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# ENHANCE YOUR WORKPLACE!

A dialogue tool for workplace health promotion  
with a salutogenic approach

Petra Nilsson



**LUND**  
**UNIVERSITY**  
Faculty of Medicine

I samarbete med Högskolan Kristianstad



Malmö 2010

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**This thesis is dedicated to Peter  
my swimming partner in the river of life**

*"It's the little details that are vital.  
Little things make big things happen"*  
- John Wooden

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# List of papers

This thesis is based on the following papers, referred to in the text by their numbers.

- I** Nilsson, P., Bringsén, Å., Andersson, H.I., & Ejlertsson, G. (2010). Development and quality analysis of the Work Experience Measurement Scale (WEMS). *WORK: A Journal of Prevention, Assessment & Rehabilitation*, 35, 153-61.<sup>1</sup>
  
- II** Nilsson, P., Andersson, H.I., Ejlertsson, G., & Troein, M. Workplace health resources based on SOC theory. (2010). *Accepted: International Journal of Workplace Health Management*.
  
- III** Nilsson, P., Andersson, H.I., Ejlertsson, G., & Blomqvist, K. How to make a workplace health promotion questionnaire process applicable, meaningful, and sustainable. *Submitted*.
  
- IV** Nilsson, P., Andersson, H.I., & Ejlertsson, G. WEMS, the Work Experience Measurement Scale, a usable tool in workplace health promotion. *Submitted*.

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# Abbreviations

ANOVA	Analysis of Variance
AY	Autonomy (sub-index in WEMS)
CA	Cronbach's Alpha
CATS	Cognitive Activation Theory of Stress
COR	Conservation of Resources
ERI	Effort Reward Imbalance
EUHPID	European Community Health Promotion Indicator Development
GRR	Generalized Resistance Resources
GSE	General Self-Efficacy
IW	Internal Work experience (sub-index in WEMS)
JDC	Job Demand Control
JDR	Job Demand Resources
MT	Management (sub-index in WEMS)
PCA	Principal Component Analysis
PT	Pressure of Time (sub-index in WEMS - Paper I)
QoL	Quality of Life
RO	Reorganization (sub-index in WEMS)
SER	Specific Enhancing Resources
SHIS	Salutogenic Health Indicator Scale
SOC	Sense of Coherence
SW	Supportive Working conditions (sub-index in WEMS)
TE	Time Experience (sub-index in WEMS - Paper IV)
UWES-9	Utrecht Work Engagement Scale - 9 items
WE	Work Engagement
WEMS	Work Experience Measurement Scale

## Name abbreviations

G.E	Göran Ejlertsson
I.A	Ingemar Andersson
K.B	Kerstin Blomqvist
M.T	Margareta Troein
P.N	Petra Nilsson
U.E	Ulf Ericsson
Å.B	Åsa Bringsén

# At a glance

**Paper I** describes a development process and quality tests of a questionnaire with a salutogenic approach: the Work Experience Measurement Scale (WEMS). In 2005, a mail survey was sent to employees (n=610) working in three scopes of practice at the hospitals in Ängelholm and Hässleholm. The response rate was 73% (n=446). A focus group study with 14 sessions (n=78) was performed in 2006 in one of the scopes of practice at the Ängelholm hospital.

The quantitative data was used in a factor analysis (Principal Component Analysis) to construct dimensions of the questions. The factor analysis resulted in six acceptable dimensions. The contents of the six dimensions were: management, reorganization, internal work experience, time use, autonomy, and supportive working conditions. The qualitative material was analysed with regard to contents, and three overall themes were found: Experience of work, Organizational changes, and Work progress. These themes were used to compare and strengthen the quantitative result. Reliability was tested by test-retest and Cronbach's Alpha. The validity was tested with correlations and comparisons of contents with other instruments. From a reliability and validity point of view, the questions were determined to be of good quality. The theory background of the questions in WEMS and the quality tests show that WEMS should function as a usable questionnaire in workplace health promotion from both a theoretical and an empirical perspective. One intention with WEMS is that a questionnaire process should help stimulate organizations to improve the employees' positive experiences of their work and workplace.

**Paper II** tests the hypothesis that the Sense of Coherence (SOC) theory is usable in workplace health promotion. The SOC theory was used as a theory framework to identify detailed work-related factors and processes from a salutogenic perspective. The study was based on the same focus group material as in paper I. In this analysis, 13 sessions (n=71) were used, not including the group with managers.

The material was analysed deductively, which means that the analysis was performed with the components from the SOC theory: comprehensibility, manageability, and meaningfulness, as a framework for identifying positively experienced work-related factors and processes of importance. The findings showed that there were work-related resources that the employees experienced as enhancing. By attending to and understanding such enhancing resources, they could contribute to the awareness of savoring such positive experiences. Furthermore, it could contribute to strengthening the employees to cope with stressors in an adequate way. The paper suggests an extension of Antonovsky's concept of Generalized Resistance Resources (GRR), which describes overall resources for developing a strong SOC, using the concept of Specific Enhancing Resources (SER). SER are important for maintaining or increasing the employees' SOC, and they were found in the material as daily tangible occurrences, factors, and relationships. SER are the details of the GRR. The study supports the hypothesis that the SOC components are useful in workplace health promotion, and that they could be used as a starting point for dialogues about SER at the workplace.

**Paper III** explores the incentives that are important for participation in and commitment to workplace health promotion questionnaire processes that are experienced as meaningful and well-functioning. The study was performed at the Ängelholm hospital in collaboration with two wards (n=69). Six of the ward's employees were interested in participating in a core group, which together with the researcher should improve the WEMS questionnaire to make it useful in practice. The core group members were nurses and assistant nurses (n=6). The study was participatory, and the research was performed in collaboration with the core group, the ward managers, and the other employees at the both wards. Using the WEMS questionnaire as a starting point, a number of process meetings were held in 2008 and 2009 with the core group and the managers. Also, a pilot study of WEMS was performed at the wards to test the WEMS in a practical questionnaire process.

The material from the process workshops was content analysed and three categories were summarized: an applicable and meaningful questionnaire process, involvement in the outcome work process, and a continuous and sustainable questionnaire process. From these categories, a synthesis is shown as a structure. The paper describes how a questionnaire process could be worked out, why it is important to establish the questionnaire process, create an understanding and meaningfulness for the questionnaire and its purpose, how interventions are focused on and implemented, and that the dialogue should be in focus all the time. This is concluded in three prerequisites: involvement of a core group; shared decision-making, and a structured workplace questionnaire process. The findings of the study give a valuable contribution to how and why workplace questionnaires in workplace health promotion could and should become more meaningful, applicable, and sustainable over time.

**Paper IV** shows validity arguments for WEMS to measure experiences of work from a salutogenic perspective. A web-based survey was performed in 2009 at the Ängelholm hospital. The questionnaire was sent to 770 employees, of which 505 were completed, which is a response rate of 66%. This paper is a continuation of the first paper on the instrument development of WEMS. Reasoning about validity is detailed in the paper by showing the usability of the questionnaire from comparing WEMS with several other established questionnaires and questions measuring aspects related to health and work from a positive point of view. The measurements used were: the Utrecht Work Engagement Scale (UWES-9), the General Self-Efficacy Scale (GSE), the Salutogenic Health Indicator Scale (SHIS), and individual questions on self-rated health, well-being, and quality of life.

WEMS was tested as a total index and divided into the six dimensions, here called sub-indices. All the correlations between WEMS and the other instruments were positive, which indicates that all scales measure health and work experience in a positive direction. The correlations showed convergent validity and discriminant validity. The compliance between WEMS and UWES-9 shows the degree of convergent validity, i.e. to what extent WEMS measures a related construct with a correlation above the accepted criteria of 0.5. Discriminant validity is shown through correlations between WEMS and the health-related instruments and the individual questions respectively below the criteria of 0.5. This demonstrates that WEMS does not primarily measure health, but does it secondarily as experiences of work influence on the individual's health in various ways. WEMS sub-indices were used to explore the ability to discriminate between groups. Age, profession, position as manager or not, areas of practice, and wards were groups which were tested with ANOVA and t-test. WEMS sub-indices showed a better discriminative ability than the total WEMS index. Empirically, WEMS was shown to have acceptable qualities, which indicates its potential as a well-functioning workplace health promotion questionnaire that can measure experiences of work from a salutogenic perspective. Such a tool is useful for enhancing the employees' resources, capabilities, and performance at work. WEMS is also a contribution to workplace health promotion as the questionnaire characteristics can have the function of promoting health from a salutogenic point of view.

# En överblick

**Artikel I** beskriver en utvecklingsprocess och kvalitetstestning av det salutogent inriktade frågeformuläret Work Experience Measurement Scale (WEMS). År 2005 skickades en postenkät ut till personalen (n=610) inom totalt tre verksamhetsområden vid sjukhusen i Ängelholm och Hässleholm. Svarefrekvensen blev 73% (n=446). En fokusgruppsstudie med 14 sessioner (n=78) genomfördes 2006 inom ett verksamhetsområde vid Ängelholms sjukhus.

Enkätdata användes för att göra en faktoranalys (Principal Component Analysis) av frågorna. Faktoranalysen resulterade i en fördelning av frågorna i sex dimensioner som tillfredställande uppfyllde analyskriterierna. Innehållet i de sex dimensionerna var om: ledarskap, förändringsarbete, individuella inre upplevelser, tidsutnyttjande, självbestämmande och stödjande arbetsförhållanden. Materialet från fokusgruppsstudien analyserades med innehållsanalys, vilken resulterade i tre övergripande teman: upplevelser av arbete; organisatoriska förändringar; och arbetets utveckling. Innehållet i dessa tre teman användes för att jämföra med och styrka det kvantitativa resultatet. Efter tester av reliabilitet, såsom test-retest och Cronbach's Alpha, samt validitet i form av korrelationer och jämförelser med innehållet i andra frågeformulär, bedömdes frågorna i WEMS vara av god kvalitet. Teorierna som ligger till grund för frågorna samt de utförda kvalitetstesterna visar att WEMS utifrån teoretiskt och empiriskt underlag borde fungera som en användbar enkät för hälsofrämjande arbete på arbetsplatser. En intention med WEMS är att en enkätprocess ska kunna bidra till att organisationer blir stimulerade att förbättra medarbetarnas positiva upplevelser av arbetet och arbetsplatsen.

**Artikel II** testar hypotesen om att teorin Sense of Coherence (SOC) är användbar i hälsofrämjande arbete på arbetsplatser. SOC-teorin används som utgångspunkt för analysen för att identifiera detaljerade arbetsrelaterade faktorer och processer utifrån ett salutogent perspektiv. Studien baseras på samma fokusgruppsmaterial som i artikel I. I analysen användes 13 sessioner (n=71), gruppen med chefer användes inte i analysen.

Materialet tolkades med deduktiv innehållsanalys, vilket innebar att analysen utgick från SOC-teoriens komponenter: begriplighet, hanterbarhet, meningsfullhet som analysram för att identifiera betydelsefulla och positivt upplevda arbetsrelaterade faktorer och processer. Fynden visade att det fanns arbetsrelaterade resurser som upplevdes som stärkande av medarbetarna. Genom att uppmärksamma och förstå de stärkande resurserna som finns, så skulle det kunna bidra till att arbetsgruppen på ett mer medvetet sätt kan ta tillvara sådana positiva upplevelser och erfarenheter. I förlängningen bidrar det till att medarbetarna blir stärkta till att på ett adekvat sätt kunna hantera påfrestningar. Artikeln föreslår således en utökning av Antonovskys koncept generella motståndsresurser (Generalized Resistance Resources), som beskriver resurser för att utveckla en stark SOC på ett övergripande plan, med specifikt stärkande resurser (Specific Enhancing Resources - SER). SER har betydelse för att bevara eller öka medarbetarens SOC; sådana påvisades i analysen vara dagliga konkreta händelser, faktorer och relationer på arbetsplatsen. SER är följaktligen detaljerna av GRR. Studien ger stöd för att SOC-komponenterna är konkret användbara i hälsofrämjande arbete genom att de skulle kunna användas som utgångspunkter för dialog om SER på en arbetsplats.

**Artikel III** undersöker vilka drivkrafter för delaktighet och engagemang som är betydelsefulla för ett meningsfullt och fungerande hälsofrämjande enkätarbete. Studien genomfördes på Ängelholms sjukhus tillsammans med två vårdavdelningar (n=69). Av avdelningarnas medarbetare var det sex personer som frivilligt deltog i en kärngrupp, som tillsammans med forskaren skulle arbeta för att göra frågeformuläret WEMS praktiskt användbart. Kärngruppen bestod av sjuksköterskor och undersköterskor (n=6). Studien var participatorisk, och forskningen bedrevs därmed i nära samarbete med kärngruppen, med avdelningarnas respektive chefer och de övriga medarbetarna på de båda avdelningarna. Med frågeformuläret WEMS som utgångspunkt genomfördes under 2008 och 2009 ett antal diskussionsmöten med kärngruppen och cheferna. Även en pilotstudie av WEMS tillsammans med de båda avdelningarna genomfördes för att praktiskt testa WEMS i en enkätprocess.

Materialet från mötena analyserades och fyndet blev tre kategorier: en användbar och meningsfull enkätprocess, att vara involverad i resultatarbetsprocessen och en återkommande och hållbar enkätprocess. Utifrån de tre kategorierna gjordes en syntes som beskrivs i en cirkulär struktur. Artikeln beskriver ingående hur en enkätprocess kan arbeta igenom och betonar varför det är så viktigt med att förankra enkätprocessen, skapa förståelse och meningsfullhet för enkäten och dess syfte, hur interventioner inriktas och genomförs samt att dialogen hela tiden ska vara i fokus. Detta sammanfattas i tre förutsättningar: involvera en kärngrupp, dela beslutsfattande och en strukturerad enkätprocess. Studiens fynd ger ett värdefullt bidrag till hur och varför enkätprocesser i hälsofrämjande arbete på arbetsplatser kan och bör bli mer meningsfulla, välfungerande och hållbara över tid.

**Artikel IV** visar på validitetsargument för att WEMS mäter upplevelser av arbete utifrån ett salutogent perspektiv. En webbaserad enkätstudie genomfördes 2009 på Ängelholms sjukhus. Enkäten skickades till 770 sjukhusanställda varav 505 besvarade enkäten, vilket innebär en svarsfrekvens på 66 %. Artikeln är en fördjupning av den första artikeln om instrumentutvecklingen av WEMS. Kvalitetsaspekter av frågeformuläret påvisas genom att WEMS jämförs med etablerade frågeformulär och frågor som mäter hälsa eller arbetsrelaterade aspekter utifrån ett positivt synsätt. Instrumenten som användes tillsammans med WEMS var: Utrechts Work Engagement Scale (UWES-9), General Self-Efficacy Scale (GSE) och Salutogenic Health Indicator Scale (SHIS), och de enskilda frågorna berörde självskattad hälsa, välbefinnande och livskvalitet.

WEMS testades både som ett totalindex och uppdelat på de sex dimensionerna, här kallade sub-index. Alla korrelationer var positiva mellan WEMS och instrumenten, vilket indikerar att alla mätinstrumenten mäter upplevelser av hälsa och arbete i en positiv riktning. Korrelationer visade även på konvergent validitet och diskriminativ validitet. Graden av överensstämmelse mellan WEMS och UWES-9 visas genom konvergent validitet, dvs. i vilken utsträckning WEMS mäter ett relaterat begrepp, genom att korrelationerna var över den accepterade nivån 0.5. Diskriminativ validitet visades genom att korrelationer mellan WEMS och de hälsorelaterade instrumenten och frågorna låg under 0.5. Det visar på att WEMS inte mäter hälsa primärt men väl sekundärt då upplevelser av arbete påverkar hälsan på olika sätt. WEMS sub-index användes även för att undersöka diskrimineringsförmåga mellan grupper. Ålder, yrke, chefsposition, verksamheter och avdelningar var grupper som testades med ANOVA och t-test. WEMS sub-index visade på bättre diskrimineringsförmåga än det totala WEMS-indexet. Empiriskt visade WEMS ha god kvalitet vilket indikerar en potential för att bli en välfungerande hälsofrämjande arbetsplatsenkät, som kan mäta upplevelser av arbete utifrån ett salutogent perspektiv, och som kan bidra till att stärka medarbetarens resurser, kapacitet och prestation i arbetet. WEMS är därmed ett betydelsefullt bidrag till hälsofrämjande arbete som syftar till att skapa hälsa, då frågeformulärets egenskaper är just promotiva och fungerar att användas utifrån ett salutogent förhållningssätt.

# Preface

*“The real voyage of discovery consists not in seeking new landscapes  
but seeing with new eyes”* - Marcel Proust

This thesis in public health science is a contribution to the field of workplace health promotion, especially concerning questionnaire processes. The research was conducted from a salutogenic point of view, as a contrast to the more common risk perspective with a pathogenic approach. My desire is that this thesis will be used by other researchers who will perform similar processes, and also be useful to practitioners who are going to use workplace questionnaires. The question of utility has been in the focus of this project. With the spirit of salutogenesis governing all my work, I have tried to bear in mind the three components in the theory of Sense of Coherence (SOC): comprehensibility, manageability and meaningfulness in the thesis.

We have all at one time or another completed questionnaires for different purposes. Have you asked yourself why or for whom the questionnaire results would be used? Maybe you did it for a good cause, because you were getting a lottery ticket, or because you thought that your answers could change something for the better. There are various incentives for completing a questionnaire and the incentives will be reduced or enhanced due to processes relating to the experienced result. A common opinion is that there is no use completing a questionnaire because the result will lead nowhere or the goal will never be achieved. People have lost faith in questionnaires because results are often misused. This is sad as questionnaires could be of great use to promote something good, for example workplace health. To restore the trust for participation and increase the interest in questionnaire processes, we need to rethink the issue and look at questionnaires with new eyes.

Through this thesis, my research journey will be mirrored by descriptions of the action research performed in various collaborations with participants, with various methods, by the striving for useful research findings, and of course on all the theories and models that I have come across during this exciting project.

# Introduction

In 1998, Ryff and Singer wrote: “*We know little about the essential nature of positive goods in work...*” (p. 18) and today, twelve years later, the research in workplace health promotion still mainly focuses on preventing the work-related risks instead of also focusing on promoting the positive features of the work situation. Levi (2009) wrote about inclusive work life in relation to the Treaty of Lisbon from 2009, and work is discussed from two aspects, more jobs on the one hand and better jobs on the other. In Sweden, the focus is more on how to create new jobs than on efforts for a sustainable working life. Workplaces that strive to enhance the employees’ health and work performance will flourish in terms of productivity and well-being according to Levi. To achieve a flourishing workplace, the manager needs to understand the efficiency of health promotion, not only have knowledge on health prevention, and then work actively with workplace health promotion together with the employees (Levi, 2009).

In Sweden’s national Public health policy (Folkhälsoinstitutet [FHI], 2009), there are eleven public health objective domains. One of these, number four, concerns health in people’s work life. This domain emphasizes the workplace as an arena for health promotion where the individual should have the ability to function throughout his/her entire work life, with manageable pace, influence, and skill development. The employer should provide the foundation for this, offering a safe, secure, and healthy workplace. There are other factors in creating health-promoting workplaces, such as authority, management and labour, and occupational health services. There is an expressed need for a greater focus on workplace health promotion from the Swedish government’s national Public health policy (FHI, 2009). Workplaces are most often described in terms of statistics of work-related illness or disease, and numbers of employees on sick-leave rather than from a positive perspective in numbers of long-term good health and presence at work (Aronsson & Blom, 2008; Sveriges Kommuner och Landsting [SKL], 2008).



Health and well-being are complex perceptions emanating from the various pieces of life, e.g. the family, leisure time, and workplace experiences. This thesis is limited to the workplace area, to deepen the understanding of this piece in the complex puzzle of an individuals' life. Workplace health promotion should be based on a holistic perspective on the workplace e.g. how work is organized, the equipment, and social relations, which are factors and processes that contribute to employees' health (Trollestad, 2003). It is not enough or comprehensive to focus on and make interventions in the individuals' health in terms of lifestyle changes (Noblet, 2003). Such interventions could be questioned from the individual's autonomic and ethical point of view as well. Workplace health promotion in terms of enhancing health among a group of employees in order to improve efficiency is more acceptable, because the employees are employed to perform certain work tasks (Åkerlind, Schunder & Frick, 2007). The health enhancement is thereby beneficial to both the employees and the employer, but from different aspects. This enhancement perspective is reported by Kira (2003), who describes the individuals' resources investment in work as a contribution to accomplishing tasks in the work process and to achieving results. An employee is hired because of his/her special qualities (resources). The term resource is a key concept in this thesis. Demerouti, Bakker, Nachreiner and Schaufeli, (2001) and Kira (2003) describe work resources in similar terms as organizationally related psychological, social, and physical characteristics, which – among other things – function to stimulate the individuals' personal development as well as to reduce negative work experiences. Some of these resources are used when working and therefore the employer is obliged to improve the conditions in order to maintain and enhance the employees' resources. If the employer just consumes the employees' resources there is a great risk of draining, which could lead to mental and/or physical disease (Kira & Forslin, 2008). According to Zwetsloot and Pot (2004), the employees' health and well-being are of strategic importance, and employees should be seen as gainful investments for the organization, as valuable resources, instead of potential risks for rehabilitation costs.

As previously mentioned, workplace health interventions are primarily focused on risks and prevention of risks, and the risks are therefore included in workplace questionnaires. According to Benach, Muntaner, Benavide, Amable and Jodar (2002), there is a need for measurements that are related to work health, and the outcome is focused on health. First of all, the employee has a legal right to a safe and healthy workplace (Benach, et al., 2002), but health promotion activities are also intended to improve the employees' work motivation, satisfaction, and thereby productivity (Kira, 2003). Thus, salutogenic research about workplace health promotion and appropriate measurements is essential, in order to increase knowledge and practice about features of and strategies for creating workplaces that enhance the employees' health.

# Aims

## Overall aim

The aim of this thesis was to develop and quality assess a tool, including a questionnaire and a dialogue process, which can be used for workplace health promotion from a salutogenic point of view.

## Specific objectives

*Paper I:* To present the development process and quality assessment of the Work Experience Measurement Scale (WEMS).

*Paper II:* To study the hypothesis of Sense of Coherence (SOC) as a useful theory in workplace health promotion, by way of identifying detailed salutogenic workplace-related factors and processes among hospital staff with the SOC theory as a framework.

*Paper III:* To explore incentives for participation in and commitment to a workplace health promotion questionnaire process by using the WEMS as a case.

*Paper IV:* To present validity arguments regarding WEMS as a salutogenic instrument by exploring its relationship to measures that are positively related to health and work.



# Framework

On the basis of the introduction, the aim and objectives, this section will present a theoretical framework for the thesis. The framework is written from a public health perspective with the workplace as the focal point of interest. Concepts, theories and models that have imbued the research process will be described.

## Health

It is difficult to catch the meaning of the word *health* as it is individually experienced and dependent on the life circumstances in which individuals are living. The word health is often used carelessly, without a clear standpoint (Bowling, 2003). For example, there is a significant difference between “health” as the absence of disease, or “health” as a subjective positive resource for an individual’s capacity to face and manage his/her life. Health is often discussed as if there is a general definition that means the same to all people, which there is not (Ejlertsson & Andersson, 2009). Throughout the years, health has been described in various terms (Strandmark, 2007). The most commonly used and well-known definition of health is the one from the World Health Organization [WHO] (1948): “*Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*” (p. 100). This definition points out a global vision of the important components: physical, psychological and social factors of health in the struggle against health inequalities. Although the definition contains an element of subjective well-being, it points to an ideal picture and a static opinion of absolute health being the optimal goal. However, the WHO definition opens up for interdisciplinary research in public health (Lindström & Eriksson, 2006). The Ottawa Charter for Health Promotion (WHO, 1986) was a public health innovation with its more positive and individually directed description of health: “... *a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities*” (p. 1). The resource capacity is central, and individuals are actively participating in mobilizing health resources from everyday life and settings (Hobfoll, 1989).

In today's public health context, an individual's health is seen from a life perspective, not merely as being healthy or unwell. Health interpreted in a continuum perspective has the ends of ease and dis-ease, and in this sense ease is associated with positive subjective feelings such as well-being (Cowley & Billings, 1999). The concept of well-being is as problematic to define as health (Seedhouse, 1995). However, this thesis interprets well-being as a two-part construct with one cognitive part and one spontaneous experience part. The cognitive part is related to life and an estimation of life satisfaction. The experience part is about positive and negative affect in a shorter perspective (Seedhouse, 1995). The life satisfaction part is connected to the concept of quality of life (QoL), which relates to positive aspects of an individual's physical and mental health (Eriksson & Lindström, 2007) like an individual's personality, how an individual is connected to the surrounding environment, and how the individual's hope and goals are achieved. Life experiences that have a positive affect on the individual are health promoters (Fredrickson, 1998). Even if the term positive health is interpreted differently in the literature, this thesis refers to it as a holistic description of health, like a positive subjective experience and a resource in life presented by Bringsén, Andersson and Ejlertsson (2009). They stated that health indicators could be assessed from a salutogenic point of view through self-assessment of health aspects (physical, mental, and social well-being).

## Pathogenesis and salutogenesis

Scientifically, health is founded in philosophy where different approaches describe and interpret health in different ways. There are elementary differences between interpreting health from a pathogenic point of view or from a salutogenic point of view. Both perspectives of health development are significant from a public health point of view (Bauer, Davies & Pelikan, 2006). Starting with pathogenesis, which means disease origin and/or creation (Keyes, 2007), the focus is to describe the cause or development of a disease. Health is in this perspective seen as the absence of disease. Seeing pathogenesis from a philosophical stance, its feature is reductionism, which means that a complex system could be fully understood by its components (Stringer & Genat, 2004). Salutogenesis is described in contrast to pathogenesis. Salutogenesis is a stance that focuses on how to interpret and explore health in a positive sense, and could philosophically be described by holism. It implies that life could be seen as a complex system that has emergent properties as a whole, which cannot be explained only by its components (Antonovsky, 1987b).

It is significant to be aware of the different interpretations of health and to make a clear standpoint of approach in health research and improvement activities. The European Community Health Promotion Indicator Development (EUHPID) model gives a clarification of the two parallel perspectives on health development. On the one hand is healthcare of disease, and protection and prevention of risk factors, and on the other hand is the promotion of resources for positive health. It is significant to identify the disarticulation of the concept health promotion, when for example the focus of an intended healthcare activity is discussed (Bauer, et al., 2006).

## Salutogenesis and sense of coherence

Aaron Antonovsky (1987b) contributed to the health perspective with *salutogenesis*. He raised the question of “what creates health?” from studies on women who had survived the Holocaust. There was a group of women that despite their background had maintained good health and a belief in life. Antonovsky meant that there is an origin of health that strengthens and mobilizes an individual to face adverse life situations. Antonovsky was interested in finding out those conditions and resources in life that could enhance the individual’s health and strength, instead of those causing illness and weakness. The salutogenic perspective focuses on a description of such causes of health, meaning the development process and the maintenance of health resources (Antonovsky, 1987b). It could be explained by an individual’s lifetime as a continuum between the opposite ends of ease and dis-ease. During a lifetime, an individual faces positive and negative occurrences that are experienced as strengthening or weakening, and the experiences are influencing the individual’s variation over the continuum. Salutogenesis focuses on causes of positive movement toward the ease end as well as on factors and processes that contribute to maintain a position near the ease end. Antonovsky’s (1996) concept of Generalized Resistant Resources (GRR) is an overall operationalization of such causes: “... *a property of a person, a collective or a situation, which, as evidence or logic has indicated, facilitates successful coping with inherent stressors of human existence*” (p. 15). Examples of GRR are personality traits, money, and social support. Individuals make use of appropriate combinations of GRR to cope with stressors and situations to which they are being exposed.

To explain specifically how an individual is making sense and dealing with life stressors cognitively, instrumentally and emotionally via GRR, Antonovsky (1987b) introduced the theory of Sense of Coherence (SOC): "*a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement*" (p. 19).

The theory contains three components called 1) comprehensibility, 2) manageability, and 3) meaningfulness. They describe how an individual perceives, values and manages a stressor from his/her capacity in terms of predictability and understanding (comprehensibility), resource accessibility (manageability), and personal commitment (meaningfulness). Stressors in life are always present and Antonovsky's attitude was that stressors have a purpose and should be faced and dealt with, not only defeated. SOC as a personal resource to face stressors adequately could thus improve health, QoL and well-being (Antonovsky, 1996). The SOC theory has similarities with the concept of *hardiness* used by Kobasa (1979). Hardiness could be seen as salutogenically based as it describes the individual's commitment, control, and challenge, components that are comparable to the three SOC components. An individual with hardiness will face his/her life situations, take control of and responsibility for what happens, and has the ability to act and treat changes in life as potential development. Kobasa suggests hardiness as an explanation of why individuals manage to maintain or enhance their health despite a high stress level (Kobasa, 1979).

Previously, SOC was assumed to be a stable characteristic from about the age of 30 (Antonovsky, 1987b), but more recent research has proven that SOC has the potential to be developed during the entire life (Lindmark, Stenström, Gerdin Wärnberg & Hugoson, 2010), which means it could also be learned (Lindström & Eriksson, 2006). From this, improvements of individuals' SOC could be made in various settings in which the individual is situated. According to Kalimo, Pahkin, Mutanen & Toppinen-Tanner (2003), the workplace is one arena where SOC could be changed by experiences. According to Antonovsky (1987a), an individual's experiences of his/her workplace environment could have an impact on their SOC. This is also described in later research (Kalimo, et al., 2003; Volanen, Lahelma, Silventoinen & Suominen, 2004). Thus, the workplace is a valuable arena for enhancement of resources that may contribute to an increased SOC of the employees (Kira, 2003). SOC is increasingly applied in research of workplace health, e.g. on the organizational climate's impact on SOC (Feldt, Kinnunen & Mauno, 2000; Feldt, Kivimäki, Rantala & Tolvanen, 2004).

After Antonovsky's death in 1994, the SOC measurement has been used in several studies in recent years (Lindström & Eriksson, 2005). Eriksson (2007) made a review and exposition of the research field of salutogenesis and SOC in her thesis. In recent years, Eriksson and Lindström have presented articles where they interpret, discuss and relate the salutogenic approach to e.g. public health development (2006), promotion of mental health (2008a), the Ottawa Charter (2008b), and healthy public policies (2009). Several other studies have investigated the correlation between a low SOC value and the risk for various diseases, e.g. diabetes (Agardh, et al., 2003) and long-term sick leave (Bergh, Baigi, Månsson, Mattsson & Marklund, 2007). The SOC theory in such research is used in studies with a pathogenic outcome. A question like "how salutogenic is SOC?" is justified because SOC in these studies is not interpreted in a salutogenic way. Thus, measuring SOC to explore how well an individual can understand, manage, and see meaning in everyday life, despite living with a disease or experience of illness, is to use SOC in a salutogenic way. SOC is in such a case something positive and a strength factor for managing ones life with health as a resource. Johnson (2004) states that important personal characteristics for a high level of SOC is an internal locus of control and self-esteem, which contributes to a positive outlook on life. According to Nilsson, Holmgren and Stegmayr (2003) SOC may vary over time and could be influenced by individual as well as social conditions. Individuals with a high degree of SOC often maintain a stable level over time, and for these individuals, interventions for maintenance of SOC are significant. For individuals with a lower SOC that has potential for improvement, workplace health interventions are essential for increasing their SOC. Salutogenesis and the SOC theory is proposed by Antonovsky (1996) to be used as a guide to health promotion interventions, as it focuses on enabling opportunities and identifying resources.

## Health promotion

Health promotion is a widely used concept, and internationally speaking it covers both the perspectives of protecting and preventing individuals from risk factors, and promoting positive factors and processes that contribute to individuals' health enhancement (Bauer, et al., 2006). The word *pro-motion* makes the strategy of health promotion actions more clear, as it means "movement", i.e. the action could be interpreted as "the movement" towards the ease-pole on the health continuum (Hansson, 2004).



For a long time, the WHO Ottawa Charter from 1986 has been used as a framework for health promotion. The Ottawa Charter emphasizes enabling and empowerment processes as essential for health promotion. Eriksson and Lindström (2008b) connect the Ottawa Charter with salutogenesis and emphasize the role of salutogenic principles and the concept of SOC in health promotion interventions for society, group, and individual health. Sparks (2010) states that active participation in health promotion increases the participants' understanding of significant health determinants and thereby enables change or improvement. An empowerment process in health promotion will be strengthened and increase the probability for action when meaningful goals with the health promotion interventions are stated by the participants (Sparks, 2010). Poland, Krupa and McCall (2009) describe a settings approach to health promotion, which means that various contexts should be focused on because they is where individuals spend time in their lives e.g. at work. The central part in a settings approach is an extended understanding of the context, including making a description of previously performed health promotion, resources required for success, priority focus, committed participants, strategy, and evaluation of the process. The incentives for health promotion should be concretized by the individuals in the local context, because they have the experience of it and their needs, and thereby interventions can be optimized. The focus of action in health promotion has to be reflected upon and discussed on the basis of values, principles and norms in the local context (Seedhouse, 2004; Sparks, 2010) to fit the context needs and thereby have more potential to be effective (Polanyi, McIntosh & Kosny 2005). Sparks (2010) demonstrates values of health promotion in relation to community health development, but the principles are also applicable to a work context. The stated values of empowerment, equity, respect, moral, ethics, and sustainability will be further discussed in the section about workplace health promotion.

## Measuring health with a promotive purpose

Health measurements through surveys are often used in health promotion as a basis for prioritizing interventions. In such measurements, the goal is health but the measuring is focused on symptoms that decrease the health status (Bowling, 2003). This kind of measurement is problematic due to the different interpretations of health discussed in previous sections. In health promotion, such interventions will be ambiguous, and if the aim is to increase health and well-being, it is essential to measure health from a health promoting point of view. Appropriate measurements from a salutogenic perspective are therefore needed. Such a measurement is the Salutogenic Health Indicator Scale (SHIS) developed by Bringsén, et al. (2009). SHIS focuses on indicators of health in a holistic sense, covering both an individual's interactive functions and intrapersonal characteristics. SHIS has potential, and it could be used in workplace health promotion. If SHIS is combined with a

questionnaire measuring work and workplace characteristics, assessment of health impacts from interventions could be made. Workplace health could be measured from various perspectives, for example physical, psychological and social experiences in relation to work and the workplace. According to Garcia and McCarthy (1996), surveys are providing valuable information as the result shows local information, and measuring continually forms a basis for continuous improvements and sustainability in e.g. workplace health promotion processes.

## Workplace health promotion

### The workplace – a setting for health

A majority of the adult Swedish population has a paid employment, and spends a large part of their waking hours at their work. The workplace is therefore a significant part of people's lives and could, under positively experienced conditions, contribute to enhance their health and well-being from a physical, psychological, and social point of view (Åkerlind, et al., 2007). According to Kira and Forslin (2008), such workplace resources could function as strengthening energy injections to the employees. Work-related resources are, for example, interaction with colleagues, having a satisfying organization of work, being able to influence their work situation, and good equipment (Forslin & Kira, 2008). Furthermore, as a workplace is a demarcated setting, often with commonly clear structures and knowledge about change processes, there should in that sense be favourable prerequisites and potentials for health promotion activities (Antonovsky, 1987a; Kira, 2003). For a long time and still today, health promotion interventions at workplaces are focused on the employees' lifestyle, e.g. smoking habits, diet, and exercise (Noblet, 2003), but now, the employees' experiences of the working conditions and how the work is organised have become increasingly highlighted in research (e.g. Docherty, Forslin & Shani, 2002; Ericsson, 2010; Forslin & Kira, 2008). From an economical perspective, the employees' health and well-being are factors that are significant for efficiency and productivity. The workplace has a mutual significance to society, the employer and the employee, and it is beneficial from different aspects. Thus, workplace health promotion efforts are important (Åkerlind, et al., 2007).

In the previous section about health promotion, an equivocal international perspective was described, and efforts and activities for workplace health promotion from an international perspective focus on both prevention and promotion in the same context. It is significant to point out that the prevention and promotion perspectives do not exclude each other, as they are both essential, however from different perspectives. Commonly, the purpose of a workplace intervention does not

have a clearly stated meaning as to whether the intervention should be driven with a prevention or promotion purpose. An intervention would probably be more effective if the aim of the intervention is demonstrated (Bauer, et al., 2006) and appropriate measures are used (Bowling, 2003).

Workplace health promotion should permeate the entire organization, e.g. in decision-making, planning and actions, because the whole context is significant for both impact and sustainability. Under such circumstances, the employees' health and well-being have good prerequisites for being improved and enhanced (Kira, 2003). According to Sparks (2010), intersectional actions are contributing to success within health promotion. From a work perspective, it could mean to cooperate with trade units and other interested organizations for health development and improvement. For success in workplace health promotion both a top-down and a bottom-up commitment is essential (Kristensen, 2000). It means that workplace health promotion should embrace the organization at all levels, as all people in an organization are important participants in the health development, and they contribute dynamically with their knowledge, ideas and commitment in the workplace health promotion process. When all levels in the organization actively strive for comprehension and towards a common goal, there will be optimum chances for improvements. Also, Sparks (2010) highlights participant inclusion as important in health promotion, meaning that working together with the participants is efficient, and taking time to build good relations and trust. The employees experience their daily work and are the best people to know what to enhance, improve or change. A participatory approach in workplace health promotion is therefore preferred according to research and literature about action research (Stringer & Genat, 2004) that highlights participation as significant for actions to take place. When the employees are participating to a great extent in forming and accomplishing interventions, they will take more responsibility for the process (Stringer & Genat, 2004). In workplace health promotion, a holistic perspective and mixed methodological strategies are preferred, in order to facilitate going out and solving the problem in focus (Gendron, 2001).

The health promotion principles (Sparks, 2010) stated in the health promotion section above could be considered in workplace health promotion as well (European Network for Workplace Health Promotion [ENWHP], 2007). Here, the health promotion principles stated by Sparks (2010) are related to a workplace health promotion perspective. To start with, *empowerment* is an essential process with the purpose of strengthening the capability for individuals and groups to make their own choices and take action to improve their daily work life for themselves and for the organization where they are working. The next process is *equity*, which is a democratic aspect meaning that all employees should be given the same rights to develop, influence and flourish in their working life. Aspects of *moral and ethics* in

interventions involve an obligation for the participants to conduct workplace health promotion with compassion. Related to ethics is *respect*, which should be shown to each person's individual worth and values. Interventions regarding an individual's health in relation to his/her lifestyle need to be considered with respect for the individual's privacy. Finally, *sustainability* is probably the most difficult to accomplish in workplace health promotion. Continuous endurance is about continuous replenishment of resources (physical, social, emotional) experienced by the employees. Sustainability is facilitated when health promotion includes the entire organization according to Sparks (2010). The revised Luxembourg Declaration from 2007 (ENWHP, 2007) summarized the principles of workplace health promotion, meaning that it is a mutual action where employers, employees and the community work together for improved health in the workplace.

## Work – a health-creating activity

Work is often discussed in negative terms of distress, dysfunctions and burnout (Maslach, Schaufeli & Leiter, 2001). The opposite term eustress (from the greek word "eu" for good), means a positive response to stressors, and that feelings relating to work are positive, for example challenge and commitment (Nelson & Simmons, 2003). Nelson and Simmons (2003) present a holistic stress model, which contains both positive and negative responses to stressors. An individual is experiencing a stressor as eustress or distress, and handles the situation in one way or another. Individual differences, like strength of sense of coherence, hardiness, and optimism, play a role regarding how and how well the individual manages the situation experienced, meaning what the outcome will be, for example physical and/or mental health. In connection to this, Luthans (2002) describes the concept of *positive organizational behaviour* as: "...the study and application of positively oriented human resources strengths and psychological capacities, that can be measured, developed, and effectively managed for performance improvement in today's workplace" (p. 698). Positive organizational behaviour can be related to the concept of *regenerative work* by Docherty, et al. (2002), which emanates from the work psychology perspective. The idea of regenerative work is to promote sustainable organizational platforms where a mutual development of energy in the organization is possible, and this leads to a recreation of human resources. According to Ryff and Singer (1998), work could be a health-creating activity to ascertain meaningfulness, developing skills, and self-reliance of work. To create a healthy workplace, there is a need for a constantly ongoing sustainable workplace health promotion process to improve the workplace. As working life is frequently changing, and work tasks as well, promotion of good work content should therefore function as an adjusting and growing process. Sainfort, Karsh, Booske and Smith (2001) describe a work organization as prosperous if it has healthy, flourishing employees and is financially balanced and successful.

Looking at work from the positive point of view, working as an activity fulfils significant needs from both employee and employer perspectives. To the employee, work contributes to life through e.g. the salary, social relations, personal development, satisfaction and work commitment (Nelson & Simmons, 2003). To understand how work can be a health-creating activity to the individual, a resource perspective (Forslin & Kira, 2008; Kira, 2003) is used. An individual possesses various resources, e.g. skills, commitment, health, positive attitude. These resources are invested in a work situation, meaning that the employee is contributing his/hers resources to performing the work tasks. When the individual spends resources, there should be a refilling of resources, and it is the employers' obligation to replenish such essential resources. Especially when organizations are down-sizing and competition increases, the employer has a responsibility to the employees, by law as well as a moral responsibility that the working conditions will not become impaired (Hansson, 2004). Instead, the conditions for the employees' chance to mobilize resources should be enhanced, because if the employer just consumes the employees' resources, there is a great risk for draining the employees. Exhausted employees run a great risk for mental and/or physical illness, and performance decreases drastically (Kira & Forslin, 2008). A work setting that over-utilizes its employee's resources is called intensive. Such an organization could degenerate as the employees' personal resources become consumed and depleted (Docherty, et al., 2002; Kira, 2003).

## Healthcare work

Health care organizations are important settings for workplace health promotion as their assignment is to care for and cure patients. To be able to perform careful patient care, the hospital staff should be healthy. In addition, the role of future health care staff is described in terms of health promotion (Socialstyrelsen, 2009). The health care sector in Sweden has undergone major changes in the last decades, involving a smaller number of beds and employees (Axelsson, 2000), which have affected the health of hospital staff in a negative way (Hertting, 2003). These constant changes require that the healthcare staff can adapt to the new conditions. That is one reason why it is significant that hospital settings work with workplace health promotion, e.g. coping ability. Another reason is that hospital settings and health care work are often described as stressful, with demands for high job quality, and limited control of the work situation (Demerouti, et al., 2000; Garrosa, Rainho, Moreno-Jimenez & Monteiro, 2010). Burnout related to health care work is a result of invested emotional relations to patients and too high work-related demands (Maslach, et al., 2001). On the other hand, health care work is stimulating as it contains challenges, commitment, and interaction with patients (Hallin & Danielsson, 2007; Jönsson, 2005). Factors causing distress in health care work are well explored, but less investigated are the powerful effects of processes in health care and appreciation of success and strength

(Suchman, 2001). Some examples of studies on health care professionals and their positive work experiences are physicians' well-being (Aasland, Rosta & Nylenna, 2010; Jansson von Vultée, Axelsson & Arnetz, 2007), nurses' work life quality (Brooks & Andersson, 2005; de Jonge, Le Blanc, Peeters & Noordam, 2008), and nurses' optimism (Browning, Ryan, Greenberg & Rolniak, 2006). Health care employees' personal resources such as hardiness, self-efficacy and sense of coherence contribute to a better workplace and decrease the risk for burnout (Garrosa, et al., 2010; Malinauskiene, Leisyte & Malinauskas, 2009).

## Theory perspectives applicable to workplace health promotion

Public health science is multidisciplinary. This thesis focuses on workplace health from a salutogenic point of view, and various disciplines, theories, and models have been used to illuminate, explain, and increase the understanding of the workplace health phenomena. This section will therefore present all the theories, models, and concepts that have been used during the research process, and which will also be applied and discussed in relation to the research findings.

Even if the studies in this thesis are not in particular investigating the complex concept of stress, but rather what work factors and processes influence individuals in a positive sense, stress will be briefly described. A large part of previous research about workplace health is stress-related (Frankenheuser, 1993; Karasek & Theorell, 1990; Kelloway, Teed & Kelley, 2008; Lazarus & Folkman, 1984; Maslach & Leiter, 1997; Selye, 1981). *Stress* is the human reaction to an experienced and interpreted threat, also called a stressor. Stress reactions arise when there is a perceived discrepancy between what an individual is able to cope with and the demands of the situation. A stress reaction could be acute or prolonged, and be experienced negatively or positively. Stressors are related to social, physical, and psychological factors and processes in human life (Levi, 2000). In a work situation, negatively experienced stressors are for example an inferior physical environment, insufficient interaction with colleagues, and time pressure. Stress reactions that are experienced as pleasant or curative are called eustressors. Such eustressors are challenging and contribute to focus and give energy in the situation or task that should be fulfilled. Individuals manage occurrences of these and their own reactions to the situation in some way, and Selye (1981) describes it as *coping*. Coping is explained as a process or a result. Levi (2000) describes coping as the effort an individual makes to manage an experienced stressor that exceeds the individual's resources, related to what is expected. The effort could be cognitive or behavioural depending on how the experience is interpreted. How an

individual interprets and reacts to a stressor depends on the individual's abilities and strategies for problem solving. The individual's attitude to managing a situation influences to what extent the individual can change the situation and his/her own experience of it. Thus, the experienced manageability influences the individual's stress level (Lazarus & Folkman, 1984). Coping styles are individual and could be learned (Lazarus, 1999).

In the *Cognitive Activation Theory of Stress* (CATS) Ursin and Eriksen (2004) claims that coping is a learned positive expectation and response to stressors. When a stressor is experienced, the individual's arousal level will be decreased by the expectation of a positive response. The CATS theory could be connected to a model actively used in research about risk outcomes from work-related stress experiences, the *Job Demand Control model* (JDC model) by Karasek and Theorell (1990). The model explains four states (active, passive, relaxed, and strained) that an individual can experience in relation to demands at work in combination with the amount of influence on the work situation. One example is the "active state", a positive experience of high work demands together with great influence on the work situation. The model shows both positive and negative facets of work experience. As working life varies over time, all categories of the JDC model will probably appear now and then. The point of the model is that a state should not be static, because there would then be a risk for unhealthy effects. An overall interpretation of the model is that work-related health can be achieved when the individual has the ability to influence or predict the work situation. The active category in the JDC model is a state that describes a psychosocial work situation formed by high activity and great influence (Karasek & Theorell, 1990). From this, it is interpreted that control is the common denominator between the CATS theory and the active category in the JDC model. The meaning is that control over the work situation is part of the JDC model's active category, as well as a positive coping feature in terms of predictability. Control in terms of positive expectation and understanding of occurrences in the work situation is significant for well-being and a positive experience at work. A positive expectation of managing the work situations enhances creativity and increases the employees' energy, which are significant resources and premises of regenerative work according to Ericsson (2010). Regenerative work (Docherty, et al., 2002) has the prerequisites to develop, enhance and recreate human resources.

In a discussion about resources, the *Effort Reward Imbalance* (ERI) model by Siegrist (1996) is applied. The model describes the relationship between an employee's investment of resources and efforts into work, and his/hers expectations of rewards, e.g. job security, money, and satisfaction, in return. If there is an imbalance between resources invested by the employees and the received or regenerated resources from the organization, stress responses are likely to be triggered, and the employee will suffer from stress-related disease in a long-term perspective. On the other hand, the

model could be interpreted positively. If positive emotions were evoked when resources were enhanced and regenerated, it is likely that they would instead promote growth, motivation and employee well-being related to Kira (2003). A model that describes the two processes of motivation and health impairment as possible results from occupational experience is the *Job Demand Resources model* (JDR) by Demerouti, Bakker, Nachreiner and Schaufeli (2001). The most negative condition is when the employee experiences job demands, and has no or poor resources, neither work-related nor individually related, to manage the situation. Negative effects occur, such as poor health, burnout and probably long-term sick leave. Further Demerouti, et al. describes this as a process of health impairment. The most positive condition is when the employee has adequate resources to manage a situation. In a positive mode, the employee's work commitment will be strengthened and efficiency is enhanced. That is a motivational process. The JDR model is related to both the JDC model and the ERI model, as it connects to the working conditions in terms of work demands (JDC) and work resources (ERI) described by the outcome of positive or negative perception of health. Bakker, Demerouti and Euwema (2005) connect the JDC and JDR models by focusing on the matter of resources. JDC highlights control as the central resource to manage stress in a work situation, whereas JDR extends that thought and means that it is important to buffer several different job resources. Also, Hakanen, Bakker and Demerouti (2005) point at the individual's, as well as the group's, ability to cope with demands at work depends on the mobilization and buffer of resources, and especially when the job demands are high the significance of resources is salient.

The resource perspective is a growing research field that is connected to the salutogenic approach in public health science and to positive psychology by Seligman and Csikszentmihalyi (2000). *Positive psychology* studies factors and processes that positively influence individuals, in terms of personal growth, thriving and well-being, to explore the resources and strengths that are significant in individual's lives. Tetric (2002) states that it is not just the opposite mechanisms and processes of negative illness that are the reasons for employees developing positive health. Positive emotions are qualitatively different. The *Broaden-and-build theory* by Fredrickson (2004) describes the significance of an individual's positive emotions to be able to function optimally. Positive emotions are beneficial in many ways, as they for example broaden thoughts, increase the resilience ability, decrease negative stress, trigger well-being, and contribute to flourishing. From positive emotions, an individual's well-being is enhanced (Fredrickson, 2004). Concepts that are often related to and explored in positive psychology are: flow, savoring, self-efficacy, resilience, work engagement, and optimism.

*Flow* is a short-term psychological peak state or experience in relation to an activity, when an individual's experience of a challenge meets and melts with the level of skill.



A flow experience is characterized by total focus and absorption, e.g. in sports, work, or music (Csikszentmihalyi, 1990; Csikszentmihalyi & LeFevre, 1989). Related to work, flow could emerge in feelings of enjoyment, referring to emotional evaluations, and experience of intrinsic motivation, meaning commitment to tasks due to the pleasure and satisfaction (Bakker, et al., 2005; Bakker & Schaufeli, 2008). Flow has also been used to predict and describe an outcome of motivational processes (Kowal & Fortier, 1999; Straume Vivoll, Christensen & Klöckner, 2009), and being positively related to job performance (Csikszentmihalyi & LeFevre, 1989; Straume Vivoll, et al., 2009). Flow experiences are optimal moments of positive psychological perceptions, and such pleasant feelings are energy-enhancing. Psychological gain processes are related to the model of *Savoring* (Bryant & Veroff, 2007). It is a model that describes how an individual savors positive feelings experienced, a kind of buffering of positive emotions and experiences. There are some necessities for an individual to be able to savor, and these are e.g. low experience of social or psychological demands, being mindful in daily life, and perceiving a meaning in becoming aware of and attending occurring positive experiences. Some individuals could easily savor, others have to train savoring. A savoring process is affected by the conditions of daily life, and these could start or increase savoring, and also be fostered. As well as to foster employees' coping abilities to handle negative experiences, there is a need for fostering and focusing on savoring abilities to mobilize positive experiences in daily life. Similar to savoring, but related to the workplace context, is workplace spirituality (Duchon & Plowman, 2005), that asserts that employees' internal experience of their work could fertilize the workplace, and the individual will be nourished by meaningful work. Organizations with a work spirit that promotes good relations at work, work joy, and comprehensiveness, will foster commitment and positive experiences. Both the model of savoring and workplace spirituality place the focus on inner life experiences that help buffer positive experiences that can be used as resources.

The *Conservation of Resources (COR) model* by Hobfoll (1989, 2001) is a model about buffering all kinds of significant resources. The model has a theory about stress that is different to other theories of stress by its focus on predictive capability. Valuable resources are objects (e.g. home), personal characteristics (e.g. skills, positive outlook), conditions (e.g. employment, financial security), and energies (e.g. spare time interests, work tasks). Individuals are striving to obtain, protect, and replenish valuable resources. When the resources are enhanced and increased, the individual has greater capability for resource gain, and to recover from resource loss, and this is a positive gain cycle. Such a conservation cycle develops when resources are used and replenished continuously. Cycles could also turn negative, when resources are lost and the individual fails to replenish the consumed resources, which leads to psychological stress. The negative cycle could be related to the ERI model. When efforts are made,

also resources are invested, and when no reward is gained, the resources are lost. The JDR and COR models have elements in common with the concept of regenerative work. All models describe processes of positive resources as essential to enhancing health, well-being, and motivation in work situations.

Personal characteristics are contributing resources in the COR model, and one such trait is self-efficacy. *General Self-Efficacy* (GSE) is a complex construct of individually based attitudes and the ability to act, which is influenced by all impressions from the environment (Bandura, 1997). General self-efficacy reflects self-belief in an optimistic way and is a positive, enhancing resource, which strengthens a person's efficiency and reassurance, as well as facilitates coping with and persistence to stressors. The perception is a subsequent behaviour, meaning that feeling self-efficient influences a person's daily action (Schwarzer & Jerusalem, 1995). Related to a work situation, it could be significant to have employees who believe they can perform well despite unexpected situations and be resilient to adversities (Stajkovic & Luthans, 1998). In today's working life, especially in health care, there are continuous changes and reorganizations, and employees therefore need the ability to be self-efficient and decisive. There are connections between the GSE and *resilience* concepts. Here, resilience means an individual's ability to be "elastic" or flexible, to manage strain and challenges that arise from available resources, and even develop under such conditions. An individual with a high level of resilience can positively adapt to stressful situations or changes and find a meaning in it and rebound (Maddi & Khoshaba, 2005).

The concept of *Work Engagement* (WE) relates to several of the above theories and models connected to its concept that work engagement is also a positive resource. Schaufeli, Bakker and Salanova (2006) describes WE in terms of three words: vigour, dedication, and absorption. A person with a sense of vigour is energetic and tries to perform well at work, and is at the same time persistent to stressors. Vigour is related to resilience and general self-efficiency as the employee should manage to be flexible, e.g. in situations of change. Being dedicated is when a person is enthusiastic and proud of his/her work because the work is significant to others and the work is thereby motivating as well. When a person feels absorbed during work, there is a pleasant feeling of time flying and he/she could work for ever. Absorption is connected to flow as both feelings are strong experiences of joyful and stimulating moments. WE has been shown to be a positive resource to employees' performance (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007).

## Concluding theoretical remarks

From the presented concepts, theories and models, positive work related features have been shown to be central for employees' health enhancement. Positive experiences at and of work and workplace reduce physical and psychological strain and stress, and instead enhance personal health and resilience (Levi, 2000). Productivity also has good prerequisites to be enhanced by beneficial social and personal resources in the workplace, something which also has an impact on creating healthy regenerating organizations (Forslin & Kira, 2008). This thesis is written from a Swedish perspective on workplace health, and with focus in the workplace as a specific area for health promotion. It is important to emphasize that the specific work-related health and well-being is central here, not general feelings of individuals' lives related to other life contexts. Arnesson (2006) states that it is important to clearly present how the meaning of health is interpreted when improvements in the workplace are being planned. Thus, I will state the interpretation of health in this thesis, which is in agreement with Bringsén, et al. (2009): "*Health is a positive subjective experience of oneself as a whole. [...] ...health serves as a resource for the individual when dealing with the various strains of everyday life or pursuing their individual goals*" (p. 14). From this, all the studies in this thesis have had a salutogenic perspective with a focus on exploring positively experienced work-related resources that contribute to employee health and performance. Writing about promotion here solely means a positive resource enhancement perspective. The framework indicates that this thesis has multidisciplinary influences, and in the methods section it is shown that a pragmatic approach with a mixed methods design was used for the development of a useable questionnaire and an adherent process about workplace experiences from a salutogenic perspective.

# Methods

The methods section will first present the action research approach of this thesis, second give a description of the contexts and the participants in the studies performed, and third show how the data collections and analyses were conducted within each paper.

## Research approach

### The type of research which has been performed

This thesis is based on an action research project. The research has been pervaded by a pragmatic approach, as the practical usefulness of the findings has been a central striving throughout all the studies. The research questions have governed the choice of methods in data collection, and there has also been an openness to both quantitative and qualitative methodology. Therefore, the intention has been to work in close relationship with the research context in order to be able to understand the context reality, communicate ones own thoughts, and together with the staff produce research that is seen as useful to both sides. This intention agrees with Reason and Torbert (2001), who describes action research as producing knowledge which is directly useful, and that empowers participants to use the new knowledge. In the literature, there are several descriptions of action research, one is from Stringer and Genat (2004): “*Action research is a systematic, participatory approach to inquiry that enables people to extend their understanding of problems or issues and to formulate actions directed towards the resolution of those problems or issues*” (p. 4). According to Rönnerman (2004), action research could also be interpreted by the two words “action” and “research”. *Action* means that something is supposed to be tested, then observing what happens, discussing and reflecting on it, which will lead to greater knowledge. *Research* means a systematic procedure in relation to a theory that is supposed to generate new knowledge (Rönnerman, 2004). Altrichter, Kemmis, McTaggart and Zuber-Skerritt (2002), use a similar description of the key circular process features in action research as: planning, acting, observing, reflecting and re-planning. Action research is naturalistic and collaborative, and the researcher creates

knowledge and action together with the involved persons in their natural environment (Heron & Reason, 2001; Lincoln & Guba, 1985). A similar description is made by Greenwood and Levin (1998), who expresses the opinion that action research is a co-generation of knowledge with contribution from both participants and researcher, and all the participants' experiences enrich the process.

In an action research process, the cooperation between researcher and participants varies. To interpret to what extent the participants have participated and contributed in the research process, an assessment of the division of power between participants and researchers, the degree of participant involvement during the process, and the degree of focus on action or change could be valued (Carr & Kemmis, 1986). The interaction during collaborative processes leads to some kind of change, while also reflecting a real-life problem. Only by highlighting a problem, a process and a development of the participants' thoughts is started, even though no major change is accomplished (Altrichter, et al., 2002). Involvement of the people concerned will contribute to the research aims by enhancing the participants' motivation for taking an active part in a change. Information on and understanding of a change increases commitment and feelings of responsibility, with the presupposition that the change is experienced as meaningful (Pettersson, 2009).

## How the research was performed and why

Apart from the purpose of this research, to develop and assess the quality of a workplace health promotion questionnaire, and to elaborate on the questionnaire to make it useful in practice, there has been an underlying purpose of usefulness. This means that the research created should be of practical use to those involved and of use in further research. Therefore, both quantitative and qualitative methodologies were used in order to explore local knowledge (see figure I, p. 37). Quantitative studies were performed in order to make an assessment of reliability and validity of the questionnaire (Creswell, 2003), and the data was used to make psychometric assessments, and to evaluate the questionnaire's usefulness from a quantitative point of view. Surveys were performed to get a quantitative description of the participants' experiences of work and health. Further, qualitative studies were essential to use to be able to understand the participants' experiences in a deeper sense (Creswell, 2003). The qualitative methods used were focus group interviews and process meetings. Focus group interview was preferred because there was an intention to catch a width and depth of the participants' opinions about work and health. Through the open discussions, the participants should be stimulated to share their experiences in order to create a multi-sided picture (Kreuger & Casey, 2000).

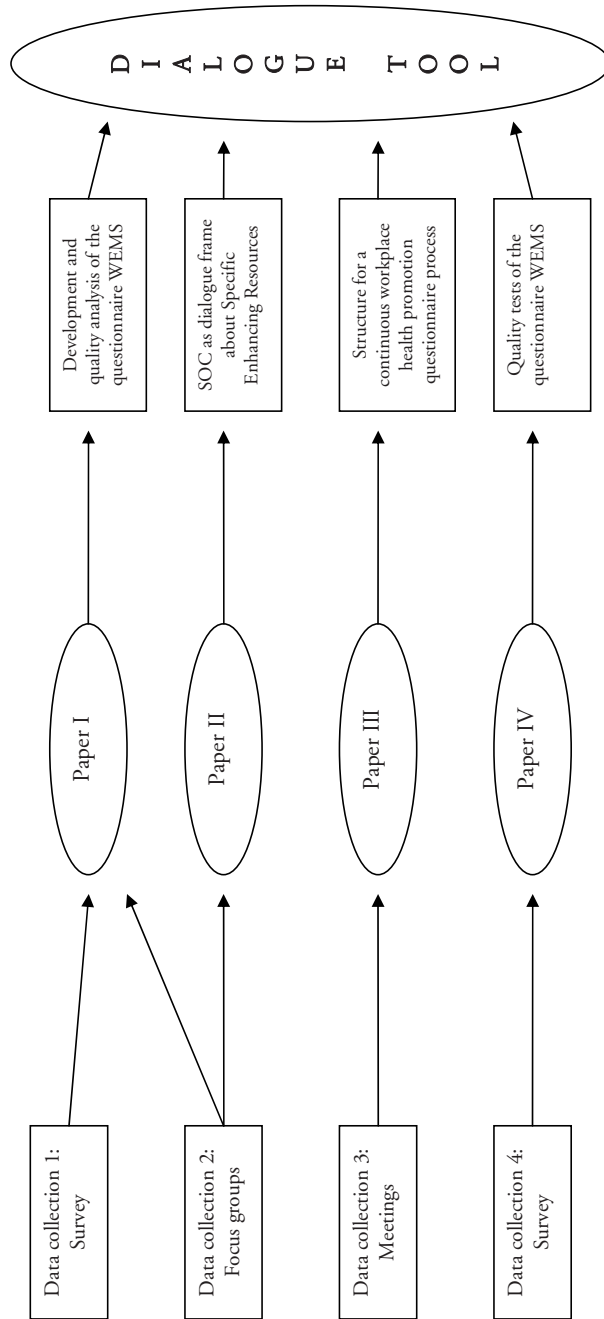


Figure I. A picture of the research process.

In the study of the practical application questionnaire process consisted of meetings, which functioned as workshops. The meetings were driven by creativity, and creation by the goal of making the WEMS questionnaire, which was the starting-point, useful together with the participants' experiences of their work and previous questionnaire experiences. According to Stringer and Genat (2004), such research is action research oriented. The studies all contributed individually or in combination to the final result as the methods complemented each other and the research objectives could be answered. This insight about the advantages, i.e. the ability to understand the research questions from different perspectives, and using various methods, contributed to answer the complexity of the research objectives of this thesis. The complexity in workplace health promotion research is also an argument for the use of several different methods in data collection and analysis according to Gendron (2001). The use of both quantitative and qualitative methods in the studies gives this thesis a mixed methods design (Creswell, 2003). A mixed methods design is used when you wish to combine results in order to confirm, cross-validate, or corroborate findings. The combined use of various data materials could clarify and illustrate results from one method with the use of another method (Johnson & Onwuegbuzie, 2004). In the analysis that combined survey results and focus group material, findings were compared to complement and enhance the conclusive results.

In summary, this research process has had a pragmatic approach, a collaborative strategy, and a mixed methods design, which were all used to reach the goal of usefulness and meaningfulness when developing a questionnaire and the adherent process. A collaborative research strategy is preferred in workplace health promotion research, because the focus of participatory processes is on involvement, as well as to improve and develop people's knowledge for action based on their local context. Active participation leads to deeper comprehension and width through reflection and discussion of experiences (Greenwood & Levin, 1998). Collaborative research encourages the participants to become active analyzing agents and contributes with proposals of solutions to the problem in focus. The participants become owners of the development process and are thereby empowered to engage in, take action in and organize activities in the research process (Koelen & Lindström, 2005; Lundberg & Starrin, 2001). A collaborative strategy is also in accordance with the Luxembourg Declaration, which points out the vision of "healthy employees in healthy organizations" through improvement processes in the work organization, promotion of staff involvement, and encouraging personal development (ENWHP, 2007).

## Contexts and participants

The material used in the four papers of this thesis is collected from two projects, both performed in hospital settings in the province called Scania in the south of Sweden (see a description on p. 97). The participating hospitals in the municipalities of Ängelholm and Hässleholm, are small hospitals and are both members of the WHO network of health-promoting hospitals. A health-promoting hospital should systematically work with improvements to prevent risk factors and promote health factors for employees, patients, and the local population. Interventions and activities for health improvement for different groups are continually implemented at the hospital.

The hospital in Hässleholm is one of the regional hospitals for patients from the northeast Scania area. The rural municipality of Hässleholm has around 50,000 inhabitants. The hospital has about 700 employees and the areas of practice are, e.g. local hospital care (Närsjukvård), children's medicine, internal medicine, and orthopaedics.

The hospital in Ängelholm practices health care for people living in the northwestern part of Scania, and some planned care for patients from the entire Scania region. The rural municipality of Ängelholm is located by the sea and has around 39,000 inhabitants. The hospital has some 1,100 employees, and the hospital's care focus is local hospital care (Närsjukvård) and planned specialist care, e.g. internal medicine, orthopaedics, and surgery.

The "Stop plastering" project was started in 2006 at the hospital in Ängelholm and was carried out at five wards with some 220 employees. The hospital in Ängelholm has been subject to several changes during the project time from 2006 until 2010. At the beginning of the project, six managers participated, but today two have finished their employment at the hospital and their wards have been closed, and the employees were allocated to the other three wards. A major part of the participating employees at the wards have remained the same throughout the project, but the employees' locations have in some cases shifted from one ward to another.

In table 1 (p. 40), all four data collection processes are described with regard to how, when and where they were performed, and which professionals and the number of individuals that participated.



**Table 1.** Describes how, when, where, with whom, and how many that participated in the data collections.

<b>Data collection</b>	<b>Method</b>	<b>Year</b>	<b>Hospital</b>	<b>Units and wards</b>	<b>Profession</b>	<b>n</b>
1	Survey	2005	Hässlholm Ängelholm	Hässlholm: One psychiatric unit Ängelholm: One operation unit and one medicine care unit	Registered nurse Assistant nurse Physician Administrative Paramedical Manager	446
2	Focus groups	2006	Ängelholm	One pre/post-op ward for ambulatory surgery and four internal medicine wards	Registered nurse Assistant nurse Administrative Manager	Employees: 71 Managers: 7
3	Meetings	2008 - 2009	Ängelholm	One pre/post-op ward for ambulatory surgery and one internal medicine ward	Registered nurse Assistant nurse Manager	Ward: 69 Core group: 6 Managers: 2
4	Survey	2009	Ängelholm	Major part of all hospital units and wards	Registered nurse Assistant nurse Physician Administrative Paramedical Other <sup>a)</sup>	505

<sup>a)</sup> Other profession includes e.g. technicians, kitchen staff, household technicians, building managers.

## Data collections and analyses

### Development process of a questionnaire for workplace health promotion (Paper I)

In 2005, a comprehensive postal questionnaire with 46 questions constructed from theories about e.g. work, work situation, illness, health, QoL, self-confidence, and life style, was sent to 610 employees at three hospital units (data collection 1, see table 1). The response rate was 73% (n=446). The questions regarding experience of work and work situations were focused on here for analyses and presented in paper I. To investigate the interrelated questions and create a structured questionnaire, a factor analysis was made using the Principal Component Analysis (PCA). The factor extraction used was the direct oblimin method for oblique rotation, because there was a correlation between the factors, from the questions underlying the theoretical base (Field, 2005). The first PCA resulted in a ten-factor model. To improve the quality of the model, eleven questions were gradually excluded due to their similarity to other questions. The final model had six dimensions of questions with factor loadings  $>0.4$ , and was accepted due to quality values according to Field (2005). The quality values were: Communalities  $>1$ , Determinant  $>0.00001$ ; Kaiser-Maier-Olkin Measure of Sampling Adequacy  $>0.8$ , Bartlett's Test of Sphericity should be significant  $<0.05$ , and the explained variance  $>60\%$ . The dimensions of the questions, also called factors or indices, were estimated for Cronbach's Alpha (CA) to declare the internal consistency of each index from the criterion of being above 0.7.

A test-retest was performed, meaning that a sample of the participants (n=95) completed the questionnaire twice with a two-week interval. The test-retest shows how similar the participants' responses were the first and second time and the consistency of the questions over time was thereby measured. Weighted kappa values were estimated to calculate the reliability of the questions. However, organizations are changing rapidly which has to be considered and variation should be seen as normal.

To assess how the factors related to health and QoL, a correlation analysis with Spearman's rank order correlation coefficient ( $\rho$ ) was established. Spearman correlation, instead of Pearson correlation, was used, because the data categories were ordinal. SPSS version 14.0 was used for the statistical procedures.

In paper I, the results from the questionnaire study were compared with focus group findings. The reason for comparing the quantitative analyses with a qualitative material was that the questions had been developed from a theoretical perspective. The quantitative results should therefore be strengthened and confirmed by voices

from practice (Johnson & Onwuegbuzie, 2004). A focus group study (table 1) with fourteen sessions was performed in 2006 (data collection 2). From the five hospital wards, 71 employees and 7 managers participated. All managers participated in one group, while the other thirteen groups contained a mixture of registered nurses, assistant nurses, and medical secretaries. The groups were mixed because the employees' collective opinions as a group were more interesting than differences between the professions. The sessions were carried out according to a written guide containing three areas for discussion: 1) experience of health in relation to the workplace, 2) experience of work factors and processes that contribute to health and well-being and, 3) desires to change the organization of the work and the workplace in order to improve the employees' health. The sessions were performed in meeting rooms at the hospital and were recorded on tape. A co-listener, U.E, sat in on the sessions to take notes if the tape recorder should malfunction, and to be a support to the moderator and interject with additional questions. A secretary transcribed the tapes verbatim. All fourteen audiotapes were played several times to get a comprehensive view of the material. The transcriptions from all focus groups were then read a few times and a content analysis (Graneheim & Lundman, 2004) of the material was performed. Three themes were established and the contents of these corresponded with the questionnaire contents.

## Identification of work-related factors and processes from the SOC theory (Paper II)

The analysis in paper II is based on the focus group interviews (data collection 2) described in the previous section. Thirteen of the fourteen focus group interviews were used. The group of managers was excluded in order to focus on the opinions from the three larger groups of hospital staff (registered nurses, assistant nurses, and medical secretaries) to get a picture from the employees' perspective of the workplace. The difference between the analyses in paper I and II is that the qualitative data in paper I was used to complement and strengthen the statistical data. In paper II, the qualitative data was used for a content analysis solely to describe the employees' experiences of their workplace.

A deductive content analysis (Elo and Kyngäs, 2008) was used for the analyses of the material based on the hypothesis that Sense of Coherence (SOC) (Antonovsky, 1987b) is a useful theory in workplace health promotion. The SOC theory was also proposed to be useful for identifying positively experienced workplace-related characteristics. In a deductive analysis, the point of departure is a theory, which is used as the framework for analysis. The three pre-existing categories of the SOC theory: comprehensibility, manageability and meaningfulness (Antonovsky, 1987a) functioned as the categorization matrix in the analysis (Elo and Kyngäs, 2008). P.N

made the analysis, and started by playing all the thirteen audiotapes several times to get a comprehensive view of the material. The transcriptions of focus groups number 1 through 7 were then read a few times. Subsequently, the analysis was performed by identifying the hypothesized workplace-related factors and processes (codes). The codes were organized into one of the three categories of the SOC theory, and each category was then analyzed one by one to explore sub-categories. Eight sub-categories were recognized. Co-author M.T made a confirmatory analysis from reading the transcriptions of the focus group interviews number 1 through 7. All the authors then discussed the content of the sub-categories several times. Finally, the authors discussed the analysis with a research group, which consisted of other active researchers in the fields of public health and work psychology. The transcriptions of the focus group interviews number 8 through 13 were read and compared to the content of the analyses of groups number 1 through 7, and it was concluded that saturation was reached.

## Exploration of incentives for commitment in a questionnaire process (Paper III)

Paper III reports on a practical application questionnaire process (data collection 3) of the developed Work Experience Measurement Scale (WEMS) described in paper I. Two wards (n=69) participated in the study, from which six employees were participating voluntarily in a core group. The core group worked with me as a researcher in an action research process in 2008-2009. The study was performed in three steps: at first, the process was established and the employees involved; secondly, the practical application process was performed, and thirdly, the entire questionnaire process was summarized. During the steps, meetings were held in collaboration with the managers and the core group consisting of registered nurses and assistant nurses. The ward managers participated only once. All meetings were held at the hospital in meeting rooms, and they were run like workshops, where we discussed and worked with the practical usefulness of the WEMS. During the process, WEMS was pilot-tested as a web-based survey at the two wards to evaluate its usability. The material of taped recordings and field notes were collected through meetings with the participants. Taped recordings were transcribed verbatim by a secretary. Transcriptions and field notes were analyzed by content (Elo & Kyngäs, 2008). P.N made the content analysis and then discussed the findings with the co-authors. It was adequate to perform an action research process in order to understand the usability of the WEMS questionnaire and the participants' incentives for commitment in the questionnaire process.

## Validation of WEMS as a questionnaire from a salutogenic perspective (Paper IV)

Paper IV is based on a survey (data collection 4) performed in 2009 at the Ängelholm hospital. A web-based survey was sent to 770 employees (table 1), followed up by one reminder after two weeks. The response rate was 66% (n=505). To be able to validate WEMS in relation to other similar questionnaires, three established questionnaires and three single questions (all Swedish versions) that are positively related to health and work were used in the survey.

The *Work Experience Measurement Scale (WEMS)* developed in paper I. WEMS has a total of 32 statements divided into six dimensions/sub-indices: Supportive work conditions, Internal work experience, Autonomy, Time experience, Management, and Reorganization. The statements have a six-graded Likert scale for responses, ranging from: agree completely to disagree completely (WEMS in Swedish can be seen at pp. 98-99).

From the first version of WEMS presented in paper I, there have been some adjustments. The adjustment contributes to the unambiguity of questions and interpretation of the result direction. Now, all the questions are stated in a positive sense. The dimension called "Pressure of time" has been changed to "Time experience", and two of the questions in that dimension have been changed regarding direction. The negative direction of the two questions "I rarely have enough time to finish tasks" and "I often feel pressurized to work overtime" were switched to: "I often have enough time to finish tasks" and "I seldom feel pressurized to work overtime", which point in a positive direction.

The *Utrecht Work Engagement Scale (UWES-9)* is an established nine-item questionnaire, measuring work engagement and occupational well-being. The UWES-9 measures three elements of work engagement: these are vigour, dedication, and absorption. The questions have seven response alternatives: never, almost never, rarely, sometimes, often, very often and always (Schaufeli, et al., 2006). A Swedish version of UWES has proven validity and reliability (Hallberg & Schaufeli, 2006).

*The Salutogenic Health Indicator Scale (SHIS)* consists of twelve items with intrapersonal characteristics and interactive functions related to health from a salutogenic perspective. All items in SHIS were estimated as one index. SHIS has one overall question: “How have you felt in the past 4 weeks? In the last 4 weeks, I have...”, related to aspects of health. The response format is a semantic differential (one positive end and one negative end), e.g. from “felt brisk” to “felt tired, exhausted” (Bringsén, et al., 2009).

*The General Self-Efficacy Scale (GSE)* is a widely used measure related to self-belief, optimism about challenges, and ability of proactive coping. Self-efficiency influences an individual’s daily actions, e.g. work performance. The GSE has ten questions with four response alternatives: not at all true, hardly true, moderately true and exactly true (Schwarzer & Jerusalem, 1995).

The three single questions used had a five-graded scale with response alternatives ranging from very good to very bad. The questions were:

- 1) *Self-rated health*: How is your health in general?
- 2) *General well-being*: How do you experience your general well-being? In the last 4 weeks, I have felt...
- 3) *Quality of life*: How do you feel that your overall life is right now?

The data analyses consisted of validity and reliability assessments of WEMS. Convergent validity is demonstrated by the degree of a questionnaire similarity to other measures that are supposed to measure similar features (van Saane, Sluiter, Verbeek & Frings-Dresen, 2003). To show this, WEMS was correlated to a scale that measures work engagement. An acceptable criterion for convergent validity is a correlation of 0.5 or higher (van Saane, et al., 2003). Discriminant validity is assessed to consider whether the questionnaire in focus to some extent measures a related but different concept than the measures selected. Here, WEMS was correlated to the health related measures and questions. The adequate degree of correlation was set to less than 0.5 (van Saane, et al., 2003). Spearman’s rank order correlation coefficient was used in the correlation analyses.

The internal consistency of WEMS sub-indexes was established using CA, with a set criterion of 0.7 or higher according to Field (2005). To explore the usefulness of the questionnaire differences between group means, they were assessed using independent samples t-test and one-way ANOVA. The significance level was set to 0.05. SPSS version 16.0 was used for all the statistical procedures.

## Concluding methodological remarks

This development process for a new questionnaire has both been theoretical and practical. There are various ways for developing a new instrument, and it is an on-going process in several steps (Streiner & Norman, 2003). However, in these concluding remarks I will summarize the methodological choices made in this initial instrument development. The starting point for the questionnaire development was the need for a work-related questionnaire from a salutogenic perspective that could be used in workplace health promotion. The area of workplace health is extensive and difficult to catch completely. From a theoretical background, and inspired by theories and models from various disciplines, questions were therefore constructed (see a description on p. 97). To prove the content validity of the questions, a focus group study was made. The quality analysis showed that all domains in the questionnaire's qualitative material appeared to be relevant key areas for workplace health in a hospital setting. When the questionnaire was constructed, factor analysis was chosen as a good method for analysing patterns in complex, related concepts (Field, 2005). Here, it was done to investigate the underlying structures of the questions and to possibly reduce the number of questions (Bowling, 2003). According to the pragmatic purpose of this research, the WEMS usability and functionality in workplace health promotion was prioritised for exploration. Therefore, the WEMS ability to discriminate between groups was investigated with ANOVA and t-test. Nevertheless, there was still a desire to consider the salutogenic approach of WEMS. However, it was difficult to find measurements for work-related aspects, built from a salutogenic starting point, for use directly in a comparison with WEMS (paper 1). Criterion validity could therefore not be used as validity assessment because it is necessary to compare with a "gold standard". Instead, a number of questionnaires and questions about work and health from other disciplines, e.g. positive psychology, which can be assumed to be related to WEMS content, were chosen for assessment of construct and discriminant validity (paper IV). These validity types were chosen to be appropriate due to the psychosocial contents of the questionnaire (Bowling, 2003), and this opened up for a possibility for reasoning about the salutogenic approach of WEMS. To further investigate the theoretical structure of WEMS dimensions, other methods could possibly be used, and one such method is structural equation modelling. This method was not used in this initial development process, because exploration of WEMS and its practical functionality was prioritised. Structural equation modelling is a possible method for further exploration of WEMS, e.g. to compare group reactions to two versions of a scale (e.g. original and translated version), and to investigate theoretical hypotheses of item and factor belonging (Streiner & Norman, 2003).

Reliability aspects were assessed with test-retest and internal consistency. Test-retest was used here to explore the consistency between two measuring points (Streiner & Norman, 2003), rather than an exact accuracy. The WEMS measures experiences of various work-related aspects, which are supposed to vary to some extent over time due to a changing reality. The correlations between the items in WEMS dimensions were calculated with Cronbach's Alpha and judged to be reliable also in relation to eigenvalues (Bowling, 2003). Furthermore, the practical part performed was to pilot WEMS and to work in a participatory process to promote the WEMS usability in practice. Several questionnaires are well developed and tested, but often fail in practical use because the participants find it difficult to understand them, relate to and use them in their own setting (Boynton, 2004). There could be various reasons why questionnaires fail, but this can be prevented if the potential respondents participate in the development process of a questionnaire. Therefore, the participants were involved in and committed to a practical application process of WEMS, discussing layout, administration, and piloting, and worked with possible structures for result processing and continued questionnaire processes. The action research strategy of working together with the participants in the research process was adopted in order to create meaningful and useful results (Stringer & Genat, 2004).





# Ethical considerations

The Swedish Research Council (Vetenskapsrådet, 2002) has established ethical guidelines concerning demands on the information given to participants about the procedure of the research, the informed consent to participate, and how the participants' confidentiality is safeguarded, and information on the use of the research data. In quantitative and qualitative studies, similar but different ethical considerations are made. Ethical considerations should be made and planned before a quantitative study starts, contrary to a study that integrates the participants' influences to a higher degree, and that are not planned from the start. It is difficult to secure the information requirement and confidentiality when involving the participants in some or all phases, because the research process is not planned in advance, and therefore no answers can be given on how the process will proceed. The researcher has a responsibility to make sure that the participants can influence and end their participation during the research process. All studies in this thesis were conducted in agreement with the Swedish Law of Research Ethics, SFS 2003:460.

Data collection 1 was approved by the board for research ethics at Lund University (LU-141-03; Lund Dnr 279/2004). In the quantitative studies, data collection 1 and 4, the participants' were informed about the research and their confidentiality was guaranteed, as the respondents could not be identified in the result presentation. The paper questionnaires in data collection 1 were de-identified to make sure that no identification was possible. In data collection 4, the questionnaires were administered by a computer program, and no participant's individual responses could be identified. Participation in both surveys was voluntary, and the participants agreed to take part in the research when they submitted their questionnaires.

Participation in the focus group interviews, data collection 2, was voluntary, and the result was brought back and discussed with the participants. However, the researcher cannot guarantee that the topics discussed during the sessions are not spread by the other group participants. An agreement within each group was made that what was said during the session was to stay inside the group. The ethics committee at Kristianstad University approved of the focus group study (Kristianstad Dnr ER 2006-44).

Ethical issues were initially discussed within the core group in data collection 3. In an action research process, the researcher participates in the collaborative research process, acting as researcher as well as a participant. It is a challenge to the researcher to take care of the group members and make everybody feel comfortable at meetings and enhance their commitment and knowledge development during the process (Petersson, 2009). During the research process, the researcher is continuously obliged to consider ethical issues that may arise (Silfverberg, 2005). The participants were employees from two wards, and initial discussions were held if there were any problems with open discussions about for example the wards' questionnaire results. An agreement was made that findings could be discussed openly. The participants were aware of their rights to stay with or leave the group during the process, and they understood that the ethical confidentiality could not be secured beforehand, because the process was not planned.

# Empirical findings

This section describes empirical findings, and comments are made in conjunction with the respective paper findings.

## Development process of a questionnaire for workplace health promotion (Paper I)

Based on survey data, principal component analyses were conducted and the final model contained six factors with an eigenvalue above 1 (1.32-8.12). This factor model was accepted and it had satisfying quality values (Field, 2005) of Determinant (5.82E-008), Kaiser-Maier-Olkin Measure of Sampling Adequacy (0.87), and Bartlett's Test of Sphericity (0.000). The explained variance was 62.0%. The factor loadings were all above 0.4 (0.47-0.92) and were labelled from their content: Management (MT), Reorganization (RO), Internal work experience (IW), Pressure of time (PT), Autonomy (AY) and Supportive working conditions (SW). The factors formed six indices with Cronbach's Alpha coefficients in the interval of 0.71-0.89. Test-retest results showed items with weighted kappa values ranging from 0.36 to 0.71. The indices were standardised into values that ranged from 0 to 100. Through standardization, the indices could be more easily compared. A high value of an index indicates a positive direction in relation to the factor characteristic. Correlations between self-rated health and five of the indices (MT, IW, PT, AY and SW) were significant in the interval of 0.13-0.32. QoL correlated significantly to five of the indices (MT, RO, IW, PT and AY) in the interval of 0.18-0.39.

The findings from the focus group study formed three themes. The first theme, *Experience of work*, was characterized in relation to belonging, prevailing demands of work and stimulating work tasks that included everyday human encounters. Factors from the PCA related to this theme were: 1) IW contained items of work joy, meaningfulness, and challenge at work. 2) AY related to the experience of being able to influence one's work situation. 3) SW contained items of social support and work routines. The second theme, *Organizational changes*, described the health care organization as continuously changing at all levels. Related factors from the PCA were: 1) MT contained items regarding the experience an employee has of his/her

immediate manager. 2) PT included items such as time to finish tasks and overtime. 3) SW related to the work atmosphere and the potential of thriving at work. The third theme, *Work progress*, indicated that the new way of working called Patient Closer Care had yielded mostly positive experiences such as learning, social support and a greater, more holistic understanding of the work among the professions. Connecting factors from the PCA were: 1) RO contained items regarding influence, such as participation and information. 2) SW included items such as encouragement and feedback. The indices content and focus group themes contributed to the name of the scale: The Work Experience Measurement Scale (WEMS).

## Comments

The statistical assessment procedures demonstrated that the factor model of WEMS had satisfactory qualities according to the criteria of Field (2005). A comparison of the theoretical basis for the questions and the empirical analysis from the focus groups showed connections between the indices and the themes. The use of both quantitative and qualitative methods in combination is a strength when developing a new instrument (Johnson & Onwuegbuzie, 2004), and this study corroborates that due to the complex picture of work experience. The six dimensions of WEMS reflect factors, which it is significant to actively work with in order to achieve positive work experiences (Bakker & Schaufeli, 2008). Positive work experiences serve as health promoting resources, and the employee has the ability to successfully handle negative situations at work, to be flexible, and to increase the organizational effectiveness (Maddi & Khoshaba, 2005; Luthans, Norman, Avolio & Avey, 2008).

The standardization of the WEMS indices enables users to compare values. The salutogenic approach is imposed by interpreting the standardized index values, which means that a high value of an index indicates a positive direction in relation to the factor characteristic. Benach, et al. (2002) expresses a need for measurements that could present the outcome in terms of health instead of illness. Working with a focus on employee health at the workplace is, according to Benach, et al. (2002), a key to development and healthy well-motivated employees. The content of WEMS was compared to various questionnaires that share similar contents parts as an indication of content validity. WEMS differed from these with questions phrased solely in positive statements, with multidimensionality, and the salutogenic approach. The way the questions were phrased, in a positive or negative way, is qualitatively different. The focus and content of the questions lead to and influence the subsequent improvements, and the process effect could enhance positive or negative feelings (Fredrickson, 2004). WEMS has positive characteristics and a purpose of being used as a workplace health promotion questionnaire from a salutogenic point of view.

## Identification of work-related factors and processes from the SOC theory (Paper II)

Through a deductive content analysis (Elo & Kyngäs, 2008), with the Sense of Coherence theory (Antonovsky, 1987a) as a framework, various specific enhancing work-related resources were identified. These were then organized into eight subcategories within the three main categories of the SOC theory. In the category of *comprehensibility*, three subcategories were recognized. The first subcategory, reflective skills, contained features of individual and group-related reflection. The second demonstrated open-mindedness as a contributing factor to increased understanding and influence. Comprehensive view was the third subcategory, and it is about how the organization of the work and workplace could facilitate the employees' understanding of their work situation.

The category of *manageability* had three subcategories as well. One was labelled harmony, which focused on the employees' attitudes to the workplace by which positive experiences could be gained. The second one was flexibility, which expressed supportive fellow co-workers' roles as facilitators and contributors to employee flexibility and resilience to deal with various work situations. The third one was responsibility, which showed various kinds of tasks in the work situation that had been delegated by the manager. The increased autonomy facilitated work performance and the ability to influence the work situation.

*Meaningfulness* was the third category. The first subcategory was called reinforcement as it focused on individual as well as organization-related work rewards. The second, called social climate, pointed out social aspects in the work group as a source of meaning at work.

### Comments

The usefulness of the SOC theory in workplace health promotion was demonstrated by its ability to identify and explain context-specific resources significant to employee health. The findings showed several small daily occurrences in the hospital context that were experienced as positive by the employees. The significance of daily life experiences has previously been stated in stress-related research by Selye (1981) and Lazarus (1999), meaning that the reaction to the distress or eustress of a situation depends on the way in which an individual faces these occurrences. Related to SOC, if an individual experiences that he/she has resources to cope with a situation, it is possible to enjoy eustress. Work resources have a potential effect to strengthen employees' health (Kira, 2003; Volanen, et al., 2004; Whitehead, 2006). Laschinger Spence and Finegan (2005) discuss a theory of organizational empowerment,

meaning that access to information, support and other resources at work will increase the opportunity to learn and grow. Beneficial conditions in the workplace foster employee commitment, involvement, and effectiveness. In workplace health discussions, the SOC theory could thereby be useful as a framework to understand significant conditions.

In the results, a suggestion is made that Antonovsky's (1987b) concept of Generalized Resistance Resources (GRR) can be extended, by adding a more concrete underlying level that could be called Specific Enhancing Resources (SER). Nelson and Simmons (2003) emphasize that it is important to identify why and what makes the employees thrive and be committed to work. A concept that could be related to SER is the concept of savoring by Bryant and Veroff, 2007. Savoring is an individual's or a group's capacity to enjoy positive feelings that they experience, e.g. on a daily basis. According to Xanthopoulou, et al. (2007), positively experienced job resources are keeping an employee involved and interested in work, and a mobilization of such resources increases thriving and flourishing at work. In a long-term perspective, workplace health promotion efforts will increase the employees' empowerment, positive perception of health, and lead to productivity (Kira, 2003; Laschinger Spence & Finegan, 2005). In this study, public health research and practice is offered a new opportunity to explore, understand, and foster workplace health promotion characteristics through the SOC theory and the SER concept. Identifying work-related SER and using them in active workplace health promotion processes may increase the sense of coherence among employees.

## Exploration of incentives for commitment in a questionnaire process (Paper III)

Through the analysis, this study process was summarized in three main categories:

- An applicable and meaningful questionnaire process;
- Being involved in the outcome work process;
- A continuous and sustainable questionnaire process.

The last category is a summary of experiences from the entire process, and includes the first two categories in a general structure that could be of generic use in similar questionnaire processes. The structure contains nine phases and should be seen as a continuous workplace health promotion questionnaire process:

1. *Establish and prepare* carefully before the questionnaire process is started, i.e. provide information and motivation about the aim and advantages of using the workplace questionnaire and involve a core group with 2-3 employees of special interest to the up-coming workplace health promotion process. This work group will run the process with the support from the manager.
2. *Complete the questionnaire* WEMS on the web within a few weeks.
3. *Present the questionnaire outcome* fairly quickly, preferably within a few weeks after completion so the outcome is up-to-date with the context. The core group, with possible support from the manager, presents the outcome to the work group.
4. *Discuss the questionnaire outcome* within the workgroup. The core group is handling the discussion, with possible support from the manager. The questionnaire outcome is used as a basis for discussion and it will be possible to translate and concretize abstract workplace concepts, factors and experiences through dialogue.
5. *Focus and agree* on an area or question to work further on. The ward staff decides together what to work with.
6. *Define and plan* the chosen area or question for improvement. This phase includes promoting the work groups responsible for the actions, dedicating time for planning the actions, for implementation of the actions, and deciding how to document the progress of the actions.
7. *Accomplish* the planned improvements. Decide on a time frame.
8. *Reflect* and evaluate what happened in the process and how to proceed.
- 9 and 1. *Establish and prepare again*. This is the last and the first phase. The preparation at this stage involves how to gain from the previous process experiences and how to prepare the employees for a new takeoff before the next circular questionnaire process.

## Comments

From the categories and the presented structure three prerequisites are proposed for consideration initially in workplace health promotion questionnaire processes. These prerequisites are: involve a core group; share the decision-making, and adopt a structured workplace questionnaire process. In accordance with Poland, et al. (2009),



findings in this study emphasize that a careful establishing process, where e.g. knowledge and understanding of the setting and process, is a significant success factor for workplace health promotion. Involving and trying to get the employees committed to the questionnaire process at an early stage was shown to be important. In the study, a *core group* was involved to drive the practical application process, and this increased the employees' responsibility and commitment for further questionnaire process work. Flicker, et al. (2010) state that, in processes where the participants' input is valued as important to the progress of the process, early involvement is a key. Cornwall and Jewkes (1995) describe a collaborative work process as cooperation on the research questions between the researcher and the local people, in line with the procedure in this study. Collaboration gives strength as it stimulates the participants' reflection and intellectual skills (Heiskanen, et al., 2007)

It is common that workplace questionnaire processes are top-down directed. This study shows a questionnaire process with a bottom-up approach and *shared decision-making*. The organization in this study did express a mandate for the managers and employees involved to drive the questionnaire process. That increased the employees' sense of empowerment and commitment to the process, which also Arnesson (2006) points out as an important outcome of participatory processes. Such kind of organizational support is also described by Petersson (2009) as a success factor in change processes.

The practical application process was summarized in a *structure*, intended to contribute to sustainability by increased comprehensibility, manageability and meaningfulness among the employees in workplace questionnaire processes (Antonovsky, 1996). Choo (1996) establish three information modes, namely: interpretation, conversation, and processing. These modes could be related to the stated questionnaire process structure if "result" is translated as "information". Then, stages four to nine are similar to interpretation, conversation, and processing. Thus, the nine-phase structure is more detailed. It could be assumed that commitment to the questionnaire processes is related to the ability to make sense of a result, and to positive experiences of having resources at work and feelings of work commitment. It predicts personal initiative as reported by Hakanen, Perhoniemi and Toppinen-Tanner (2008). Individuals with a trait of personal initiative are active, enterprising, goal directed, persistent to occurring situations, and have a long-term focus. These are ingredients in a successful workplace questionnaire process and could be enhanced by active participation. Hakanen, et al. (2008) showed that personal initiative positively affected work-unit innovativeness over time, and sustainability in workplace questionnaire processes was demonstrated in this study to be related to commitment, but personal initiative may also be a pre-factor worth consideration. Positively experienced continuous workplace health promotion fosters the employees' creativity, commitment, and capability according to Suchman (2001). In addition, an example

of a framework to use in concretizing the outcome work process (phase 4 in the suggested structure) is Antonovsky's Sense of Coherence theory – SOC (1987b). The three components, comprehensibility, manageability and meaningfulness, could be used to identify Specific Enhancing Resources (SER) in the work and the workplace. When WEMS is used in a continuous workplace questionnaire process, it is used as a dialogue tool for workplace health promotion.

## Validation of WEMS as a questionnaire from a salutogenic perspective (Paper IV)

Based on survey data, satisfying reliability and validity arguments of WEMS and its sub-indices were demonstrated in this paper. The UWES-9 and the WEMS sub-indices for internal work experience correlated above the criteria of 0.5. The correlations between WEMS sub-indices and all the health-related measures and questions: SHIS, GSE, self-rated health, well-being and QoL were all below 0.5.

How the standardized WEMS sub-indices, the WEMS total, and the UWES-9 discriminated between different age groups, professions, having a position as manager or not, scopes of practice, and internal medicine wards, is demonstrated in table 2 (p. 60). The age group 55 years or older showed significant values for the indices supporting working conditions and management. Five of the WEMS sub-indices, all but management, were related to groups of profession. Physicians had high mean values overall, except for the time experience index, where the mean value was the lowest of all professions. All WEMS sub-indices, WEMS total, and UWES-9 discriminated between being a manager or not. Managers demonstrated the highest overall mean values, except for the time experience index. Table 2 also presents standardized mean values from various scopes of practice and from units of internal medicine. Differences were demonstrated for all groups regarding the scopes of practice. The emergency ward had low overall mean values compared to the other medical scopes of practice. Between the internal medicine wards, differences were shown for five indices, but not in the time experience sub-index. Overall, the WEMS sub-indices differed to a higher degree between groups than the WEMS total and UWES-9, respectively.

The relationship between WEMS and SHIS was shown by the standardized mean values for the WEMS sub-indices in the highest and lowest quartiles of SHIS. All WEMS sub-indices scored higher in the fourth quartile than in the first quartile of SHIS (see paper IV, figure I).

## Comments

WEMS appeared to be a well-functioning questionnaire that could measure work experiences from a salutogenic point of view. Convergent validity was demonstrated by correlations between WEMS total, the sub-index for internal work experience together with the UWES-9 work engagement scale (Schaufeli, et al., 2006). The questions in the sub-index for internal work experience are about work satisfaction, and meaningfulness at work, which resemble the UWES-9 content. Discriminant validity was shown by low correlations between the sub-indices of WEMS and all the health-related scales and questions used. The weak relationships show that WEMS measures related but different concepts to health. However, WEMS demonstrated salutogenic features relating to work experience. Connecting WEMS to the EUHPID model by Bauer, et al. (2006), who assert that health development should be stated with a clear focus on prevention or promotion intention, WEMS is considered to be a useful instrument for workplace health promotion interventions.

The advantage of WEMS is the sub-indices, which have the ability to show more details of the employees' work experiences than the total WEMS index. WEMS sub-indices discriminate well between groups, for example different professions and different age groups. It supports WEMS usefulness in workplace health promotion practice, as it could be significant in getting a picture of differences between various groups at the workplace. Such information could be used, for example, as a basis for discussions in a workgroup about the employees' experiences of their workplace. Table 2 presents groups of profession and age, and whether the respondent had a position as a manager or not. The findings indicate that physicians experience their work mostly positive, even though experiences of shortage of time to manage their work tasks were reported. Jansson von Vultée, et al. (2007) highlight control over the work situation as significant to manage work-related extrinsic stressors. Physicians' negative time experience is shown to be a significant issue from two aspects, both the physicians' health, and patient safety. Further results showed that the age group of 55 years or older had the most positive experiences regarding supportive work conditions and management. Previous research about age and work motivation (Kanfer & Ackerman, 2004), highlights collaboration, and knowledge sharing as the most rewarding work factors for older employees. The ageing work force is thereby a group to focus on for workplace health promotion as this group contributes to discussions about work experience with their comprehensive and balanced work life experience. The results showed that managers had higher mean values of the WEMS sub-indices than their employees, except for the time experience sub-index. Research into head nurses' and managers' occupational empowerment, Souminen, Savikko, Puukka, Irvine Doran and Leino-Kilpi (2005), shows that their ability to cope with their work situation is dependent on resources such as cooperation, trust, and influence. Health care managers have a significant role of being translators from the top management to

their own ward employees. It is sometimes hard to accomplish their role as managers (Ericsson, 2010). Thus, workplace health promotion efforts would also be beneficial to this group. The emergency ward showed low mean values compared to the other medical scopes of practice. Working at an emergency ward is demanding from several aspects, as it is both stressful and emotional, and requires great competence. Thus, positive work experiences regarding skills and accessible resources such as collaboration, routines and equipment are essential to both patient safety and employee health according to Rathert and Douglas (2007).

From the scores of the WEMS sub-indices in relation to SHIS quartiles, a relationship between workplace health promotion efforts and experienced employee health could hypothetically be predicted. This indicates the WEMS potential for being a useful tool in workplace health promotion, to enhance positive employee resources in order to improve work performance. Heaney (2003) emphasizes that it is significant to have the ability to examine employee health and well-being as well as efficiency as results of a healthy and well-functioning organization.

**Table 2.** Standardized sub-indices (WEMS) and total indices (WEMS; UWES-9) in relation to different groups.

Variable (n)	Groups	Sub-index					Total index		
		Supportive working conditions	Internal work experience	Autonomy	Time experience	Management	Reorganization	WEMS	UWES-9
Age group (102-222)	39 or younger	69.6	75.4	55.8	60.1	60.0	50.2	62.7	70.2
	40-54	70.2	74.1	55.0	59.2	63.9	51.8	63.7	70.1
	55 or older	74.2	74.9	58.7	63.0	68.2	55.0	67.0	72.6
	(p)	<b>(0.034)</b>	(0.822)	(0.252)	(0.316)	<b>(0.012)</b>	(0.333)	(0.057)	<b>(0.348)</b>
Profession (22-162)	Registered nurse	73.9	76.7	55.5	61.9	64.9	52.6	65.6	68.9
	Assistant nurse	71.9	73.0	49.5	64.8	65.6	52.9	64.3	72.2
	Physician	71.5	80.2	58.3	38.5	69.3	62.2	67.3	69.8
	Paramedic	70.8	78.1	68.4	58.2	62.4	42.5	63.9	74.6
	Administrative	70.2	72.3	54.2	59.2	64.0	51.0	63.1	67.4
	Other <sup>a)</sup>	63.5	66.3	59.6	65.6	61.0	60.1	62.1	69.4
Position as manager (35-452)	(p)	<b>(0.012)</b>	<b>(0.001)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.015)</b>	<b>(0.004)</b>	<b>(0.636)</b>	<b>(0.100)</b>
	Yes	76.7	87.0	70.6	50.7	73.4	63.5	72.4	76.2
	No	70.7	73.4	55.2	61.5	63.5	51.4	63.6	70.3
Scopes of practice (35-154)	(p)	<b>(0.033)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.007)</b>	<b>(0.006)</b>	<b>(0.007)</b>	<b>(0.001)</b>	<b>(0.036)</b>
	Administration	70.3	79.6	63.9	57.1	67.2	50.5	65.7	75.0
	Internal medicine	70.6	72.9	54.5	56.5	66.0	55.4	64.7	68.4
	Emergency ward	64.0	69.1	37.0	43.1	41.0	30.9	49.7	60.6
	Surgery units	77.5	78.3	54.3	68.7	70.4	57.0	68.9	74.2
	Rehabilitation units	71.3	77.7	67.7	58.9	62.1	46.7	63.7	71.8
Internal medicine wards (10-37)	units	58.8	59.5	58.1	68.5	58.8	56.8	59.3	69.8
	(p)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>
	Maintenance	71.0	78.1	62.6	56.4	74.5	70.6	70.1	74.4
	Ward 1	77.4	71.4	57.3	65.3	74.4	54.1	67.5	64.8
	Ward 2	62.5	61.8	41.8	51.3	52.0	36.4	53.8	64.3
	Ward 3	77.4	81.4	57.1	59.4	70.3	58.6	68.6	72.1
(p)	Ward 4	65.7	65.5	43.0	71.5	46.4	58.2	60.3	64.3
	Ward 5	<b>(0.001)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.075)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.042)</b>
	(p)	<b>(0.001)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.042)</b>

**(Significant p-values <0.05 in bold for differences in groups)**

<sup>a)</sup> Other profession includes e.g. technicians, kitchen staff, household technicians, building managers.

# General discussion

At the beginning of this thesis, I indicated what was needed to promote health at work, and to increase the interest and participation in questionnaire processes: “...*we need to rethink the issue and look at questionnaires with new eyes*”. This thesis has presented a development process for a dialogue tool with a salutogenic approach. On the one hand, it shows the questionnaire development and quality assessments, and on the other hand a description of a continuous structure for the progression in questionnaire processes. Furthermore, there are three parts to be discussed: *methodological considerations* of the research performed, *theoretical reflections* on salutogenesis with an extension of the Sense of Coherence (SOC) theory’s Generalized Resistance Resources (GRR) concept, and *practical contributions* to the usefulness of a dialogue tool in workplace health promotion.

## Methodological considerations

It is essential to discuss the methodological considerations of quantitative and qualitative studies, and to demonstrate that the research is truthful and adequate (Stringer & Genat, 2004). The research in this thesis has had a pragmatic stance, and the research objectives have governed the methods used, and thereby proved an openness to using the most suitable method. According to Johnson and Onwuegbuzie (2004), a mixed methods approach and action research are both connected to a pragmatic approach, and they have been advantageous here because the research contained two overall parts. On the one side, there is the questionnaire development and quality analysis. On the other side, there is the practical questionnaire application process. According to Lincoln and Guba (1985), it is important to assess four overall principles, regardless of whether the studies are quantitative or qualitative, and they are: “truth value”, consistency, neutrality, and applicability. Furthermore, quantitative and qualitative research processes are evaluated from similar aspects but described with different terms. The methodological considerations for these research studies will

be discussed in detail from both a quantitative and a qualitative point of view. To start with, table 3 presents an overview of the principles (Lincoln & Guba, 1985) that will be used for the methodological considerations.

**Table 3.** An overview of principles for methodological considerations in quantitative and qualitative research (modified after Lincoln & Guba, 1985).

<i>Principle</i>	<i>Description</i>	<i>Quantitative</i>	<i>Qualitative</i>
<b>"Truth value"</b>	... is a judgement of a study's ability to measure what it was intend to measure, and about the "truth" of the study findings in relation to respondents and context.	Internal validity	Credibility
<b>Consistency</b>	... is an assessment of whether the outcome of a study is able to be replicated.	Reliability	Dependability
<b>Neutrality</b>	... is an appraisal on the researcher's influence and distortion of the findings.	Objectivity	Confirmability
<b>Applicability</b>	... is an assumption about the findings possibility to be useable in other settings.	External validity	Transferability

## Quantitative studies

The quantitative studies have been judged both in relation to the study performance and in relation to the results. According to Lincoln and Guba (1985), “**truth value**” of the research performance through *internal validity* was strengthened by almost all the respondents from the Ängelholm hospital maintained in the project from the first data collection in 2005 (paper I) up to the fourth data collection in 2009 (paper IV). The data collections are described in table 1. It may be considered a weakness with no analyses of dropouts. It is not unlikely that the dropouts in some way have influences. Therefore, from the purpose of developing and validating the WEMS questionnaire, an assumption was made that the number of respondents, the representation from different scopes of practice, wards, and profession groups sufficiently met the assessment needs of the WEMS. The questionnaire results (papers I and IV) were returned and discussed with the respondents, something that contributed to securing internal validity. Instrumentation could be one risk to internal validity, i.e. when questions in a questionnaire are changed over time (Streiner & Norman, 2003). In WEMS, two statements were changed from the first measurement to the second. However, because this thesis focuses on the questions’ functionality and not on the actual results from the measurements, the issue of decreased internal validity due to instrumentation could be considered less important in this case.

In the questionnaire assessment of WEMS and in relation to other questionnaires and questions, three aspects of validity have been considered in the analysis according to van Saane, et al. (2003):

1) *Content validity* was assessed by the extent to which WEMS covered the concept in focus, here positive work experiences. Content validity was established by the theories and models underpinning the WEMS, and by the comparison between the WEMS content and the content of other instruments measuring work aspects (paper I).

2) *Convergent validity* was considered to estimate the degree of similarity between WEMS and a measure that could theoretically measure the similar concept. A scale measuring work engagement (UWES-9) was used to demonstrate convergent validity (paper IV).

3) *Discriminant validity* was assessed to consider whether WEMS measures a related but different concept than the one selected. Various measurements related to health were used (paper IV).



**Consistency** between the first and the second survey results (papers I and IV) has not been compared because of the modification of two questions in WEMS. Instead, the contexts, participants, and measurement scales are described in order to enable replication of each survey. However, test-retest *reliability* was established in the first data collection (paper I) to assess the WEMS consistency between two measurement points. The interpretation of the kappa values for the different items ranged from good to acceptable. The lowest kappa values were seen to reflect a change in employee experiences of the work situation during a two-week period. Although this could be viewed as a weakness of the instrument, the estimated change could just as well be an indication of the ability of WEMS to catch the changing reality in the hospital setting. The next step in the further development process of the WEMS is to compare results from several different measurement points. In this thesis, only an initial part of the development process is presented. More measurements with WEMS are needed to be able to evaluate its reliability. Anyway, internal consistency was estimated with Cronbach's Alpha (Field, 2005) in both data collections (papers I and IV), and showed to be good (papers I and IV).

**Neutrality** was achieved by performing surveys (papers I and IV), as surveys are considered more objective than qualitative findings (Stringer & Genat, 2004). *Objectivity* was reached when the respondents were completing the questionnaires without influence from the researcher. Personal values held by the researcher are potential sources of error in the analysis of results (Forsman, 2002). Thus, co-authors with no relationship to the respondents have also evaluated the results (papers I and IV). In relation to the results, the significance level (papers I and IV), and levels for convergent and discriminant validity (paper IV) were predefined by adequate criteria (Field, 2005), which contributes to objectivity in interpreting the results.

In quantitative studies, generalization is discussed as the **applicability** of the results (Lincoln & Guba, 1985). The *external validity* was strengthened by the large number of participants in the surveys, and by including different professional groups at the hospital in the surveys (papers I and IV). There is always a risk of negative influence on the external validity due to the close collaboration between some of the wards and the researcher. However, in this study, there was no close collaboration with the majority of the participants.

## Qualitative studies

To provide trustworthiness of the qualitative research performed and meaningfulness of the findings, various methodological aspects are required (Sandelowski, 1986; Stringer & Genat, 2004). To start with, “**truth value**” (Lincoln & Guba, 1985) was provided through *credibility* in the feedback of findings from focus group sessions, as the interpretation of the findings was discussed with the participants. In the practical application process (paper III), the interpretation of the contents from all process meetings was member-checked (Stringer & Genat, 2004), which means that the researcher’s interpretation of the meetings was discussed with the core group to precede the process. Thereby, the researcher safeguarded that the participants recognized and agreed to the findings. This makes sure that interpretations made are credible and truthful. Credibility is also judged by the quality of focus group interviews (Wibeck, 2000), which in this study was demonstrated by the large number of volunteers and interested participants in the focus group interviews (paper II), and that a colleague of the researcher (U.E) was present during the sessions. A risk regarding the quality of interviews is that non-interested employees do not participate, but the large number of participants (n=78) probably ensured that a full and varied picture of the setting was captured. Credibility was also considered due to the interpretation of the data material, as there was an openness to alternative interpretations and discussions of the findings among the authors. In addition, peer debriefing (Stringer & Genat, 2004) of findings, meaning discussions about the findings in a research group with experts on the research areas of public health science and work psychology, increased the credibility (papers II and III). Prolonged engagement provides the prerequisites for closeness and confidence in the collaboration between the researcher and the participants (Stringer & Genat, 2004). Collaboration has been shown to be an important factor for credibility in this action research process: to have access to the research area, to collaborate with the participants, and to ascertain the usefulness of the findings. The entire research process lasted for four years. Thereby, a prolonged engagement (Stringer & Genat, 2004) with the participants at the Ängelholm hospital was established, which increased good relationships and a comfortable atmosphere between the researcher and the hospital staff. The practical application process (paper III) in particular, which lasted for one year, contributed to good collaboration and trust between the core group and the researcher. That process highlights and describes the significance of employee involvement in and commitment to the research process. According to Sandelowski (1986), there are both positive and negative sides to closeness to participants. Access to the participants is positive but it could also lead to a neutrality problem when needed, e.g. in the analysis.

Utility is central for the validity in research that aims to be used in practice, and the credibility is strengthened when there is action in the research process (Stringer & Genat, 2004). It is common that questionnaires are developed and validated psychometrically, but further descriptions of how to make the questionnaire useful and sustainable in an organization are sparse. The action research process as a whole has fostered *pragmatic validity* of this thesis, meaning the utility of research findings. According to Stringer and Genat (2004), action research is built on the involved participants' experiences from head, hand, and heart, i.e. the participants should understand why and what to do, and how to participate, which enhances their motivation for and commitment to proceeding a process. Overall, the pragmatic validity from the entire research process is shown by the WEMS questionnaire (papers I and IV) and the adherent general dialogue structure for continuous workplace health promotion questionnaire processes (papers II and III). The good relationships in the research project may have infected the trustworthiness (Sandelowski, 1986). It is possible that the participants in the studies have responded with what they thought was expected, and what they thought the researcher wanted to hear (papers II and III). However, the large number of employees attending the focus group sessions (paper II) decreases such a risk, and a credible picture of the setting has presumably been painted. During the process meeting discussions, the researcher often emphasized the importance of truthful responses for the local setting. This was done to safeguard pragmatic validity (paper III).

It is difficult to accomplish **consistency** in qualitative studies because contexts are changing, and the researcher and co-researching participants, who have conducted the study, have received new insights during the process. Therefore, it may be difficult to repeat a qualitative study. Instead, the consistency of qualitative studies is assessed by the degree of concordance in the analysis of the data between a number of researchers (Sandelowski, 1986). Furthermore, *dependability* has been demonstrated in this research by a clear description of the method used, e.g. how the focus groups were handled and that all focus groups were discussing the same three themes (paper II) as well as the steps in the practical application process (paper III). The researcher could unintentionally influence the findings by his/her own interests and experiences (Lincoln & Guba, 1985). However, the analysis of findings in both qualitative studies (papers II and III) was made by more than one author, and the categorization resulted in very similar findings. A few disagreements were discussed and reconsidered.

**Neutrality** was considered in this research by giving a picture of the setting where the research was performed (papers II and III). The good relationships between the researcher and the hospital staff during the research process could be seen as a hindrance to objectively face, e.g. context shortcomings in the findings. *Confirmability* was therefore fostered by including other researchers in the process of interpreting the data material and the process, and analysing the material (papers II

and III). The risk for bias from one single interpreter is decreased when more than one person interpret data material. The findings are illuminated with quotes from the sessions (paper II), to allow the reader to assess the categorization (Graneheim & Lundman, 2004). There is a risk that the researcher has predicted the findings due to preconceptions. However, findings of surprise (Utbildningsdepartementet, 1999), such as the creative processes (paper III) when the two wards chose to work with their questionnaire findings in two different ways, indicate confirmability.

The final step of research is **applicability**, to transfer findings to other settings to contribute, improve, and benefit them in some way. *Transferability* of the studies was made possible by careful description of the wards, and the participants (Sandelowski, 1986). The non-inclusion of physicians and other professional groups such as paramedical, and maintenance (papers II and III) could be criticized. However, the participating wards in this research project had only nurses, assistant nurses, and medical secretaries employed. The physicians and other professional groups were employed in other organizations at the hospital, which made inclusion impossible. Additional criticism could be that WEMS as a dialogue tool has only been tested at two hospital wards (paper III). However, the WEMS as a questionnaire was also tested on a larger group of employees at the hospital (paper IV). Further research is needed to increase applicability by testing WEMS as a dialogue tool in other professional groups, and other types of wards or settings.

The issues of trustworthiness have been discussed throughout the process, but all the possible weaknesses that may have effect have probably not been considered. Finally, a difficult issue in the WEMS development process has been the difficulty to find validated instruments related to a public health and salutogenic perspective to investigate and compare to WEMS. Thus, this weakness at the same time shows the need for the research conducted in this project.

## Theoretical reflections

The research conducted for this thesis and all the reasoning throughout the process have been imbued by salutogenesis. This is due to the necessity of an increased focus on the strengthening and positive facets in work life that contribute to the health enhancement of individuals. The focus of eliminating risks in the workplace has to be complemented with an enabling perspective, which has enhancement of work related resources as a focal point (Antonovsky, 1987a). The risk perspective is still significant when the focus is on prevention of the employees' physical environment and safety at work about e.g. equipment and chemicals (Smith, Karsh, Carayon & Conway, 2003). However, most workplace interventions are concentrated on minimizing or defeating stressors that negatively influence the individuals' psychosocial health (Arbetsmiljöverket, 2001). A prevention focus does not automatically contribute to health enhancement (Bauer, et al., 2006), but rather to a kind of "zero state" because avoiding disease is not the same as strengthening health. A majority of psychological research about stress (e.g. Lazarus & Folkman, 1984; Selye, 1981) is focused on the subjective experiences of an individual regarding potential threats (stressors) in the setting, and how the individual handles these stressors (Lazarus & Folkman, 1984). The Job Demand Control model by Karasek and Theorell (1990) is one example that describes various states an individual could experience in relation to the extent of demands in the work situation. How the individual manages the situation or stressor depends on to what extent the individual feels in control of the situation. Also, social support (Johnson & Hall, 1988) from colleagues may contribute to the individual's ability to cope with a stressful situation. Furthermore, a different attitude towards facing upcoming situations in work life is to do it with a sense of coherence and to handle it adequately using experienced resources or at least see possibilities to handle it (Antonovsky, 1987b). The Sense of Coherence theory connects to the Cognitive Activation Theory of Stress (Ursin & Eriksen, 2004) by a description of individuals' attitudes to upcoming situations and a coping strategy in a possibly positive sense instead of a negative. This means that an individual's arousal level in relation to a stressor decreases if there is a positive expectation of being able to handle the stressor. When coping has been successful before, there is a learned response to face stressors as challenges (Lindström & Eriksson, 2006). Such positive experiences are also described in the Broaden-and-built theory (Fredrickson, 2004), which emphasizes positive emotions as essential to functioning optimally. According to Fredrickson, a positive life approach facilitates resilience, openness, and triggers well-being. From the view of Benach, et al. (2002), workplace health interventions are mostly about preventing and protecting employees from work-related risks and by that increase employee health. Thus, that fosters a focus on all the negative influences and very little, or not at all, on positive health creation features. The salutogenic perspective is therefore essential to

workplace health promotion. Salutogenesis focuses on promoting and enhancing health factors, to make e.g. an organization live on the credit side. This connects to the Conservation of Resources theory (Hobfoll, 1989, 2001), which advocates a preservation of valuable resources from all parts of life in order to build up a capability to persist stressors. When resources are continually replenished, the individual is in a positive circle of having a buffer of resources. In relation to a work situation, there are several features that could function as valuable resources that it is essential to mobilize for the future.

To be able to concretely work with employees' understanding of possible resources and enhancement of such health resources in workplace health promotion, the suggested concept Specific Enhancing Resources (SER) (paper II) could contribute with a detailed description of work-related factors and processes from the components of the Sense of Coherence theory. The presented SER are from a hospital setting, and they were the details that the employees experienced to be significant to their health enhancement. The SER are related to several theories about work e.g. to the Effort Reward Imbalance model (Siegrist, 1996). Working in patient care is to invest emotional efforts in the care, and when the patient has recovered and expresses pleasure and gratitude, this is a rewarding experience for the employee. SER are also related to the concept of work engagement (Schaufeli, et al., 2006) based on the hospital staffs' expressed commitment to their work, pride in their work role, and the work tasks are experienced as challenges. Such positively experienced processes and SER are connected to the positive motivational process of the Job Demands Resources model (Demerouti, et al., 2001). The model describes two possible outcomes of an employee's work experiences, either a motivational process or health impairment, depending on the experienced amount of accessible resources. SER could be such useful resources that, when identified, are able to promote and enhance employee health. An initiative in workplace health promotion, such as identifying SER, contributes to an increased understanding among the employees of the significant resources, and also of possible needs of other resources. A work organization that has the ability to replenish the employees' invested resources through its organization and prerequisites is regenerative (Docherty, et al., 2002; Kira, 2003).

## Practical contributions

The developed WEMS contributes practically to both research and practice of workplace health promotion, but in two different ways: 1) as a questionnaire, and 2) as a dialogue tool. Firstly, the WEMS could be used as a **questionnaire** in quantitative research to explore and investigate work-related experiences of various groups from a salutogenic perspective. The WEMS meets a need for a salutogenic work-related questionnaire to supplement the more common pathogenic-based questionnaires that are used in research and workplace health interventions (Benach, et al., 2002; Christensen, 2008). Questionnaires with a pathogenic content become ambiguous when they are used in research or interventions with a promotional focus. To be able to assess how the employees experience their workplace from a positive perspective, and from such results be able to discuss from a research perspective or make practical interventions, the questionnaire contents should have a promotional purpose. This reasoning relates to the parallel structure of health development, the EUHPID model by Bauer, et al. (2006). It describes the necessity of a clear purpose for health development, i.e. prevention from impairing risks, or promotion of strengthening resources. Luthans (2002) also emphasizes the measurement and recognition of positively contributing resources as vital to the implementation of improvements in a workplace.

The WEMS is presented as a questionnaire that measures experiences of work from a salutogenic perspective. In this thesis, salutogenesis is previously described as a holistic approach to health, as complex and with emergent properties as a whole, which cannot be explained only by its components. A question that may arise then is how it could be possible to measure experiences from a salutogenic perspective. Using WEMS as an instrument to measure work-related experiences is reductionistic, as it tries to explain experiences by measuring parts of a workplace context. It could be seen as philosophically impossible to combine the two stances of holism and reductionism. However, in a questionnaire process, the practical advantages from the holistic and reductionistic stances could be combined and used in a pragmatic way. Measuring work-related experiences with WEMS is useful for getting a basis for discussion (a questionnaire result). While it could in some cases be difficult to start talking about work-related experiences in a workgroup, a questionnaire outcome, which presents a picture of how the workplace is experienced, could be useful. According to Bowling (2003), it is the subjectivity that is the strength of the outcome. The workgroup should discuss the result to understand the complexity through each other's thoughts, and such a discussion is an argument for holism. Experiences of work and workplace are multifaceted, broader and deeper than only some parts, and by discussions that complexity is highlighted. Augustinsson (2006) is discussing

complex adaptive systems, and the problems of using questionnaires in organizational development due to complexity, ambiguity, and changes in practice. However, Augustinsson advocates that questionnaire results are useful when data is used as feedback and a contribution to processes of self-organization. In discussions about the result from a questionnaire, previous experiences are mentioned as something one can learn from. Weick (2001) describes it as sense making. Work-related stressors that were experienced negatively are adjusted in the discussions to be understood in a positive sense instead. Thus, the result is applied and made meaningful by the work group or organization.

Secondly, the function of WEMS is as a **dialogue tool**, when WEMS is used as part of an entire questionnaire process. The presented structure (paper III) is a practical example of a continuous process to work through in a workplace health promotion questionnaire process. Core tasks include establishing the questionnaire and prepare the process by involving the employees at an early stage. According to Meyer and Allen (1997), understanding of and commitment to the purpose of health promotion interventions will increase with careful planning and inclusion. Initially, before completing the questionnaire, it is desirable to have a discussion in the work group about the purpose of the questionnaire process and the questionnaire content. For the employees and the manager to get an overall view of the questionnaire process, it is useful to discuss three questions based on Antonovsky (1987b): Is it comprehensible for us? Is it manageable for us? How is it meaningful to us? Relating the questionnaire and the process to the local setting is significant to the usability and sustainability (Poland, et al., 2009).

The thoughts about WEMS as a dialogue tool could be related to the values of health promotion stated by Sparks (2010): empowerment, equity, respect, moral, ethics, and sustainability. The dialogue tool has the intention to be proceeded as a participatory and continuous questionnaire process. Participation fosters all the values of health promotion while the process is driven from the participants' needs and interests (Lavoie-Tremblay, et al., 2005), to benefit their health and thereby make the organization more effective (Trollestad, 2003). Thus, a question to state about the whole questionnaire process is: Why is participation significant? Workplace health promotion should be seen as a joint effort for employer and employees to become successful and sustainable. The meaning of participation could be seen from different ways. To participate does not automatically mean to be committed to the activity. Being participating means to be committed actively, to invest personal interest and will to act (Hansson, 2004). In a workplace health promotion questionnaire process it is significant that the employees are committed, because then they probably will take larger responsibility for action and improvements. Arnesson (2006) emphasizes that empowered employees feel they have an ability to make decisions and care for the possibility to influence. They also have an interactive and active approach to problem-

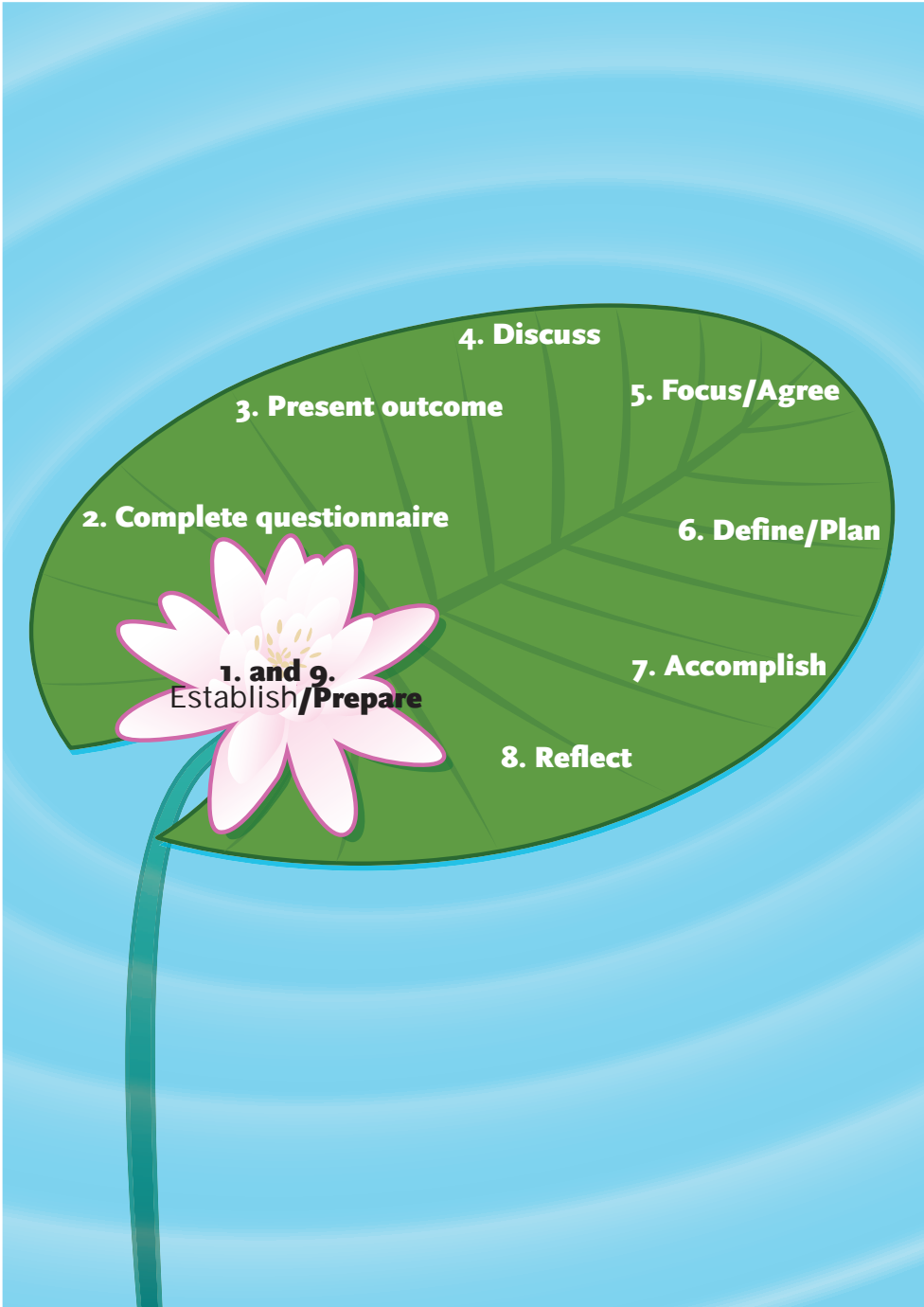


solving, and act as creators of upcoming situations. Enhancement and development of the workplace become a joint interest, not only a management question (Arnesson, 2006). Negatively is if the workplace health promotion is seen as a quick-fix procedure, because sustainable processes are often built on local prerequisites, participation, interaction and dialogues. Such processes take longer time to function well, but in a longer time perspective it would be advantageous for the organization (Hansson, 2004). Empowerment and the concept of motivation, in terms of incentive for activity, are related. According to Borgh (2009) motivation is two-sided, intrinsic/individual and extrinsic/social. Related to a questionnaire process in workplace health promotion strengths and needs are identified which could function as motivation to drive furtherance processes. Borgh emphasizes that the energy the participants are investing into a process also is a possible source of well-being. Participation in questionnaire processes could bring positive qualities, such as empowerment, motivation, and team spirit, for the employees in workplace health promotion.

A practical issue that has been raised during this research process is if it would be beneficial for a questionnaire process, aiming at putting workplace health promotion into practice, being performed in a modified way compared to traditional principles for quantitative survey research. Essential quality criteria for survey result to be useful in research (Field, 2005) are a different task to consider and accomplish than utility of a questionnaire result in practice. If a questionnaire result should be seen as “the truth” and as a main benefit only has a large number of respondents to be interpretable and usable in local workplace health promotion we are probably on the wrong track from a utility point of view. As an example, several workplaces e.g. hospital wards are small size workgroups. A workgroup should focus on their particular outcome and the practical use of it, to see enhancing conditions and potential improvements in their own workplace, the local ward. Such result will be actual and have possibility to be more usable to work further with because it mirrors the workplace at the time. In concrete workplace health promotion it is probably more useful to focus on the utility in the moment than on trying to reach a stable picture, because it will probably never be reached due to all organizational changes and complexity. Many workplaces, especially hospital settings, are such fast changing organizations. To be able to work with health enhancement there is a need for recurrent measures and rapid results that illuminates the workplace right here and right now, as an evaluation of experiences (Warr, 1999).

A questionnaire result could be used in various ways to be meaningful for different stakeholders in an organization. A result from a WEMS measurement could be used by the top-management, and by the manager together with the workgroup. The organization top-management could use a continuous WEMS result as key ratio to assess their organization from quality and efficiency aspects. Standardized values of

results make it easy to compare and follow a trend of results over time (Streiner & Norman, 2003) For example it could be used to compare experiences of various facets of work from different professional groups' in order to pay attention to or make interventions for those. The manager together with a workgroup uses the result in continuous workplace health promotion. In result discussions in the workgroup, it is not primarily the statistic result that is interesting it is the subjective experiences in the work group beyond the statistics (Warr, 1999). A questionnaire result interpreted from a salutogenic approach highlights what in the workplace that is good and beneficial to the employees. As suggested previously in the section "Theoretical reflections" the Sense of Coherence theory and its components could be applied to a WEMS result, to explain which and how work related resources (SER) contribute to enhanced comprehensibility, manageability, and meaningfulness in the work situation (Antonovsky, 1987a). When the employees learn to distinguish positive features and resources in their daily work, it contributes to positive circles of attention (Fredrickson, 2004) and probably increases the communicative ability among the employees to put words on and concretizing abstract experiences. That probably leads to employees starts to pay attention to the salutary resources in a work situation instead of the opposite (Antonovsky, 1987b), which probably is more common to be caught in. Connected to the Job Demands Resources model are such positive and strengthening resources contributing to a motivational process, significant for employees' health enrichment (Demerouti, et al., 2001). Attention to positive factors and processes contributes also to enhance possibilities for savoring processes, such processes mobilize positive experiences (Bryant & Veroff, 2007). An agreement of a question to work further with, from discussions about the employees' experiences of work, is useful to the employees and their manager in a continuous process to initiate concrete improvements (Lavoie-Tremblay, et al., 2005). Through dialogue the resources will be concrete, and with a concrete picture the planning of workplace health promotion interventions will be facilitated. Such cooperation and involvement in workplace health promotion create organizational commitment (Meyer & Allen, 1997), and contribute to employees flourishing (Keyes, 2007). According to ENWHP (2007), placing meaningful workplace improvements on the daily agenda, fosters a joint action of responsibility about driving workplace health promotion. Mutual efforts and considerations about the workplace, and incentives for improvements give possibilities to increase employees' motivation to take action in continuous workplace health promotion.



## The water lily metaphor

A participatory process of how to work with a questionnaire in a workplace includes both the questionnaire WEMS and the structure for workplace questionnaire processes, which could be explained with a metaphor. A metaphor is a figurative way to increase understanding and memorizing of a concept or process. The metaphor for this presented structure is formed by its shape as a water lily. The core of establishing and preparation is the flower that also symbolizes the flourishing power of experiences and the outcome of the processes. Thereby, the circular process forms the water lily leaf. The participants are the stem that gives the flower nutrition and keeps it floating. The ongoing process of actions makes a movement in the context, symbolized here by the water, and the rings from it on the water symbolize the influence on other processes in the workplace. When the water lily is flourishing, the stem is very strong, nearly impossible to draw up by hand. The same idea can be applied to the questionnaire process that functions and flourishes of meaningfulness, and it is strong, sustainable and continuously flourishing because it is driven by a committed organization.

## Synthesis

Utility has been the primary incentive during the entire research process. All four papers (I-IV) mutually present and describe the development process of the WEMS questionnaire and how WEMS could be used also as a dialogue tool in workplace health promotion. To synthesize this research process has been a balance between the positivistic (reductionism) and naturalistic (holism) approaches and adherent methods, which many people presumably see as irreconcilable. However, instead of seeing the two approaches as contradictory, I have seen them as a possibility to fertilize the process, as two important pieces to reach the research aim of utility for a workplace health promotion questionnaire process. Thus, a double-edged problem related to utility had to be handled. On the one hand, the WEMS questionnaire was an attempt to catch and describe work-related experiences, and it does not claim to give “the truth” about the workplace, but functions as a basis for further discussions in the work group. To make the questionnaire credible, psychometric tests should be performed in order to give credit to functionality. On the other hand, a questionnaire should be context-specific to be experienced as meaningful and useful by the users. To adapt the questionnaire to the local context, the work group could go through the questions in the WEMS beforehand, and discuss how to interpret the questions. Furthermore, when a result is obtained, the result discussions will increase the understanding of factors and processes underlying the result. In such discussions, a more comprehensive picture comes forward about how the various dimensions of work experience depend on and influence each other. The reasoning about the double-edged problem in this research relates to Skau (2003), who describes the two research approaches as context-independent (positivistic approach) and context-dependent (naturalistic approach). Papers I and IV have features for generally understood and context-independent results as the survey samples were larger and the tests aimed to develop a questionnaire that is useful in general, not only for the particular respondents involved. The sample of participants in the qualitative studies (papers II and III) were smaller, because the studies aimed to involve and collaborate with the participants to catch and understand the context-specific needs for a workplace questionnaire process that can function in the hospital setting. During the research process, I have been open to suggestions for improving the WEMS, and have also encouraged creativity when the wards worked with their results in different ways. This openness and the alternation between methods are attempts to combine the two different approaches, in order to increase the utility of the outcome for both research and practice.

# Conclusion

This thesis in public health science contributes with methodological considerations, theoretical reflections and practical suggestions to the field of workplace health promotion. The Work Experience Measurement Scale (WEMS) is a multidimensional scale that was shown to be a functional workplace health promotion questionnaire with the ability to measure work experiences from a salutogenic perspective. Its psychometric properties give support for applicability in health care settings and offer the possibility to measure trends over time of employees' work experiences. One intention of the WEMS is to stimulate organizations to take action to improve their workplaces. A continuous structure should therefore be used in such participatory questionnaire processes. A water lily is presented as a metaphor for the structure. The leaf is the circular process of phases, and the flower is the core where to start and from which to make a new take-off. The structure describes what to consider and how to precede a workplace questionnaire process in order to foster sustainability. One stage in the structure is a dialogue emanating from the WEMS questionnaire results. These results could be explored, understood, and fostered with assistance from the components of the Sense of Coherence (SOC) theory. Through the outcome of WEMS, work-related resources, context Specific Enhancing Resources (SER), could be found in the workplace. Enhancement of the SER could contribute to increase SOC among the employees. When WEMS is used as a dialogue tool in a continuous questionnaire process, it has the potential of being a useful assessment tool in workplace health promotion, and a tool to use in discussions and concrete furthering work of enhancing positive human capabilities and resources that improve work performance. The WEMS questionnaire is a contribution to research about workplace-related experiences from a salutogenic perspective. In addition, it is useful for investigating work-related experiences by people of different professions and ages.



# Implications for further research

From this research, some implications of the WEMS, both as a questionnaire and as a dialogue tool may be derived for further research. It would be useful to conduct a longitudinal study to assess how the WEMS questionnaire functions over time and is reliable in different work settings. To further validate the questions in WEMS, interviews with individuals in different occupational groups could be made to investigate their interpretation and understanding of the questions. The suggestion for using WEMS as a dialogue tool for identification of continuous work-related resources (i.e. SER), and to study how results from a WEMS measurement is used (i.e. the outcome work processes), and how dialogues are performed (i.e. if the SOC components can be used as a framework for discussions) in different settings could be useful. Such questionnaire processes could also be explored and explained based on theories of complexity and self-organization. A final implication could be to translate the WEMS questionnaire into other languages and perform surveys in international studies to compare its usability and results between various countries.





# Populärvetenskaplig sammanfattning

Arbetsplatsens positiva sidor kan förbättras genom ett nytt dialogverktyg! Nu går det att mäta medarbetares positiva upplevelser av arbete. Vanligtvis kopplas människors upplevelser av arbete samman med stress och ohälsa. Men det går att tänka tvärtom, att istället fokusera på allt det positiva som arbete kan ge. När människor mår bra av sitt arbete, blir de också mer handlingskraftiga. Fram tills nu har det saknats en användbar och engagerande metod för att mäta och driva förbättringsarbeten på arbetsplatser utifrån ett hälsoskapande synsätt. Nu finns det ett nyutvecklat dialogverktyg.

När en människa går in för att utföra en arbetsuppgift, satsas individuella resurser för att kunna genomföra uppgiften. Resurserna som utnyttjas kan vara fysiska, psykiska, känslomässiga och sociala. Under gynnsamma förhållanden på arbetsplatsen mår medarbetarna bra, de upplever arbetet som positivt och stärkande därför att de resurser som satsats blir ”påfyllda” igen. Medarbetare som mår bra har också ork till att ha drivkraft i sitt arbete. Ett företag eller en organisation kan aktivt arbeta för att främja sådana hälsoskapande förutsättningar så att medarbetarna kan tillägna sig stärkande resurser genom sitt arbete. Medarbetarna kommer då åter att kunna investera sina resurser i arbetsuppgifter eller använda dem för att hantera olika situationer i arbetet. Det behövs alltså metoder för att aktivt och kontinuerligt kunna arbeta med att främja hälsoskapande resurser på en arbetsplats.

Ett webbaserat frågeformulär har utvecklats utifrån teorier om arbetshälsa och i samarbete med några sjukhusavdelningar på Ängelholms sjukhus. Det kallas WEMS – Work Experience Measurement Scale (Frågeformulär om upplevelser av arbete och arbetsplats). Frågeformuläret är utformat utifrån ett positivt sätt att se på arbete och fokuserar på arbetets potentiella friskfaktorer istället för enbart riskfaktorer. Det innehåller frågor om medarbetarnas individuella upplevelser av arbete, hur det sociala stödet från arbetskamrater är, hur chefen upplevs agera, hur tiden räcker till för

arbetsuppgifterna, vad man kan bestämma själv och hur förändringar genomförs. Frågeformuläret har 32 påståenden som man tar ställning till. Varje medarbetare graderar sin upplevelse från instämmer helt med påståendet till att helt ta avstånd från påståendet. WEMS är också tänkt att användas som ett dialogverktyg för hälsofrämjande arbete på arbetsplatser.

När ett frågeformulär som WEMS utvecklas, testas frågornas kvalitet med olika mått. Håller de en god kvalitet, förutsätts de också fungera bra i praktiken. De erfarenheter som har gjorts är att förberedelser inför en enkätprocess på en arbetsplats är avgörande för om enkätprocessen kommer att bli lyckad och kännas meningsfull för medarbetarna. Det är betydelsefullt att förankra enkäten hos alla på arbetsplatsen, att utse en kärngrupp av medarbetare med ansvar för att driva enkätprocessen, att diskutera i arbetsgruppen vad en enkätprocess kan bidra med på den specifika arbetsplatsen och därigenom skapa förståelse för hur arbetsgruppen kan arbeta med enkätprocessen. Om en organisation lägger ner tid och pengar på en enkätprocess är det av vikt att den fyller ett syfte för både ledning och medarbetare.

Avhandlingsresultatet har även gett en cirkulär struktur för hur en arbetsgrupp kan arbeta med enkäten WEMS som ett dialogverktyg i en kontinuerlig process. Strukturen består av faser som kan symboliseras med en näckros. Blomman är kärnan där förberedelser och planering börjar. Därefter fortsätter enkätprocessen runt bladet i olika faser, vilka är: besvara enkät, presentera resultat, diskutera resultat, fokusera ett område, definiera och planera förbättringsarbeten, genomföra förbättringsarbeten, reflektera över hur det gick och slutligen påbörja en ny enkätprocess genom att förankra och förbereda på nytt. I steget där enkätresultat diskuteras är det viktigt att lyfta fram vad det är i arbetsituationen som är positivt, vilka stärkande resurser som finns på den aktuella arbetsplatsen och utifrån det också se var det finns brister och behov. I en sådan diskussion kan arbetsgruppen ta hjälp av tre begrepp som kan förklara enkätresultatet på ett tydligare sätt. Dessa är begriplighet, hanterbarhet och meningsfullhet. De tre begreppen kopplat till att förstå arbetsituationen kan gemensamt bidra till att öka medarbetarnas känsla av sammanhang i arbetet. Ett kontinuerligt hälsofrämjande arbete på arbetsplatser kan bli mer användbart, meningsfullt och hållbart, genom att använda WEMS som ett dialogverktyg i processer för att se och förstå vilka resurser som finns på arbetsplatsen, samt hur de kan bevaras och förbättras.

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-Albert Einstein

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# The two research projects

Already in 2002, the development of a questionnaire with a salutogenic approach was started in an intervention project, with I.A. as the project manager. The hospital organizations in Kristianstad and Hässleholm, in the south of Sweden, participated. A questionnaire about health and work experience was designed on the basis of related theories and models. At the beginning, the questionnaire was more extensive, including questions about health, illness, work, QoL, and living habits, and that questionnaire was used in previous surveys at hospitals. The questionnaire was also used in 2005 for a survey at the hospitals in Hässleholm and Ängelholm. Data from that study was used as the foundation for the first paper (I) in this thesis. All other data used in this thesis comes from a research project that started in 2006, called “Sluta plåstra – Hälsoskapande arbetsplatser inom hälso- och sjukvården” (In English: “Stop plastering – Health-creating workplaces within health care”) with G.E as the project manager. This has been an interdisciplinary project on public health and work psychology. During the project, I have collaborated with U.E, a doctoral student colleague in work psychology. His research focus has been regenerative work in the organization and is presented in a monographic thesis (Ericsson, 2010). The project has had a regional and a local support group, and they have contributed with various knowledge perspectives and significant support during the entire project. The regional support group consisted of staff from the Ängelholm hospital, Region Skåne, and researchers from Kristianstad University and KTH Royal Institute of Technology, Stockholm. The local support group had representatives from the Ängelholm hospital, and from national trade unions. The initial aim of the “Stop plastering-project” was: 1) to develop a workplace-related questionnaire, that a) should be easy to use, b) could be handled by the employees and managers themselves, c) could be used in the development of a health-creating workplace, d) could be used by the management to take the “temperature” of the organization. The first step, question development and design, was already made in the project that started in 2002. In 2006, the data material from 2005 with questions concerning work experience was handed over to establish psychometric tests, and to complete the functional parts (a-d). At the same time, the work continued to complete a scale for measuring aspects of experienced health, and the Salutogenic Health Indicator Scale (SHIS) was presented by Bringsén, et al. (2009).

## Work Experience Measurement Scale - WEMS

### Frågeformulär om upplevelser av arbete och arbetsplats

Läs noga igenom frågan med tillhörande svarsalternativ. Svara sedan på frågan genom att sätta **ett** kryss i rutan i för det svar du anser vara rätt eller mest stämmer med din uppfattning.

#### Stödjande arbetsförhållanden

*Var vänlig ta ställning till följande påståenden om din arbetssituation.*

*Ju längre till vänster du placerar ditt svarskryss desto mer håller du med om påståendet.*

	Instämmer helt					Tar helt avstånd
	(6)	(5)	(4)	(3)	(2)	(1)
Vi uppmuntrar och stödjer varandra på mitt arbete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Det är en god stämning på min arbetsplats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag tycker att vi har väl fungerande rutiner på mitt arbete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag får "feedback" på det arbete jag utför	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag trivs på min arbetsplats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag tycker att min arbetsgivare satsar på min hälsa	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag får råd och praktisk hjälp av andra när jag behöver det	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### Individuella inre upplevelser

*Var vänlig ta ställning till följande påståenden om din arbetssituation.*

*Ju längre till vänster du placerar ditt svarskryss desto mer håller du med om påståendet.*

	Instämmer helt					Tar helt avstånd
	(6)	(5)	(4)	(3)	(2)	(1)
Mitt arbete känns meningsfullt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag känner att jag utvecklas i mitt arbete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mitt arbete är varierande	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag utför det arbete som jag är utbildad för	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag går till arbetet med glädje	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mitt arbete är en stor utmaning för mig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### Självbestämmande

*Var vänlig ta ställning till följande påståenden om din arbetssituation.*

(Med "arbetssituation" avses din direkta arbetssituation)

*Ju längre till vänster du placerar ditt svarskryss desto mer håller du med om påståendet.*

	Instämmer helt					Tar helt avstånd
	(6)	(5)	(4)	(3)	(2)	(1)
Jag bestämmer själv <b>när</b> olika uppgifter skall utföras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag bestämmer själv <b>vad</b> som skall utföras i mitt arbete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag bestämmer själv <b>hur</b> mitt arbete skall utföras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag bestämmer själv mitt arbetstempo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Tidsupplevelse

**Var vänlig ta ställning till följande påståenden om din arbetsituation.**

*Ju längre till vänster du placerar ditt svarsrygg desto mer håller du med om påståendet.*

	Instämmer helt					Tar helt avstånd
	(6)	(5)	(4)	(3)	(2)	(1)
Jag hinner utan tidspress (stress) med mina arbetsuppgifter under ordinarie arbetstid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag hinner oftast avsluta en arbetsuppgift innan nästa behöver påbörjas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag behöver sällan stanna kvar efter arbetstid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## Ledarskap

**Var vänlig ta ställning till nedanstående påståenden om den person som är din närmaste chef.**

(Den person/chef du vänder dig till i ditt dagliga arbete.)

*Ju längre till vänster du placerar ditt svarsrygg desto mer håller du med om påståendet.*

	Instämmer helt					Tar helt avstånd
	(6)	(5)	(4)	(3)	(2)	(1)
Chefen finns tillgänglig när jag behöver det	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chefen är bra på att skapa intresse och engagemang för arbetsuppgifterna	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chefen medverkar till att arbetsuppgifterna blir rättvist fördelade	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chefen tar upp saker till diskussion med arbetsgruppen innan viktiga beslut fattas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chefen har förmåga att fatta egna beslut vid behov	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chefen ser till att information om verksamhetens mål och visioner blir tillgänglig för arbetsgruppen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## Förändringsarbete

**Tänk efter vilket det senaste förändringsarbetet var och ange hur väl just den förändringen stämde med nedanstående påståenden.**

*Ju längre till vänster du placerar ditt svarsrygg desto mer håller du med om påståendet.*

	Instämmer helt					Tar helt avstånd
	(6)	(5)	(4)	(3)	(2)	(1)
Förändringsarbetet präglades av en öppen dialog	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Förändringsarbetet var ett resultat av arbetsgruppens behov eller önskemål	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Förändringsarbetet kändes meningsfull	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Förändringsarbetet präglades av delaktighet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag kände trygghet i arbetet med förändringsarbetet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jag fick bra information om förändringsarbetet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

