011). And health-related behaviors found as outcomes of work-family/life conflict were risk behaviors associated with alcohol and drug consumption, diet, and exercise – namely, substance abuse and especially problem drinking, fatty food intake, unfavorable food choices, and physical inactivity (Allen et al., 2000; Allen & Armstrong, 2006; Frone, 2000; Greenhaus & Allen, 2011; Jones, Kinman, & Payne, 2006; Roos, Lahelma, & Rahkonen, 2006; Roos, Sarlio-Lähteenkorva, Lallukka, & Lahelma, 2007).

It can be summarized that work-family/life conflict generally leads to reduced psychological and physical well-being and is particularly associated with a variety of work and health-related outcomes and behaviors at different levels and related to:

- The society (e.g., medical visits, use of health care system, use of child care institutions)
- The organization (e.g., job satisfaction, job performance, organizational commitment, turnover intention, absenteeism, work-family benefit utilization)

- The family (e.g., family satisfaction, family integration, parenting, marital satisfaction)
- The individual (e.g., substance abuse, stress, burnout, depression, musculoskeletal disorders)

Whereas work-family/life conflict was demonstrated to be negatively associated with health, well-being, and satisfaction (at the individual, familial, organizational, and societal levels), work-family/life enrichment was found to be positively related to physical and mental health as well as to satisfaction and well-being in different domains (Allis & O'Driscoll, 2008; Greenhaus & Allen, 2011; McNall et al., 2010).

Given this overwhelming evidence and the overall convincing findings of mostly consistent and strong associations between work-family/life conflict and enrichment and a variety of health outcomes, it can be said that both sides of the work-family/life interface, or both sorts of spillover, are doubtless of great relevance and importance for an employee's health and well-being.

10.5 Prevalence and Relevance for Public Health

As mentioned above, the work-family spillover issue is of great concern to occupational health psychology. Although the construct of work-family/life conflict has now been adopted at least sporadically by other disciplines and has enriched established research domains such as work-related stress research – using it as a risk factor for health or an explanatory factor for (work-related) stress, the research on that and the knowledge gained from it has up to now been largely ignored by occupational medicine, social epidemiology, and public health (Hämmig & Bauer, 2009; Hämmig et al., 2009, 2011). Conversely, the psychological work-family research has neglected to consider the public health implications of its findings. Practical implications drawn from these findings are usually limited to worksite health promotion interventions and strategies and organizational initiatives. And there is in particular a blind spot in this research regarding some specific and important public and/or occupational health issues and concerns, such as social inequalities in health, cardiovascular diseases, or musculoskeletal disorders.

What is important for an individual's health and well-being is not necessary equally relevant for the public's health. Public health is a multidisciplinary science; it is about preventing disease and premature death and therefore prolonging life, reducing social inequality in health, and improving and promoting health in populations. Public health is focused strongly on social factors, or rather on basically changeable living and working conditions that are mostly responsible for the avoidable inequalities in health status (morbidity, mortality) within and between populations seen in all times, cultures, and countries. From this point of view, work-family/life conflict is relevant with regard to public health when significant proportions of the working population are exposed to competing multiple requirements from different roles and life domains and are therefore affected by such role conflict,

when such conflict goes along with health impairments, and/or when it contributes significantly to explaining social inequalities in health, i.e., observed socially determined discrepancies in life quality, well-being, morbidity, and mortality.

As shown above, there is a lot of evidence on associations between work-family/life conflict (and enrichment) and different health outcomes and behaviors. However, there is very little or hardly any scientific evidence on the prevalence of this negative (and positive) spillover or interaction in the general working population or even on its contribution to the frequently observed phenomenon of the social gradient in health. Just a few international studies were based on national population samples, i.e., nationally representative data, and reported on the overall prevalence of work-family/life conflict in the working population (Hämmig & Bauer, 2009; Hämmig et al., 2009; Jansen et al., 2003; Kinnunen & Mauno, 1998). According to these studies, very unequal proportions of the employed population are affected by work-family/life conflict, ranging from 11 % to 41 % and depending very much on the country studied (Finland, Switzerland, the Netherlands), the measure used, or the direction of the conflict looked at (Hämmig & Bauer, 2009; Hämmig et al., 2009; Jansen et al., 2003; Kinnunen & Mauno, 1998). Moreover, differences in prevalence rates within the countries, i.e., among subpopulations and different sociodemographic and occupational categories, turned out to be no less considerable than between the countries. But regardless of such diverse and/or inconsistent findings, it is clear that a significant proportion of employees struggles with work-family/life conflict.

According to the latest available data from the Swiss Household Panel collected in 2010, when a nationally representative sample of more than 5,000 employees in Switzerland was asked how strongly their work interfered with their private activities and family obligations, only 18.1 % answered 'not at all,' and 28.3 % rated interference as 6 or higher on this 11-point Likert scaled item with values from 0 'not at all' to 10 'very strongly.' Of the employees surveyed, 20.1 % found it somewhat-to-extremely difficult to disconnect from work when the work day is over (score of 6+ on a scale from 0 to 10), and 35.5 % reported being rather-to-very much too exhausted after work to do things that they would like to do (again, score of 6 or higher on an 11-point scale). The questions were added to the annually conducted Swiss Household Panel in 2002 on our recommendation (Hämmig et al., 2009) and have been used as measures of work-life conflict since then. That means that depending on the measure used, every fifth to every third employee in Switzerland experiences fairly strong work-life conflict. These proportions are still higher among the approximately 44 % of the surveyed employees having higher job status, i.e., in superior occupational positions like management or supervisory positions. Of these, 28.7 % reported increased difficulties with disconnecting from work, 36.3 % even experienced their work to be interfering with personal or family life, and a remarkable 40.5 % were too exhausted after work to do desired things. Overall, it can be said that negative spillover and interference between work and personal life is quite prevalent among the employed population and particularly among supervisors and managers in Switzerland, as it is probably also in many other European countries.

Since many of the health problems and risk behaviors that have been found to be associated with such conflict or spillover are highly prevalent in the entire population as well (e.g., stress, depression, sleep disorders, fatigue, musculoskeletal disorders, physical inactivity), its basic relevance for public health is beyond question.

10.6 Psychosocial Work Factors as Important Social Determinants of Stress and Health

Since social determinants are mostly responsible for health inequalities and premature death according to the World Health Organization, and since working conditions and particularly psychosocial work demands are increasingly recognized as important social determinants of health or rather strong risk factors for disease, adverse and stressful working conditions are of great importance from a public health perspective. This is basically true for all stressful working conditions and applies likewise to those working conditions that are difficult to bring in line with family responsibilities and other commitments in personal life and that are, hence, important sources of (work) stress.

In addition to the traditional risk factors – namely, physical aspects of work such as heavy loads, poor posture, or highly repetitive movements, psychosocial work factors such as work stress in general and low job control, fast work pace, job insecurity, lack of social support at work, monotonous tasks, high workload, and – as has been shown recently – work-life conflict in particular play an increasingly important role in causing and predicting work-related musculoskeletal disorders (Hämmig et al., 2011). Whereas musculoskeletal disorders related to traditional risk factors and strenuous working conditions are declining, stress-related musculoskeletal disorders associated with psychosocial work factors are on the rise (Hämmig et al.). All in all, musculoskeletal disorders are the most prevalent work-related health problem and the main occupational disease in Europe.

Moreover, among the many psychosocial factors at work that were proved to be detrimental to health, a lack of job control or autonomy at work in terms of low decision latitude and/or low time flexibility has been found to be one of the most important work stressors and risk factors for health and particularly for coronary heart disease and cardiovascular mortality at all. Different studies and particularly the famous and much-cited Whitehall studies (two prospective and large-scale cohort studies among British civil servants) provided evidence on this (see, inter alia, Karasek & Theorell, 1990; Marmot, Bosma, Hemingway, Brunner, & Stansfeld, 1997). Cardiovascular diseases are the major disease and the number one cause of death worldwide and particularly in high-income countries.

Researchers working with Michael Marmot, the principal investigator of the Whitehall studies mentioned above, concluded that psychosocial work characteristics and particularly work stress from high job demands combined with low job control, high effort-reward imbalance, lack of social support, job insecurity, and conflicting work and family demands not only increase the risk of (heart) disease

and ill health but also make an important contribution to social inequalities and the social gradient in health and disease (Stafford et al., 2004).

To conclude, psychosocial work factors and work-related stressors such as low job control or strong work-life conflict are crucial with regard to highly prevalent stress-related diseases that are relevant for public health, such as cardiovascular diseases and musculoskeletal disorders. This applies also to mental health disorders, another major public health issue and intervention target, and, by the way, also to subclinical or preclinical symptoms and health problems below medical treatment and beyond diagnosed and clinically significant diseases that are not any less relevant for public health. As mentioned above, effects or associations have been found between work-family/life conflict (and enrichment or facilitation) and depression, anxiety, burnout (or emotional exhaustion), fatigue, sleep disorders, and more (Allen et al., 2000; Frone, 2000; Greenhaus & Allen, 2011; Grzywacz & Bass, 2003; Hämmig et al., 2009; Innstrand et al., 2008; Jansen et al., 2003).

From a public health point of view, work stress and negative spillover from work to family or the whole non-work domain and vice versa are not only of great importance due to their high prevalence and relevance for major health problems and public health challenges such as cardiovascular diseases or musculoskeletal and mental health disorders but also because of their influence on the individual's health-related risk behaviors such as alcohol abuse, smoking, unhealthy diets, or sedentary lifestyle (Jones, Kinman, & Payne, 2006). The role of work stressors and the role of health behaviors in causing disease are both well examined and recognized. But for a time, researchers did not at first take health behaviors into account as outcomes of work stress, particularly not in the work-family/life context. Since then, however, a growing number of studies have examined effects of work stress and particularly work stressors like work-family/life conflict on health-related behaviors and have found predominantly negative effects (Greenhaus & Allen, 2011; Jones, Kinman, & Payne, 2006).

The fact and finding that psychosocial work factors in general and work-life conflict in particular play an important role in stress-related health problems is also supported by previously not published findings from our own collected data in a sample of predominantly blue-collar workers (Hämmig, Brauchli, & Knecht, 2010). We collected the data in the context of an employee survey among the workforces of four large and medium-sized industrial companies that was conducted in 2010 in different regions of Switzerland. The participating companies were in the building, chemical, machine, and knife and watch industries. A large proportion of the pooled sample of employees surveyed ($N = 2{,}014$) were unskilled or semiskilled industrial, production, or construction workers having no or only compulsory education or basic vocational education at most (72 %).

Table 10.1 shows that psychosocial work factors and work-related stressors – such as high time pressure, frequent interruptions, a growing workload, monotony at work, job insecurity, and particularly strong work-life conflict and a lack of time flexibility at work or rather poor compatibility of work hours with family responsibilities or other personal life activities – significantly, separately, and independently of sex, age, and education increase up to tenfold the risk of poor health status,

Table 10.1 Different adverse working conditions as risk factors for various health problems among blue-collar workers in Switzerland ($N = 2{,}014$)

		Poor self-rated health	Strong backache or low back pain	Strong neck or shoulder pain	Serious sleep disorders	Strong stress feelings	Strong fatigue	Increased burnout risk (13–24)	Always or often de-pressed	Sickness absence from work (>10 day/year)	Low life satisfaction (0–4)
		13.8 %	11.0 %	11.7 %	10.7 %	15.1 %	6.8 %	16.4 %	5.8 %	8.2 %	4.8 %
		aOR	aOR	aOR	aOR	aOR	aOR	aOR	aOR	aOR	aOR
Physical working conditions											
• Carrying heavy loads[a]	13.6 %	1.78***	2.13***	1.71**	1.50*	n.s.	1.76*	1.93***	2.09**	n.s.	2.14**
• Repetitive work[a]	22.2 %	1.47*	1.74***	2.53***	1.93***	1.74*	2.14***	2.12***	1.89**	1.50*	2.00**
• Painful or tiring posture[a]	17.6 %	2.21***	**3.80*** **	**4.68*** **	2.23***	1.95***	2.51***	3.09***	3.04***	1.90***	2.08**
• High work pace[a]	45.3 %	n.s.	2.02***	1.73***	1.84***	1.99***	1.82**	2.51***	2.28***	n.s.	n.s.
Psychosocial working conditions											
• High time pressure[b]	26.0 %	2.45***	2.22***	2.87***	3.23***	4.53***	3.19***	5.57***	3.69***	n.s.	2.87***
• Frequent interruptions[b]	17.2 %	1.51*	1.62**	2.15***	2.44***	3.16***	3.10***	3.48***	2.50***	n.s.	2.57***
• Steadily growing workload[b]	19.2 %	2.02***	2.03***	2.49***	4.24***	4.93***	3.63***	5.66***	4.55***	1.50*	2.03**
• A lot of responsibility[b]	33.4 %	1.38*	n.s.	1.56**	2.04***	1.79***	1.71**	2.26***	1.94**	n.s.	n.s.

• Monotonous work[a]	11.4 %	1.59*	1.74**	2.59***	2.13***	2.02***	3.15***	4.23***	2.15**	1.98**	3.25***
• Strong work-life conflict (19+)	16.4 %	**2.96*** **	2.80***	2.82***	**7.01*** **	**6.32*** **	**8.77*** **	**9.80*** **	**7.83*** **	**2.17*** **	**6.33*** **
• Poor compatibility of work hours with private life	14.8 %	2.04***	n.s.	1.90***	4.30***	3.36***	3.48***	3.76***	3.89***	1.74*	2.79***
• No or low autonomy at work	21.7 %	n.s.	1.45*	1.76***	2.09***	1.48*	1.97**	2.33***	1.82*	n.s.	2.83***
• Job insecurity[b]	8.6 %	1.82**	2.37***	2.22***	2.72***	3.44***	4.11***	3.42***	4.64***	n.s.	2.69***
• Long hours (>5 h/ week)	10.2 %	n.s.	n.s.	n.s.	1.62*	2.12***	2.24**	2.20***	2.04*	n.s.	3.12***
• Regular work time changes at very short notice	14.8 %	n.s.	1.52*	1.49*	1.49*	1.90***	2.04**	2.02***	2.46***	n.s.	2.40***

Note: n.s. not significant ($p > .05$), *aOR* Odds Ratio adjusted for sex, age, and education, *numbers in* bold strongest of all considered work-related risk factors (highest OR)

***$p < .001$; **$p < .01$; *$p \leq .05$

[a]Applies largely/fully

[b]Applies and stresses me/stresses me very much

musculoskeletal disorders, sleeping problems, stress feelings, fatigue, burnout, negative affectivity and depression, sickness absence from work, and dissatisfaction with life. The psychosocial work demands, although somewhat less prevalent in this sample of mostly low-income industrial and construction workers who are performing manual labor and physically demanding jobs, seem to be stronger risk factors than the physical and strenuous working conditions. And work-life conflict (in time and strain-based forms and in both directions) almost consistently turned out to be the strongest and most important work-related risk factor of all, except for musculoskeletal disorders .

10.7 The Importance of Organizational Support and Work-Family Culture

Successfully combining job and family, or integrating work and personal life with a minimum of role conflict and negative spillover from one domain to the other and/or with a maximum of satisfaction and involvement across multiple roles, is not only of great importance to employees and their individual health and personal well-being and, therefore, to (working) society as a whole and public health. Good functioning of employees at work and at home is also very important for the organizations that employ them and for organizational 'well-being'. It is largely believed, although little examined to date, that organizational initiatives, policies, and practices to reduce barriers to parenting and employment and to facilitate work-life integration, i.e., family-supportive organizational programs and reconciliation policies such as child care opportunities, parental leave programs, and alternative work schedules, benefit both employees and employers (Burke, 2006; Hammer et al., 2006; Lewis & Cooper, 2005). Mainly anecdotal evidence from case studies has shown that promoting work-life integration, or implementing flexible working opportunities and family-friendly workplace supports in organizations, is accompanied in many cases by improvements in productivity and performance, work climate, organizational commitment, personnel recruitment, absenteeism (due to illness), and labor turnover for the benefit of the employer (Burke, 2006; Hammer et al., 2006; Lewis & Cooper, 2005).

Many employers and particularly large companies and multinational corporations have now recognized this. Due to a shortage of qualified labor, in order to ensure employees' loyalty and to keep know-how within the company and in response to the rising number of women entering the workforce, the growing number of single parents and fathers increasingly involved in parenting, and the increased competition to attract employees and particularly the best talents ('war for talents'), more and more companies are providing a variety of practices, policies, services, and programs with the aim to facilitate the integration of work demands, family responsibilities, and leisure activities. These offerings include part-time work, flexible or alternative work hours (e.g., flextime, compressed working week), child care services and benefits (e.g., family allowances or subsidies, on-site day care facilities),

parental leave programs (e.g., job-protected and/or full salary maternity leave, paternity leave entitlement), teleworking arrangements, job sharing opportunities, shift swapping and self-rostering possibilities, sabbatical leave and/or unpaid leave policies, career break and return-to-work options, gradual or partial and early retirement programs and prospects, and many more. Many of these offerings are predominantly family-supportive and focus primarily on single parents and dual-earner families with children, but others may also benefit childless couples and singles who simply want to balance work and leisure.

However, just offering a range of workplace supports and work-family benefits to the employees is not enough (Thompson, Beauvais, & Lyness, 1999). Mere availability does not yet ensure utilization or even effectiveness of the supports and benefits (Burke, 2006; Hammer et al., 2006). Studies dealing with this utilization showed that large proportions of employees do not use or take advantage of work-family/life benefits and programs due to a perceived lack of support and acceptance among supervisors and fear of negative career consequences or because managers do not set a good example (Burke, 2006; Campbell Clark, 2001; Hämmig & Bauer, 2010; Thompson et al., 1999). Supports and benefits being offered by organizations must meet employees' needs and be embedded in a supportive organizational environment, i.e., be accompanied by a family-friendly organizational climate and culture; otherwise, they will be underutilized (Burke, 2006). There are only few studies and inconsistent findings available on utilization and evaluation of work-life practices and programs (Hammer et al., 2006). But there is no doubt that corporate policies, services, and programs that are provided but not supported sufficiently and believably, or at least not perceived to be supported by the company's informal culture, will not be used or work effectively. And it is widely agreed that organizational work-family culture and (perceived) organizational family support play a key role in preventing stress and promoting health at work and in combining and balancing work and family roles (Burke, 2006; Gordon, Whelan-Berry, & Hamilton, 2007; Greenhaus, Ziegert, & Allen, 2011; Judge & Colquitt, 2004; Thompson & Prottas, 2005).

10.8 Organizational Resources and Work-Life Supports with Health Benefits

What exactly makes an organizational climate supportive and a corporate culture family-friendly? What aspects of the work and the workplace help employees to achieve work-life integration, enhance positive spillover, and prevent negative spillover, i.e., work-family/life conflict, and, hence, stress and bad health outcomes? What are the characteristics and common grounds of organizational supports that will have benefits for the employees with regard to work-life integration and well-being?

There are basically two important work factors or work-related resources that have been proved to be beneficial to the work-life integration and health of individuals and, ultimately, to the well-being of whole organizations and (working) populations.

First, control over the amount of work to be done, over how the work is to be performed, and over when the work gets done is crucial. This is particularly true under conditions of high work demands and with regard to work stress and health as is generally known (Karasek & Theorell, 1990), but it applies also with regard to the reconcilability of work and family or personal life (Hill, Hawkins, Ferris, & Weitzman, 2001, Mauno, Kinnunen, & Ruokolainen, 2006). Job control or autonomy in terms of task and decision-making authority and flexibility in work scheduling offers greater control over work requirements, reduces the likelihood of work-family conflict, buffers and protects against adverse effects of work-family conflict, and even produces positive spillover effects between job and home or personal life, respectively (Burke, 2006; Grzywacz & Marks, 2000; Hill et al., 2001; Mauno et al., 2006; Thompson & Prottas, 2005).

Second, social support in general and at work in particular (i.e., from coworkers and supervisors) is another key factor that has been found to reduce work stress and work-family/life conflict. Particularly, support by supervisors and top management is critical in preventing work stress and work-life conflict and in implementing family-supportive policies and practices and establishing a supportive corporate culture and, hence, in helping employees balance their work and personal life (Burke, 2006; Greenhaus et al., 2011; Thompson, Jahn, Kopelman, & Prottas, 2004). When managers provide a good example or actively encourage the use of work-family/life benefits offered by the company, employees are more likely to take advantage of the benefits (Burke, 2006).

These two work and organization-related resources, autonomy at work and supervisory support, are key components and fundamental conditions of a supportive and family-friendly organizational climate and culture. And they are key requirements for helping employees to better integrate their work and personal life and, therefore, to protect them at least partly from stress and resultant health consequences. More than a decade ago, Grzywacz and Marks (2000) found for men and women that work characteristics and resources like decision latitude and support at work were associated with less negative spillover and more positive spillover from work to family and, to a lesser degree, from family to work.

10.9 Some Additional Considerations and Implications for Worksite Health Promotion

There are other preconditions for the utilization and effectiveness of organizational work-life offers, benefits, and supports besides availability and existence of a supportive corporate culture. Work-family/life policies, practices, programs, and services should fit and meet the needs of employees and – as a whole – should be addressed basically to everybody in the organization. Available organizational supports targeting only a few individual groups of employees or without focusing on the specific needs of employees do not work and do not help employees integrate their work and family (or, more inclusively, personal life) responsibilities. Up to now, by focusing mainly on employees with small children there has been little consideration of the wider needs

of all employees for an integrated, satisfying, and balanced life regardless of their family situation (Jones, Kinman, & Payne, 2006). Perceptions of organizational supports being designed and offered especially or only for certain employees (e.g., women, mothers, single parents, aging workers) and not for the entire workforce may discourage other employees from using such offers. This has to be taken into account when planning organizational initiatives for the improvement of work-life integration and interventions for worksite health promotion.

Work-life supports are not yet, but clearly should be, an integral part of worksite health promotion. In other words, worksite health promotion interventions should include work-life initiatives and address this work-life issue that has been proved to be highly relevant for individual and public health as well as for the success and well-being of organizations and that therefore is of great societal and organizational concern. They cannot be confined solely to the work and its organization. The interventions should target not only adverse working conditions per se but also consider the living arrangements and wider needs of employees, i.e., their social responsibilities and leisure activities that may conflict with any working conditions. Organizational policies, practices, services, and programs that facilitate work-life integration not only need to be offered and communicated by the organization but also should be accompanied by a supportive climate or corporate culture that encourages their utilization. As employees that are using the offers often are suspected of being less committed to their organizations than others, they are afraid that negative job-related consequences could follow. It is therefore important that organizational work-life interventions and initiatives are better communicated and addressed, offered explicitly to all employees, and actively supported by supervisors and management. They should come with full acceptance or even active encouragement by supervisors and management. And, finally, they should not be seen as oriented solely towards the needs and requirements of the employer regardless of the employees' needs, or as restricted to employees with child care responsibility, or as reserved for other specific and presumably little career-minded employees.

In summary, organizations in the future should put more effort into the promotion of corporate cultures that are more supportive, sensitive, and aware of employees' needs rather than just offering and implementing a great number of work-life policies, programs, services, and benefits that may not meet employees' needs or may be insufficiently or not actively supported by the management and are therefore underutilized.

10.10 Summary

In recent years and against the background of steadily increasing participation of women in the labor market and profound changes in workforce demographics, work-family spillover, or, more generally, interaction and reconciliation of paid work and personal life, has become an issue of great importance for employees and employers, politics and the public, and researchers. Although countless studies were conducted on antecedents and consequences of work-family spillover in the

past three decades, the extensive research literature comes predominantly from North American countries. In German-speaking countries like Switzerland, research on the topic has just begun but follows a long tradition and builds upon the previous research on work and family as separate life domains of industrial male workers and subsequently as cumulated roles and double burden of working women and mothers. After having focused for a long time mainly on negative spillover and conflict between different roles and life domains and on work- and health-related outcomes, the research has recently switched over to a more inclusive integrated perspective by examining also work-family enrichment and positive spillover effects on work and health. Since the research on the topic originates mostly from occupational health psychology, the issue of work-family, or more inclusively work-life, spillover and its health effects has not been taken into account by other disciplines or health sciences such as occupational medicine or public health. However, negative (and positive) spillover between work and family or the non-work domain is quite prevalent, at least in Switzerland, and is strongly associated with various and widespread (mental) health problems and health-related risk behaviors. In addition to health problems and mental health disorders that often do not need medical treatment and/or that are not diagnosed as diseases, psychosocial factors at work such as low job control or work-life conflict have also been found to cause or to contribute to cardiovascular diseases and musculoskeletal disorders, which are two major diseases in European and other high-income countries. This is why work-life spillover is of great relevance to public health. But it is also very important for organizational health, i.e., for employers and the well-being of business companies; employers are thus well advised to offer various organizational supports and particularly work-family benefits such as part-time work, flexible work hours, or parental leave programs to facilitate work-life integration and to prevent negative spillover and its health consequences. But these offers are not really beneficial and will not be used unless they are accompanied by a supportive climate and a family-friendly organizational culture. Control over work requirements and support from supervisors are probably the most important work-related resources in providing the needed corporate culture and helping to balance or integrate work and personal life. Organizational policies, practices, programs, services, and benefits that aim to facilitate work-life integration should preferably improve or increase the degree of autonomy at work and promote supervisory support. In addition, they should meet employees' needs and be offered to the entire workforce and not just to working mothers with small children. And finally, these work-life offers and supports should – in contrast to the past – be seen as an integral part of worksite health promotion interventions.

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Part III
Beyond Organizational Health: Social and Political Issues

Chapter 11
Mental Health as a Complete State: How the Salutogenic Perspective Completes the Picture

Corey L.M. Keyes

Abstract There have been at least three conceptions of health throughout human history. The pathogenic approach views health as the absence of disability, disease, and premature death. The salutogenic approach views health as the presence of positive states of human capacities and functioning in cognition, affect, and behavior. The third approach is the complete state model, which derives from the ancient word for health as being hale, meaning whole. This approach is exemplified in the World Health Organization's definition of health as a complete state, consisting of the presence of positive states of human capacities and functioning as well as the absence disease or infirmity. This chapter reviews evidence supporting the complete state model when applied to mental health and illness. Studies are reviewed making the case for promoting and protecting positive mental health to prevent mental illness and to improve overall psychosocial functioning of individuals and population health.

Keywords Mental health • Mental illness • Flourishing • Subjective well-being • Happiness

11.1 Introduction

Mental illness is serious but was not serious enough to be considered a major public health issue until the last decade of the twentieth century, when the World Health Organization published the results of the first Global Burden of Disease study

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(Murray & Lopez, 1996). As is now well known, this study estimated the total contribution of 107 acute and chronic medical conditions and illnesses by including disability in the equation to calculate disability-adjusted life years (DALYs). The DALY reflects the total number of years in a population that were either lived with disability or abbreviated prematurely due to death that are attributable to specific physical or mental conditions. Depression was the fourth leading cause of disease burden, accounting for 3.7 % of DALYs in 1990, 4.4 % in 2000, and projected to be 15 % of DALYs by 2020 (Ustun, 1999; Ustun, Ayuso-Mateos, Chatterji, Mathers, & Murray, 2004).

The debate is no longer about whether mental illness is a public health issue as serious as cancer and heart disease – it is, according to the burden of disease research. Rather, the real debate is what workplaces and governments should do to reduce the number of cases of mental illness and those suffering from it. The de facto approach to mental illness and its burden has been treatment (Chisholm, Sanderson, Ayuso-Mateos, & Saxena, 2004) and risk-reduction prevention. But evidence shows that the de facto approach has not reduced the prevalence or burden of mental disorder over the past several decades (Insel & Scolnick, 2006), nor has it prevented early age-of-onsets for mood, anxiety, and substance abuse disorders (Kessler et al., 2005). As such, mental illness – in particular, unipolar depression – is projected to be the leading cause of burden to the world (i.e., in developing and developed nations) by the year 2030 (World Health Organization [WHO], 2008).

Mental health promotion seeks to elevate levels of positive mental health and protect against its loss (Davis, 2002; Keyes, 2007; Secker, 1998). Whereas treatment targets persons with mental illness, and risk reduction prevention targets those vulnerable to mental illness, mental health promotion targets those with good mental health and those with less than optimal mental health – i.e., all members of a population. Mental health promotion is therefore amenable to a public health approach and is a complement rather than an alternative to treatment (Keyes, 2007).

Although it has important consequences for individual functioning and for society, mental illness represents only half of the outcomes that should be of interest to business and governments. The other half that is equally important as mental illness is the measurement and study of positive mental health. Historically, good mental health has been viewed as the absence of mental disorder, despite conceptions that health in general is 'something positive' (Sigerist, 1941) or well-being (WHO, 1948), and not merely the absence of illness. Mental well-being – i.e., positive mental health – is now a focus of policy and science. The WHO (2004) recently highlighted the need to promote good mental health, defined as "… a state of well–being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (p. 12).

Mental health has been operationalized salutogenically under the rubric of subjective well-being, or individuals' evaluations of the quality of their lives. The nature of subjective well-being has been divided into two salutogenic streams of research – positive feelings (or emotions) and positive functioning. The first of these equates well-being with happiness or feeling good. The second approach to well-being focuses on human potential that, when cultivated, results in functioning well in life.

Emotional Well–Being

Positive Affect : Cheerful, interested in life, in good spirits, happy, calm and peaceful, full of life.
Avowed (i.e., judgments of) Quality of Life: How one feels about their life (overall or in domains)

Psychological Well–Being

Self Acceptance: Likes most parts of self, personality.
Personal Growth: Is challenged to be or become a better person.
Purpose in Life: Has a sense that one's life has direction and meaning.
Environmental Mastery: Feels capable of managing responsibilities of life.
Autonomy: Feels confident to think and express own ideas, opinions, and values.
Positive Relations with Others: Has, or can form, warm and trusting personal relationships.

Social Well–Being

Social Acceptance: Holds a positive attitudetowardother people.
Social Growth: Feels that "we" (groups, institutions, society) are challenged be a better kind of people.
Social Contribution: Sees own daily activities a useful to and valued by society and others.
Social Coherence: Can make sense of what is happening around or to them (in their community, workplace, society).
Social Integration: A sense of belonging to, and derivescomfort and support from, a community.

Fig. 11.1 Tripartite structure and specific dimensions reflecting positive mental health

These two streams of subjective well-being research grew from two distinct philosophical viewpoints on happiness – one reflecting the hedonic tradition that championed positive emotions, whereas the eudaimonic tradition championed striving toward excellence in functioning as an individual and a citizen. As such, mental health can be operationalized and measured in terms of the presence and absence of positive feelings toward one's life and the presence and absence of positive functioning in various facets of functioning in life.

As Fig. 11.1 shows, the hedonic tradition is reflected in research on emotional well-being, where scholars use measures of avowed satisfaction with life and positive affect (Bradburn, 1969; Diener, 1984; Gurin, Veroff, & Feld, 1960). The tradition of eudaimonia is reflected in research on psychological (Ryff, 1989) and social (Keyes, 1998) well-being. Here, scholars use multidimensional scales that ask individuals to evaluate how well they see themselves functioning in life as they strive to achieve secular standards of purpose, contribution, integration, autonomy, intimacy, acceptance, and mastery in life. When subjective well-being is measured comprehensively, studies support the tripartite model consisting of emotional, psychological, and social well-being in U.S. adults (Gallagher, Lopez, & Preacher, 2009), college students (Robitschek & Keyes, 2009), and adolescents (Keyes, 2005a).

11.2 The Two Continua Model of Mental Health

Mental health promotion and protection (MHPP) is premised on the dual continuum model – that mental health and mental illness belong to two separate but correlated dimensions in the population (Downie, Fyfe, & Tannahill, 1990; Health and Welfare Canada, 1988). Recent advances in the scientific measurement of positive mental

Fig. 11.2 The dual continua model of mental health and mental illness

health (Keyes, 2002) now permit scientific investigation of the long-standing hypothesis that mental health, like health in general, is a complete state – that is, that mental health is more than the absence of mental illness.

Findings from a series of papers based on the Midlife in the United States (MIDUS) study (Keyes, 2005b) as well as other populations using narrower measures (i.e., only hedonic happiness, life satisfaction, or both) of well-being (Greenspoon & Saklofske, 2001; Headey, Kelley, & Wearing, 1993; Huppert & Whittington, 2003; Masse et al., 1998; Suldo & Shaffer, 2008; Veit & Ware, 1983) support the two continuum model: one continuum indicating the presence and absence of positive mental health, the other indicating the presence and absence of mental illness symptoms. For example, the latent factors of mental illness and mental health correlated ($r = -.53$) but only 28.1 % of their variance is shared in the MIDUS data (Keyes, 2005b). Recently, this model has also been replicated in a random sample of U.S. adolescents (ages 12–18) with data from the Panel Study of Income Dynamics's Child Development Supplement (Keyes, 2009), in Dutch adults (Westerhof & Keyes, 2008, 2010) and in Setswana-speaking South-African adults (Keyes et al., 2008).

Based on the dual continua model shown in Fig. 11.2, individuals can be categorized by their recent mental illness status and according to their level of mental health: languishing, moderate, or flourishing. One implication of the dual continua

model is that the absence of mental illness does not imply the presence of mental health. In the American adult population between age 25 and 74, just over 75 % were free of three common mental disorders during the past year (i.e., major depressive episode – MDE, panic attacks – PA, and generalized anxiety disorder – GAD). However, while just over three-quarters were free of mental illness during the past year, only about 20 % of these were flourishing. A second implication of the dual continua is that the presence of mental illness does not imply the absence of mental health. Of the 23 % of adults with any mental illness, 14.5 % had moderate and 1.5 % had flourishing mental health, while only 7 % were languishing and had a mental illness. Thus, about 70 % of adults with mental illness (i.e., MDE, GAD, or PA) had moderate or flourishing mental health (Keyes, 2002, 2005b, 2007). The absence of mental illness does not mean the presence of mental health, but the presence of mental illness does not imply the absence of some level of good mental health.

Another important implication of the dual continua model is that level of mental health should differentiate level of functioning among individuals free of, and those with, a mental illness. Put differently, anything less than flourishing mental health is associated with impairment for persons with a mental illness and persons free of a mental illness. Findings consistently show that adults and adolescents who are diagnosed as anything less than flourishing are doing worse in terms of physical health outcomes, healthcare utilization, missed days of work, and psychosocial functioning (Keyes, 2002, 2005b, 2006, 2007, 2009). Over all outcomes to date, individuals who are flourishing individuals function better (e.g., fewer missed days of work) than those with moderate mental health, who in turn function better than languishing individuals – and this is true for individuals with a recent mental illness and for individuals free of a recent mental illness.

11.3 The Dual Continua Is a Product of Our Genes and Environment

In recent papers using the 670 pairs of same-sex twins from the MIDUS (Midlife in the United States Study) sample of U.S. adult twins, we have found strong support for the heritability of positive mental health and strong support for the dual continua model at the genetic level (Kendler, Myers, Maes, & Keyes, 2011; Keyes, Myers, & Kendler, 2010).

First, the common pathway model was the best fitting model to the three phenotypic measures of positive mental health – emotional, psychological, and social well-being. In other words, the three measures of subjective well-being all share a single common source of genetic variance that may be referred to as the latent propensity for good mental health. The latent factor of positive mental health was quite heritable at 72 % among the population. Estimates of genetic effects of latent factors in such models are not, however, directly comparable with estimates obtained from single scales, because latent factor estimates are always higher because errors of

measurement are mostly contained in the trait-specific environmental variance. We also found no evidence that the magnitude of genetic and unique environmental effects on any kind of well being differed for males and females (Keyes, Myers, & Kendler, 2010).

In turn, we investigated whether and how much of the highly heritable construct of positive mental health was shared in common with the genetic variance of the mental disorders measured in the MIDUS. The MIDUS twins received the same measures of subjective well-being and past year mental illness (i.e., MDE, GAD, PA) as the nationally representative sample of MIDUS adults. A common pathway model was the best fitting model to the three MIDUS measures of mental illness, as these measures of mental illness represent internalizing mental disorders. The latent factor for mental illness was also highly heritable with 61 % attributable to additive genetic effects among the population. We found that exactly 50 % of the genetic influences of the common factor of mental health were shared with the common factor of mental illness, which means that half of the genetic influences on mental health and on mental illness are independent of each other. Moreover, less than 10 % of the environmental influences on the common factor of mental health were shared with the common factor of mental illness, which means that the majority of the environmental causes of mental illness and of mental health are independent of each other. In short, the dual continua observed at the phenotypic level in the general population (Keyes, 2005a, 2005b) reflect a dual continua at the genetic as well as the environmental levels.

Because there is some genetic overlap of mental illness and health, our findings suggest it may be somewhat more difficult to reach high levels of well-being if one inherits strong genetic risk factors for depression or an anxiety disorder. However, a strong dose of genetic liability to mental illness does not preordain individuals to low levels of well-being, and inheriting a low level of genetic risk for mental illness by no means guarantees that an individual will flourish in life. Rather than being an artifact, the dual continua arises, because half of the genetic propensity for, and nearly all of the environmental causes of, positive mental health are independent of the genetic liability for, and environmental causes of, common internalizing mental disorders. At the phenotypic level, the absence of mental illness does not mean the presence of mental health (Keyes, 2005b), and this is because the absence of genetic risk for internalizing mental illness does not mean the presence of high genetic potential for flourishing mental health (Kendler et al., 2011).

11.4 The Alternative to Treatment: Mental Health Promotion and Protection (MHPP)

Progress has been slow in bringing MHPP into the mainstream of policy debates about how to address the problem of mental illness. Admittedly, there has been a deficit of scientific evidence supporting the “promotion” and the “protection” axioms of MHPP. Central to the argument behind promotion is the hypothesis that gains in

level of mental health should decrease the risk of mental illness over time. Central to the argument behind protection is the hypothesis that losses of mental health increase the risk of mental illness over time, and therefore efforts should be made to prevent and to respond to the loss of good mental health. Findings recently published (Keyes, Dhingra, & Simoes, 2010) using the 10-year follow-up of the MIDUS national sample strongly supported the protection and promotion hypotheses.

In 1995 and in the 2005 follow-up of the MIDUS sample, adults completed the long form of the mental health continuum (MHC-LF) (Keyes, 2002, 2005b) and the Composite International Diagnostic Interview Short Form (CIDI-SF) (Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998). Studies have shown that the CIDI-SF has excellent diagnostic sensitivity and diagnostic specificity as compared with diagnoses based on the full CIDI in the National Comorbidity Study (Kessler, DuPont, Berglund, & Wittchen, 1999). During the telephone interview, the CIDI-SF was used to assess whether respondents exhibited symptoms indicative of MDE, GAD, or PA during the past 12 months.

11.5 The Prevalence and Stability of Levels of Mental Health

The prevalence of mental illness is about the same in 1995 (18.5 %) as in 2005 (17.5 %); approximately 8 out of every 10 adults were free of any mental illness in 1995 and in 2005. The prevalence of any mental illness and the absence of mental illness appear to be stable over time. However, of the 17.5 % with any mental illness in 2005, just over half (52 %) were ‘new cases’ of mental illness insofar as these adults did not have any of the three mental disorders in 1995. Does level of mental health change over time, and do the losses of good mental health – from flourishing to moderate, and from moderate to languishing – result in new cases of mental illness over time?

On the one hand, the prevalence of levels of mental health in 1995 and 2005 appear static, or about the same, over time. The prevalence of flourishing is only 3.2 % higher in 2005, up from 19.2 % in 1995. The prevalence of moderate mental health is 3.7 % lower in 2005, which is down from 64.1 % in 1995. The prevalence of languishing is merely 0.5 % higher in 2005, slightly up from 16.7 % in 1995. Compared with mental illness, level of mental health – particularly moderate mental health and flourishing – appear slightly more dynamic at the level of the population. That is, there is a slight decline in moderate and slight increase in flourishing mental health at the level of the population. Like mental illness, mental health appears to be relatively stable at the level of population prevalence estimates.

However, the apparent stability of prevalence levels of mental health belie a more dynamic story of change of near equal parts of improvement and decline in each category of mental health. Only 45 % of those languishing in 1995 are languishing in 2005; 51 % improved to moderate and 4 % improved to flourishing mental health in 2005. Only half of adults flourishing in 1995 are flourishing in 2005 – 46 % declined to moderate and 3 % declined to languishing mental health in 2005.

Two-thirds of those with moderate mental health in 1995 had moderate mental health in 2005. Of those with moderate mental health in 1995, about 19 % improved to flourishing and 14 % declined to languishing mental health in 2005.

Although the percentage of change emanating from moderate mental health appears small, recall that 64.1 % of the sample had moderate mental health in 1995. Thus, it is almost entirely the 14 % in declines from moderate mental health to languishing that counterbalance the 55 % who improved from languishing to moderate and flourishing mental health that creates the apparent stable population prevalence of languishing in 1995 (16.7 %) as in 2005 (17.2 %). Similarly, it is almost entirely the 19 % of improvement from moderate mental health to flourishing that counterbalances the 49.5 % of decline from flourishing to moderate and languishing mental health that creates the apparent stable but slight rise in population prevalence of flourishing from 19.2 % in 1995 to 22.4 % in 2005.

11.6 Testing the Promotion and Protection Hypotheses

Figure 11.3 presents the adjusted odds ratio of any mental illness in 2005 (i.e., whether respondents had either MDE, PA, or GAD) by change in positive mental health. The reference category includes all individuals who were flourishing in 1995 and 2005. The odds ratios at the top of each bar graph are adjusted for respondents' age, sex, race, education, marital status in 2005, employment status in 2005, and whether respondents had any of 25 physical illness conditions in 1995. The proportion of individuals in that category of mental health change is recorded beneath each axis label.

The findings strongly supported the protection hypothesis. Those who declined to moderate mental health were just over three and one-half times (odds ratio [OR] = 3.7) more likely to have a 2005 mental illness than those who stayed flourishing. Thus, the first loss of good mental health – from flourishing to moderate mental health – results in a rise in the risk of future mental illness. Adults whose mental health stayed at moderate were over four times (OR = 4.4) as likely to have a 2005 mental illness as those who stayed flourishing. Compared to those who stayed at moderate mental health, those who declined to languishing – almost all of whom had moderate mental health in 1995 – represented an 86 % increase in the odds ratio of a 2005 mental illness (i.e., 8.2–4.4 = 3.2 ÷ 4.4 = .864). Thus, protection against the loss of moderate mental health can mitigate the risk of future mental illness.

Findings also supported the promotion hypothesis. Individuals who stayed languishing were over 6 times (OR = 6.6) and those who improved to moderate mental health were over three times (OR = 3.4) as likely as those who stayed flourishing to have a 2005 mental illness. Compared to staying languishing, improving to moderate mental health cuts the risk of future mental illness by nearly half (i.e., 6.6–3.4 3.2 ÷ 6.6 = .484). Individuals who improved to flourishing – most of whom had moderate mental health in 1995 – had no high risk of future mental illness than those who stayed flourishing.

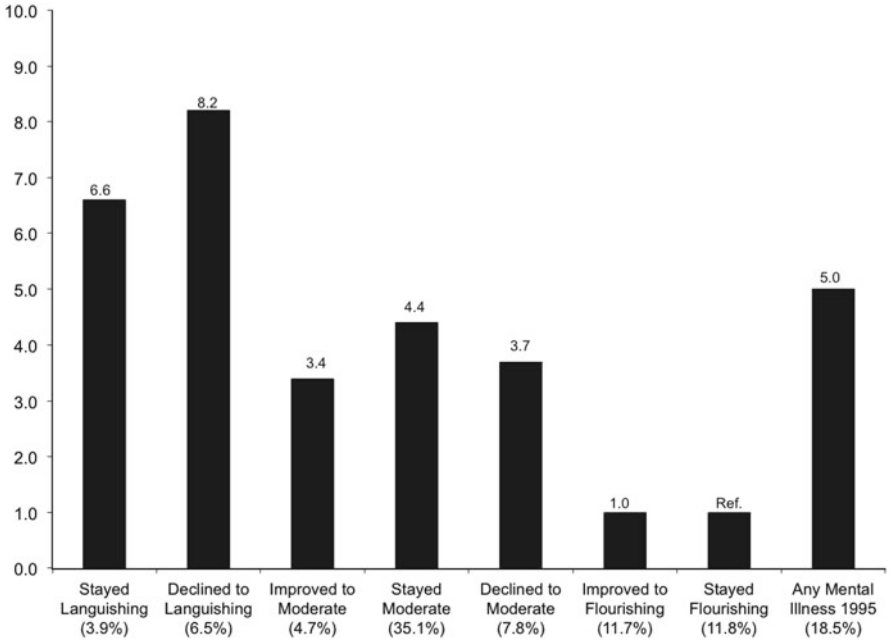

Fig. 11.3 Adjusted odds ratio of any 2005 mental illness (MDE, GAD or PA) for change and stability in level of mental health compared with adults who stayed flourishing (Keyes, Dhingra, et al., 2010)

Individuals who had any of the three mental illnesses in 1995 were five times more likely than those who stayed flourishing to have one of the same mental illnesses in 2005. Whereas past mental illness is a very good predictor of future mental illness, the findings in Keyes, Dhingra, et al. (2010) illustrate that the absence of flourishing mental health results in a risk of future mental illness that is nearly as high as and sometimes a higher than those who started with one of the mental illness. Almost half of the study sample that was free of any mental illness in 1995 but had moderate mental health in 2005 (i.e., 7.8 % declined to moderate + 35.1 % stayed moderate + 4.7 % improved to moderate = 47.6 %) had nearly as high of an odds of mental illness in 2005 as the 18.5 % that had a mental illness in 1995. Moreover, 1 in 10 was free of any mental illness in 1995 but had languishing mental health in 2005 (i.e., 3.9 % stayed languishing + 6.5 % declined to languishing = 10.4 %) had a higher odds of mental illness in 2005 than the 18.5 % that had a mental illness in 1995. Altogether, almost 6 in 10 American adults (i.e., 47.6 % with moderate + 10.4 % with languishing mental health = 58.0 %) otherwise free of MDE, GAD, or PA have about as high or even higher risk of a future mental illness than individuals who had one of those mental disorders to start with in 1995.

The above analyses suggest that the loss of positive mental health may generate new cases of mental illness. Analysis of the same model reported in Fig. 11.3 after

exclusion of adults with any 1995 mental illness did not change findings of identified relationship between changes in mental health status and mental illness. For example, compared to those who stayed flourishing, individuals who either stayed languishing (OR = 7.5, $p < .001$) or became languishing (OR = 7.0, $p < .001$) had the highest risk of a new case of any 2005 mental illness. In turn, individuals who either stayed at moderate (OR = 3.8, $p < .009$) or improved to moderate mental health (OR = 3.2) were over 3 times as likely as those who stayed flourishing to have a new case of any 2005 mental illness, although the latter was marginally significant at $p = .076$. Adults who declined from flourishing to moderate mental health were about 3 times (OR = 3.2, $p < .043$) as likely as those who stayed flourishing to have a new case of any 2005 mental illness.

11.7 Conclusion

The guiding ethos of medicine and public health are embodied in the myth of Asclepius, the birth of whose daughters gave rise to complementary conceptions of and approaches to health – Pathos requires Panacea and Salus requires Hygeia (Hart, 1965). The pathogenic approach is derived from the Greek word pathos, meaning suffering and an emotion-evoking sympathetic response through panaceas (Panacea being one of Ascelpius' daughters). The pathogenic approach views health as the absence of disease or illness. All research that focuses only on pathogenic outcomes is not, by my definition, salutogenic. This is where much unnecessary confusion arises, because many researchers, including Antonovsky (1979), focused solely on illness outcomes but considered their research salutogenic, because they aimed to understand how constructs such as sense of coherence and generalized resistance resources protected against illness in the face of adversity. In my opinion, the aforesaid research, including Antonovsky's, is better understood as the study of resilience, and the constructs the research would call salutogenic are better understood as protective factors. Moreover, Antonovsky spoke merely of a single continuum of disease and health, as he appeared to believe that the outcome was not the important element of salutogenesis. I disagree, because I believe the outcome is the defining feature of whether research is salutogenic or pathogenic. Salutogenic research seeks to elevate levels of health as more than the absence of illness; put differently, salutogenic research aims to promote positive mental or physical health.

The salutogenic approach comes from the Latin word salus, for health, which was considered a positive state. That is, health is monitored by the relative presence of positive states of human capacities and functioning (Strümpfer, 1995) that come from "hygienic" or health promotion and maintenance (Hygeia being another daughter of Asclepius). The strong support for the two continua model, and the research showing that it is encoded in the our DNA, suggests that the absence of mental illness does not mean the presence of mental health (i.e., flourishing) and that the conditions that protect against mental illness do not necessarily promote the presence of positive mental health. Without measuring both outcomes, there is no

possibility of knowing whether the conditions and factors that protect against mental illness also promote positive mental health. It is for this reason that I advocate the use of the complete health approach and see the salutogenic perspective not as an end but as a means toward completing the picture, so that we may begin to study and understand health as a complete state.

That is, a third and complementary conception of health derives from the word hale, which means to be whole. This, of course, is embodied in the WHO's (1948) definition of health, which is supported scientifically by the dual continua model of mental health and illness. This complete approach to the mental healthcare of a nation simultaneously involves treatment (panaceas) and public mental health promotion and protection (MHPP) – an approach that permits nations through public health and organizations through human resources to deftly respond to illness, because more illness will have been avoided through the promotion and protection of good mental health.

Research supports the two fundamental axioms of MHPP for addressing the mental illness and mental health needs of populations and workforces. First, gains in mental health resulted in decreasing odds of mental illness over time, suggesting that promoting mental health could reduce the incidence and prevalence of mental illness. Second, losses of mental health resulted in increasing odds of mental illness over time, suggesting that protecting against loss of mental health could reduce the incidence and prevalence of mental illness. Third, mental health is dynamic over time, although the point prevalence estimates of any mental illness and level of mental health appear stable from 1995 to 2005. The reason for this apparent stability is that approximately half of the mental illness in 2005 represents new cases, whereas half of those flourishing in 2005 are new cases and over half of those languishing in 2005 are new cases.

Further, research suggests that governments and business should invest in MHPP to keep pace with – i.e., prevent – the rise of new cases of mental illness. Whereas having had a mental illness in the past is a good predictor of future mental illness, the absence of mental health is an equally good and in some cases a better predictor of future mental illness. Nearly 60 % of the U.S. adult population free of mental illness but with less than optimal mental health have as high, or higher, risk of a future mental illness as individuals who already have a mental illness. Failure to address the problem of the absence of positive mental health in populations means risking failure in attacking the problem of mental illness.

Government officials and business leaders can no longer blithely announce that they seek to promote the mental health of their population while investing mainly in treatment and the study of mental illness. The two continua model debunks this as a "wanting-doing gap" in policy and practice, where policies pronounce national efforts to seek health but engage in activities directed primarily or solely toward illness. If you want better mental health, you must focus on positive mental health – promoting flourishing and protecting against its loss. Public health and organizations cannot promote mental health by solely reducing mental illness, and no amount of wishful thinking will make this fact disappear. You can ignore the science supporting the two continua model, but this will serve only to sacrifice more

lives to the recurrent, chronic, and currently incurable condition of mental illness. The alternative and complementary approach to treatment is public mental health promotion and protection.

So, the question is no longer whether mental illness is a major public health issue – it is. The question is no longer whether we have any alternative to treatment for reducing mental illness – we do. Research has clarified where citizens and governments should want to be; the debate, then, is not where we want to be – it is flourishing and this is salutogenic. The most important next step for researchers and practitioners is to discover how to get more people to stay or become flourishing. This is the salutogenic challenge, because only by focusing on the outcomes of positive mental health can we learn how to promote and protect good mental health. Persons in public health, persons in governments, and business leaders who expect answers immediately as to how to best promote and protect are not being fair or realistic – it takes time and financial support. The National Institute of Mental Health (NIMH) in the United States was created by an Act of Congress in 1946, and it started its work in earnest in 1949. Today, billions of dollars annually (see http://www.nimh.nih.gov/about/budget/cj2010.shtmt) of taxpayer money are spent by well-intentioned leaders for the study and treatment of mental illness. If they want good mental health in the population, government and business must provide the same realistic timeframe and financial support to MHPP. Take a moment and imagine where we, throughout the world, might be, had we started the so-called war on mental illness years ago by attempting to promote and protect the best in people.

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Chapter 12
Recovery from Work During Off-Job Time

Sabine A.E. Geurts

Abstract Recovery from work is crucial to protect employee health and well-being. This chapter aims at illuminating the processes underlying recovery from work, focusing on recovery during off-job time. First, I present theoretical arguments and empirical evidence that recovery from work is a process of unwinding that is the opposite of psychophysiological activation during effort expenditure under demanding and stressful conditions. Next, I discuss cognitive, affective, and behavioral processes that influence recovery from work either negatively or positively. With regard to recovery-hampering processes, stressor-related thoughts, negative affective states, and prolonged exposure to work or similar demands are discussed. With regard to recovery-promoting processes, psychological detachment from work, positive affective states, and active leisure and behavioral control are considered. Based on this overview of recovery research, a number of directions for future research are suggested.

Keywords Effort • Stress • Perseverative cognition • Affect • Overtime • Psychological detachment • Leisure activities • Control

12.1 Introduction

Research in the field of occupational health psychology has established that stressful work is associated with adverse effects on employee health and well-being. Longitudinal research has demonstrated that being exposed to stressful psychosocial work characteristics (e.g., high job demands, low job control, high job insecurity) is

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associated with an increase in psychological and cardiovascular health problems across time (for reviews, see Belkic, Landsbergis, Schnall, & Baker, 2004; Bonde, 2008; De Lange, Taris, Kompier, Houtman, & Bongers, 2003).

Results from the fifth European Working Conditions Survey revealed that a quarter of European workers state that their health is at stake because of their work (European Foundation for the Improvement of Living and Working Conditions, 2010). This seems to manifest primarily in stress-related and musculoskeletal symptoms (Parent-Thirion, Fernández Macías, Hurley, & Vermeylen, 2007). Statistics indicate that 60 % of European workers work regularly at very high speed and with tight deadlines. In modern working life, characterized by a 24-h economy, swift developments in information communication technology (ICT), and a rapidly changing nature of work, we can expect job demands to further intensify, evening and weekend work to increase, and boundaries between work and private life to evaporate. Stressful work will be an inescapable outcome, and sufficient recovery will be one of the main future challenges. Hence, recovery from work as a preventive or protective mechanism in the work-stress-health relationship deserves special research attention.

In this chapter, I will demonstrate that recovery from work is a crucial mechanism in the work-stress-health relationship (Geurts & Sonnentag, 2006).

My aim is to pay special attention to the psychophysiological processes underlying the recovery process. First, I will discuss the role of stress physiology in the relation between work and health and provide a definition of recovery from work. Second, I will explain why insufficient recovery is a serious health risk by drawing on Effort-Recovery Theory (Meijman & Mulder, 1998) and Allostatic Load Theory (McEwen, 1998). Next, I will discuss cognitive, affective, and behavioral processes that may hamper and promote recovery from work, focusing on recovery during off-job time. With regard to recovery-hampering processes, I will consider stressor-related thoughts, negative affective states, and prolonged exposure to work or similar demands. With regard to recovery-promoting processes, I will discuss psychological detachment from work, positive affective states, active leisure, and behavioral control. I will finish up with concluding remarks and suggestions for future research.

12.2 The Concept of Recovery and the Role of Stress Physiology

In order to understand the concept of recovery from work, we need to understand the role of stress physiology in the relation between work and health. There are two main psychophysiological stress systems that work together closely in response to a potential threat (a stressor): the sympathetic-adrenal-medullary (SAM) system and the hypothalamic-pituitary-adrenal (HPA) system (Clow, 2001). The SAM system is responsible for direct cardiovascular activity. Through production of catecholamines (adrenaline and noradrenalin), accelerated heart rate and elevated blood pressure

levels instantly provide the brain and muscles with energy. In general, the SAM system enables body and mind to expend effort, not per se under stressful conditions. The HPA system is more strongly linked to stressful experiences. Through production of cortisol, which is called the 'stress hormone,' extra energy is mobilized to deal with the stressor.

As these stress reactions are in principle adaptive, short-lived, and reversible, one might ask how stressors and stress reactions can have adverse effects on health. For a long time, the 'stress reactivity hypothesis' aimed to answer this question (Linden, Earle, Gerin, & Christenfeld, 1997). Based on animal research, it was hypothesized that very intense physiological reactions during exposure to a stressful situation would adversely affect health. However, recent evidence suggests that prolongation of physiological stress responses after the stressor has ended is more predictive of ill health (Brosschot, Gerin, & Thayer, 2006; Verkuil, Brosschot, Gebhardt, & Thayer, 2010). In other words, health is primarily at stake when prolonged psychophysiological stress reactions hamper the recovery process.

This novel insight has shifted the emphasis of research on the work-stress-health relationship from 'stress reactivity' to 'stress recovery.' Geurts and Sonnentag (2006, p. 483) argued that "the essence of recovery is that psychophysiological systems that were activated during work will return to and stabilize at a baseline level, that is, a level that appears in a situation in which no special demands are made on the individual." Accordingly, recovery is considered to be a process of psychophysiological unwinding that is the opposite of the activation of psychophysiological systems during effort expenditure particularly under stressful conditions.

12.3 Insufficient Recovery from Work and Health Consequences

The crucial role of incomplete recovery from work can be understood from the perspective of Effort-Recovery Theory (Meijman & Mulder, 1998). The core assumption is that after a demanding or stressful workday, individuals require a period of recuperation to restore energy and to allow the negative after-effects of work to wear off. If load reactions (e.g., fatigue or accelerated heart rate), that have unavoidably built up while working spill over to the non-work domain and continue in the free evenings and on weekends, a negative accumulative process will be started that in the long run may result in poor health.

Indeed there is broad empirical evidence that demanding and stressful work is associated with slow psychophysiological unwinding and, thus, incomplete recovery. Results from a diary study with university staff members in the Netherlands showed that expending high effort during the workday was associated with negative after-effects such as fatigue, cognitive preoccupation with work, inactive behavior during free time in the evening, and low sleep quality (Van Hooff, Geurts, Kompier, & Taris, 2007). In a similar vein, white-collar workers in Sweden reported higher

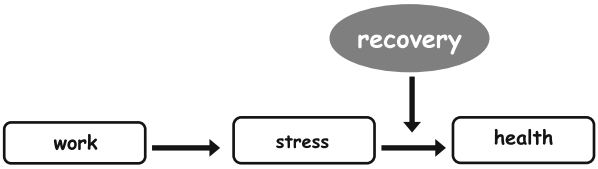

Fig. 12.1 Model of work, recovery, and health

levels of restlessness and sleepiness at bedtime and showed a decrement in their total sleep time during a stressful work week as compared to a work week that was not stressful (Dahlgren, Kecklund, & Åkerstedt, 2005). Slow unwinding may also manifest itself in neuroendocrine indicators (for reviews, see Sluiter, Frings-Dresen, Meijman, & Van der Beek, 2000; Sonnentag & Fritz, 2006). Results from a classic field experiment with Dutch driving examiners revealed that a very intensive workday resulted in higher adrenaline levels that persisted until bedtime (Meijman, Mulder, Van Dormolen, & Cremer, 1992).

McEwen's (1998) Allostatic Load Theory accentuates the negative long-term health consequences of incomplete day-to-day recovery. Here, the core assumption is that chronic activation of initially protective 'allostatic systems' (e.g., SAM system, HPA system, and immune system) will result in 'allostatic load'. This refers to either over activity or inactivity of allostatic systems, which in turn manifests in chronic sleep problems, burnout, and cardiovascular disease (Sluiter, Frings-Dresen, Van der Beek, & Meijman, 2001). Various longitudinal studies have substantiated these long-term adverse health effects of incomplete day-to-day recovery. Dutch police officers who experienced a chronic situation of negative work-home spillover showed an accumulation of subjective health complaints (e.g., fatigue) 1 year later (Van Hooff et al., 2005). Kivimäki et al. (2006) showed that initially healthy industrial employees who reported incomplete recovery during free weekends, suffered from serious cardiovascular health problems 20 years later. Similarly, chronically elevated blood pressure levels were observed among initially healthy adults who showed slow physiological recovery from a stressful task 3 years earlier (Stewart, Janicki, & Kamarck, 2006; see also Steptoe & Marmot, 2005).

Taken together, recovery appears to be an essential explanatory mechanism in the relation between work, stress, and impaired health (Geurts & Sonnentag, 2006) (see Fig. 12.1). Therefore, we need to pay attention to psychological processes that may hamper or facilitate recovery from work to prevent adverse health effects in the long run. For the purpose of this chapter, I will focus on recovery during off-job time (i.e., external recovery), that is, recovery during after-work time, on weekends, and during longer periods of not working (vacations). However, we should also recognize the importance of recovery opportunities during working time (i.e., internal recovery). A well-designed job providing, for instance, job control, job support, and job variety will enable workers to align their work behavior and strategies with their current need for recovery (e.g., by switching from complex to easier tasks, by conducting tasks on a more routine basis, or by asking co-workers for help). Thus, a well-designed job will prevent a high need for recovery at the end of the workday. But what if intense load effects develop during working time and spill over to employees' non-work domain? What processes may hamper and facilitate recovery after work?

12.4 What Processes May Hamper Recovery During Off-Job Time?

To answer this question, it is useful to distinguish among three interrelated psychological processes that influence (and are influenced by) recovery – namely, cognitive processes (what people think), affective processes (what people feel), and behavior (how people act). From this triangle of cognition, affect, and behavior, I will discuss stressor-related thoughts, negative affective states, and prolonged exposure to work or similar demands (see Fig. 12.2).

12.4.1 Stressor-Related Thoughts

Various theories posit that cognitive processes, like negative thoughts about stressors, may extend the duration of physiological stress responses. Ursin and Eriksen's (2004) Cognitive Activation Theory of Stress (CATS) argues that physiological stress reactions do not fade out if coping options for dealing effectively with the stressor are not perceived ('helplessness') or are expected to be unsuccessful ('hopelessness'). Both of these situations of 'negative outcome expectancy' are indicative of lack of control. Building on this idea of prolonged cognitive activation after stress exposure, Brosschot, Pieper, and Thayer's (2005) Prolonged Activation Model posits that physiological activity will extend after or occur before a real stress situation due to "repeated or chronic activation of the cognitive representation of one or more psychological stressors" (Brosschot et al., 2006, p. 114). This phenomenon, called 'perseverative cognition' can take two (related) forms: Worrying involves negative future-oriented thoughts about potential stressors (anticipation), and rumination refers to negative thoughts about stressful events in the present or past. Both manifestations of 'perseverative cognition' share the same mechanism of relatively uncontrollable and unpleasant repetitive thoughts.

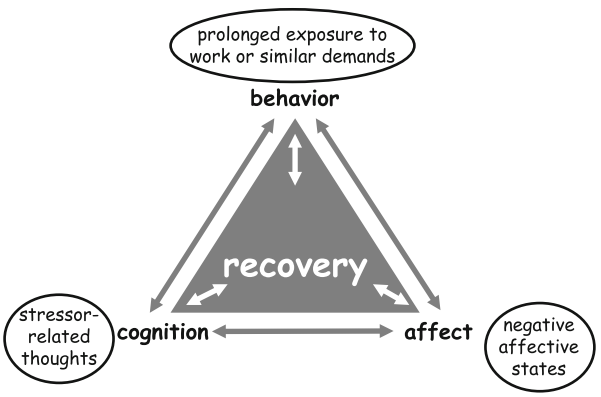

Fig. 12.2 Processes hampering recovery during off-job time

Results from various laboratory studies have indeed suggested that ruminative and anticipatory thoughts about stressors are accountable for prolonging physiological stress responses. For instance, individuals who ruminated more after exposure to a stressful mental arithmetic task showed slower blood pressure recovery (Glynn, Christenfeld, & Gerin, 2002; Radstaak, Geurts, Brosschot, Cillessen, & Kompier, 2011), whereas distraction from stressor-related thoughts accelerated cardiovascular recovery (Neumann, Waldstein, Sollers, Thayer, & Sorkin, 2004). Hall et al. (2004) demonstrated that stressor-related anticipatory thoughts at bedtime caused prolonged physiological activity even during sleep.

These laboratory findings are corroborated by results from various field studies. Fritz and Sonnentag (2006) showed in a diary study that thinking negatively about one's job ('negative work reflection') during vacation was associated with increased feelings of exhaustion after the vacation period. Results from other diary and cross-sectional studies showed that employees who were negatively preoccupied with work during off-job time experienced more recovery complaints (Cropley & Millward Purvis, 2003; Sonnentag & Bayer, 2005), more sleeping difficulties (Kompier, Taris, & Van Veldhoven, 2011) and prolonged cardiovascular activity (Pieper, Brosschot, Van der Leeden, & Thayer, 2010).

12.4.2 Negative Affective States

Research suggests that negative affective states are associated with prolonged psychophysiological activity and thus may hamper the recovery process (for reviews, see Chida & Hamer, 2008; Pieper & Brosschot, 2005). In two field studies, cardiovascular activity was prolonged between 5 and 45 min after negative emotional episodes, independently of various biobehavioral variables (Brosschot & Thayer; 2003; Kamarck et al., 1998). Recently, Radstaak et al. (2011) investigated the extent to which affective processes influenced cardiovascular recovery after stress exposure. Participants performed a stressful laboratory task that increased cardiovascular activity and elicited negative affect. After stress exposure, participants' affective state was manipulated by showing them a negative, a neutral, or a positive scene from a movie. Results showed that blood pressure recovery was slower for participants who watched a negative movie scene as compared to participants who watched a positive or a neutral movie scene. These findings indicate that recovering from stress is hampered by prolongation of negative affect after stress exposure.

12.4.3 Prolonged Exposure to Work or Similar Demands

Due to developments in ICT, flexibilization of work hours and workplaces, and fading boundaries between 'work' and 'non-work', prolonged exposure to work demands is common (Kompier, 2006). Working long hours and working overtime on a regular basis may seriously hamper the recovery process, not only because they

are directly at the cost of potential recovery time but also because an incessant demand is being made on the same (cognitive, affective, and/or physical) abilities and skills (called 'resources') that were already drawn on at work. The same is true when during off-job time workers are exposed to demands that are similar to their work demands. Picture a job that incessantly puts high demands on an individual's affective resources – for instance, the job of social worker. If people who work as social workers come home tired after an emotionally demanding workday, we can imagine that they will feel resistance if confronted with new emotional demands during their off-job time, due to already depleted affective resources. However, social workers may be well able to expend physical effort during off-job time, since physical resources may still be available. To recover sufficiently from work demands, it seems important that people engage in off-job activities that utilize resources other than those already drawn on during the workday.

This reasoning may not hold in every situation, however. If a worker is extremely exhausted after a demanding workday, any new demand that necessitates effort may run up against resistance, irrespective of the type of effort involved. This idea fits Muraven and Baumeister's (2000) Limited Resource Model of behavior regulation. This model assumes that people draw from one central and limited psychological resource to initiate, inhibit, and regulate behavior. When this central resource becomes worn out already during working hours, the initiation and regulation of any type of effort after working time will be too much. As Thorndike (1914) put it, the crucial principle of fatigue is "the intolerance of *any* effort." This reasoning may explain at least in part why workers show inactive behavior patterns after a highly demanding and stressful workday (Sonnentag & Jelden, 2009; Van Hooff et al., 2007).

There is ample empirical evidence that particularly excessive and frequent overtime work is associated with health problems, such as chronic fatigue, sustained increases in heart rate and blood pressure levels, and disturbances of the immune system (Van der Hulst, 2003). In terms of Allostatic Load Theory, these are obvious manifestations of allostatic load (McEwen, 1998). However, regarding moderate and incidental overtime work, harmful effects have not been consistently shown and seem to be moderated by job characteristics, worker characteristics, and specific circumstances. Moderate overtime work does not adversely affect health, if jobs are well-designed (e.g., provide sufficient job control, rewards, and rest breaks), workers experience their work as pleasant, and overtime work is not mandatory (Beckers et al., 2008; Geurts, Beckers, Taris, Kompier, & Smulders, 2009; Tucker & Rutherford, 2005; Van der Hulst & Geurts, 2001).

12.5 What Processes May Facilitate Recovery During Off-Job Time?

Now that we have discussed processes that may prolong psychophysiological activity after work, an important question is what processes may counteract these negative after-effects of work and thus facilitate recovery from work. To answer this

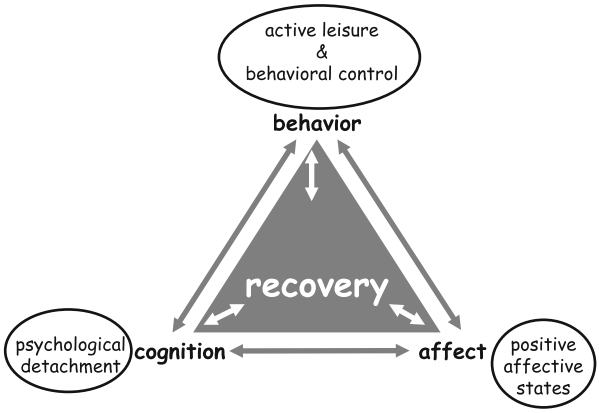

Fig. 12.3 Processes facilitating recovery during off-job time

question, I distinguish again among cognition, affect, and behavior and discuss psychological detachment from work, positive affect, active leisure, and behavioral control (see Fig. 12.3).

12.5.1 Psychological Detachment from Work

When people are free of work duties, they are supposedly released from exposure to work demands. This can be considered a passive form of recovery. However, not being exposed to work demands does not automatically mean that workers have distanced themselves from work mentally, a phenomenon called 'psychological detachment' (Etzion, Eden, & Lapidot, 1998). Detachment is more than just being away from work physically; it implies that workers are no longer cognitively occupied with work. Psychological detachment from work can counteract the phenomenon of perseverative cognition discussed earlier and thus reduce the physiological activity associated with negative work-related thoughts.

Several field diary studies have provided evidence that persons that psychologically detach from work during free evenings report better mood, less negative affect, and lower levels of fatigue at bedtime and the next morning (Sonnentag & Bayer, 2005; Sonnentag, Binnewies, & Mojza, 2008). The positive impact of psychological detachment on recovery was also supported during free weekends: Persons that experienced higher levels of psychological detachment during the weekend reported improved recovery status at the end of the weekend and at the beginning of the work week (Binnewies, Sonnentag, & Mojza, 2010; Fritz, Sonnentag, Spector, & McInroe, 2010).

12.5.2 Positive Affective States

Since stressful work conditions often impair mood, and since the prolongation of negative affect further hampers the recovery process (Radstaak et al., 2011), affect

restoration is considered an essential element of the recovery process (Sonnentag & Geurts, 2009). Positive affective states may facilitate the recovery process in at least two ways. First, the experience of positive emotions is associated with the production of certain brain hormones (i.e., dopamine and serotonin) that seem to down-regulate psychophysiological stress responses rather quickly (Esch & Stefano, 2004). Second, following Fredrickson's (2001) Broaden and Build theory, positive emotions may broaden people's thought-action repertoires, thereby encouraging novel and exploratory thoughts and actions. In contrast to negative affective states that evoke restricted and survival oriented behavior, positive affective states will help individuals to perceive coping possibilities to deal with stressors and to keep a sense of perspective. In this way, positive affect may act as buffer against future stressors.

As compared to negative affect, only few studies have examined the impact of positive affect on cardiovascular recovery from stress. Papousek et al. (2010) investigated both subjective and cardiovascular parameters of stress and recovery in students during and after exposure to academic stress in an ecologically valid setting; the study found that higher trait positive affect was associated with more complete cardiovascular and subjective recovery after stress exposure. A laboratory study conducted by Fredrickson, Mancuso, Branigan, and Tugade (2000) found that a positive affect manipulation after stress exposure facilitated cardiovascular recovery, this in contrast to a negative affect manipulation.

A recent diary study with university staff members showed that pleasure experienced during working time and during off-job time favorably affected recovery indicators (i.e., fatigue and vigor) at the end of the workday and at bedtime (Van Hooff, Geurts, Beckers, & Kompier, 2011). The researchers also found evidence for pleasure as a buffer against stress: Expending high effort at work was associated with low vigor at the end of the workday but only for staff members who experienced low pleasure at work. If persons' work pleasure was high, their level of vigor remained stable, irrespective of their expended effort during the workday. Various vacation studies also demonstrated that workers that derived more pleasure from their vacation activities showed higher levels of health and well-being during vacation (De Bloom, Geurts, Sonnentag, Taris, De Weerth, & Kompier, 2011; De Bloom, Geurts, & Kompier, 2012, 2013).

12.5.3 Active Leisure and Behavioral Control

In addition to cognitive and affective processes, recovery from work may also be influenced by the type of activities people engage in during off-job time. Various studies have investigated the recovery potential of specific leisure activities, such as physical, social, low-effort activities (Demerouti, Bakker, Geurts, & Taris, 2009). The most consistent and positive effects have been found for physical activities, like exercise and sports (Rook & Zijlstra, 2006). In a laboratory setting it was shown that exercising (walking) for 3 min after stress exposure speeded up blood pressure recovery in comparison to a non-exercising control group (Chafin, Christenfeld, & Gerin, 2008). Joosen, Sluiter, and Joling (2008) demonstrated positive effects of a

6-week exercise training period on both psychological and physiological recovery indicators in patients suffering from serious fatigue complaints. In a Cochrane systematic review, Mead et al. (2009) concluded that regular exercise had great therapeutic effects in people with mood disorders.

The impact of physical activities on recovery can be explained by psychological and neurophysiological mechanisms (Lox, Martin Ginis, & Petruzzello, 2010). First, intensive physical activities (like exercise and sports) help people to mentally switch off from work and distract them from stressor-related thoughts. Second, there is evidence that exercise and sports may elicit positive emotions quickly due to psychological factors (e.g., people feel good about themselves after having accomplished challenging tasks) and hormonal factors (the production of antidepressant hormones). Third, persons that are physically fit appear to recover more rapidly after stress exposure than persons that are less physically fit.

Findings about the recovery-promoting potential of other leisure activities are as yet inconclusive. For instance, De Bloom et al. (2011) found that engagement in passive activities was negatively associated with recovery indicators during a winter sports vacation but positively associated with the same recovery indicators during a summer vacation (De Bloom, Geurts, & Kompier, 2013). In the first setting, vacationers were forced to be passive due to negative (skiing) incidents. In the summer vacation, though, engagement in passive activities was associated with relaxation and psychological detachment and seemed to be a deliberate choice of the vacationer.

The recovering impact of a specific leisure activity may, at least partly, depend on the individual's behavioral control. Intentional engagement in activities that are valued and pleasant can be regarded an active form of recovery. According to the Self Determination Theory (Ryan & Deci, 2000), autonomy is a fundamental human need that, once fulfilled, is associated with personal growth and well-being. Control over whether, how, and when to engage in a particular leisure activity (i.e., behavioral control) will influence the pleasure that is derived from that activity and thus well-being in general. Research has shown that workers experienced more positive feelings during free weekends than during work periods on account of their higher level of control over how to spend their time (Fritz & Sonnentag, 2005; Ryan, Bernstein, & Brown, 2010).

12.6 Summarizing Conclusions and Future Research

I have tried to show that recovery from work is crucial to reduce negative aftereffects of work and to protect employee health and well-being in due course. I have argued that recovery from work is a process of psychophysiological unwinding that is the opposite of psychophysiological activation during effort expenditure under demanding and stressful conditions. My overview has shown that recovery during off-job time may be negatively and positively influenced by cognitive, affective, and behavioral processes. More specifically, recovery may be hampered by stressor-related thoughts, negative affective states, and prolonged exposure to work or similar

demands. However, recovery may be facilitated by psychological detachment from work, positive affective states, active leisure, and behavioral control.

Based on this overview of recovery research, I suggest a number of directions for future research. First, previous recovery research relies mainly on diary designs with rather limited time frames and is characterized by a focus on psychological recovery indicators. This research generally includes repeated (within-subject) self-report measures over a period of several (consecutive) days in a participant's natural environment (Bolger, Davis, & Rafaeli, 2003). Although diary designs are generally strong and methodologically adequate for investigating daily or weekly recovery cycles and for relating these cycles to daily work and non-work activities and experiences, they are not very appropriate to demonstrate health consequences of (lack of) recovery in the long run. To better substantiate long-term consequences of incomplete recovery, we need longitudinal studies covering a longer observation period of several months or several years. In addition, I believe that a combination of psychological recovery indicators (e.g., fatigue, vigor, need for recovery, affective states, sleep quality) and (neuro)physiological recovery indicators (e.g. blood pressure and cortisol levels) will help to provide a more complete picture of the recovery phenomenon (Sonnentag & Geurts, 2009). Due to traditionally different research approaches, still little is known about the interrelationship between psychological and (neuro)physiological recovery indicators.

Second, sleep is a prototypical and crucial recovery activity. During sleep, physiological processes counteract the negative effects of stress and thus have an important restoring function. Moreover, sleep disturbances yield effects that are very comparable to those of stress (Åkerstedt, Nilsson, & Kecklund, 2009). Since a strong connection between stress and sleep can be expected, it is remarkable that only few studies have investigated relationships between work stressors and sleep (Kompier et al., 2011). As far as evidence exists, it relies mainly on cross-sectional designs or, to a lesser extent, simple longitudinal (i.e., non full-panel) designs (Van Laethem, Beckers, Kompier, Dijksterhuis, & Geurts, 2013). As a consequence, the temporal dynamics between work stressors and sleep need further study. Exposure to work stressors may negatively affect sleep, but in turn, disrupted sleep may elicit work stressors, such as if it leads to poor work performance (e.g., mistakes) due to reduced alertness or to interpersonal conflicts due to irritability (stressor creation hypothesis; see Spector, Chen, & O'Connell, 2000). In addition, the role of worrying and rumination ('perseverative cognition') in the work-stress-sleep relationship deserves more research attention, as these cognitive processes may be key factors underlying sleeping problems (Åkerstedt et al., 2009). To illuminate the important role of sleep in people's everyday lives and to clarify the temporal relations among work stressors, sleep, and stressor-related cognitive processes, future researchers could use diary designs collecting day-level or week-level data. To elucidate the health consequences of (lack of) sleep in due course, strong (i.e., full-panel) longitudinal designs are needed (De Lange et al., 2009).

Third, we can imagine that recovery patterns may be influenced by personal factors (e.g., personality and temperament) and that these factors may be reflections of (lack of) recovery as well. Thus far, only a few studies have related recovery indicators

to personal factors. For instance, results from a cross-sectional field study revealed that individuals scoring high on neuroticism experienced relatively strong negative after-effects of work, such as fatigue and work-home spillover (De Vries & Van Heck, 2002; Wayne, Musisca, & Fleeson, 2004). Findings from a laboratory study showed slower cardiovascular recovery after stress exposure in persons scoring high on trait hostility as compared to persons scoring low on trait hostility (Anderson, Linden, & Habra, 2005). Still unanswered questions are what underlying cognitive, affective and behavioral mechanisms may account for different recovery patterns for workers with different personal characteristics, and to what extent person aspects (e.g., irritability) may partly be manifestations of (lack of) recovery. Various designs (short-term diary designs, longitudinal designs, and experimental designs) can be employed to provide more insight into whether and why recovery patterns unfold differently for workers with different personal characteristics.

Fourth, although numerous studies have investigated the effectiveness of stress intervention programs, such as cognitive-behavioral and relaxation techniques (e.g., Richardson & Rothstein, 2008), there is a high need for interventions and intervention studies aiming at improving recovery from work. Evidently, well-designed jobs (offering job control, job support, and job variety, for instance) and appropriate work-rest schedules are crucial to prevent a high need for recovery at the end of a workday (Kompier, 2003). Nevertheless, now that we have gained knowledge about processes that may hamper and facilitate recovery during off-job time, it is useful to develop and study interventions aiming at recovery during off-job time. Recently, free weekends and vacations (as well as activities and experiences during these episodes) have been studied as 'natural' recovery interventions (De Bloom et al., 2011; Fritz et al., 2010). Recovery interventions can also be actively implemented. A recent laboratory study showed the effectiveness of meditation as a tool to recover after stress exposure (Van Hooff & Baas, 2013). A recent intervention study by Hahn, Binnewies, Sonnentag, and Mojza (2011) revealed that workers improved their skills at detaching from work, relaxing, and deciding on their own leisure time schedule (control) during and after a 'recovery training' that also affected recovery-related variables (e.g., self-efficacy, sleep quality, and perceived stress).

In sum, future recovery research is challenged to combine findings concerning different time frames (short-term and long-term) and different recovery indicators (psychological and (neuro)physiological) into one comprehensive picture of the recovery process, and to use this knowledge to develop interventions and interventions studies aiming at facilitating recovery from daily work stress and protecting employee health and well-being in the long run.

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Chapter 13
Beyond Paid Work: Voluntary Work and its Salutogenic Implications for Society

Patrick Jiranek, Rebecca Brauchli, and Theo Wehner

Abstract The current understanding of work in I-O psychology is built fundamentally on the concept of paid labor. We believe that this angle is too narrow and discuss current as well as prospective strands of research on paid and unpaid work. In addition, we highlight the potential of volunteering with regard to life domain balance by drawing on different empirical results. First, it could be shown that volunteering can positively influence the appraisals of stressors. Second, due to their volunteer work individuals can build up resources that can be transferred to other life domains. And finally, volunteering facilitates relaxation/recovery, enabling individuals to better adapt to and fulfill tasks and responsibilities in other life domains. Results from our own research indicate the compensatory and beneficial potential of volunteering. However, there seems to be an optimum, suggesting that individuals who volunteer with a medium frequency experience minimal conflict between life domains. We conclude by discussing from a psychology perspective the health-promoting potential of income equality guaranteed by a utopian basic income.

Keywords Volunteering • Meaningfulness • Life domain balance • Health • Basic income • Repertory grid technique

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13.1 Beyond the Context of Gainful Employment

The roots of North American work psychology are strongly connected with the idea and analysis of industrial labor as reflected in the I-O psychology domain, where the "I" stands for industrial. In one of the seminal definitions of this scientific branch, the main concept is "the relationship between man and the world of work … in the process of making a living" (Guion, 1965, p. 817). The last part of the definition hints at the extrinsic properties contained in this understanding of work, which is fundamentally concerned with the process of gaining material resources. That is, making a living refers to the existential issue of managing to pay the monthly bills. Hence, the current understanding of and research on work is built extensively and almost exclusively on the foundation of paid labor or gainful employment. According to Taylor (2004), in the twentieth century this reductionism was driven by transitions during industrialization that left a public, primarily male-dominated domain separated from a private, non-economic domain organized exclusively by females. Today, the question arises as to how such a delimited industrial understanding of work in the sense of traditional employment relations can account for current and prospective concepts of work, when considering phenomena such as part-time work, unemployment, multiple jobs, precarious working conditions, and the like.

With the rise of positive psychology in the late 1990s, novel concepts dealing with resource-oriented paradigms emanated. This presented new opportunities to understand traditional constructs, which were formerly based mainly on a pathology and strain perspective (see Seligman & Csikszentmihalyi, 2000). In occupational health psychology, the salutogenic approach has been applied increasingly to the context of paid work in recent years (e.g., Busch, Roscher, Kalytta, & Ducki, 2009; Cox, Taris, & Nielsen, 2010). We argue that if salutogenic approaches are relevant in the profit sector, they should be considered essential in the non-profit sector, where meaning plays an even more important role (Wehner, Mieg, & Güntert, 2006) and where greater perceived autonomy should serve as a breeding ground for sense of coherence (Udris, 2006). In our view, volunteers in non-profit organizations are not just engaged for moral or altruistic reasons but also because the activity itself is rewarding (Deci & Ryan, 2000) and bears personality development potential (Morf & Weber, 2000).

In this contribution we will critically examine the tacit consent concerning work activity as paid labor. That is, in the realm of I-O psychology, an implicitly accepted concept of work is applied that builds on the premise of an employment relationship inherent to a traditionalist understanding of work and society. From our perspective, this conception ignores certain forms of autonomy that go beyond a paid employment relationship. Understanding and investigating volunteering as an emancipated, salutogenic form of work has appears promising to us. In the following, we discuss unaddressed issues around health with regard to volunteering from what we perceive as a holistic I-O psychology perspective. Although empirical evidence substantiates the belief that volunteering per se has a strong meaning-making potential, a topic that has not yet been addressed is how volunteer work as an activity positions itself with regard to an imagined ideal concept of work and to the construct of gainful employment. Furthermore, the question remains whether and how volunteering can

be conceived as a resource. Taking a life domain balance perspective, we try to answer this question and break new scientific ground by presenting initial research findings that substantiate our line of thought. We conclude by linking the resource approach of volunteering with the utopian idea of a basic income, which builds on a humanistic conception of work and society.

13.2 From a Pathogenic Towards an Integrated Understanding of Work

During the 1950s and 1960s one central assumption of industrial psychology regarding the quality of work was related to raises in pay and reduction of time on the job. A worker who earned more, and had more time to spend and enjoy his earnings, was considered a happy worker from a labor policy perspective (Sauer, 2011). However, as both rationalization and work intensity increased, so did the workers' health problems, which could scarcely be compensated by mere raises in pay. The adverse effects of physically demanding to health-threatening forms of labor became gradually more recognized, and the intention to address these issues by work council representatives and policy makers increased. Consequently, work conditions received growing attention in various social movements and discussions on work (Sauer, 2011).

13.2.1 Work Engagement and Burnout

The impact of different conditions of work on the individual can take many forms, ranging from negative to positive effects. In the research on work and health, a strain approach can be distinguished and delineated from a resource approach. To date, the demands reflected in the pathogenic potential of work are well investigated and documented (see Ganster & Schaubroeck, 1991), and the positive potential of certain work-related attitudes and beliefs is recently being discussed, including for example the relationship between efficacy beliefs and work engagement (Llorens, Schaufeli, Bakker, & Salanova, 2007; Schaufeli & Bakker, 2004). In general terms, as the research on both ends of the strain-resource-continuum has progressed, the dichotomy has become less strict, as many instruments have been consolidated to measure both stress and resources (e.g., Busch et al., 2009). Nevertheless, the issue of stress as a direct and indirect determinant of cardiovascular disease, which is one of the leading causes of death, is surely essential in terms of prevention, when it comes to strain in the workplace. Accordingly, I-O psychology has been concerned for decades with the negative effects of work (see Spector, Zapf, Chen, & Frese, 2000). In occupational health psychology, which was quicker to consider salutogenic influences, a slow but steady paradigm change from research on stress has been taking place, and it is expected that, besides other resource-related constructs, more and more attention will be devoted to work engagement in the future (Macik-Frey, Quick, & Nelson,

2007). In traditional I-O psychology, generally speaking, a paradigmatic focus on stress, strain, and demands is still present, and it remains to be seen whether positive psychology will impact on this branch as much as it has on occupational health research. Currently, the introduction and application of constructs like work engagement seem to indicate such a trend (Schaufeli & Bakker, 2004).

The ideal image of work as a mentally enriching, creativity-laden, and enthusiasm infused activity is somewhat reflected in the current proliferation of the construct of work engagement (Bakker, Schaufeli, Leiter, & Taris, 2008). This perception and understanding of work contrasts with the term burnout, which is conceived as "the erosion of engagement" by Schaufeli, Leiter, and Maslach (2009, p. 215) and appears to be overused in the public sphere due to differing cultural reasons. As Schaufeli et al. (2009) suggest, the use of the term burnout in the United States is less stigmatized, since it is non-medical, whereas in Europe burnout as a medical diagnosis is perceived as a key to recovery. An interpretation derived from these cultural applications and implications of burnout could be that it serves as an exit door from a working life that is more and more characterized by a decline in structure, is low in meaningfulness especially in fragmented work tasks, and is permeated with a rise in inter-organizational and inter-individual competition.

Viktor Frankl's (1985) well-known book, Man's Search for Meaning, addresses the existential relevance of meaning for human well-being. According to Frankl, frustrating individuals' will for meaning creates an existential vacuum that is infused by apathy. With regard to working life, it is obvious that people's failure to generate meaning can potentially harm their health. In addition, with the erosion of family and community life (Putnam, 2000), individuals might tend to identify more and more with their colleagues and their work, thus attaching outstanding importance to these work-related ties. Hence, any fundamental change at work combined with social recession (Myers, 2000), can harm especially predisposed individuals and might eventually contribute to burnout. According to Schein (1980), who promotes a complex idea of man, the same individuals can have different needs in different parts of the same formal organization and might prevent alienation in this formal context by satisfying their social and self-actualizing needs in unions or informal working groups. Turning to volunteering may help people to impede social recession and satisfy rather intrinsic needs such as meaningfulness.

13.2.2 Meaningfulness and Its Emotional Content

If it is assumed that "the desire for meaning is viewed as a basic motivation" (Nakamura & Csikszentmihalyi, 2003, p. 95), it should be a core element focus of work psychology. According to Antonovsky and Franke (1997), individuals' lives are meaningful when they perceive purpose in the activities they perform and when the purpose is sustained over their lifespan. Whether and how meaningfulness can help people to cope with the daily stressors imposed on them by different externalities, ranging from daily hassles to severe life-threatening situations, is at the center of the sense of coherence concept. For Antonovsky and Franke, meaningfulness plays a

special role as it bears motivating potential. They suggest that individuals who scored high on this component were predominantly speaking of areas of life that made sense and mattered to them emotionally. Thus, in contrast to the components of comprehensibility and manageability, meaningfulness is characterized not only by cognitive but also by emotional means (Antonovsky & Franke, 1997). This is important to note with regard to volunteering, which has been shown empirically (Wehner et al., 2006) to be based strongly upon meaning and is both cognitive and emotional in nature. Paid work, in contrast, tends to suffer from a kind of déformation professionelle, implying that emotional reactions, such as empathy, are not an expected part of vocational behavior. Accordingly, the objective of many forms of vocational training in social sector occupations and elsewhere is to overrule emotions by cognitions. With regard to the social sector, Ho and Yuen (2010) emphasize the necessity of value involvement and tackle the myth of a positivist conception of social work. According to Ho and Yuen, value-neutrality and "value-detachment in the daily practice of social work" (2010, p. 5) rooted in a strictly positivist conception of social work can produce barriers between social workers and clients and thus lead to a decrease in mutual understanding. That is, common vocabulary and emotional reactions in professionals tend to wither away through the process of becoming professional. When looking at I-O psychology, positive emotions are neglected insofar as mainly constructs, such as negative affectivity, are focused or treated as sources of disturbance, both substantially and statistically (e.g., Schaubroeck, Ganster, & Fox, 1992; Spector et al., 2000). This clearly shows the negative connotations attached to affectivity in the workplace by academia, as well as by industry.

On the whole, it seems obvious that most volunteers in the social sector sustain an unprofessional, layperson view on things containing both cognitive and emotional behavioral and attitudinal components. Conciliating feeling, thought, and action appears to work best in voluntary work objectives where there is enough autonomy to approach a work objective, be it person- or object-related, in a more intuitive fashion as opposed to gainful employment, which is more often attuned to a positivist, professional code of conduct (Ho & Yuen, 2010). There is no question that there are pros and cons in the self-conceptions of both domains – which, however, we will have to leave unaddressed at this point – and that there should be differences in the way people subjectively experience their paid work versus other forms of work.

13.2.3 Voluntary Work Activity

Concerning paid work, Hackman and Oldham (1975) showed that individual perceptions of work deal with the meaning derived from it or rooted in the activity. Understanding structures inherent to work design that enhance both personality and health in employees, fueled by humane working conditions, was a core research focus in the works of European I-O psychologists in the second half of the previous century, as is reflected in the sociotechnical systems approach (Emery & Thorsrud, 1982; Rice, 1958; Trist & Bamforth, 1951). According to Udris (2006), in future concepts of I-O psychology, the structure- and system-based approach should be

Table 13.1 Average ranking of the criteria of humane working conditions[a]

	Volunteers	Employees
Meaningfulness: Social participation due to congruence of social and individual interests	1.3	3.7
Time flexibility: Compensating work density; freedom to interact and to act creatively	5.8	5.1
Learning and development opportunities: Sustaining and developing general mental flexibility and vocational qualification	2.9	3.6
Autonomy: Assumption of responsibility increasing self-esteem and feeling of competence	2.3	5.8
Social interaction: Joint coping with difficulties distributes and decreases strain	4.0	2.2
Skill variety: employing versatile qualification to avoid single-sided strain	6.1	2.9
Task identity: Recognizing the significance of one's own work; direct feedback increases motivation	5.6	4.8

[a]Participants ranked the seven criteria from 1 = very important to 7 = the least important

complemented by the concept of salutogenesis, which stresses individual aspects. Taking the instrument of subjective work analysis (Udris & Alioth, 1980) as a conceptual starting point, Rimann and Udris (1997) developed a survey incorporating salutogenic resources in addition to job demands. Accordingly, the instrument, called SALSA (Udris & Rimann, 1999), measures personal, organizational, and social resources with regard to occupational health (see Ulich, 2005).

Wehner et al. (2006) define voluntary social work activity as "unpaid, organized social work, which requires an expenditure of time and could also be carried out by a third person and could potentially be remunerated" (p. 20). Wehner et al.'s modus operandi initially took account of previously and universally proven methods of work psychology. Hence, when starting research on volunteering, Wehner et al. adapted a conception of job design characteristics by Ulich (2005), which integrated works from European sociotechnical systems research (Cherns, 1976; Emery & Emery, 1974; Emery & Thorsrud, 1976). Those works show an exceptional "degree of agreement" (Trist, 1981, p. 31) with the North American classic among work design in work psychology – specifically, the Job Diagnostic Survey (JDS) (Hackman & Oldham, 1975). Wehner et al. used JDS-related criteria of humane working conditions in the sense of Ulich (2005), namely, meaningfulness, time flexibility, learning and development opportunities, skill variety, social interaction, autonomy, and task identity in different samples consisting of, among others, (a) volunteers, and (b) employees. The participants were asked to rate seven of the JDS-related criteria, one of which being meaningfulness, on a scale ranging from 1 (very important) to 7 (least important). Whereas volunteers rated meaningfulness on average with 1.3, employees attached less importance to it, reflected in an average rating of 3.7. Additionally, it was found that meaningfulness was delimited from the other aspects such as autonomy or safety. Therefore, Wehner et al. concluded that the meaning-making motive in volunteers should be regarded as essential (Table 13.1).

In a more recent study on hospice volunteers Güntert, Barry, and Wehner (2010) investigated resources and stressors as well as job and organizational characteristics.

One major aim of the study was to find out whether the inclusion of work design inventories in addition to an established instrument, namely, the HIV Volunteer Inventory (Guinan & McCallum, 1991), would provide incremental variance in explaining volunteers' satisfaction[1] and burnout. With regard to satisfaction and in accordance with the authors' hypothesis it did so to a considerable extent, as an additional 14 % of variance in satisfaction could be explained (Güntert et al., 2010). More importantly, by using the established HIV Volunteer Inventory, they found that volunteers in hospice care showed lower levels of stress and even felt enriched by their voluntary work (Güntert et al., 2010) as opposed to AIDS volunteers in comparable studies (Claxton, Catalan, & Burgess, 1998; Ross, Greenfield, & Bennett, 1999). Results of further studies on volunteering in palliative care (Claxton-Oldfield & Claxton-Oldfield, 2007; Field & Johnson, 1993) pointed in the same direction. Consequently, these results and this initial finding led us to reflect further on the role of volunteering with regard to different forms of work and concerning health, which will be discussed in the following sections.

13.3 Subjective Spaces of Meaning

Looking at delimited systems and focusing solely on one form of work – namely, gainful employment – is a paradigm of I-O psychology research. In that paradigm, traditional employment relations are still implicitly assumed, leaving certain transformations unaddressed, such as smaller workplaces admitting more informal interaction, a rise in flexibility and fragmentation, and organizational adaptation to parenting needs of their male and female employees (Guest, 2004). Thus, to account for and learn from currently emerging alternative phenomena, it is necessary to seize the opportunity to analyze and compare the different forms of work that are emerging due to sociotechnical and sociocultural transitions.

When it comes to comparing different forms, apart from measuring meaningfulness and associated emotional responses that individuals attach to gainful employment directly, it is important to first understand subjective-evaluative aspects regarding varieties of work. At the same time, it seems fruitful to compare gainful employment, for instance in relation to volunteering, by positioning both in subjective mental models. In a grid study, Mösken, Dick, and Wehner (2010) adapted qualitative methodology to visualize and analyze mental models and to gain insight into the complexity of individual cases, considered in relation to each other as well as in the aggregate. Unfolding individual perceptions derived from biographies of volunteers helps to model inter-individually varying sculptural sketches of activities that otherwise remain known only to the individual in question. The aggregate of various

[1] The satisfaction scale consists of items developed in our research group and in connection with several prior investigations on volunteering as well as items adapted from the Schaufeli and Bakker (2003) Utrecht Work Engagement Scale. The Eigen value criterion suggested one general factor solution with an internal consistency of $\alpha = .83$ after eliminating two items.

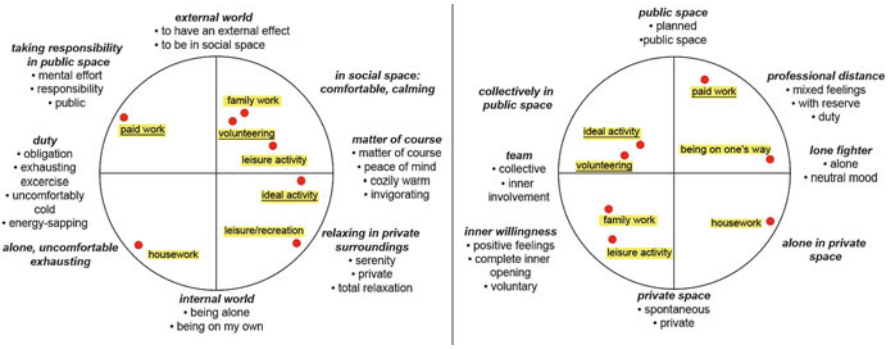

Fig. 13.1 Two exemplary subjective models (*left*: "Julia"; *right*: "Sonja") based on a principal component analysis. Inside the circles are the elements (e.g., volunteering), outside the circles are the personal constructs (e.g., external world)

models helps us to understand which and how many attributes are assigned to different activities by a group of participants.

This methodology is different from regular work analysis, such as survey methodology, which builds on constructs that are introduced by investigators themselves, implying that the investigator knows of the very nature of certain constructs. In the grid technique, this assumption does not guide the researcher's line of action. Here, constructs are developed cooperatively. The only specification in this research design appears in presenting the activities, which participants are asked to make statements on (Mösken et al., 2010). Hence, by building on Kelly (1986) and Kelly's construct theory, Mösken et al. (2010) aimed to evoke a subjective account and to test it via factor analysis.[2] The resulting subjective space of meaning (SSM) was obtained by applying a semi-structured, narrative grid interview (Fromm, 1995). The grid technique is based on the idea of explicating individual perceptions that build on specific individual constructs (Mösken et al., 2010) after presenting certain elements. The major goal is to detect attributes and motives regarding different types of activity by participants who have experience in both gainful employment and volunteering. To do so, Mösken et al. presented three elements at a time[3], each comprising different types of activity, to the participants, who were asked to pair two elements due to perceptual similarity and to separate the third element perceived to differ from the other two. This resulted in triads, with two elements being paired on the basis of the constructs applied to differentiate activities or elements, respectively. These constructs can be conceived as the participants' reasons to distinguish the elements and referred to such notions as spontaneous or planned (see Fig. 13.1).

[2] For a further explanation of the theory and method, see Fransella, Bell, and Bannister (2003).

[3] Altogether, the set of elements contained on average ten activities, which were presented to the respondents.

As the two subjective models make evident, there are inter-individually differing spaces of meaning, and different individual motives emerge as relevant with regard to the different activities.

Three central results of the study by Mösken et al. (2010) are:

- Overall, the SSM showed that on a subjectively perceived continuum, volunteering is closer to an ideal conception of activity.
- There is a shared spectrum of meaning attached to both volunteering and gainful employment comprising aspects such as duty, public, well-being, effort, pretense, development, recognition, and activity.
- Volunteering receives more attributes or, in terms of the repertory grid technique, more constructs than gainful employment, which shows the great diversity inherent to volunteering.

Looking at the grids in the aggregate, consisting of 20 cases, it becomes clear that there are major differences when it comes to placing volunteering and work activity in relation to each other and based on a subjectively conceived ideal of activity. The individual SSM show that volunteering is perceived as being closer to an ideal activity. Consequently, this supports evidence of the special role that volunteering as an activity plays in the lives of volunteers.

Although there is common ground concerning volunteering and work insofar as participants perceive volunteering as one form of work, the results also indicate that volunteering has certain characteristics that differentiate it clearly from gainful employment. These delineating characteristics include admitting emotions, experiencing community, and self-determination during the activity (Mösken et al., 2010).

Concerning work-life balance or life domain balance, the SSM seems relevant when taking into account that there is still no consensus on the balance and conflict of different domains. Based on the results, no generalization can be made concerning which activities are assigned to which domains, and thus speaking of a dichotomy of paid work and family life is not conducive. In other words, these results show that different people assign the same activities to different domains, which they deem important with regard to different constructs. The results are in line with the functional approach applied to volunteering, comprising the notion that a great deal of human behavior is motivated by different goals and needs and thus varies from individual to individual (Clary et al., 1998). According to the functional approach, the very same attitudes and behavioral outcomes of individuals can be accountable for differing psychological functions. Going beyond the paradigm of social psychology, which for decades has been concerned with analyzing the dichotomy of prosocial behavior by interpreting it as either egoist or altruist, these results point up the necessity to perceive the motives of volunteering as multi-functional. To sum up, narrowing volunteering down to an either altruist or egoist motive is just as shortsighted as establishing a dichotomy regarding work and family and then looking for conflict between the two.

13.4 The Potential of Volunteering Concerning Life Domain Balance

With the sweeping change of social, economic, and technological structures over the last decades, both women and men have expressed interest in a balanced life, mainly referred to as work-life balance. However, due to increased responsibilities within various life domains (such as work, family, friends, sports, volunteering), greater performance pressures, increased hours spent at the workplace, and technical advancements (such as smartphones) that blur boundaries between work and personal life (Burke, 2000; Jones, Burke, & Westman, 2006: Greenhaus & Allen, 2010), employees today are especially challenged to balance their work and other life domains in order to meet the various needs and demands (Allen, Herst, Bruck, & Sutton, 2000). This challenge may become a stressor, and conflicts between different life domains may occur. This is called work-family conflict or work-life conflict (Allen et al., 2000). However, researchers have argued that workers may also benefit from combining work and personal life; this is called work-family enrichment or work-life enrichment (Greenhaus & Allen, 2010; Greenhaus & Powell, 2006).

13.4.1 From Work-Life Balance to Life Domain Balance

As the research on work-life balance is concerned with questions about the relation between paid work and personal life (Wiese, 2007), the term work-life balance is an unfortunate choice (Resch & Bamberg, 2005). It may lead to the conclusion that it refers to a balance or a balancing between work and life. However, since work is a central part of life and there are various forms (e.g., voluntary work, housework, education work) outside paid work, the term life domain balance seems more appropriate (Ulich & Wiese, 2011). A comprehensive understanding of balancing, combining, or integrating different life domains will allow us to refer to these different life domains, which are individually relevant for each person (Brauchli, Hämmig, Güntert, Bauer, & Wehner, 2012) and can potentially come into conflict with or enrich one another (Ulich & Wiese, 2011). Keeping this broad view on the interaction of diverse life domains in mind, voluntary work activity or volunteering gains relevance, considering its effects on the individual. Volunteering is a specific field of activity beyond paid work, and it involves activities that may be both enriching and demanding (Ulich & Wiese, 2011). As mentioned above with regard to single SSM, many more categories are ascribed to volunteering than to paid work. Since voluntary work activity is a unique source of self-esteem and optimism (Jusot, Grignon, & Dourgnon, 2007), we assume that volunteers benefit from this particularly enriching life domain.

13.4.2 Interactions Between Life Domains and the Role of Volunteering

In principle, life domains can interplay or interact with one another in two opposite ways: The dominant assumption in the research literature on life domain balance is still that different domains are separate and compete, i.e., life domains interfere with one another negatively (Barnett, 1998; Gareis, Barnett, Ertel, & Berkman, 2009). The fact that different life domains are important in one's life produces conflicts in the sense that it might be difficult to fulfill diverse responsibilities within and between different domain activities (such as between paid work and family or a hobby and paid work). However, growing evidence of a synergy between life domains and salutary effects of an involvement in different life domains has challenged the conflict assumption (Greenhaus & Powell, 2006; Grzywacz & Marks, 2000). It is reasonable that multiple life domains can enrich each other. Note that conflicts and enrichment are not mutually exclusive but mostly co-occur (Greenhaus & Powell, 2006). With regard to volunteering – besides the co-occurrence of conflicts and enrichment – we can imagine that enrichment can develop from prior conflict and vice versa. However, there are still only few studies available that incorporate both, the conflict and the enrichment perspective, not even to mention longitudinal designs to test this assumption. It seems that merging this assumption with the aforementioned functions that volunteering can serve for different individuals (Clary & Snyder, 1999) might be worthwhile. We therefore assume that there are not only inter-individual differences with regard to the functions that voluntary activities can serve but also consider possible intraindividual differences. These functions might change over individuals' life spans, depending on personal values, characteristics of the environment such as norms imposed by close peers and family, structural characteristics, and so on.

13.4.3 Conflicts Between Life Domains

Based on a scarcity hypothesis, which assumes that people have a fixed amount of time and energy, individuals who participate in multiple roles within different life domains inevitably experience conflicts and stress that detract from their quality of life (Greenhaus & Allen, 2010; Greenhaus & Powell, 2006). Based on the definition by Greenhaus and Beutell (1985), Westman, Etzion, and Gortler (2004) wrote that a conflict between work and personal life occurs when "demands associated with one domain are incompatible with the demands associated with the other domain" (p. 413). Studies have revealed several work- and health-related correlates of this conflict (commonly a conflict between paid work and family), with the strongest

evidence being confirmed for negative effects on work and life satisfaction (Allen et al., 2000; Bonebright, Clay, & Ankenmann, 2000; Judge & Colquitt, 2004; van Rijswijk, Bekker, Rutte, & Croon, 2004).

13.4.4 Enrichment Between Life Domains

As mentioned above, within the research on the interface, or rather the interaction, of different life domains (primarily paid work and family) there has been a recent shift in perspective from a negative strain to a more positive resource perspective. This also emphasizes the positive aspects of being involved in different roles within different life domains (Greenhaus & Powell, 2006; Hakanen, Peeters, & Perhoniemi, 2011). Greenhaus and Powell (2006) define enrichment as "the extent to which experiences in one role improve the quality of life in the other role" (p. 73), referring to a transfer of resources and positive affect from one role to the other role (Greenhaus & Allen, 2010). Furthermore, in agreement with Wayne, Grzywacz, Carlson, and Kacmar (2007) and Hakanen et al. (2011) we assume that when individuals succeed in generating resources in relevant life domains, enrichment is enhanced, leading to positive outcomes, such as well-being. Several researchers have identified a significant association between enrichment and health (Allis & O'Driscoll, 2008; van Steenbergen, Ellemers, & Mooijaart, 2007).

13.4.5 The Role of Volunteering

In terms of these possible positive consequences of multiple roles and different tasks and activities within different life domains, volunteering gains relevance because we perceive it as a life domain, which potentially increases the availability of social and psychological resources such as social support, self-efficacy or self-esteem (Mojza & Sonnentag, 2010; Musick & Wilson, 2003). As research showed, these resources can be directly transferred from one domain to another (Greenhaus & Allen, 2010; Rozario, Morrow-Howell, & Hinterlong, 2004). In this sense, volunteering might enrich other life domains and therefore beneficially affect well-being and health. In addition to this assumed direct positive effect on health, we argue that a person's voluntary work activity can buffer stressors (such as conflicts) occurring between or within various life domains, such as paid work or family:

First, volunteering can influence the appraisal of stressors in general. Stressors that are perceived as irrelevant have a reduced negative impact on well-being and health (Lazarus & Folkman, 1984). Voluntarily engaged individuals might appraise potentially stressful events or situations as less relevant for their well-being, which reduces the threat by potential stressors (Mojza & Sonnentag, 2010).

Second, volunteering can build up resources that can not only be directly transferred to other life domains (see above) but also can help people to cope with

stressors. People who garner satisfaction, confidence, and esteem from various life domains are better able to cope with stress and conflicts (Mojza & Sonnentag, 2010; Ruderman, Ohlott, Panzer, & King, 2002).

Finally, volunteering can facilitate recovery after expending effort, such as at work. As the Effort-Recovery Model (Meijman & Mulder, 1998) indicates, it is essential to be exposed to conditions that facilitate recovery, such as conditions within or through voluntary work activity. In this way, depleted resources can be restored (Sonnentag & Zijlstra, 2006). The effort that we must devote to the tasks within different life domains, such as work and family, elicit a series of physiological and psychological changes. These changes are not permanent but reversible, provided that this effort can be suspended by recovery. If recovery is hindered, that is, if we undertake nothing to restore our resources, these physiological and psychological changes persist and have adverse (health) effects. The risk of burnout is increased, whereas engagement at work is limited (Mostert, Peeters, & Izel, 2011).

Indeed, Mojza and Sonnentag (2010) found that volunteer work has a potential to buffer stress and aid recovery and may have a compensatory function. Volunteering reduces stress and builds up resources and thus might empower people to manage the different demands and challenges in their relevant life domains (paid work, family, social life, and other domains). This would improve their balancing of these life domains (Brauchli et al., 2012; Golüke, Güntert, & Wehner, 2007).

13.4.6 Insights from Our Own Research

To investigate this compensatory and beneficial function or potential of volunteering as a resource and buffer of stressors, we recently conducted an exploratory study (Brauchli et al., 2012). We wanted to explore the role of voluntary work activity concerning life domain balance, namely, whether it bears the potential to reduce conflicts among different life domains. The results indicated that volunteering is related to these conflicts in a differentiated way: Conflicts that emerge within the paid work domain are higher, the more frequently a person volunteers. In contrast, conflicts from personal life that interfere in a negative way with a person's paid work life, are lower among employees who engage in volunteer work. Moreover, a non-linear relationship between conflicts and volunteering was found when these two different forms of conflicts – i.e., conflicts emerging within personal life affecting working life and conflicts emerging within working life affecting personal life – were summarized. Thus, there seems to be an optimum: Employees who volunteer with medium frequency (in our study one to three times a month) experience minimal conflicts among different life domains.

In conclusion, it appears evident that volunteering is usually not an additional stressor but instead can serve as a resource, if performed at an optimum level. Finding the optimum level appears to be decisive with regard to volunteering as a resource in individual lives. To complicate things, one can assume that the optimum level varies inter- and intra-individually, because domain conflicts are not only limited to

individual determinants but also to situational and, most importantly, monetary determinants. Since not everybody has equal volunteering opportunities due to socio-economic status or, in other words, since volunteering is an affluence-related phenomenon that not everyone can afford, there are huge gaps in citizens' opportunities to become engaged in volunteer work. However, if volunteering is meaningful and indeed has health-promoting potential despite the fact that or even because it is unpaid, it seems necessary to consider ways to promote volunteering or meaningful, intrinsically motivated activities. These conclusions are relevant with regard to the final section below, which deals with the utopian ideal of a basic income and how this ideal might promote both meaningful activities and public health.

13.5 A Basic Income as an Institutional Framework to Promote Public Health?

Historically, the concept of a basic income, or guaranteed income, as discussed by Milton Friedman (1962) and Erich Fromm (1966),[4] is linked to ideals of justice regarding basic rights that date back to ancient scholars, such as Aristotle (Aristoteles, 1991) as well as more contemporary philosophers (e.g., Rawls, 1975). Aristotle's idea of common justice refers to all citizens partaking in wealth and moves beyond national spheres toward a global concept of justice (Opielka, Müller, Kreft, & Bendixen, 2009). Today, the Basic Income Earth Network (BIEN) defines a basic income as "an income unconditionally granted to all on an individual basis, without means test or work requirement" (Basic Income Earth Network [BIEN], 2011, p. 1). Currently, civilizing the economy to enable the proliferation of civic freedom and emancipatory social policy would encompass social rights of safety and partaking (Mastronardi & von Cranach, 2010). According to the authors, these rights could be implemented by introducing a basic income. This raises the question as to how a basic income might potentially have positive effects on individuals and society as a whole.

In this final section, we abstain from claiming historical and theoretical completeness in our dealing with the concept of a basic income. As a matter of fact, currently there is no such thing as the concept of basic income, as there are, for example in Germany, numerous differing models that are being discussed politically and economically (Opielka et al., 2009). Although the macro- and microeconomics of a basic income are surely essential in the discussion of its feasibility, we leave these issues unaddressed. Instead, we briefly discuss issues of motivation by referring to empirical results and conclusions stated above. Our aim is to address the question as to whether people would work and experience meaning if they received a guaranteed income without any form of means testing. Additionally, and jointly, we conclude by discussing the health-promoting potential of this utopian concept.

[4] Erich Fromm uses the term *guaranteed income*.

13.5.1 The Issue of Motivation

The assumption that most people would not work if they received a guaranteed basic income is ubiquitous. And it is often stated in social discourse on the effects of its implementation. That is, it seems commonly held that individuals are primarily driven by extrinsic factors such as remuneration. This idea of people as restricted, resourceful, expecting, evaluating, and maximizing by nature, which for decades has been taken for granted and maintained unchallenged by behavioral economics is recently being called into question more and more by different economists (e.g., Fehr & Fischbacher, 2002; Vanberg, 2008). In Friedman's (1962) early theorizing, he assumed that a basic income – like any measure against poverty – lowers the drive of individuals receiving the security measure to help themselves but does not exclude this drive. Hence, even from an economic viewpoint, there seems to be something beyond a mere tit-for-tat strategy in humans when it comes to paid work. Other needs besides the existential necessity to make a living appear to deserve attention. Ascribing gainful employment and the income resulting from it the same need-fulfilling potential compared to voluntary work seems at least questionable when taking into account the empirical evidence from research on work-related attitudes, intrinsic motivation, and volunteering. The Kelly Global Workforce Index (Kelly Services, 2009), which surveyed 100,000 participants in 34 countries, showed that in Germany and Switzerland more than 50 % of respondents would forego status and accept cuts in salary to be supplied with more meaningful tasks. In their self-determination theory, Deci and Ryan (2000) stressed growth-oriented activity, maintaining that people are "naturally inclined to act on their inner and outer environments, engage activities that interest them … move toward personal and interpersonal coherence" and that they "do not have to be pushed or prodded to act" (p. 230). Finally, it was shown that the need for meaningfulness is stronger in volunteering than in gainful employment (Wehner et al., 2006) and that more attributes are ascribed to volunteering than to paid work (Mösken et al., 2010). The latter shows the multifaceted diversity of facets of meaning that are inherent to volunteering. All in all, it seems that people's attitudes toward a basic income are influenced more by their ideas about the nature of human beings and not so much by proven facts from research on motivation.

13.5.2 The Indirect Health-Promoting Potential of a Basic Income

Today we know of the strain potentials in work and are now gradually starting to explore resources inherent to work and its design by turning to such concepts as meaning or work engagement. Further, psychological studies showed decades ago that unemployment has negative effects on health (Frese & Mohr, 1978; Jahoda, Lazarsfeld, & Zeisel, 1960). As we argued above, I-O psychology was built mainly

around the examination of paid labor contexts. This lack of emancipation of other forms of work, one might argue, is rooted in a patriarchal understanding of public, economic labor (Taylor, 2004). The notion that "self-respect and social standing in developed societies are primarily distributed via paid employment" (Merkel, 2009, p. 47) and the fact that community life is collapsing (Putnam, 2000) leads to the following conclusion: Identity and social inclusion of employees in the Western industrialized world are built on a fragile foundation, namely, paid labor. As long as gainful employment remains a central building block of material reproduction and social security, motivational issues will remain linked to paid labor, although there is no initial ontological connection (Heinze & Keupp, 1997). However, it seems questionable whether our current understanding of gainful employment as the main source of identity and of social inclusion will suffice, if individuals are to remain healthy. To illustrate, many people work in different jobs, and boundaries between life domains are becoming more and more permeable. The availability and accessibility of a remote workforce through modern communication technology leads to a drift of business into private life or to an overlap of life domains, respectively. Some European researchers refer to this phenomenon as the subjectification of work (see Moldaschl & Voß, 2003).

Fromm (1966) discussed the psychological implications of a basic income. Fromm viewed the elimination of existential fear, on the basis of personal freedom, as one crucial outcome. From his perspective, freedom in the sense of an independence from material goods is one of the most important personal resources. A decisive link between personal and social resources is the ability to accept, establish, and maintain trusting and helpful relations (Udris, 2006). Thus, trustful social relations outside paid work can bear a certain bridging potential. No man is an island, a phrase borrowed from John Donne and nowadays often used by positive psychologists, points to the importance of relatedness in societies deemed happy and healthy (see Keyes & Haidt, 2003). If we assume that the introduction of a basic income would entail perceptions of equality in society, health effects should occur at least indirectly. Empirical data from political science research suggests that one of the prime movers of social trust is income equality (Uslaner, 2002). According to Uslaner (2002) trust diminishes in an unequal world. At the same time, trust has significant effects on cooperation (Putnam, 2000; Uslaner, 2002). Besides the positive effects of trust on behavioral and health outcomes in the work setting (Kramer & Cook, 2004), different studies have shown that trust is an antecedent of public health (Barefoot et al., 1998). To summarize, the social impact of a basic income on health is, hypothetically stated, indirect and should be mediated by trust and cooperation, the latter of which can take many forms, such as volunteering.

13.6 Conclusion

We argued theoretically, and to a certain extent empirically, that volunteering bears the potential to serve as a resource in life and in relation to paid work. However, with job uncertainty caused by factors such as precarious working conditions,

flexible working hours, and so on, which are present in most societies of today's globalized world, the potential of meaning-making in volunteering seems like a luxurious accessory that not everybody can afford. For certain underprivileged individuals who work multiple jobs, the idea of volunteering might seem absurd. The same would apply to individuals who are unemployed. Therefore, if we hold that volunteering and its different activities, such as social sector volunteering, cause-related voluntary activism, or modern forms like online volunteering, do indeed have positive spillover effects on health due to the meaning that they contain, then it should become a part of public health policy to further promote these activities. As initial empirical findings suggest, importance should be attached to identifying the right level of volunteering for individuals. Taking the idea of promoting volunteering or unpaid work to the next emancipatory level would imply reconsidering institutional and social policy frameworks. In this respect, the decoupling of work from income could be achieved by introducing a basic income. If this were the case, occupational health policy would go public and a huge and drastic shift from means testing social policy to a trust-based, autonomy-supportive society might take place.

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Chapter 14
Policy Approaches to Occupational and Organizational Health

Stavroula Leka and Aditya Jain

Abstract This chapter analyzes the policy context and clarifies the policy process of relevance to occupational, organizational, and public health. It discusses different levels of policy-level interventions and the role of stakeholders, presenting examples and differentiating between hard and soft regulation. Policy underpins occupational health and organizational practice in a complex way and through different avenues. For occupational and organizational health research to achieve its desirable outcomes, it is important that researchers are aware of the policy process, the stakeholders involved, and implementation issues. Research involving stakeholders in its process will have greater potential to achieve impact both in policy and practice. This kind of research is unfortunately limited and particularly when it comes to the evaluation of policy-level interventions. It is important that this gap is addressed in the future to achieve effective translation of research into policy and practice.

Keywords Policy • Interventions • Macro approaches • Hard and soft regulation • Stakeholders • Social dialogue • Corporate social responsibility • Occupational and organizational health

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14.1 Introduction: Policy and Policy Research

The policy context and policy-level interventions have been largely ignored in the occupational, organizational, and public health literature. However, one can never fully understand why an intervention at company level works or does not work unless the policy context is taken into consideration. For it is the process of policy development and stakeholder engagement at international, regional, national, and sectoral level that determines whether awareness is raised, common understanding emerges, norms develop, decisions are made, actions are promoted, and sustainability is ensured. This chapter clarifies the policy process of relevance to occupational, organization, and public health, discusses its implementation at different levels and the key stakeholders involved, highlights examples of different types of policy instruments, and discusses future directions as concerns policy-level interventions in research and practice.

However, it is essential to first clarify some key concepts, starting with what is meant by policy:

> Various labels are applied to decisions and actions we take, depending in general on the breadth of their implications. If they are trivial and repetitive and demand little cogitation, they may be called routine actions. If they are more complex, have wider ramifications, and demand more thought, we may refer to them as tactical decisions. For those which have the widest ramifications and the longest time perspective, and which generally require the most information and contemplation, we tend to reserve the word 'policy.' (Bauer, 1968, pp. 1–2)

However, what has the widest ramifications and what requires the longest time perspective varies on the opinions of individuals, governments, and societies alike, and changes with time. As such, the meaning of policy has not been fixed and is not constant. The notion of policy itself has been constituted and reconstituted over time (Jenkins, 2007).

Policy generally refers to a course or principle of action adopted or proposed by an organization or individual. As such, policies can take a number of courses, be based on various principles, and be proposed by several organizations or even individuals. Policies can therefore be proposed or adopted at the macro level, meso level, or the micro level.[1] Moreover, policies are said to be revealed through texts, practices, symbols, discourses, that define and deliver values including goods and services as well as regulations, income, status, and other positively or negatively valued attributes (Birkland, 2005). Through this conception of policy, it is clear that policies are not just contained in laws and regulations; even once a law is passed, policies continue to be made as the people who implement policy make decisions about who will benefit from the policies and who will shoulder the burdens as a result (Birkland, 2005). Therefore, it is hardly surprising that there is little in the way of a consistent conceptualization of the term policy itself (Jenkins, 1978).

Today the word policy is easily recognized and understood; however 'what is meant by policy' and 'what policy is meant for,' is understood, conceived, studied, and analyzed in many different ways (Weimer & Vining, 1992). In addition, there is

[1] Macro level refers to the international, regional (such as for example European), or national level; meso level refers to the provincial or sectoral level; micro level refers to the organizational level.

only a fine line that separates policy research and policy analysis, which is characterized by the strength of the client orientation. Low client orientation allows the policy researcher to focus on formal methodology, while policy analysts are restricted by high client orientation and also need to consider practical constraints that are of little academic interest (Weimer & Vining, 1992). According to Laswell (1970), policy research also includes the study of the policy process.

14.2 Process, Levels, and Key Stakeholders in Policy Making

The policy process is an elaborate and complex process; it involves a large number of choices made by a possibly large number of individuals and organizations (Hill, 1997). It may also involve complex interactions between state and non-state actors. For example, Birkland (2005) reviewed a number of definitions of public policy and concluded that whereas finding consensus on a precise definition was impossible, all variants suggest that public policy affects a greater variety of people and interests than do private decisions, and government or other policy actors are at the center of efforts to make and implement public policy.

To date, various models and approaches in studying the policy process have been proposed. For example, Dye (2010) proposed six main steps in the policy process, which along with the typical activities and stakeholders in each step and how they relate to the systems model are presented in Table 14.1.

As can be seen in Table 14.1, a number of stakeholders are relevant in the policy process. In addition to state actors, non-state actors play an important role in influencing policy development through organized groups or pressure groups which have the freedom to organize, and lobby government (Harrop, 1992). Non-governmental pressure groups can include business associations, employer associations, trade unions, mass media, expert/professional associations/societies, etc. Through the involvement of all these different stakeholders different types of policy-level interventions can take place and at different levels. On the basis of existing literature, policy-level interventions can be broadly classified as (Leka, Jain, Iavicoli, Vartia, & Ertel, 2011):

i. Legislation/policy development
ii. Standards at national/stakeholder levels
iii. Stakeholder/collective agreements
iv. Declaration signing
v. International organization action
vi. Social dialogue initiatives
vii. National strategy development
viii. Development of guidelines
ix. Economic incentives/programs
x. Establishing networks/partnerships.

As is evident from this list, policy making can take place at different levels, including the international, national, regional, inter-organizational and organizational.

Table 14.1 Steps in the policy process

Stage	Step	Activity	Stakeholders
Inputs - Policy demands	Problem Identification	Publicizing societal problems Expressing demands for government action	Mass media, interest groups, citizen initiatives, public opinion
	↓	↓	↓
	Agenda Setting	Deciding what issues will be discussed, what problems will be addressed by government	Social partners, civil society, political and societal elites
The political system – Policy decisions	↓	↓	↓
	Policy Formulation	Developing policy proposals to resolve issues and ameliorate problems	Experts and think tanks Government agencies interest groups
	↓	↓	↓
Policy outputs	Policy Legitimation	Selecting a proposal – regulation impact assessment Developing political support Enacting it into law	Government agencies, courts, interest groups
Policy outcomes	↓	↓	↓
	Policy Implementation	Organizing departments and agencies Providing payments or services Levying taxes	Government agencies and departments, social partners
	↓	↓	↓
	Policy Evaluation	Reporting outputs of government programs Evaluating impact of policies on target and non target groups Proposing changes and 'reforms'	Executive department and agencies, mass media, experts and think tanks, social partners

Source: Adapted from Dye (2010)

Accordingly, different stakeholders will participate in the process at each level, and, as a result, different policy instruments will be produced.

Policy instruments have typically been differentiated as 'hard law/regulation' or 'soft law/regulation,' and each term can be seen as an inclusive, expansive, and flexible category. Moreover, both terms are used with a great variety of meanings in the existing literature (Kirton & Trebilcock, 2004). Hard law is defined as a policy relying primarily on the authority and power of the state – ultimately its legitimate monopoly on the means of coercion – in the construction, operation, and implementation, including enforcement, of arrangements at international, national, or subnational level (Kirton & Trebilcock). Hard law, based on the concept of 'legalization,' is also used to refer to legally binding obligations that are precise (or can be made precise through adjudication or the issuance of detailed regulations) and that delegate authority for interpreting and implementing the law (Abbott & Snidal, 2000). Statutes or regulations in highly developed national legal systems are generally taken as prototypical of hard legalization (Abbott, Keohane, Moravcsik, Slaughter, & Snidal, 2000). At the inter-governmental level they can take the form of legally binding treaties, conventions, and directives.

Soft law, in contrast, refers to policies that rely primarily on the participation and resources of non-governmental actors in the construction, operation, and implementation of a governance arrangement (Abbott & Snidal, 2000). According to Ikenberry (2001), in a soft law regime, the formal legal, regulatory authority of governments is not relied upon and may not be even contained in the institutional design and operation. Furthermore, there is voluntary participation in the construction, operation, and continuation and a strong reliance on consensus-based decision making for action and, more broadly, as a source of institutional binding and legitimacy. In such a regime, any participant is free to leave at any time and to adhere to the regime or not, without invoking the sanctioning power of state authority (Ikenberry, 2001).

State and non-state actors can achieve many of their goals through soft legalization that is more easily attained or sometimes preferable. Soft law is valuable on its own, not just as a steppingstone to hard law; it provides a basis for efficient international 'contracts' and it helps create normative 'covenants' and discourses that can reshape international politics (Abbott & Snidal, 2000). Soft law instruments range from treaties, which include only soft obligations (legal soft law), to non-binding or voluntary resolutions, and codes of conduct formulated and accepted by international, regional, and inter-organizational bodies (non-legal soft law), to statements prepared by individuals in a non-governmental capacity, but which purport to lay down international principles. They also include voluntary standards designed and adopted by businesses and civil society to guide their shared understanding (Chinkin, 1989; Kirton & Trebilcock, 2004).

One process through which both hard and soft law has been produced at European level, for example, is European social dialogue. Dialogue between the European social partners (trades unions and employer associations) takes place at both cross-sectoral and sectoral level. Participants in cross-sectoral dialogue – ETUC (trade unions), BUSINESSEUROPE (private sector employers), UEAPME (small businesses), and CEEP (public employers) –have concluded a number of agreements that have been ratified by the Council of Ministers and are now part of European

legislation, such as the agreements on parental leave (1996), part-time work (1997), and fixed-term contracts (1999). In the context of the European employment strategy (a part of the Lisbon Agenda: cf. Council of the European Union, 2000), the European Council also invited the social partners to negotiate 'voluntary' agreements to modernize the organization of work, including flexible working arrangements, with the aim of making undertakings productive and competitive and achieving the necessary balance between flexibility and security. The social partners have since concluded framework agreements on telework (European Social Partners, 2002), work-related stress (European Social Partners, 2004), and harassment and violence at work (European Social Partners, 2007). These agreements create a contractual obligation for the parties to implement the agreement at each appropriate level of the national system of industrial relations instead of being incorporated into a Directive (Eurofound, 2011a). It is against this background that national governments in Europe develop policy-level interventions.

As policies are made and implemented in multi-actor contexts, the various stakeholders frequently view problems and solutions differently, and some will try to influence the aim and direction of a policy all the way through the policy process. Such situations call for more attention to be paid to different rationalities and lines of argument (Hanberger, 2001). Stufflebeam (1999) further warns that evaluators may encounter considerable difficulties if their perceptions of the study being undertaken differ from those of their clients and audiences. Often, clients want a politically advantageous study performed, whereas the evaluators want to conduct questions/methods-oriented studies that allow them to exploit the methodologies in which they were trained. Moreover, audiences usually want values-oriented studies that will help them determine the relative merits and worth of competing programs, or advocacy evaluations that will give them voice in the issues that affect them. If evaluators are ignorant of the likely conflicts in purposes, the evaluation is probably doomed to failure from the start. Therefore, it is important to remember that no one type of approach consistently is the best in evaluating policy interventions.

The evaluation model presented in Fig. 14.1 is based on an analytical framework of industrial relations proposed by Weiler (2004). According to this, any evaluation of policies relating to workers' health and safety must begin with an exploration of the context within which these policies are developed and implemented; these relate to the environment that influences the policy process including social, economic, and political influences on inputs, systems variables, policy outputs, and policy outcomes.

The economic climate includes, for example, availability and provision of resources, unemployment rates, labor productivity, as well as social factors such as freedom of association and union participation in public policy. The political climate relates to the system of governance (federal, central, unitary, intergovernmental), political stability, etc. The context has a direct impact on the regulatory framework for occupational health and safety, the actors who are included or excluded from the development of policies for health and safety and their perception of health and safety risks, the process of negotiation, development and implementation of these policies, and policy outcomes. These have an impact on the actions taken by governments, regions, and companies to manage occupational health and safety risks in

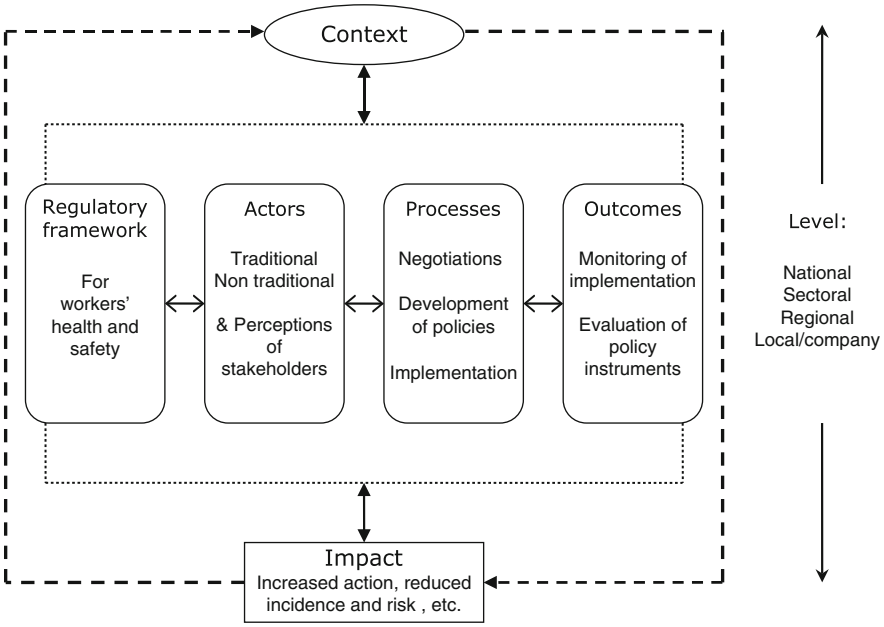

Fig. 14.1 Model for the evaluation of workers' health and safety policies (Source: Adapted from Weiler (2004))

order to reduce their impact in terms of incidence of accidents, diseases, health conditions, and related business outcomes (e.g., absenteeism, presenteeism, and human error). This process is applicable at the national, sectoral, regional, and company level.

The next sections of this chapter present different examples of policy-level interventions at the European, national, sectoral, and inter-organizational levels, which are discussed on the basis of the available literature and the above model.

14.3 Policy-Level Interventions at European Level

The Community Strategy on Safety and Health at Work sets out the political framework for European safety and health policy. The starting point for legislative initiatives at European level is a legislative proposal drafted by the European Commission. It is the Council and the European Parliament under the 'ordinary legislative procedure' that adopt European directives (European Agency for Safety and Health at Work, 2012). A European directive is a legislative act of the European Union (EU). It is binding in its entirety and obliges Member States to transpose it into national law within the set deadline. EU directives on safety and health at work have their legal foundation in Article 153 of the Treaty on the Functioning of the European

Union (formerly Article 137 TEC), which gives the EU the authority to adopt directives in this field (European Agency for Safety and Health at Work).

The Framework Directive 89/391/EEC on Safety and Health of Workers at Work lays down employers' general obligations to ensure workers' health and safety in every aspect related to work, 'addressing all types of risk.' A series of individual directives focusing on specific aspects of safety and health at work were adopted on the basis of the Framework Directive. Nevertheless, the Framework Directive continues to apply to all areas covered by the individual directives. Where individual directives contain more stringent and specific provisions, these special provisions prevail. Individual directives tailor the principles of the Framework Directive to specific tasks, specific hazards at work, specific workplaces and sectors, specific groups of workers, and certain work-related aspects. The individual directives define how to assess these risks and, in some instances, set limit values for certain substances or agents. Over sixty individual EU directives setting out minimum health and safety requirements for the protection of workers have been adopted and implemented in the EU.

The standards set in these individual directives are minimum standards for the protection of workers, and Member States are allowed to maintain or establish higher levels of protection. In addition, a series of technical directives under the 'New Approach' were adopted, whereby the European standardization organizations – European Committee for Standardization (CEN), European Committee for Electrotechnical Standardization (CENELEC), and European Telecommunications Standards Institute (ETSI) – set and update European standards on a regular basis (European Agency for Safety and Health at Work, 2012). These standardization organizations are also responsible for the development and implementation of non-binding standards.

Non-binding policy interventions also include official guidelines that aim to facilitate the implementation of European directives. Guidelines can be issued in various forms, including practical guidelines from the European Commission setting out best practice for the prevention of risks, Council Recommendations, European Commission Communications, etc. (European Agency for Safety and Health at Work, 2012). The European social partners play a vital role in the European decision-making process in the field of safety and health at work, as they have to be consulted at various stages. The European Treaty also foresees the possibility of concluding autonomous agreements, as highlighted above.

14.3.1 Case Study Example: The Framework Directive 89/391/EEC on Safety and Health of Workers at Work

The Framework Directive 89/391/EEC on Safety and Health of Workers at Work lays down employers' general obligations to ensure workers' health and safety. The Framework Directive with its general principles continues to apply in full to all areas covered by individual directives, but where individual directives contain more stringent and/or specific provisions, these special provisions of individual directives

prevail (European Commission, 2004). Membership in the EU has led to the Europeanization of national policies of member states, where domestic policy areas become increasingly subject to European policy (Börzel, 1999), as is the case of policies related to occupational health and safety following the implementation of the Framework Directive.

The first report from the European Commission on the practical implementation of the provisions of the Health and Safety at Work Directives (European Commission, 2004) indicates that the EU legislation has had a positive influence on the national standards for occupational health and safety. In Greece, Ireland, Portugal, Spain, Italy, and Luxembourg, the Framework Directive had considerable legal consequences due to the fact that these countries had antiquated or inadequate legislation on the subject when the Directive was adopted. In Austria, France, Germany, the United Kingdom, the Netherlands, and Belgium, the Directive served to complete or refine existing national legislation, and, finally, in the case of Denmark, Finland, and Sweden, transposition did not require major adjustments, since these countries already had rules in place that were in line with the directives concerned (European Commission, 2004). Table 14.2 summarizes the European Commission's evaluation of the implementation of the Framework Directive in the EU15 (European Commission, 2004).

Since 2004, 12 new countries have joined the European Union. In these cases the Framework Directive was part of the negotiation for joining the EU and acquis communautaire (EU acquis), which meant the approximation of national laws to EU law before membership (Hämäläinen, 2006). The 2004 report from the Commission did not examine the implementation of the Directive in the new member states, and even though the new member states would have adapted or modified their national legislations prior to accession, there were disparities between older EU member states and new member states in health, social, and industrial relations issues (Hämäläinen, 2008). It is therefore important to take into consideration different national situations, ascribable to the time available to acknowledge and implement European Directives (in the case of new member states) and related policies to political and administrative capacities of each member country that can have a direct impact on implementation of good practice and preventive measures at the workplace level.

14.4 Policy-Level Interventions at National Level

All countries across the world have some form of national health and safety legislation that sets national minimum standards for health and safety. National laws may conform to criteria established in international (e.g., if the country has ratified an ILO convention) and regional policies (e.g., EU directives); however, there are large variations in the scope and coverage of national health and safety laws (International Labour Office, 2004). In Europe, Member States are free to adopt stricter rules for the protection of workers when transposing EU directives into national law, and so

Table 14.2 Evaluation of the impact of Framework Directive 89/391 in 15 EU Member States (Pre-2004)

Area of impact	Effect of implementation
Legal impact in member states	In Greece, Ireland, Portugal, Spain, Italy, and Luxembourg, the Framework Directive had considerable legal consequences, since these countries had antiquated or inadequate national legislation on health and safety when the Directive was adopted
	In Austria, France, Germany, United Kingdom, the Netherlands, and Belgium, the Directive served to complete or refine existing national legislation
	In Denmark, Finland, and Sweden, transposition of the Directive did not require major adjustments, since they already had national legislation in place that was in line with the Directive
Positive effects of implementation	Decrease in the number of accidents at work
	Increase in employers' awareness of health and safety concerns
	Emphasis on a prevention philosophy
	Broadness of scope, characterized by the shift from a technology-driven approach towards a policy of occupational safety and health that focused on the individuals' behavior and organizational structures
	Obligation for the employer to perform risk assessments and provide documentation
	Obligation for the employer to inform and train workers
	Increased emphasis on rights and obligations of workers
	Consolidation and simplification of exiting national regulations
Main difficulties of implementation	Increased administrative obligations and formalities, financial burden, and the time needed to prepare appropriate measures
	Lack of participation by workers in operational processes
	Absence of evaluation criteria for national labor inspectorates
	Lack of harmonized European statistical information system on occupational accidents and diseases; although this has been addressed to an extent
	Problems in implementing certain provisions in SMEs
Specific issues	Most existing risk assessment practices characterized as superficial, schematic procedures where the focus is put on obvious risks. Long-term effects (e.g., mental factors) as well as risks that are not easily observed were reported to be neglected
	Concerning the practical implementation of the provisions related to risk assessment, there is hardly any consideration of psychosocial risk factors and work organizational factors
	Significant deficits in ensuring a broad coverage of preventive services relating to psychological aspects were identified

Source: Adapted from Leka, Jain, Zwetsloot, and Cox (2010)

legislative requirements in the field of safety and health at work can vary across EU Member States (European Agency for Safety and Health at Work, 2012).

To implement national legislation, most countries have designated occupational health and safety authorities and inspection systems to ensure compliance. In several countries, particularly developed countries, there are mechanisms for national

surveillance (collection and analysis of data) on health and safety, tripartite (employers, trade unions, and government) consultation mechanisms or bodies, access to occupational health and safety services, occupational health and safety research institutions, and links with worker injury insurance schemes and institutions.

In addition to legislation, many countries also provide policy recommendations, codes of practice and guidance for public authorities, employers, workers, enterprises, and specialized occupational safety and health protection bodies. These are not legally binding instruments and are not intended to replace the provisions of national laws or regulations, or accepted standards but rather complement them. Such policy instruments provide guidance on safety and health at work on protecting workers against certain hazards and on certain safety and health measures. The Management Standards for work-related stress in the UK is one such example.

14.4.1 Case Study Example: The Management Standards for Work-Related Stress in the UK

In the UK, the Health & Safety Executive (HSE) has developed a process based around a set of Management Standards to help employers, employees, and their representatives to manage and reduce the levels of work-related stress (Mackay, Cousins, Kelly, Lee, & McCaig, 2004). The approach covers six key areas of work design that, if not properly managed, are associated with poor health and well-being, lower productivity, and increased sickness absence (Health and Safety Executive, 2007). Theoretical underpinnings justifying the focus on these particular Management Standards and work-related stress in the UK as well as practical developments of the Management Standards have been fully reported in studies by Mackay et al. (2004) and Cousins et al. (2004).

The Management Standards approach reflects the UK national legislative framework, which consists of the Health and Safety at Work Act 1974, requiring UK employers to secure the health (including mental health), safety and welfare of employees while at work. In addition, under the Management of Health and Safety at Work Regulations 1999, employers are required to carry out a suitable and sufficient assessment of significant health and safety risks, including the risk of stress-related ill health arising from work activities, and take measures to control that risk. The Management Standards are not legally enforceable and have therefore been implemented as a guidance-based approach to work-related stress (Mackay et al., 2004).

Since its development, the Management Standards as well the indicator tool have been evaluated through several studies funded by the HSE (e.g., Bond, Flaxman & Loivette, 2006; Broughton, Tyers, Denvir, Wilson, & O'Regan, 2009; Cousins et al., 2004; Cox, Karanika-Murray, Griffiths, Wong, & Hardy, 2009; Mellor et al., 2011; Tyers, Broughton, Denvir, Wilson, & O'Regan, 2009; Yarker, Donaldson-Feilder, Lewis, & Flaxman, 2007; Yarker, Lewis, & Donaldson-Feilder, 2008). Findings suggest that the approach is seen to be useful not just in terms of stress management and ensuring that systems are in place but also for integrating stress management

into management and leadership development processes and other areas such as appraisal, coaching, induction and support of managers. The business case was also found to be supported. Additional guidance was also found to be desirable by organizations. However, critics have argues that the predicted improvements in working conditions as a result of HSE's roll-out of the Management Standards for work-related stress do not appear to have materialized fully as yet. The lack of clear impact to date could reflect the long latency between organizations first implementing the process and benefits being realized. Equally, with so many other economic and social factors affecting worker perceptions of their working conditions, any effect may be masked. Only in combination with other evidence can the effects of the Management Standards be better understood.

14.5 Policy-Level Interventions at Sectoral Level

Sectoral policies are comprehensive, integrated, and coordinated initiatives targeted to address a sector's specific objectives. As in the case of macro level policies, the development of 'meso' sectoral policies usually involves consultations with several stakeholders (both public and private) and user groups at the national and supranational (e.g., European) levels, however only sector specific stakeholders are involved. At the European level, sectoral policies are largely the outcome of sectoral social dialogue (European Commission, 2010) that began in the early decades of European integration, when six joint committees, composed of an equal number of employee and employer representatives, were established in sectors directly affected by the first pan-European regulations (Perin & Léonard, 2011). To date, 40 European social dialogue committees, which now cover 145 million workers in Europe in sectors of crucial importance, are formally involved in sectoral social dialogue.

European sectoral social dialogue is an instrument of EU social policy and industrial relations at sectoral level (Eurofound, 2011b). "European sectoral social dialogue committees are fora for consultations on European policies. They allow European social partners to develop joint texts for action and conduct negotiations on issues of common interest in their sector, thereby contributing directly to shaping EU labour legislation and policies" (European Commission, 2010, p. 4). Joint texts issued by the sectoral social partners include agreements that can be transformed into directives or implemented in accordance with the procedures and practices specific to management and labor and the Member States; process-oriented texts (frameworks of action, guidelines, codes of conduct, policy orientations), whereby the social partners undertake to abide by principles and to verify that they are properly implemented; joint opinions and tools (such as studies, handbooks, instructions for use, etc.) through which the social partners forward their view on a European matter to the European institutions and attempt to influence policy-making (Degryse & Pochet, 2011).

More than 500 joint texts have been adopted by the sectoral committees, including six agreements on working conditions and occupational health and safety, five of

which have been implemented by European directives (European Commission, 2010). Most joint texts, however, consist of process-oriented texts and joint opinions which are not binding, and their implementation relies on processes largely dependent on the goodwill and capabilities of national affiliates of the European counterparts. With European federations having little or no power to enforce compliance among their affiliates, the implementation of any text is largely dependent on the internal dynamics of each national context (Perin & Léonard, 2011). Therefore, outcomes of European sectoral social dialogue are modest if compared to national systems of collective bargaining and sectoral social dialogue (Eurofound, 2011b). The Work and Health Covenants in the Netherlands are examples of sectoral policy interventions at the national level.

14.5.1 Case Study Example: The Work and Health Covenants in the Netherlands

From 1998 until 2007, the Dutch Ministry of Social Affairs and Employment actively encouraged and subsidized a sectoral approach to risk management. The overall aim was to achieve a reduction of about 10 % in exposure to sector-specific occupational health and safety risks over a period of approximately 3 years. These sectoral risk management projects were called Work and Health Covenants. A covenant can be described as an agreement between employer and employee representatives of a sector, who – in the presence and with the advice of the Ministry – agree on the risks to tackle, the approach or measures to take, and the specific goals to be formulated at sectoral level. Sectors did not start with the covenants at the same time. The covenants that were agreed in later years more often included goals related to absence reduction. About 50 high-risk sectors (i.e., sectors in which either 40 % of workers or at least 50,000 workers were exposed to primary work risks, including high job demands, high physical demands, and working with health damaging chemicals, participated in the initiative (Taris, van der Wal, & Kompier, 2010).

At the end of the 'Work and Health Covenant period' two large evaluations took place, initiated by the Ministry of Social Affairs and Employment. One was mainly directed at absence (and cost) reduction, whereas the other was more directed at risk reduction at the national level, comparing risk change in sectors that did and did not participate in the covenants. The evaluation that considered absence (and cost) reduction resulted in a quite positive message: Absence and related costs were reduced (Veerman et al., 2007). However, the study considering risk exposure was not so positive, as no differences were found (Blatter, de Vroome, van Hooff, & Smulders, 2007). These latter findings may have been an underestimation of the effects on exposure, since even in sectors where covenants had been agreed upon, not all organizations implemented interventions and not all employees participated. Another explanation may be that only a post-covenant comparison of sectors with and without such a covenant was possible. No national measurements were carried out, so no comparison could be performed on risk exposure before the covenants

were agreed upon. The fact that only a comparison on risk exposure could take place after the covenants were implemented and the fact that high-risk sectors were selected and approached to enter into these covenants may have biased the comparison on exposure (Blatter et al., 2007).

14.6 Policy-Level Interventions at Inter-Organizational Level

The complexity of legislation has brought about a high degree of specialization and differentiation, evident in the plethora of working groups at the macro policy level (Andersen, Eliassen, & Sitter, 2001). This in turn has prompted focus on the importance of policy networks ranging from close and stable 'policy communities' to looser 'policy networks' (Richardson, 1996), indicating the importance ascribed to informal relationships, shared views and the role of the civil society in general. Civil society has always played a central role in the development of European nation-states. It comprises a broad array of social organizations, trade unions, non-governmental organizations, local associations, expert/professional associations/societies and others (Geyer, 2003).

Since the early 1990s, the EU has increasingly recognized the importance of civil society in the policy-making/influencing arena as a means of combating poverty, social exclusion, and unemployment through social dialogue, promotion of a wide variety of social and civil organizations, and the integration of civil society issues into the strategies of 'open method of co-ordination' (Geyer, 2003) and more recently through key initiatives aimed at promoting Corporate Social Responsibility (CSR) (for example, European Commission, 2001, 2002). The role of civil society in social dialogue is relatively well established and institutionalized with clearly defined stakeholders, procedures, and actions that therefore represent 'policy communities.' Policy initiatives arising out of social dialogue can take place at the macro level (European and national) as well at the sectoral level, as discussed above.

However, policy-level interventions can also be developed and implemented at the inter-organizational level, where civil actors with or without the involvement of governmental actors organize to promote specific areas of interest. This involves the development of 'policy networks' of organizations, government bodies, businesses, or experts to share examples of good practice, recommendations, guidance, and tools. Some examples of such inter-organizational networks in the area of occupational health and safety include the ILO International Occupational Safety and Health Information Centre (CIS) Network, WHO Global Network of Collaborating Centres in Occupational Health, European Network for Workplace Health Promotion (ENWHP), Partnership for European Research in Occupational Safety and Health (PEROSH), Northern Dimension Partnership in Public Health and Social Well-being (NDPHS), CSR Europe, and the Enterprise for Health (EfH) network.

14.6.1 Case Study Example: European Network for Workplace Health Promotion (ENWHP)

Established in 1996, the European Network for Workplace Health Promotion (ENWHP) is a platform for all stakeholders interested in the improvement of workplace health and is committed to working towards the vision and mission 'healthy employees in healthy organizations.' The Network was founded when the European Union adopted the Programme of Action on 'Health Promotion, Education, Information and Training' to improve public health standards in Europe in which workplaces were accorded a special role.

Since it was established, ENWHP has grown steadily, with a current membership of 31 national safety and health and public health organizations in the EU Member States, Switzerland, and countries of the European Economic Area. Over these years the network has successfully formulated a general definition for workplace health promotion (WHP) in Europe, developed standardized criteria for good quality workplace health, and published reports with models of good practice from a wide range of industrial sectors. ENWHP has also developed a European toolbox of successful practices and identified strategies to help keep workers longer in employment. In addition, national networks were established by ENWHP in recent years to disseminate information on WHP to a wider audience, including interest groups and decision-makers from politics, industry, and society. Through the combined efforts of its members, partners, employers, employees, and society, the network seeks to improve the health and well-being of people at work (European Network for Workplace Health Promotion (ENWHP) [ENWHP], 2007).

14.6.2 Case Study Example: CSR Europe

CSR (Corporate Social Responsibility) Europe is the leading European business network for corporate social responsibility with around 75 multinational corporations and 25 national partner organizations as members. Its mission is to support member companies in integrating CSR into the way they do business on a daily basis. CSR Europe sees the issue of health and well-being in the workplace as core to CSR objectives. It feels that the business case is soundly made, at moral, financial, and other levels, but that this still needs to be communicated more efficiently in the language of business. One activity is the CSR Laboratory on Well-being in the Workplace. It aims to identify the key areas related to well-being issues in the workplace as well as mainstreaming and coordinating policy initiatives through discussions of best practices and development of associated tools. The Laboratory brought companies together, in 2007 and 2008, to understand, share, and identify best practices, to facilitate an understanding of managerial performance, as well as highlight supporting tools and techniques. They developed a guide to capture the necessity of

well-being strategies in the workplace, showcase best practices from participating companies, discuss reintegration theories and initiatives, and provide a comprehensive list of resources on various aspects of well-being theory, implementation, and EU or national policies.

14.7 Conclusions

This chapter has analyzed the policy context to occupational and organizational health distinguishing the different levels of policy-level interventions and the role of stakeholders in the policy process. It also presented examples of policy-level interventions at each of these levels, differentiating between hard and soft regulation. A model for the evaluation of policy-level interventions has been offered as a guide for studies in this area. However, it must be highlighted that there is no one-size-fits-all evaluation approach in policy research, particularly given the complexity of the policy process itself and its context specificity.

Indeed, complexity of regulation, even if one considers hard law alone and the volume of legally binding health and safety regulations, has given rise to a number of 'better regulation' initiatives both at European and national (e.g., UK, the Netherlands) levels. The current trend for 'better regulation' is viewed by many as a trend towards 'deregulation,' or at least towards a less stringent and more goal-setting approach to policy making in health and safety (Department for Business Enterprise and Regulatory Reform, 2008; Lofstedt, 2007). Regulatory impact assessment is now a more widely used tool, and it aims at assessing the possible costs (financial, administrative, social) of introducing different types of policies before a decision is made for the best option to be adopted (Torriti, 2007). It is hoped that the more effective use of regulatory impact assessment will reduce the burden of increased legislation to the state and to businesses (and especially small and medium-sized enterprises). In this new landscape of health and safety policy making, softer forms of regulation now become more important and relevant than ever – as does research examining the development, implementation, and evaluation of policy-level interventions.

As shown in this chapter, policy underpins occupational health and organizational practice in a complex way and through different avenues. For occupational and organizational health research to achieve its desirable outcomes, it is important that researchers are aware of the policy process, the stakeholders involved, and implementation issues. Research involving stakeholders in its process will have greater potential to achieve impact both in policy and practice. Such research is unfortunately limited and more so as concerns the evaluation of policy-level interventions (Leka et al., 2010). It is important that this gap is addressed in the future for effective translation of research into policy and practice to be achieved.

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