THE IMPACT OF MANAGERIAL LEADERSHIP ON STRESS AND HEALTH AMONG EMPLOYEES

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ABSTRACT

The overall aim of this thesis was to explore the relationship between managerial leadership on the one hand and stress, health, and other health related outcomes among employees on the other. This was done in five studies, three using a cross-sectional and two a prospective design. In all studies the employees rated their managers with a self-administered questionnaire. The health outcomes were in four of the studies self-reported, but in the last study register-based diagnoses were used to determine incidence of ischemic heart disease. Logistic and Cox regression analyses were used to estimate the associations. In three of the five studies, the association between managerial leadership and the outcomes were adjusted for the dimensions in the Demand-control-support model. Other adjustments included staff category, labour market sector, job insecurity, marital status, satisfaction with life in general, and biological risk factors for cardiovascular disease. In the first study (I) Attentive managerial leadership was found to be significantly related to the employees' perceived stress, age-adjusted self-rated health and sickness absence due to overstrain or fatigue in a multi-national company. The association remained significant after adjustment for the dimensions of the Demand-control-support model. In the second study (II) focussing hotel employees in Sweden, Poland, and Italy the factors Autocratic and Malevolent leadership (less common in Sweden than in the other two countries) aggregated to the organisational level were found to be related to poorer individual ratings of vitality. The relationships were significant also after adjustments for the dimensions of the Demand-control-support model aggregated to the organisational level. Self-centred leadership (which was as common in Sweden as in the other two countries) was related to poor employee mental health, vitality, and behavioural stress after these adjustments. The third study (III) showed significant associations in the expected directions between Inspirational leadership, Autocratic leadership, Integrity, and Team-integrating leadership on the one hand and self-reported sickness absence among employees on the other in SLOSH, a nationally representative sample of the Swedish working population. These associations were adjusted for the Demand-control-support model and self-reported general health (SRH). In the fourth (IV) prospective study significant associations were found between Dictatorial leadership and lack of Positive leadership on the one hand, and long-lasting stress, emotional exhaustion, deteriorated SRH, and the risk of leaving the workplace due to poor health or for unemployment on the other hand. In the fifth study (V) a dose-response

relationship between positive aspects of managerial leadership and a lower incidence of hard end-point ischemic heart disease among employees was observed. This relationship was very little affected by adjustments for conventional risk factors for cardiovascular disease.

Leadership associated with good employee health included to provide employees with the means to carry out their work in an independent manner (provide information, power, and clarity), encourage employees to partake in the development of the workplace, provide support, inspire employees, show integrity (justice), and to integrate team members to work well together. Leadership associated with poor employee health was found to encompass both actively destructive (e.g. acting dictatorial, forcing own opinions on others, being insincere and actively unfriendly) and passively destructive behaviours (withdrawing from employees).

SAMMANFATTNING

Det övergripande syftet med föreliggande avhandling var att utforska relationen mellan chefers ledarskap å ena sidan och stress, hälsa och andra hälsorelaterade utfall bland medarbetare å andra sidan. Detta gjordes i fem studier, varav tvärsnittsdesign användes i tre och prospektiv design i två. I alla studier skattade medarbetarna sina chefer med hjälp av frågeformulär. I fyra av studierna var hälsoutfallet självskattat, men i den sista studien användes registerbaserade diagnoser för att mäta ishemisk hjärtsjukdom bland anställda. Logistiska regressioner och coxregressioner användes för att skatta sambanden. I tre av de fem studierna justerades sambandet mellan chefens ledarskap och utfallen för dimensionerna i Krav-kontroll-stödmodellen. Andra kontrollvariabler som inkluderats är yrkeskategori, arbetsmarknadssektor, anställningsotrygghet, civilstatus, nöjdhet med livet i allmänhet och biologiska riskfaktorer för hjärt- och kärlsjuklighet. I den första studien (I) fann vi, i ett multinationellt företag, ett signifikant samband mellan faktorn Uppmärksamt ledarskap och självskattad nivå av stress bland medarbetare samt åldersrelaterad självskattad hälsa och sjukfrånvaro p.g.a. överansträngning eller utmattning. Sambanden förblev signifikanta efter kontroll för dimensionserna i Krav-kontroll-stöd-modellen. I den andra studien (II) av hotellanställda i Sverige, Polen och Italien fann vi att Autokratiskt och Illasinnat ledarskap (vilket var mindre vanligt i Sverige än i Polen och Italien) aggregerade till organisationsnivå hade samband med lägre individuella skattningar av vitalitet. Sambanden förblev signifikanta efter justering för dimensionerna i Krav-kontroll-stöd-modellen aggregerade till organisationsnivå. Självcentrerat ledarskap (vilket var lika vanligt i Sverige som i de andra två länderna) visade samband med lägre skattningar av mental hälsa, vitalitet och beteendemässig stress bland anställda. I den tredje studien (III) fann vi signifikanta samband i förväntad riktning mellan Inspirerande ledarskap, Autokratiskt ledarskap, Integritet, och Team-integrerande ledarskap å ena sidan och självrapporterad sjukfrånvaro bland anställda å andra sidan i SLOSH, ett representativt urval av den svenska arbetande befolkningen. Relationen kontrollerades för dimensionerna i Krav-kontroll-stöd-modellen. I den fjärde (IV) prospektiva studien fann vi signifikanta samband mellan Diktatorisk leadership och brist på Positivt ledarskap å ena sidan och ökade symptom på långvarig stress, symptom på emotionell utmattning, försämrad självskattad generell hälsa, och risk för att lämna arbetsplatsen p.g.a. dålig hälsa eller för arbetslöshet å andra sidan. I den femte studien (V) fann vi en

dos-respons-relation mellan chefers ledarskap och objektivt konstaterad ischemisk hjärtsjukdom bland anställda. Denna relation påverkades mycket litet av justeringen för traditionella riskfaktorer för hjärtsjukdom.

Ett hälsofrämjande ledarskap fann vi vara att förse medarbetare med förutsättningar att utföra sitt arbete på ett självständigt sätt (ge information, befogenheter och tydlighet), att uppmuntra medarbetare att delta i utvecklingen av arbetsplatsen, att ge stöd, att inspirera medarbetare, att visa integritet (rättvisa) och att integrera team-medlemmar så att de ska kunna arbeta väl tillsammans. Negativt för medarbetares hälsa fann vi vara både chefers aktivt destruktiva beteenden (t.ex. att agera diktatoriskt, tvinga egna värderingar på medarbetare, vara oärlig och aktivt ovänlig) och passivt destruktiva beteenden (att dra sig undan från medarbetare).

Nyckelord: chefers ledarskap, krav, kontroll, socialt stöd, stress, emotionell utmattning, psykiskt välbefinnande, självskattad generell hälsa, sjukfrånvaro, ischemisk hjärtsjukdom

LIST OF PUBLICATIONS

I. Westerlund, H., Nyberg, A., Bernin, P., Hyde, M., Oxenstierna, G., Jäppinen, P., Väänänen, A., & Theorell, T. Managerial Leadership is Associated with Employee Stress, Health, and Sickness Absence Independently of the Demand-Control-Support Model (accepted *WORK: A Journal of Prevention, Assessment & Rehabilitation*, 2009).

II. Nyberg, A., Holmberg, I., Bernin, P., Alderling, M., Åkerblom, S., Wiederszal-Bazyl, M., Magrin, M., Hasselhorn, H-M., Milczarek, M., D'Angelo, G., Denk, M., Westerlund, H., & Theorell, T. Destructive Managerial Leadership and Psychological Well-Being among Employees in Swedish, Polish, and Italian Hotels (submitted, 2009).

III. Nyberg, A., Westerlund, H., Magnusson Hanson, L., & Theorell, T. (2008) Managerial leadership is associated with self-reported sickness absence and sickness presenteeism among Swedish men and women. *Scandinavian Journal of Public Health;36*(8):803-11.

IV. Nyberg, A., Westerlund, H., & Theorell, T. Destructive managerial leadership – stress or exit? A prospective study of Swedish employees (submitted, 2009).

V. Nyberg, A., Alfredsson, L., Theorell, T., Westerlund, H., Vahtera, J., & Kivimäki, M. (2009). Managerial leadership and ischemic heart disease among employees: the Swedish WOLF study. *Occupational and Environmental Medicine; 66*(1):51-5.

CONTENTS

LIST OF ABBREVIATIONS

AML	Attentive Managerial Leadership
CEO	Chief Executive Officer
CI	Confidence Interval
COPSOQ	Copenhagen Psychosocial Questionnaire
GLOBE	Global Leadership and Organisational Behaviour Effectiveness research program
IHD	Ischemic Heart Disease
IPM	National Institute for Psychosocial Medicine (now Stress Research Institute)
OR	Odds Ratio
OSQ	Occupational Stress Questionnaire
SLOSH	Swedish Longitudinal Occupational Survey of Health (research project)
SRH	Self-Rated Health
SWES	Swedish Work Environment Survey
WOLF	WOrk, Lipids, and Fibrinogen (research project)

1 BACKGROUND

Stress-related diseases are a major public health issue in most industrialized countries [1, 2] and are together with mental ill-health the major overall cause of premature death in Europe [3]. It has been estimated that a substantial proportion of European employees have working conditions that can cause stress and ill health - in 2005, as much as 20-30% of workers in the EU believed that their health was at risk because of work-related stress. Also, in 2002 it was estimated that the yearly cost of work-related stress was about EUR 20 million [4-6].

Epidemiological research on the health effects of psychosocial working conditions has advanced rapidly over the past 30 years. Models of work stress, especially the demand-control-support model [7, 8] but also the effort-reward imbalance model [9] and the model of organisational injustice [10, 11] have gained support in a large number of scientific studies [12-16]. The specific role of managers' leadership for experienced stress and the development of stress-related diseases among employees has, however, not been thoroughly investigated.

The conditions for development of work democracy have been favourable in Sweden, and employees have gained increased possibilities to influence their work situation over the last century. Good collaboration between employer organisations and labour unions, and several prominent Swedish stress researchers (e.g. Marianne Frankenhaeuser, Lennart Levi, and Töres Theorell) have contributed to the elaborated work democracy in Sweden [17]. Swedish leadership ideals and leadership practices are also, in international comparisons, often described in terms of e.g. high employee participation in decision making processes, strong focus on interpersonal relations, change orientation, a certain tendency to avoid conflict, and a tendency to rely on formal rules [18].

The demand-control model was developed during the 1970s and 1980s, when many people were employed in production. The structural changes of the labour market, which have taken place in Western society since, such as more people being employed in education, administration, health care, and knowledge production, and a general increase in educational level in the population, have lead to increased decision authority and skill discretion among employees. The increased work intensification, higher job insecurity, looser and more temporary work organisations, and increased social interactions and exposure to large amounts of information at work, which have occurred simultaneously, are, however, putting new

demands on employees as well as on managers. Whereas "traditional work" was regulated with respect to time, space, and organisation, the responsibility regarding the planning and structuring of work, and the regulation of working hours and work engagement, has tended to move from the organisation to the individual, which may bring about new needs for managerial leadership [19-22].

A trend in the international research on leadership seen since the turn of the millennium, is a shift of interest moving from great charismatic leaders during the 1980s and 1990s, to forms of leadership where power is distributed (shared/distributed leadership), more ethical values are emphasised (authentic, ethical, fair leadership), and the destructiveness of negative leadership is acknowledged (e.g. abusive supervision, and passive-avoidant leadership) [23]. It is, however, unclear as to what extent these ideal forms of leadership are practiced by managers and to what extent they are given organisational prerequisites to be practiced [24]. It has been estimated that between 36 and 60 billion dollars are spent yearly on educational programs for managers worldwide [25], indicating a belief in managers' work as critical to organisational success. Whether this attribution of importance reflects that individual leaders are as influential as it may come across or rather reflects other psychological processes, has been debated [26-28]. The large body of research on health effects of the psychosocial work environment does, however, suggest that managers' strategies and behaviours may be relevant for the development of stress and ill-health among employees. The general aim of this thesis was to explore that topic.

1.1 THE PSYCHOSOCIAL WORK ENVIRONMENT

Between the ages of twenty-two and sixty-five, we spend about 40% of our waking hours at work [29]. A large majority of workers in the industrialised countries report being very satisfied with their work experience [30] and people within the OECD countries typically rank work as among the most rewarding of their roles and activities [29]. Yet, for some people, work is accompanied by a threat to their health and well-being.

Occupational hazards related to physical and chemical exposures and risks have been acknowledged for a long time, and significant progress has been made in reducing these problems. Over the past years, it has increasingly been acknowledged that psychosocial stressors cause considerable suffering and illness as well as costs for society [5, 6]. We know today that common diseases, such as coronary heart disease, mental illness, and degenerative

musculoskeletal diseases may be initiated or accelerated by chronically adverse work experiences [31].

1.1.1 Changes in the nature of work

Dramatic changes in the nature of work have occurred in Sweden and other industrialised countries over the past two decades. There has been a shift in sectorial distribution of the workforce, with an increased number of employees in the service sector. There has been a clear tendency towards an intensification of work [32, 33] and increased skill requirements especially among semi- and unskilled manual occupational categories [29]. Since more and more people work in human services occupations, emotional and interpersonal demands tend to replace physical demands. Persistently high unemployment rates have contributed to an increase in perceived employment insecurity among workers. There has been a rise in non-traditional work arrangements, such as part-time work, shift work, self-employment, multiple job holding, and casual or temporary work [34]. The organisation of work has also changed. For example, management hierarchies were flattened in many service and manufacturing industries with potential to improve aspects of working life quality [21, 35]. The effects of this change were however not positive in all organisations [36]. Repeatedly reorganising, downsizing and expanding organisations, has become very common, with established health effects among employees [37-40]. Almost all organisations, private as well as public, are more dependent on market forces, which has resulted in organisations trying to increase their flexibility [41]. This has lead to a shift of responsibility from the organisation to the individual. Individual employees are to a larger extent than before made responsible for his/her own work and employability, and are expected to make decisions regarding when and where to work, what to do, and how to do it [19, 22, 42].

1.1.2 Dominating research models of work stress

1.1.2.1 The Demand-Control-Support Model

Psychosocial stressors at work were discussed as possible risks for the development of stress-related diseases already several decades ago. The introduction of the demand-control model in 1979 [43] is often referred to as the breakthrough in this area of research [12, 13]. The two-dimensional job-strain model is to date the most widespread and empirically tested work stress model. It proposes that employees who have high psychological job demands and at the same time low control (or decision latitude) over work have a higher risk of developing stress-related diseases. The components of high demands are in the work by Karasek and Theorell described

in terms of having to work very hard, very fast, excessively, without enough time available, and under conflicting demands. Decision latitude refers to both skill discretion (learning new things, developing skills, creativity, and having a variation of work tasks rather than repetitive work), and decision authority (taking part of decision making, and freedom as to how the work gets done) [8]. A third component of the model, social support, was added later [7]. Social support refers to the social climate at work, and the possibility to get help from colleagues and supervisors when needed. The combination of job strain and lack of social support (isolation) is often, in the demand-control-support model, referred to as iso-strain. A review of cross-sectional, case-control, and longitudinal studies, thoroughly taking the effect of methodological quality into consideration, indicates consistent evidence of an association between job strain and cardiovascular disease among men [12]. Another review and meta-analysis of prospective cohort studies including more than 80.000 individuals in the US and Europe suggests a relative ratio of CHD for high versus low job strain of 1.43 (95% CI 1.15-1.84). This age and gender adjusted relative ratio did however decrease to 1.16 (95% CI 0.95-1.43) after adjustments for risk factors and potential mediators [13]. Results from the most recent review (of 33 studies, 20 originating in the Nordic countries) published indicate moderate evidence that high psychological demands, lack of social support, and iso-strain are risk factors for IHD among men. The authors conclude that in more recent studies, the significant relationship between job strain and CHD are fully explained by the association between high demands and disease risk. There was insufficient evidence regarding effects among women [44]. Results from a meta-analysis of different aspects of the psychosocial work environment predicting mental health among employees suggest that job strain, as well as high psychological demands, low decision latitude, and poor social support predicted common mental disorders. The strongest effect was shown for job strain. There was heterogeneity in the results regarding psychological demands and poor social support for men [14]. Another yet more recent review of longitudinal studies of psychosocial working conditions as sources of psychiatric diseases (depression and anxiety) was conducted by Swedish researchers and published in a report [15]. The authors conclude that there is moderately strong evidence that job strain, psychological demands (alone), and poor social support can predict depression and anxiety among employees. They found limited scientific evidence in the literature of a relationship between decision latitude and depression/anxiety, and of skill discretion and decision authority (studied separately) and these psychiatric disorders.

1.1.2.2   The Effort-Reward Imbalance (ERI) Model

The demand-control-support model was developed to reflect work stress in the era of industrial production. The model of effort-reward imbalance captures some of the stress associated with the post-industrial work life, such as flexibility and job insecurity. The effort-reward imbalance model suggests that an experienced lack of reciprocity between the effort put in at work and the rewards received (such as e.g. insufficient financial compensation, lack of help or acceptance by colleagues and supervisors, poor career opportunities, or job insecurity) causes stress in the individual [9, 45]. Kivimäki et al (2006) found in their meta-analysis of more than 11.000 employees in Europe a non-significant age- and gender-adjusted risk ratio of 1.58 (95% CI 0.84-2.97) of developing coronary heart disease when reporting a combination of high efforts and low rewards. No reduction of the risk ratio was seen when including adjustments. It was concluded in the most recent review of work related factors and IHD that there is insufficient evidence for a relationship between ERI and IHD [44]. Stansfeld et al (2006) conclude that there is a strong effect of effort-reward imbalance on common mental disorders, whereas Westerholm et al (2008) report that they did not find a large enough number of high quality longitudinal studies of the relationship between effort-reward imbalance and psychiatric disorders to draw any conclusions about the strength of the relationship.

1.1.2.3   The Model of Organisational Injustice

The model of organisational injustice focuses three conditions of injustice at work, of which the first one, injustice in the distribution of resources, is partly included in the ERI model. The other two components are procedural injustice (referring to whether decision-making procedures include input from affected parties, are consistently applied, suppress bias, are accurate, correctable, and ethical) and relational injustice (referring to the fair, polite, and considerate treatment of employees by supervisors) [11]. Kivimäki et al [13] found a relative risk of coronary heart disease of 1.62 (95% CI 1.24-2.13) when reporting organisational injustice (only two studies and a total of approx 7000 men and women were included in the meta-analysis). The relative risk remained significant after adjustments for other risk factors, including job strain and effort-reward-imbalance (RR 1.47, 95% CI 1.12-1.95). However, the conclusion made by Eller, Netterström et al [16] is that there is insufficient evidence for a relationship between injustice and IHD. The same conclusion is drawn by Westerholm et al [15] regarding the scientific evidence of a relationship between procedural injustice and relational injustice (respectively) and employees' development of depression and anxiety.

1.1.2.4   Limitations in research on work stress

Epidemiological research on work stress has been criticised for presenting a series of empirical findings rather than an integrated conceptual model that specifies the pathways by which individual work experiences are linked to health as well as to the broader social context [14, 46]. Several methodological limitations are also currently being discussed. For all three models of work stress, little standardisation of the assessment instruments have been made; the survey instruments vary between studies, and scales have often been modified. The dimensions in the demand-control model may have to be developed in order to better capture demands in the post-industrial working life and the evaluation of intensity and duration of exposure to be refined. In some studies conducted unacceptably long periods have also elapsed between assessment of work environment and end of follow-up [13, 44]. The mechanisms by which work stress may increase the risk of e.g. coronary heart disease and psychiatric diseases are also to date rather unclear, and future studies need to focus on mediating factors in this relationship. There is also little knowledge of groups of people at greater risk of developing disease under stress. Studies of interactions between work stress, genetic predispositions, and health behaviours would help improve the predictive validity of stress models. A large heterogeneity in development of both mental illness and IHD due to work stress has been observed between studies. Differences in risks between men and women, differences in vulnerability to different work stressors, recall biases of older participants, imprecise measures of both exposures and outcomes, and confounding by a third unmeasured factor have been discussed as possible reasons for the inconsistent findings [13, 14]. Large-scale intervention studies are needed to further our understanding of causality and means of prevention in the relationship between work stress and disease [12, 13, 44, 47].

1.1.3   Leadership in models of work stress

The role of managers or supervisors is not specifically emphasised in the demand-control model [8]. However, some versions of the social support scale in the extended demand-control-support model include support from supervisors (the DCQ), but support from supervisors is then often measured in combination with support from colleagues [7, 48]. In the model of effort-reward imbalance, recognition and support from supervisors are parts of the combined measure of rewards, but the model does not focus on the role of managers specifically [9]. Most pronounced is the role of the manager or supervisor in the model of organisational injustice, where one of the three dimensions, relational injustice, refers to the managers' lack of fair,

respectful and considerate behaviours towards their subordinates. However, relational injustice is most often studied in combination with distributive and procedural injustice [11].

1.2 LEADERSHIP

1.2.1 Leadership in today's working life

New ways of organising work in many sectors of the labour market has over the past years put new demands on managers and their leadership. Since the psychosocial load at work has increased, and the motivation of employees to a large extent is focused on identity and self-fulfilment, managers need to be good at promoting well-educated workers to act in self-dependent manners, but still effectively and in collaboration with others to master quick and constant changes [21]. Holmberg and Strannegård [49] analysed leadership ideologies expressed by managers, consultants, and the media in the era of the "new economy" in Sweden. The leader is described with adjectives such as dynamic, adventurous, flexible, competitive, ready to take risks, brave, visible, visionary, stimulating, and innovative. The main principle was that what is good for the individual is good for the organisation. Employees should not be controlled or limited by a strict organisation, rules, or routines. The individual employee creates his/her own networks and the main task of the leader is to support the employee, help the employee build his/her own brand, and be available and willing to reward them. Leadership is described as a temporary role, where different people take on the leadership role in different projects. It has been asserted that in knowledge intense organisations, where the predictability is low, leaders need to be good at creating and integrating teams for temporary organisational solutions where competence is taken care of and developed [50]. Tyrstrup [51] further discusses that managers need to be good at improvising. Although new ways of organising work have resulted in positive changes, e.g. that employees have been given an extended control over work in many sectors, a vulnerability among some employees related to difficulties in regulating their work, with possible consequences of excessive work engagement and psychological distress has also been acknowledged [52, 53]. In less regulated work situations, where employees are free to exert influence on how, where and when to carry out their work, an important function of managers may be to provide support regarding the structuring, planning, and prioritizing of work tasks, judging situations, coaching when difficult decisions are to be made, as well as establishing boundaries for work engagement [20]. A more mutual and trustful relationship between manager and employee may be becoming increasingly important for the organisation as well as for the individual employee [21, 54]. Pearce [55] has suggested that managers today

need to be better educated with respect to, among other things, social competence and the importance of emotions and interpersonal relations.

1.2.2 Leadership research

In contrast to what has been the case within the research field of psychosocial working conditions, focused on work stress as a risk for disease development, studies of positive outcomes of successful leadership have dominated the field of leadership research [23, 56].

The quest in leadership research in the early 1900s was to identify the traits (personality, temperament, needs, motives, and values) associated with successful leadership. This early version of the trait theory was however never very successful – no single trait was found, revealing the truth about successful leadership [27]. More recent trait researchers have however identified a set of traits, structured around the theory of the so-called Big Five, which are often seen in successful leaders. These are extroversion, being open to new experiences, conscientiousness, and absence of neuroticism. Agreeableness, the last dimension, was not correlated with leader emergence and effectiveness [57]. In the 1940's the Ohio State University Researchers developed the theory of leader behaviours, and a very large amount of studies indicated that what makes up leader behaviours can be divided into relationship oriented behaviours[1] and task oriented behaviours[2] [58]. Conclusions from a recent review is that both behaviours have been found quite strongly related to different positive outcomes; relationship orientation somewhat more strongly to employee job satisfaction, motivation, and reported leader effectiveness, and task orientation somewhat more strongly to the leaders' work performance and outcomes on group and organisational levels [59]. Situational factors deciding when one or the other sets of behaviours are more important have been explored, but the research on contingency models of leadership has not rendered any conclusive evidence. Managerial work is probably too complex and unpredictable to rely on a set of standardised responses to events. Rather, managers need to be good at continuously reading the situation and adapting their behaviours and strategies to it [27].

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[1] addressing the feelings, attitudes, and satisfaction of the members of the group and boosting morale, increasing cohesiveness, reducing interpersonal conflict, and illustrating concern and consideration for group members

[2] pertaining to the problem at hand rather than the personal satisfaction of group members, e.g. guiding in direction of successful goal attainment, defining problems, establishing communication networks, providing evaluative feedback, planning, motivating action, coordinating members' actions, proposing solutions, and removing barriers

A new theory of leadership was developed during the 1980s. The original ideas of transformational and transactional leadership were introduced by Burns [60], and later expanded upon by Bass [61]. Transformational leaders seek to motivate followers by Idealized leadership[3], Inspirational motivation[4], Individualized consideration[5] and Intellectual stimulation[6]. Transactional leaders, on the other hand, seek to motivate followers by appealing to their self-interests. Contingent rewards[7], and Active management by exception[8] are part of Transactional leadership [62]. Passive management by exception[9], also originally part of transactional leadership, and the last scale Laissez-faire leadership[10] have later been suggested to form the category Passive-avoidant leadership. These two scales correlate positively with each other and negatively with all other scales [63]. The theory holds that transformational and transactional leadership are complementary rather than contradictory to one another. Transformational or charismatic leadership is however usually seen as more strongly correlated with different positive outcomes, such as ratings of leader and employee effectiveness, job satisfaction, commitment, extra effort, goal attainment, and performance [64, 65]. Transformational, or charismatic, leadership is the by far most studied leadership theory from the 1980s up to date. However, with some exceptions [66-68] relatively few of the studies conducted have used objective criteria of organisational success or profit.

In 2001, Collins and his research team published their research of American companies going from average to extreme success, identifying similarities in the CEOs of these companies [69]. It turned out that these managers' "level 5 leadership", as they labelled it, was not based on charisma to inspire employees – these CEOs represented an antithesis of the charismatic and narcissistic leader, which was held up as an ideal in the financial booms of the 1980's and 1990's [28]. Instead, the "level 5 leaders" had quietly, humbly, slowly, although steadfastly, fearlessly and with great effort put into the company for a long period of time, built the success of these companies. High moral standards and a great ambition put into the company rather than

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[3] making followers feel a powerful identification with and strong emotions towards the leader

[4] modelling high values, communicating an inspiring vision and powerful symbols in order to generate a sense of belonging and greater effort

[5] coaching, support, and encouragement of individual employees

[6] influencing followers to view problems from a fresh perspective

[7] the leader clarifies what needs to be done and uses rewards when expectations are met

[8] the leader monitors the work actively and uses corrective methods to ensure that the work meets acceptable standards

[9] uses corrections and punishments when expectations are not met

[10] ignores the needs of followers, does not respond to problems nor monitor work

into their own person, was what characterised these CEOs. The research of Collins and his team has probably been the most influential on the leadership arena during the first years of the 21st Century. Together with major ethical scandals in international companies, such as Enron, it has changed the direction in leadership theory development [28]. The strong focus on charisma has partly been abandoned, and theories of e.g. authentic leadership, ethical leadership, trust, distributed/shared leadership, and fairness in leadership have emerged and are starting to be tested empirically [23, 28, 70-72].

There is some scientific evidence supporting the idea that the distribution of power, or shared leadership functions, is associated with better effectiveness and success in modern organisations. For example, a recent review of research on the effectiveness of team leadership showed that the leadership dimensions most strongly related to employees' estimations of effectiveness were *empowerment* and *boundary spanning*[11] [73]. Boundary spanning was also in a review of leadership in research and development organisations found to be one of the core leadership dimensions associated with project success, along with inspirational qualities, the provision of an intellectually stimulating environment and the development of high quality relationships with employees [74]. Distributed (shared) leadership has in the few studies conducted with this focus been found to be at least as strongly related to team effectiveness as more traditional vertical leadership [75-77].

As mentioned above, leadership research has to date focused almost entirely on constructive leadership behaviours and their positive relationships with e.g. employee job satisfaction and organisational effectiveness [56, 78]. However, a conclusion drawn from an extensive literature review of psychological research is that negative events in social interactions seem to have a stronger impact on individuals than positive events [79]. Understanding and preventing destructive leadership may therefore be at least as important for organisational success and other outcomes as understanding and enhancing constructive aspects of leadership [80, 81]. Two types of poor leadership along an active-passive dimension have been described in the literature [80, 82]. The first type of leader is destructive in an active manner, e.g. by aggressive and abusive behaviours, such as yelling, ridiculing, name-calling, and threatening subordinates with job loss and pay cuts [78]. This type of leaders appear as e.g. "abusive supervisors" [83, 84], "petty tyrants" [85], and "bullies" [86] in the literature. The second type of poor leadership

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[11] refers to politically oriented communication resulting in extended resources and information for the team

is characterized by passive behaviours, encompassing aspects of both laissez-faire leadership, and passive-management-by-exception (see description above). The laissez-faire (avoiding) leader holds the leader position physically, but has abdicated from the responsibilities and duties assigned to him/her. Decisions are often delayed, feedback, rewards, and involvement are absent, and there is no attempt to motivate followers or to recognize and satisfy their needs [62]. Theory development and empirical research regarding consequences of destructive aspects of managerial leadership are currently forming [80, 81, 84].

Another trend seen in leadership research is that the strong focus on the leader, "leader-centred perspectives on leadership" (including most of the leadership theories mentioned above), is slowly being complemented by "follower-centred perspectives". Research on the followers' role in the leadership process are rooted in theories of the romance of leadership[12] [87], social identity theory[13] [88], and psychoanalytic theories[14] [28, 89]. Some leadership researchers are today questioning the very dichotomisation of leader and follower as fruitful, and the research on the follower as a co-producer of leadership is growing [28].

Most contemporary leadership theories are, however, constructed on an individual level, the leader constituting the level of analysis [90]. Leader-Member-Exchange Theory (LMX) of leadership is one exception, where the relationship between the manager and the employee (the dyad) constitute the level of analysis [91]. It has been pointed out that e.g. theories of team leadership need to be developed for the improvement of the theoretical basis for analysis of effects of leadership on the team level [73, 90].

A large part of leadership theory and instrument development emanate from the Northern American region (Canada and the US). Even though leadership research is now conducted in large parts of the world, the US domination is still evident [92]. To what extent the dominating leadership theories are relevant to other cultural contexts than the Northern American was questioned at least 20 years ago. The GLOBE project (see the next sub-heading) was an

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[12] the tendency of followers to exaggerate the importance and influence of the leader in determining a groups' or organisations' performance

[13] the extent to which a leader is either selected or accepted by a particular group will depend on how prototypical he or she is to that group

[14] individuals may react to leaders in dependent, counter-dependent, or independent manners

initiative to explore whether, and which aspects of, successful leadership were universal and/or culturally endorsed [93].

1.2.2.1 Limitations in leadership research

The field of leadership research has been criticized for a general tendency to replicate previous studies in small convenience samples (such as students or health care personnel), using poor methodology (cross-sectional designs and self-reported data, giving rise to problems with e.g. same source bias)[56]. A very large amount of small scale studies have been conducted on leadership effectiveness with inconsistent and inconclusive results. Theory development has been slow [27]. Little attention was also for a long time given to the actual nature of managerial work and actual problems raised by managers, with the consequence of research being conducted far from practical applications [94]. Consequently, the research field moved forward very slowly for many years. However, the 1990's is often referred to as the decade when this trend was broken. Researchers started to pose different questions about leadership and explore new issues, expanded conceptualizations and definitions of leadership to include other aspects than leader characteristics and behaviours [27], expanded their research methods to include qualitative methodology (collecting data primarily through interviews)[92], and started to emphasize the relevance of contextual factors in leadership (levels within organisations, type of organisation, public/private sector, cultural differences etc)[90]. The US domination is somewhat attenuated, especially within the qualitative research approaches [92]. More interest has started to be shown in the mechanisms, the mediating factors, by which leaders exert influence on followers [27], and better methodology has resulted in extended possibilities to draw conclusions about causal relationships. However, the "typical leadership study" still struggles with several of the above limitations [56].

1.2.2.2 The GLOBE study

The Global Leadership and Organizational Behaviour Effectiveness research programme (GLOBE) was started in 1991 by the American researcher Robert House. It came to involve 127 investigators in 62 nations, and is probably the most ambitious leadership study ever conducted. Data collection of 17.300 middle managers in a total of 951 organisations was carried out in 1992-95. The theoretical base of the study is implicit leadership theory, or leadership categorization theory, suggesting that the better the match between a perceived individual and the leadership concept held by the perceiver, the more likely it is that the perceiver "sees" the individual as a leader [95]. Consequently, managers who are perceived as leaders by their

employees will more likely be allowed to exert leadership influence on them. The main aim of the GLOBE study was to explore followers' perceptions of prototypical leaders throughout the world. Nine major attributes of culture were identified (Future orientation, Gender egalitarianism, Assertiveness, Humane orientation, In-group collectivism, Institutional collectivism, Permanence orientation, Power concentration versus decentralization, and Uncertainty avoidance) for which items were developed on societal and organisational levels. Two measures were used on these two levels; the extent to which these middle managers believed that their society or organisation engaged in certain practices (how it "was"), and their values regarding these same things (how it "should be"). Hypotheses relevant to relationships among societal-level variables, organisational practices, and leader attributes and behaviours could be tested. However, regarding leader attributes and behaviours, only the values were measured (how it "should be") [28, 93].

The development of the GLOBE leadership scales was done in collaboration between the researchers in the 62 participating nations, and could therefore not be criticized for being based on a North American cultural context only, a criticism against many leadership theories and instruments [92]. Well-validated leadership theories and instruments were included, but also expanded upon by experiences from interviews, focus groups, and analyses of the media. The development and validation of the GLOBE leadership scales were conducted in two phases. The phase 2 first order factors, as described in Hanges and Dickson (2004) were used in three of the studies conducted within the frame of this thesis. Of the 21 scales measured in the GLOBE study, the scales included in the present thesis are Autocratic leadership, Malevolent leadership, Self-centred leadership, Integrity, Inspirational leadership, and Team Integrator (see table 1 for items and explanations). Since there were inter-correlations between many of the first-order factors, a second-order structure was also developed by GLOBE researchers. Of the six second-order factors in the GLOBE study, four are represented in the present work. The first one Charismatic/Value based Leadership encompasses (among others) the first-order factors Inspirational leadership and Integrity. The second one, Team Oriented Leadership includes the factors Team integrator, and Malevolent leadership (reversed). The third one, Self-Protective Leadership, encompasses Self-centred leadership, and the fourth one, Participative Leadership, includes Autocratic leadership (reversed). The two second order factors Humane Oriented Leadership and Autonomous Leadership were not represented by any first-order factors in the present work [96].

One conclusion drawn from the GLOBE literature is that there is generally quite little variation in the ascribed values of effective leaders between managers in the 62 nations surveyed. As for the dimensions included in the present thesis Integrity, Team Integrator, and Inspirational leadership were, to somewhat varying degrees, viewed worldwide as effective leader behaviours. On the contrary, Malevolent leadership and Autocratic leadership were generally seen as associated with ineffective leadership. The exceptions are Self-Protective leadership (here represented by the first-order factor Self-centred leadership) which showed a greater variation between countries worldwide but also between European countries, and Autonomous leadership (not included in the present work) [27, 28, 93, 97].

1.2.3 Leadership in the present thesis

How leadership should be defined is, as with most complex phenomena, not agreed upon by scholars. However, most definitions of leadership share the assumption that leadership involves an influence process concerned with facilitating the performance of a collective task [27]. The term managerial leadership used in this thesis indicates that it is vertical leadership, leadership seen as the influence of an individual holding a formal managerial position on his/her subordinates, which is studied. The focus is furthermore the success in this influence process evaluated in terms of stress, health, and other health related outcomes among the managers' subordinates [98, 99].

We have relied upon employee estimations of leader attributes and behaviours, and are thereby following traditional definitions and theories of the individual leader as the level of analysis. It is well recognised within the leadership literature that the influence of individual managers or leaders are often over-estimated (see e.g. the theory of romance of leadership described above) [28, 98]. However, congruent with a large body of research on health effects of workplace social support and organisational justice, the hypothesis held in this thesis is that there is a variation in how managers take on their leadership role, and how they handle aspects of e.g. justice, support, distribution of resources, and ethics, making the relationship between these criteria and employee stress, well-being and health a meaningful field of study.

The way employees perceive and interpret events and other peoples' behaviours, how they act towards their managers and collaborators (i.e. how they co-produce leadership) most likely influences the relationship between the managers' leadership and the health-related outcomes studied among employees. It was however not the focus of this thesis to study the influence, or

for that matter the responsibility, of the employees in this relationship. When possible, a proxy measure for negative affectivity (assumed to affect the ratings of both the manager and the health status of the employee) was adjusted for. The follower-centric perspective is thereby, in the present thesis, primarily recognized in terms of reporting biases.

This thesis builds upon two different research traditions; one of psychosocial work environment epidemiology, and the other one of leadership research. This is reflected in, among other things, the selection of leadership instruments and variables to the present work. In two of the studies (I and V), the measures of leadership were derived from theoretical models and research on work stress. Central themes in these measures are e.g. employee influence and control, support and feedback received. In the other three studies (II-IV), the measures were derived from the GLOBE research project on leadership prototypes. Central aspects in dominating theoretical models of leadership, such as Inspirational leadership and Team Integration, hereby complement scales emanating from theories of work stress. The leadership indices are presented below (see table 1, chapter 3.2.1 for details).

In the very first study, a measure that we labelled *Attentive managerial leadership* was developed for the purpose of measuring the psychosocial work environment and its health effects in a large multinational forest industry company. This scale measures aspects of e.g. justice, consideration of employees, conflicting demands, and social climate. The scale used in the very last study (V) was developed by stress researchers and constitute one part of the validated instrument *The Stress Profile* [100]. We simply name this scale *Managerial leadership* and it includes questions about whether the manager provides the employee with sufficient information, power in relation to responsibilities, feedback, and consideration, whether the manager explains goals thoroughly and the employee finds that it is clear what the manager expects from him/her.

A wide variety of attributes and behaviours were included in the GLOBE leadership instrument, which was suitable for the aim of the studies in the present thesis (to our knowledge there was no leadership theory or instrument developed for the specific purpose of measuring health effects among employees). The selection of variables from the GLOBE project to the present studies were based on several criteria: 1) theories and research on work stress, 2) previous empirical findings of associations between leadership and employee well-being, 3) findings from the GLOBE study of attributes and behaviours seen as impeding effective leadership, and

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4) that the scales were shown to represent relatively separate phenomena in our first sample (study II). The selection criteria for each included variable are listed below (see table 1, chapter 3.2.1 for items and explanations).

Autocratic leadership: Managers' autocratic behaviours can be assumed to limit employee decision latitude [8], and are viewed worldwide as inhibiting effective leadership [93]. *Malevolent leadership:* Malevolent behaviours can be related to abusive supervision (the extent to which supervisors engage in hostile verbal and non-verbal behaviours), previously shown to predict distress among employees [83], and is viewed as inhibiting effective leadership worldwide [93]. *Self-centred leadership:* Self-centred leadership could be hypothesized to bear similarities with laissez-faire leadership (see description above), shown to be associated with psychological distress among employees [63, 78], is viewed as an impediment to effective leadership worldwide [93], and was generally independent of the other leadership scales in our first sample. *Inspirational leadership:* Inspirational leadership is a component of transformational leadership, known to be associated with employee well-being [101-103]. The scale was also shown to be relatively independent of the other leadership variables in our first sample. *Integrity:* Integrity is related to components of justice and organisational injustice has in psychosocial work environment epidemiology been shown to be related to risks for developing e.g. coronary heart diseases and anxiety and depression [13, 15]. The scale was relatively independent of other scales in our first sample. *Team Integration:* Integrating team members to work well together can be hypothesized to be linked to promoting a good social climate in the work group. Social climate or social support is a well established factor in psychosocial work environment epidemiology, associated with e.g. coronary heart disease, sickness absence, and psychiatric morbidity [7, 15, 48, 104]. Team integration was also relatively independent of other leadership variables in our first sample.

1.3 STRESS, HEALTH, AND RELATED OUTCOMES AMONG EMPLOYEES
1.3.1 Employee stress
1.3.1.1 *Stress/long-lasting stress*
The stress concept has developed a lot since it was first introduced around 150 years ago. Early stress researchers like Claude Bernard and Walter Cannon were primarily interested in the acute physiological stress reaction [36]. Like Mason [105], one of Selye´s contemporary critics, most modern theories of stress recognize an individual component in the stress reaction [106]. Whether a stimulus is pleasant or threatening depends on the individual appraisal of the

situation [107], which is based on previous experiences and expectations of the outcome. If a particular stimulus is perceived as threatening or negative, it is reported as "stress" [108]. Stress is not necessarily a negative factor to be avoided, and the unpleasantness of stress is no health threat in itself. Selye expressed this by making a distinction between eustress and distress [109]. According to Cognitive Activation Theory of Stress (CATS), ill health occurs only when the stress response becomes chronic, and when there is no constructive coping [108]. The stress response may then lead to illness and disease through pathophysiological processes [36]. There is today scientific evidence supporting the hypothesis that stress may play a significant role in the development of several of our more common public health diseases, for example coronary heart disease, obesity, diabetes type II, depression, extreme fatigue/cognitive impairment, irritable bowel syndrome and possibly also cancer [14, 36, 106, 110-112].

Work-related stress is a pattern of reactions that occurs when workers are presented with work demands that are not matched to their knowledge, skills, or abilities, and which challenge their ability to cope. When the worker perceives an imbalance between demands and environmental or personal resources, this can cause a number of possible reactions. Work-related stress is by the European Agency for Health and Safety at Work defined as a pattern of emotional (e.g. feeling nervous or irritated), cognitive (e.g. reduced attention and perception, forgetfulness), behavioural (e.g. aggressive, impulsive behaviour, making mistakes) and physiological (e.g. increase in heart rate, blood pressure, hyperventilation) reactions to adverse and noxious aspects of work content, work organisation and work environment [5].

Investigated in the present thesis were two separate measures of stress; one where respondents were asked by one single question to rate whether they experience stress these days (feeling tense, restless, nervous, anxious, or unable to sleep), and one of long-lasting stress (aiming at measuring more severe symptoms seen when the stress response has been prolonged, such as feeling stressed or rushed all the time, and having difficulties winding down).

1.3.2 Employee health

1.3.2.1 Emotional exhaustion

Emotional exhaustion is one of three dimensions of burnout (depersonalisation and reduced personal accomplishment constituting the other two), as defined by Maslach [113-115]. Emotional exhaustion refers to feeling mentally drained, worn out, or empty, and is often referred to as the most central aspect of burnout, and has also been found to be the most

strongly related to psychosocial work environment factors [113, 116, 117]. Several cross-sectional studies have reported significant associations between managerial leadership and employee burnout [63, 102].

Figure 1. A model describing the relationships between managerial leadership, the employee stress reaction, employee health, and other health related outcomes among employees explored in Study I-V.
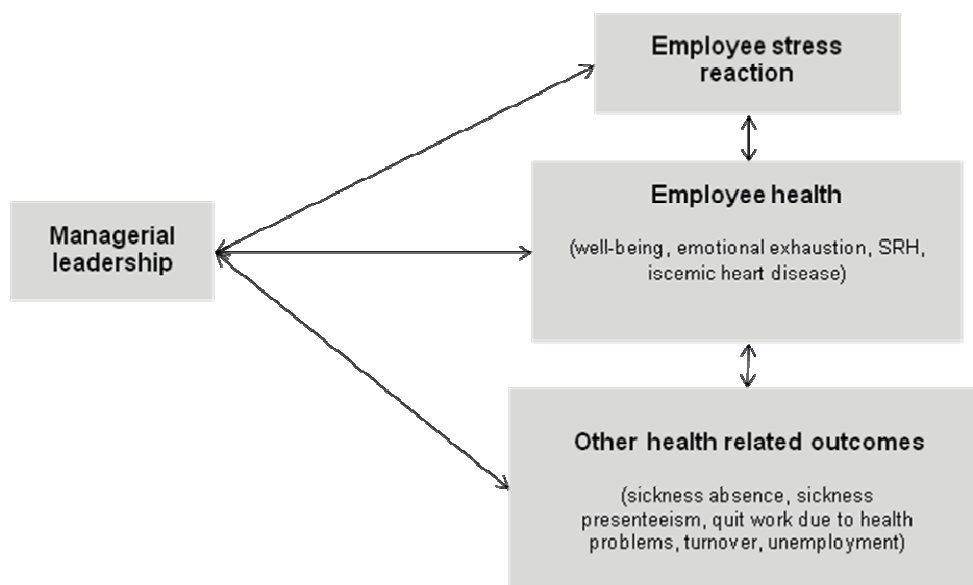
1.3.2.2 Psychological well-being
Psychological well-being is a concept referring to a wide range of symptoms, or the absence of symptoms, such as e.g. an emotional state of feeling happy, calm, enthusiastic, lively, or energetic, as opposed to feeling e.g. tense, uneasy, worried, low, or under strain. Perceived managerial leadership has been found to be associated with employee (psychological) well-being in several studies, measured with a large variety of different scales [101, 103, 118, 119].

1.3.2.3 SRH
Self-rated health (SRH) is a single item health measure, in which individuals are asked to rate whether their health is very good, quite good, neither good nor bad, quite poor, or poor[15]. SRH is generally considered to be a valuable source of information on subjective health status because it has shown strong associations with both objective measures of disease, and all-cause

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[15] This is the version recommended by WHO. The American version of the measure uses the response options Excellent, Very good, Good, Fair, and Poor. A third version of the measure is based on respondents' ratings of their health compared to other individuals of the same age.

mortality not explained by existing known disease [120-122]. It is, however, unclear as to what extent different reference levels between individuals affect their ratings of their health. It has been reported that older respondents often rate their health more favourably than otherwise comparable younger respondents [123, 124]. In Study I, a scale of age relative SRH was therefore used.

1.3.2.4 *Ischemic heart disease (IHD)*

In Study V, hard end-point ischemic heart disease (IHD) was defined as acute myocardial infarction (MI), unstable angina, death with a registered underlying cause of IHD, or cardiac arrest. Experienced work stress (job strain, an imbalance between efforts and rewards, or organisational injustice) has been estimated to be associated with a 50% excess risk for CHD among employees [13]. Relational injustice and poor social support from supervisors constitute contributing stressors [7, 48, 104, 125, 126].

1.3.3 Other health related outcomes among employees

1.3.3.1 *Sickness absence*

Johansson argues, in her model of illness flexibility, that sickness absence and sickness presenteeism are *actions* dependent on the employee's work ability (health/capacity, knowledge/skills, and adjustment latitude at work), and motivation (requirements and incentives) to attend or be absent from work. Accordingly, sickness absence (or sickness presenteeism) cannot be seen as equivalent to the employee's health condition, but to reflect more complex interactions between the individual and the work situation [127]. It could be assumed that managers are part of this complex process.

Several aspects of the psychosocial work environment (e.g. decision authority, skill discretion, job autonomy, job complexity, co-worker support, role clarity, fairness in the division of labour, and organisational climate) have been found associated with the extent to which employees are absent from work [128-130]. Also limited aspects related to the supervisor, such as relational injustice and lack of social support, have shown significant associations [10, 128]. Moderately strong evidence of an association between supportive managerial leadership and a decreased risk of sickness absence among employees was reported in a review and meta-analysis [131].

1.3.3.2 Sickness presenteeism

Sickness presenteeism refers to going to work despite judging one's current state of health to be such that sick leave should be taken. More than 50% of the Swedish working population estimated that they had been to work while sick at least once during the past year [132]. Sickness presenteeism may in the long run be harmful to the employee. For example, it was found in a Whitehall II study that employees who reported poor health at baseline had twice as high a risk of serious coronary events if they had had no sickness absence at the follow-up 3 years later [133]. Workplace factors, such as difficulties in staff replacement, insufficient resources, and time pressure have been found related to employees going to work while ill [132].

1.3.3.3 Quitting work due to health problems

In the present work, having quit work due to health problems refers to the reason employees stated regarding why they had left work between 2006 and 2008. In 2008, employees who had left work were either on different long-term sickness benefits (which was the most common), retired or unemployed. Even though the evidence regarding associations between leadership and labour market exit available in the literature is weak, two studies indicated that good and supportive leadership was associated with a decreased risk of disability pension among employees [131].

1.3.3.4 Employees changing jobs (turnover)

Working under a manager exhibiting poor leadership skills could be hypothesised to motivate employees to voluntarily change jobs. Accordingly, abusive supervision rated at one time point by full-time employed inhabitants in mid-western US cities, was found related to an increased reported voluntary turnover at follow-up six months later [83].

1.3.3.5 Unemployment

The impact of abusive supervision is likely to be stronger for subordinates with low levels of job mobility, who lack alternatives but to stay with an abusive manager [84, 134]. These individuals may be subject to a prolonged exposure to stress, which may in the long run have serious consequences not only for the individual's health, but also for his or her career and labour market participation [52, 135]. This process could, e.g. through periods of sickness absence and conflicts with management, or through employees voluntarily leaving the workplace, result in unemployment. Choosing unemployment ahead of a job when exposed to

destructive managerial leadership could be understood as a protest. Abusive supervision has for example, in cross-sectional studies, been shown to be associated with e.g. employee supervisor-targeted aggression, resistance (employees' constructive or dysfunctional tactics when resisting their supervisors' requests), and organisation deviance (e.g. taking property without permission and taking excessive breaks) (Tepper, 2007).

1.4 LEADERSHIP AND STRESS AND HEALTH AMONG EMPLOYEES

There is, to my knowledge, no theory or conceptual model, which outlines the pathways by which leadership is linked to stress and health among employees. Studies of this relationship are either based on general leadership theory (often developed with the implicit purpose of estimating organisational effectiveness) [27], or on theory, research, and practical experience of work stress [118, 136]. The research specifically focusing the relationship between leadership and employee well-being is also, in relation to the vast amount of leadership studies conducted, very limited. Many of the early studies of this relationship were based on the theory of task- and relationship oriented leadership behaviours, and these were later complemented by studies based on the theory of transformational and transactional leadership. Small samples and cross-sectional research designs in the educational and health care settings in the USA dominated [102]. A recently established interest in health effects of leadership has however generated several interesting publications. One study specifically trying to separate leadership from other workplace stressors came in 2004 [118]. Studies published over the past few years have furthermore explored e.g. destructive components of leadership [78, 83], the moderating role of psychological factors and coping among employees [134], the mediating role of different work characteristics [101, 103], and have tested the reciprocity in the relationship between managerial leadership and employee well-being [119], as well as the longitudinal relationship [103, 119]. In a recent review and meta-analysis, it was however concluded that more well-founded prospective studies with good quality are needed in order to strengthen and clarify the evidence regarding the relationship between leadership and employees' well-being and health at work [131].

Formal leadership is based on position power [27]. Inherent in the relationship between managers and their subordinates is a power-imbalance. It has been asserted that managers' will for personal power needs to be balanced by an emotional maturity and a social rather than personal ambition in order for the manager to be successful [137]. Hagberg [138] suggests different levels of emotional maturity in leadership, with the lowest levels including leading

through "manipulation", "control", and by "playing the game" motivated by factors such as fear and extrinsic rewards and recognition. More sophisticated levels include leading through "self-reflection", "vision", and "wisdom", motivated by processes, development, growth, and possibilities. Brooker and Eakin [46] argue that notions of power are often narrowly conceptualised or absent in formulations of work-related stress, and that when power is invoked, the socio-psychological pathways by which it may influence health are seldom addressed. The authors' definition of power includes the notion of job control, but is not restricted to the relationship between the worker and his/her immediate job tasks. Power denotes influence on the broader organisation (organisational power), influence of the social aspects of work (social power), and influence on the material aspects of life (material power). The authors propose that power can influence work-related stress via the distribution of stressors between e.g. occupations and genders, and by meaning. The latter refers to symbols of status and worth communicated in the workplace affecting employees' self-esteem and dignity, thereby constituting a "symbolic pathway" between working conditions and ill-health. For example, a smaller personal work space may not only give rise to worse air conditions, but also convey the symbolic representation of lower status, affecting the employee's self-esteem and thereby his/her health. Furthermore, the authors discuss poor social relations at work giving rise to poor self-esteem. For example, it has been shown in a study of cleaners' working conditions, that the cleaners' most serious concerns had to do with the way they were treated by colleagues and bosses, e.g. being ignored or not invited to social activities [46]. This theory is in accordance with research indicating that the overall autonomy and control over one's life, and one's possibilities of social engagement and participation, is strongly related to one's well-being, health, and life expectancy (the status syndrome) [139]. In accordance with this theory is furthermore a study conducted of the Canadian working population, showing that the relationship between work stressors (a composite measure of psychological demands, lack of control, lack of support, and job insecurity) and distress (feeling e.g. sad, nervous, restless, hopeless, worthless) was almost entirely mediated through the psychological factors mastery and self-esteem [140]. Stansfeld and Candy [14] discuss that unmeetable demands and little control over work may undermine beliefs of mastery over work, and that conflict and poor social support may reduce self-esteem. Based on the above theory and research, it can be hypothesised that the way managers handle their relations with employees (e.g. the extent to which they distribute power and resources, provide support when needed, and which symbols of e.g. status and worth they communicate) may be crucial for the employees' sense of mastery and self-esteem, in turn contributing to their well-being and health. Petty tyranny (defined as the

oppressive use of one's power over another) and abusive supervision have, for example, been shown to be linked to employee feelings of helplessness [85], decreased self-efficacy [141], psychological distress [83, 142], and turnover intentions [83]. The employee's relationship with his/her manager may have a greater impact on processes of esteem and mastery than relationships with colleagues, since the manager holds a superior position and extended possibilities to influence the work situation.

Below is a figure showing three different ways by which managers' leadership, together with work characteristics, may influence employee well-being, and stress. Example a shows independent associations between managerial leadership and employee stress on the one hand, and work characteristics (e.g. demands, control, and social support) and employee stress on the other. In example b managers' leadership is hypothesised to affect the work characteristics of employees, in turn affecting employee stress. Example c shows managerial leadership as a buffer in the relationship between working conditions and employee stress.

Figure 2. A model of three different ways in which managerial leadership may influence the degree of stress experienced by employees. Managerial leadership may a) independently and besides working conditions increase/decrease stress in employees, b) influence the working conditions which in turn increase/decrease stress in employees, and c) act as a buffer in the relationship between working conditions and stress in employees.
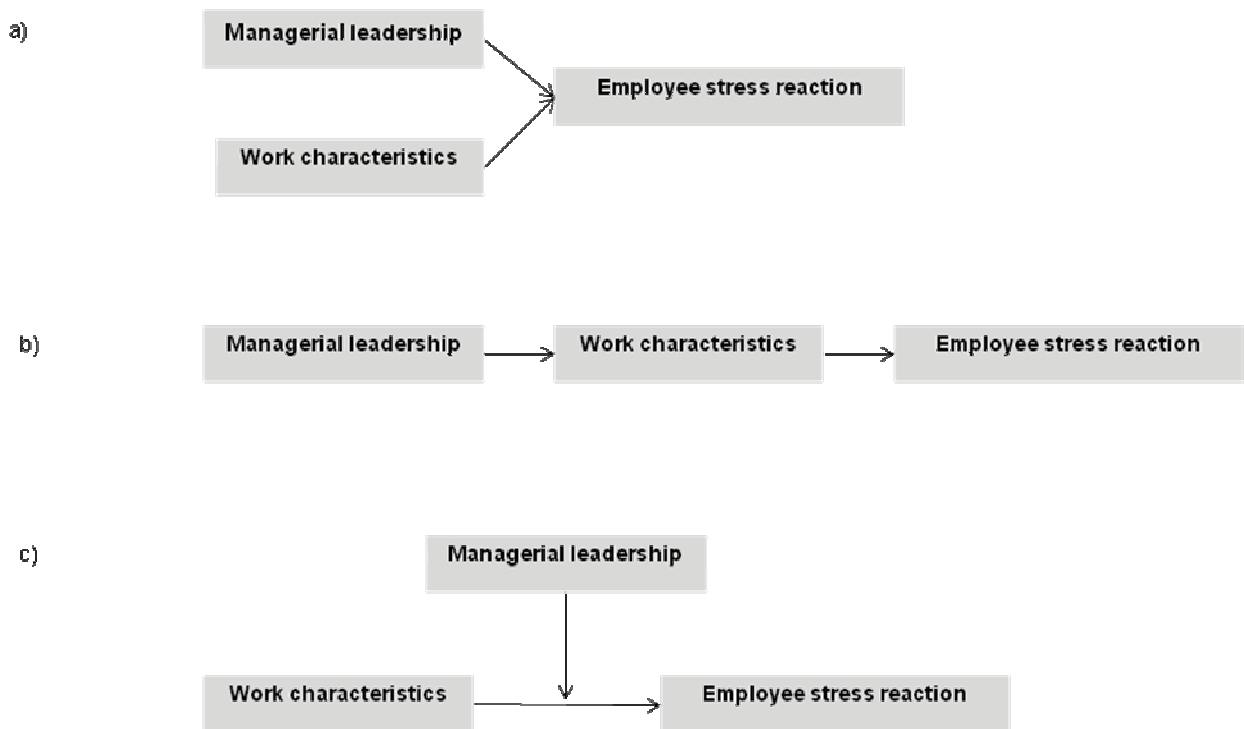
Example a) McCluskey has developed a theory of empathic affective attunement in adult relations where one person is dependent on the other for help. This "caregiving competence" may be relevant for managers when confronted by employees needing help or advice at work. What employees often need is a sensitive, alert and focussed response, which put them in touch with their own resources and capacity to act. An emotionally skilled, mature, and experienced manager may better meet employees' needs, and attune to and contain emotions of e.g. anxiety and aggression expressed by the employee. A less emotionally skilled manager may on the other hand react with defence towards subordinates' needs and emotions, with the result that they may be perceived as rejecting, controlling, or withdrawing from the employee [137, 140, 143].

Most studies of the association between managerial leadership and employee well-being conducted up to date have been conducted on this direct relationship, without taking into consideration the conditions related to the context, e.g. the work or organisation (Figure 2, example a). Not surprisingly, cross-sectional studies of the association between managers' leadership and employees' well-being and stress have shown that the relationship component in leader behaviours is more important for employee well-being and stress, than the task oriented behaviours. Task orientation in the absence of a relationship focus was found associated with poor well-being, whereas task orientation when relationship orientation was also exhibited, was positively related to good well-being. Transformational leadership has furthermore been found more important for employee well-being than transactional leadership [102]. Results from a longitudinal study showed that the relationship between leadership behaviour (providing feed-back, coaching/support, commitment to quality, communication, fairness, integrity and respect, participation and empowerment, and valuing diversity) and employee well-being was linked in a feed-back loop. Although managers' behaviours affected employees' well-being, the opposite was also true - employees who felt better about themselves reported that their manager had a more active and supportive leadership style [119]. Not many studies of the leadership-well-being relationship have focused on separating leadership from other work characteristics. Gilbreath and Benson could however show, in a cross-sectional study of several different professional categories in the US, that supervisor behaviours (a wide range of behaviours related to employee job control, leadership, communication, consideration, social support, group maintenance, organizing, and looking out for employee well-being) was significantly related to employee well-being also after taking stressful work events into consideration [118].

Example b) Another way by which a manager can affect the subordinates is by forming the working conditions for the employee. Employees are in the work situation dependent on the manager for the provision of information, support, directions etc. Whether the manager provides/distributes these resources, in turn providing possibilities for the employee to conduct his/her work in a successful way, may be of importance for the well-being, and stress experienced by employees (Figure 2, example b). A few recent studies have explored the mediating factors of work characteristics in the leadership-well-being relationship. It was for example found in two different samples, that employees' perception of having a meaningful work partly/fully mediated the relationship between transformational leadership and psychological well-being [101]. The results from a longitudinal study of employees in elderly care in Denmark, suggested that the relationship between transformational leadership and

psychological well-being among employees in a complex way was mediated through the work characteristics role clarity, meaningful work, and opportunities for development over both time one and time two [103]. Laissez-faire leadership was in another publication reported to be related to employee distress through the mediating factors conflicts with co-workers, role conflicts, role ambiguity, and bullying [78].

Example c) An employee's closest superior probably has limited possibilities to influence large parts of the working conditions of his/her subordinates. The general intensification of work for example, which has taken place over the past years, is determined by factors such as globalisation and subsequent increase in competition, which is beyond the control of the average middle manager. In this perspective, the manager's role is to help the employee master the work situation that both manager and employee are conditioned by, and the degree of success in doing so is what determines the managers' role in the employees stress process (Figure 2, example c). The manager is here seen as a buffer against stressors in the work environment, or someone who exacerbates environmental influences. Social support from supervisors (as a buffer against job strain) is a dimension studied within the field of health consequences of the psychosocial work environment. It was, however, concluded in a recent systematic review and meta-analysis, that the evidence to date regarding the association between supervisor support and employee well-being is weak [131]. In more flexible work organisations where boundaries around work are loose, employees may need support regarding structuring their work, planning, prioritising between different tasks, as well as limiting/restricting their work engagement [20].

These three models are of course only possible to separate on a conceptual level. For example, disrespect on a relational level may very well be enacted by providing employees poor working conditions, and the distinction between whether the working conditions determine or are determined by managers' is probably often hard to make. In reality, the manager can be assumed to influence employees in all these three, and possibly also other ways, at the same time.

The studies conducted within the frame of this thesis have primarily investigated the direct relationship between managerial leadership and employee stress, health, and other health related outcomes (a). In the first three studies we have, however, in stepwise logistic regressions, adjusted this relationship for the dimensions of the demand-control-support model, making it

possible to estimate the relative importance of these work characteristics in the relationship between managerial leadership and employee stress and health (b). Buffering effects of many of the leader behaviours investigated could also be assumed, even though we are not exploring this topic specifically (c).

2 AIMS

The overall aim of this thesis was to investigate the relationship between managerial leadership and stress, health, and other health related outcomes among employees.

Background and specific aim for each study are presented below.

2.1.1.1 Study I

Research on health effects of managerial leadership has only to a limited extent taken well-established work stress models into account. Previous research indicates both a direct contribution of managerial leadership to stress and well-being among employees, and one mediated by work characteristics (such as e.g. having a meaningful work, role conflicts, and possibilities for development)[78, 101, 103, 118]. The present study aimed at testing the individual contribution of lack of Attentive managerial leadership to perceived stress, self-rated age-relative health, and sickness absence due to overstrain or fatigue among employees, independently of the dimensions in the Demand-control-support model.

2.1.1.2 Study II

Previous studies investigating the relationship between managerial leadership and employee stress and well-being have predominantly focused on positive leadership characteristics and behaviours [56]. However, in accordance with a review of large amounts of psychological research indicating that negative events tend to have a stronger impact on us than positive events [79], a recent study suggested that it may well be the negative aspects of leadership which have the greater impact on stress and health among employees [63]. Most studies of destructive components of managerial leadership have however been conducted in a North American context, and questions regarding cultural transferability of results have been raised [83]. We therefore conducted a study of destructive leadership practices, which in the GLOBE research project had been shown to be viewed world-wide as impeding successful leadership [27, 28, 93] and employee psychological well-being in Northern (Sweden), Eastern (Poland), and Southern (Italy) Europe.

2.1.1.3 Study III

Previous research suggests that work characteristics (e.g. decision authority, co-worker support, role clarity, and fairness in the division of labour) are related to the extent to which employees

are sickness absent. The role of the manager in this relationship has only to a limited extent been explored, and then restricted to the dimensions of relational justice and supervisor support [10, 128-130]. Difficulties in staff replacement, insufficient resources, and time pressure have on the other hand been shown to be significantly related to employees going to work while ill (sickness presenteeism) [132]. It has been asserted that sickness absence and sickness presenteeism are *actions*, dependent on factors such as the employees' work ability and motivation to be absent or present [127, 144]. We hypothesised that employees' managers play a role in the complex relationship between sickness and sickness absence/presenteeism and accordingly conducted a study of the relationship between managerial leadership and employee sickness absence/presenteeism while adjusting for employee SRH.

2.1.1.4 Study IV

One can hypothesise several different outcomes of destructive managerial leadership among employees; increased levels of stress, symptoms of emotional exhaustion, and a deteriorated general health status, as well as employees leaving their jobs (turnover), quitting work due health problems, and becoming unemployed.

Although several cross-sectional studies of the relationship between managerial leadership and employee stress, well-being and health have found positive associations, results from the few longitudinal studies conducted are inconclusive [83, 103, 119]. The aim of study IV was to explore the prospective relationship between both positive and negative aspects of managerial leadership and changes in reported symptoms of stress, emotional exhaustion, and general health, as well as employees changing jobs, quitting work due to health problems, and becoming unemployed.

2.1.1.5 Study V

It has been suggested in a recent meta-analysis of prospective cohort studies examining determinants of cardiovascular disease, that employees who are exposed to an adverse psychosocial work situation (e.g. job strain) have an average excess risk of 50% of developing disease [13]. Educating managers could be one way to enhance working conditions for employees, which has been found beneficial in a small scale study [145]. In Study V we therefore tested whether concrete managerial behaviours were associated with a reduced risk of cardiovascular disease among employees.

3 MATERIALS AND METHODS

3.1 SAMPLE

3.1.1.1 Study I

The first study is based on an internal company-wide work environment survey distributed in the year 2000 within an international forest industry company. The largest numbers of employees were found in Sweden, Finland, and Germany, why these countries were selected to be included in our study. A total of 15,532 respondents filled out the questionnaire, of which 12,622 (81%) had complete data of all measures and constitute the analytic sample. Both men and women, blue-and white-collar workers participated. More than 80% of the blue-collar workers were men in all countries. Among white-collar workers the gender distribution is quite equal in Finland, with a slightly higher representation of men (60%) in the other two countries. The average age was somewhat higher in Finland than in the other two countries.

3.1.1.2 Study II

The sample in the second study is made up of 214 hotel employees in Sweden, 229 in Poland, and 111 in Italy. The response rate among employees in the participating hotels was 48% in Sweden, 52% in Poland, and 36% in Italy. The sample consists of a large amount of family hotels in Italy, of international hotel chains in Poland, and of a national chain and local hotels in Sweden. By and large, this reflects the hotel business in the respective countries. There was generally a higher representation of unskilled workers with poorer language skills among those who did not respond to the questionnaire compared with those who participated in the study. This means that our sample does not quite represent hotel workers at large, but rather the more skilled hotel workers (e.g. receptionists to a higher degree than cleaners).

3.1.1.3 Study III

The third study is based on participants in the 2006 wave of the SLOSH (Swedish Longitudinal Occupational Survey of Health) cohort study. The SLOSH 2006 participants constitute a follow-up of the Swedish work environment survey (SWES) participants of 2003. Statistics Sweden conducted the data collection on behalf of the National Institute for Psychosocial Medicine (IPM)/Stress Research Institute at Stockholm University. A total of 5985 (65%) individuals responded to the SLOSH 2006 questionnaire, of which 5141 (2405 men and 2736 women) used the questionnaire aimed at those who were currently working in gainful

employment 30% or more of full-time. These 5141 participants constitute the analytic sample in Study III.

3.1.1.4 Study IV

The sample in the fourth study comprises two waves of SLOSH data collection; 2006 and 2008. Of the 5141 individuals who in 2006 responded to the questionnaire aimed at those who were currently working in gainful employment 30% or more of full-time (see above), 4052 (79%) also responded to the 2008 follow-up. These 4052 individual constitute the analytic sample in the fourth study.

3.1.1.5 Study V

Data for the fifth study was drawn from the WOLF (WOrk, Lipids, and Fibrinogen) Stockholm Study, a prospective cohort study of employees initially 19-70 years old employed by companies in the Stockholm area. Overall, 3239 men and 2459 women participated in the WOLF Stockholm Study. There were however too few cases of ischemic heart disease among women for our study. Accordingly women were excluded from our analyses. Of the 3239 men, 21 were excluded because of prevalent ischemic heart disease (identified through registers between 1963 and baseline screening 1992-95), 46 men because they were above official retirement age (65 years) at the start of the study, and 50 men because they had missing data in the leadership scale. The remaining 3122 men constitute the study population in the fifth study.

3.2 MEASURES

3.2.1 Managerial leadership

The research presented in this thesis builds upon two different research traditions - epidemiological research on health effects of the psychosocial work environment, and leadership research - which is reflected in the leadership dimensions chosen for the different studies. Three of the studies are based on a leadership scale developed in international collaboration between organisational leadership and management researchers (II, III, and IV). The other two take their starting point in research of health effects of the psychosocial work environment. In Study I, III, IV, and V the respondents were asked to rate the leadership of their closest superior/manager. In study II, respondents were asked to rate the manager of the hotel, who they believed had the most influence on their daily work, and to state which position this manager held. Most hotel employees in study II had rated their immediate superior. Table 1 shows the leadership indices, items and response alternatives measured in Study I-V.

Table 1. Leadership instrument, indices, questions/items and response options for Study I-V.

Study	Instrument	Index	Questions/items and *(response options)*
I	Internal company work environment survey	**Attentive managerial leadership**	Do your superiors take into account the well-being of their subordinates? *(Very often, Quite often, Sometimes, Quite seldom, Very seldom)*
			Does the atmosphere of your work unit (department, work group or equivalent) encourage one to be innovative and to develop new ways of action? *(Very much, Quite a lot, Reasonably, Quite seldom, Very little)*
			Does your superior appreciate your work? *(Very much, Quite a lot, It varies, Not very much, Not at all)*
			How are proposals for improvement received in your work unit (department, work group or equivalent)? *(Very positively, Quite positively, Not positively nor negatively, Rather negatively, Very negatively)*
			Are your work results appraised justly in your work unit? *Very unfairly, Rather unfairly, Not unfairly but not fairly either, Rather fairly, Very fairly)*
			Do your superiors or workmates give you contradictory orders or instructions? *(Never, Quite seldom, Now and then, Quite often, Constantly)*
			Is the division of labour fair in your work unit?*(Quite fair, Rather fair, Can't say, Rather unfair, Very unfair)*
II	GLOBE	**Autocratic leadership**	Bossy (tells subordinates what to do in a commanding way)
			Elitist (believes that a small number of people with similar backgrounds are superior and should enjoy privileges)
			Autocratic (makes decisions in dictatorial way)
			Dictatorial (forces her/his values and opinions on others)
		Malevolent leadership	Hostile (actively unfriendly, acts negatively toward others)

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		Construct	Item
		Self-centred leadership	Dishonest (fraudulent, insincere)
			Vindictive (vengeful; seeks revenge when wronged)
			Irritable (moody; easily agitated)
			Self-interested (pursues own best interests)
			Non-participative (does not participate with others)
			Loner (works and acts separately from others)
			Asocial (avoids people or groups, prefers own company)

Response options: *Almost never, Very seldom, Seldom, Sometimes, Often, Very often, Almost always*

		Construct	Item
III	GLOBE	**Autocratic leadership**	(see above)
		Self-centred leadership	(see above)
		Integrity	Honest (speaks and acts truthfully)
			Sincere (means what he/she says, earnest)
			Just (acts according to what is right or fair)
			Trustworthy (deserves trust, can be believed and relied upon to keep his/her word)
		Team Integrator	Integrator (integrates people or things into cohesive, working whole)
			Informed (knowledgeable, aware of information)
			Communicative (communicates with others frequently)
			Team builder (able to induce group members to work together)
		Inspirational leadership	Enthusiastic (demonstrates and imparts strong positive emotions for work)
			Motive arouser (mobilizes and activates followers)
			Positive (generally optimistic and confident)
			Morale booster (increases morale of subordinates by offering encouragement, praise, and/or being confident)

Response options: *Very seldom, Seldom, Sometimes, Often, Very often*

		Construct	Item
IV	GLOBE	**Dictatorial leadership**	*Autocratic leadership* scale (four items, see above)

		Positive leadership	Self-interested (pursues own best interests)
			Integrity scale (four items, see above)
			Team Integrator scale (four items, see above)
			Inspirational leadership scale (four items, see above)

Response options: *Very seldom, Seldom, Sometimes, Often, Very often*

		Managerial leadership	
V	The Stress Profile (Leadership Climate)		My boss gives me the information I need
			My boss is good at pushing through and carrying out changes
			My boss explains goals and subgoals for our work so that I understand what they mean for my particular part of the task
			I have a clear picture of what my boss expects of me
			My boss shows that he/she cares how things are for me and how I feel
			I have sufficient power in relation to my responsibilities
			My boss takes the time to become involved in his/her employees' professional development
			My boss encourages my participation in the scheduling of my work
			I am praised by my boss if I have done something good
			I am criticised by my boss if I have done something that is not good

Response options: *No never, No seldom, Yes sometimes, Yes often*

3.2.1.1 Study I

Managerial leadership was in the first study measured with questions from a company-wide internal work environment survey. We constructed an index of managerial leadership consisting of 7 items regarding the behaviour of the respondent's immediate manager, and the psychosocial work environment in the work units they lead. The items include aspects of justice, role conflicts, influence, support, and feedback, and we labelled the index Attentive managerial leadership. Attentive managerial leadership was rated on a scale from 1 to 5. A sum score was calculated and since we were interested in the health effects of less Attentive managerial leadership the worst tertile was contrasted against the rest of the distribution.

3.2.1.2 Study II

In the second study, exploring leadership in the hotel sector in several European countries, a questionnaire developed within GLOBE (the Global Leadership and Organisational Behaviour Effectiveness Research Programme) was used [96]. This questionnaire was based on well-validated leadership theories (e.g. task vs. relationship orientation, and transformational leadership), which had been investigated in relation to and found associated with employee well-being [102]. However, this questionnaire comprised also other dimensions, developed on the basis of findings from focus groups, interviews, and the media. It was also an instrument, which had been developed in collaboration between leadership researchers in 62 nations, and could therefore not be said to represent American culture only, a criticism against other well-established instruments [92, 146]. The GLOBE instrument was already translated to Polish, Italian, and Swedish. However, although researchers in the GLOBE project had been interested in both ideals and practice regarding the organisation and leadership, the leadership instrument had only been introduced as a measure of ideals. In our research we measured employees' leadership ideals as well as their perceptions of leadership practice. In study II we used only three of the leadership indices measured, and only the part estimating perceived leadership practice. The indices Autocratic leadership, Malevolent leadership, and Self-centred leadership constitute the negatively worded indices of the GLOBE leadership questionnaire, shown worldwide to be viewed as impeding outstanding leadership. These three indices were the ones used in Study II. To decrease possible bias due to common method variance [147], we generated hotel means of the individuals' perceptions of leadership practice. In this study the measure of managerial leadership consequently constitute all employees' composite views of their respective managers at each particular hotel. In the article we refer to this measure as the "common leadership practice" at the respective hotels.

3.2.1.3 Study III

Not only those leadership dimensions, which were shown in several GLOBE studies to impede outstanding leadership, were related to employee ratings of their psychological well-being in the sample of Study II. Also e.g. Integrity, Inspirational leadership, and Team Integration were related to employee psychological well-being, though in the opposite direction. In addition to being related to employee psychological well-being, the indices selected were shown to represent relatively independent criteria (they did not correlate > 0.7). The selected dimensions included in Study III were Integrity, Inspirational leadership, Team Integration, Autocratic leadership, and Self-centred leadership. Since we had learned from the literature [59] that it has been assumed (and perhaps falsely so) in most studies on managerial leadership that the association with the different outcomes was linear, we were interested in investigating if that was the case here. We therefore chose to trichotomise the above leadership variables, with the aim of creating three groups of equal size.

3.2.1.4 Study IV

The same leadership items that we used in the third study, from the SLOSH 2006 data collection (see above), were used in Study IV. However, this time, rather than sticking to the original GLOBE dimensions, which we had done in study II and III for the reason of facilitating comparisons with other GLOBE studies, we decided to reduce the amount of leadership dimensions. We knew that many of them were correlated, and an exploratory factor analysis revealed that the original five dimensions could be collapsed into two larger ones, and one factor comprising only two items. The two larger factors were used as measures of managerial leadership in Study IV. The first one encompassed all positively worded items, and we therefore labelled this dimension Positive leadership. The other one comprised items primarily from the GLOBE Autocratic and Malevolent indices, and we labelled that dimension Dictatorial leadership. Positive leadership and Dictatorial leadership were dichotomised, contrasting the worst tertile against the rest of the distribution.

3.2.1.5 Study V

In the fifth study managerial leadership was measured with an index constituting one part of the Stress Profile [136]. This leadership scale is based on experience from consultation work at worksites in combination with well-established theories and research on work stress. The index is made up of 10 items, encompassing questions regarding information, clarity in expectations, feed-back, support, influence in relation to responsibilities, and change orientation. Respondents

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were asked to rate their closest manager on a scale ranging from 1 to 4. The items were summed up for each individual and expressed as a percentage of the theoretical maximum, where 0 refers to the lowest score for every item of the scale, and 100 refers to the highest score.

3.2.2 Outcomes

3.2.2.1 Study I

Three outcomes were explored in Study I: Perceived stress, self-rated age-relative health, and sickness absence due to overstrain or fatigue.

Perceived stress at work was measured by a single item. The question was worded: "Stress means the situation when a person feels tense, restless, nervous, or anxious, or is unable to sleep at night because his mind is troubled all the time. Do you feel that kind of stress these days?" The response was dichotomised into low stress (not at all, only a little, to some extent) and high stress (quite a lot, very often). This measure has been validated in four independent, cross-sectional Finnish and Nordic samples [148].

Self-rated age-relative health was measured by another single question, worded: "How is your health compared to persons of the same age?" with the response being dichotomised into good health (good, very good) and less than good health (very bad, bad, not good nor bad).

Sickness absence was measures by the question "Have you been off work because of overstrain or fatigue during the last twelve months?" with the response options yes and no.

3.2.2.2 Study II

In the second study we explored the relationship between managerial leadership and psychological well-being among employees. Psychological well-being was measured with three separate indices from the Copenhagen Psychosocial Questionnaire (COPSOQ): Mental health, Vitality, and Behavioural stress [149].

Mental health is made up of five questions regarding worrying/feeling low.

Vitality consists of four questions regarding energy level.

Behavioural stress is composed of eight questions on behaviours such as withdrawing, not being able to relax, eating for comfort, and lacking initiative.

The items of Mental health and Vitality were rated on a scale from 1 to 6 (all of the time – none of the time) and the items of Behavioural stress on a scale from 1 to 5 (correct – incorrect). Each index was summed up and dichotomised by the median.

3.2.2.3 Study III

In study III we measured self-reported sickness absence, sickness presenteeism, and self-rated health (SRH).

Sickness absence lasting less than 1 week over the past 12 months: odds ratios were calculated as the risk of having four occasions or more of sickness absence lasting for less than 1 week over the past year, compared with having zero to three such occasions.

Sickness absence lasting more than 1 week over the past 12 months: odds ratios were calculated as the risk of having two such occasions or more over the past year, compared with having zero or one such occasion.

Total amount of sick days over the past 12 months: odds ratios were calculated as the risk of having 31 or more days of sickness absence over the past year, compared to having 30 or less days.

Sickness presenteeism over the past 12 months: odds ratios were calculated as the risk of having four such occasions or more over the past year, compared with having zero to three such occasions.

Self-rated health (SRH): The response options to the question "How would you rate your general state of health?" were dichotomized, with "very good", "quite good" and "neither good nor bad" as the category of ''good health'' and "quite bad" and "very bad" as the category of ''poor health''.

3.2.2.4 Study IV

The outcome measures investigated in the fourth study are listed below:

Emotional exhaustion was measured with the Maslach Burnout Inventory general survey (MBI-GS) emotional exhaustion subscale. The scale consists of five items, scored from 1 to 6. The variable was dichotomised, contrasting the worst quartile against the rest of the population [113, 116].

Long lasting stress. The scale consists of eight questions regarding long lasting stress, with four response categories. The scale was introduced in the 2008 SLOSH questionnaire and is currently being validated. Pearson correlation coefficient with emotional exhaustion (MBI-GS) was 0.63. The scale was dichotomised, contrasting the worst tertile against the rest of the population.

Self-rated health (SRH): was measured with the question "How would you rate your general state of health?" The variable was dichotomised, with the response options "very good", and

"quite good" making up the category "good health", and the response options "neither good nor bad", "quite bad", and "very bad" making up "poor health".

Unemployed. The respondents who reported that they worked at least 30% of full-time in 2006 (using the questionnaire aimed at the working population) but in 2008 (using the questionnaire aimed at the non-working population) reported that they completely or partly were unemployed, were compared with participants who in 2008 were still employed, or did not work for other reasons.

Quitting work due to health problems. The respondents who worked in 2006, but reported not doing so in 2008 (including participants on e.g. sickness benefits, and unemployment), were in 2008 asked why they had left their work. Those who reported that they had left work due to health problems were compared with those who were still working and those who reported other reasons for leaving work.

Changed jobs. The respondents who worked both in 2006 and 2008 were in 2008 asked whether over the past two years they had changed jobs. Those who reported that they had changed jobs once or more were compared with those who had not changed jobs over the past two years.

3.2.2.5 Study V

In the last study we explored the relationship between managerial leadership and ischemic heart disease (IHD) among employees. Hard endpoint outcomes for IHD were defined as hospital admission with a main diagnosis (of the International Classification of Diseases, version 9 [ICD-9] and 10 [ICD-10]), registered as:

- *acute myocardial infarction* (ICD-9: 410; ICD-10: I21)
- *unstable angina* (ICD-9: 411; ICD-10: I20)
- *death* with a registered underlying cause of IHD (ICD-9: 410–414; ICD-10: I20–I25) or cardiac arrest (ICD-9: 427; ICD-10: I46).

Records of hospital admissions and deaths from 14 March 1963 until 31 December 2003 were obtained. Incident caseness was defined as the first event occurring after baseline screening, excluding prevalent cases at baseline.

Figure 3. Model of outcomes studied in the five included articles, sorted under the subheadings Employee stress reaction, Employee health, and Other health related outcomes. The respective studies are given within parenthesis (I-V).
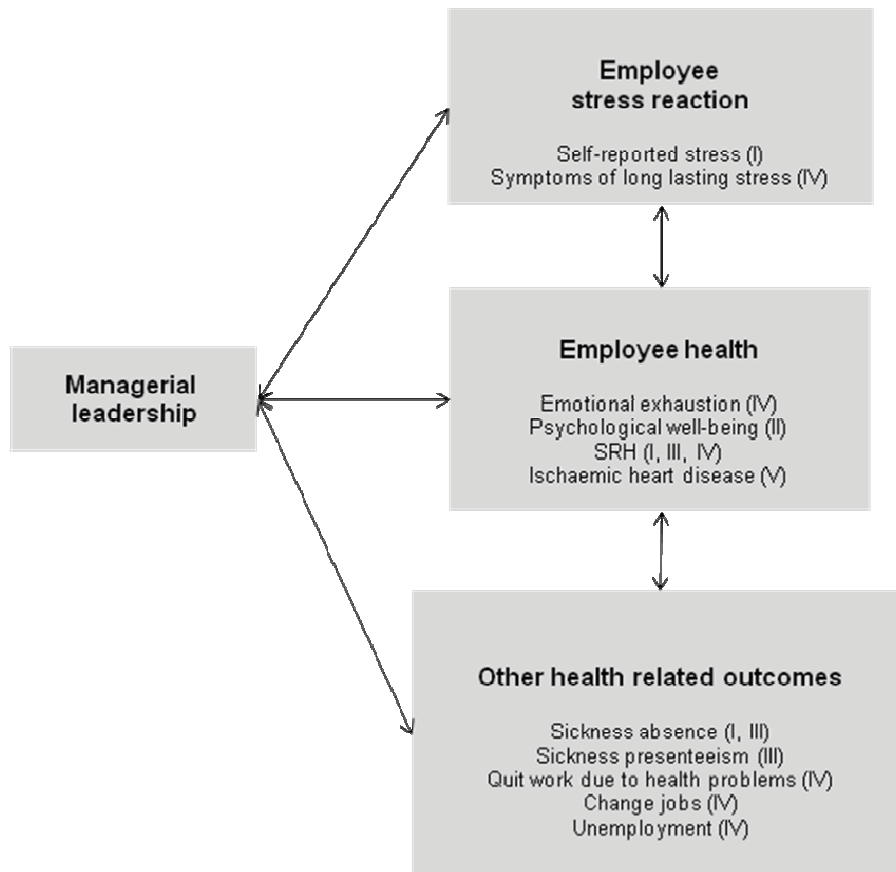
3.2.3 Adjustments

3.2.3.1 Study I

In the first study, we were interested in exploring the independent contribution of managerial leadership to employee stress, health and sickness absence, over and above the well-established psychosocial work environment factors demands, control, and social support. In addition to *age*, and *sex*, these factors were therefore adjusted for. The psychosocial work environment was measured with the Occupational Stress Questionnaire (OSQ), used in several studies, shown to have good internal reliability, and to be associated with the health of the workforce [129, 150]. For the analyses in this study, we created indices which closely correspond to the Demand-control-support model [8]. The first factor, which contains 7 items, was labelled *Skill discretion*, and the other two factors, which both contain 4 items, were labelled *Psychological demands* and

Decision authority. The responses were recoded into numbers 0–4 (0 = the most negative response, 4 = the most positive response). Sum scores were calculated for each index, and the scales were dichotomised, contrasting the worst tertile with the rest of the distribution. *Social support* was constructed by summing the responses to the following two questions "Do you get support or help from your workmates when needed?" (response options: always, quite often, now and then, quite seldom, and never), and "Does your superior provide support and help when needed? (response options: very much, quite a lot, to some extent, rather little, and very little), again contrasting the worst tertile with the rest of the distribution.

3.2.3.2   Study II

In the second study of hotel employees, the analyses were adjusted for sex, age, staff category, type of hotel, country, and hotel means of iso-strain. Staff category (blue/white collar worker) was adjusted for since previous studies have shown a variation between organisational levels regarding ratings of leadership practice [64]. Variation in leadership practice between different types of hotel (local hotel/national hotel chain/international hotel chain) was also hypothesised and type of hotel therefore controlled for. We knew that the ratings differed between countries (Sweden, Poland, or Italy), country therefore serving as an additional control variable. Working conditions (hotel means of iso-strain) were adjusted for in order to make sure that the ratings of leadership were separate from other well-established psychosocial work environment factors. Iso-strain was measured by the COPSOQ and calculated by multiplying high demands (quantitative, cognitive, emotional, and demands for hiding emotions) by low control (influence, development, predictability, and freedom) and poor social support (from colleagues only). Iso-strain was adjusted for as hotel means of individual employees' ratings (calculated with the same procedure as with the managerial leadership scales).

3.2.3.3   Study III

In Study III analyses were conducted separately for men and women. *Age* was adjusted for as a categorical variable with 10-year intervals. *Marital status*, *having children living at home* and *caring for elderly or handicapped family member(s)* were assumed to affect the relationship between workplace factors and the outcomes and therefore adjusted for, all as dichotomized variables. Staff and employment category were also assumed to possibly affect this relationship and therefore adjusted for. *Staff category* was categorized as blue-collar, white-collar, manager, and other. *Employment category* was categorized as private sector, voluntary organisation, municipality, county council, state, and other. Also in Study III we wanted to make sure that we

measured leadership variables which were independent of the working conditions *job demands*, *job control* and *social support*. These were therefore adjusted for, measured with the demand-control questionnaire [151], each variable being trichotomised. Since we wanted to measure the direct relationship between managerial leadership and sickness absence and presenteeism, *self-rated general health* was also adjusted for as a dichotomized variable ("very good", "quite good" and "neither good nor bad" as the category of ''good health'' and "quite bad" and "very bad" as the category of ''poor health''). *Satisfaction with life in general* was used as a proxy for negative affectivity, assumed to affect the ratings of managerial leadership, and was adjusted for in seven levels ranging from very dissatisfied to very satisfied.

3.2.3.4 Study IV

In the fourth study investigating the prospective relationship between Positive and Dictatorial leadership on one hand, and several health and health-related outcomes among employees on the other hand, all adjustment variables were measured at baseline (SLOSH 2006). *Age* was adjusted for in six categories, *labour market sector* in six, *staff category* in four and *marital status* in two. *Job insecurity* was assessed with the question "Are you under threat of temporary or permanent dismissal?" with the response categories yes and no, and was adjusted for in analyses of participants' job changes and unemployment only. *Satisfaction with life in general* was measured on a seven-point scale ranging from very satisfied to very dissatisfied, and was adjusted for in two categories, contrasting the worst tertile against the rest of the distribution.

3.2.3.5 Study V

In study V, exploring the relationship between managerial leadership and IHD among employees, most well-established risk factors for cardiovascular disease were adjusted for. These include self-reported *education* (low, intermediate, and high) *social class, supervisory status, perceived physical load at work, smoking status, physical exercise,* and *diabetes*. From clinical examinations we obtained *BMI, blood pressure, total cholesterol, total/HDL cholesterol ratio, triglycerides, lipids,* and *fibrinogen*, while *income* was obtained from public registers.

3.3 METHODS OF ANALYSIS

3.3.1.1 Study I

In study I, a *confirmatory factor analysis* of the managerial leadership items was conducted. *Stepwise binary logistic regression analyses* were performed separately for blue- and white-collar workers in Finland, Germany, and Sweden respectively. The analyses were adjusted for

age, sex, and psychosocial work environment factors. Results were presented in two models, the first one comprising the leadership index only, and the second one with fully adjusted odds ratios (ORs) with 95% confidence intervals for leadership and psychosocial work environment factors.

3.3.1.2 Study II

Both parametric and non-parametric tests were used in Study II. Correlations between leadership dimensions, iso-strain and Psychological Well-Being were estimated with *Spearman's correlation* coefficient. *Kruskal-Wallis* or *ANOVA* and *Bonferroni post-hoc tests* were applied to estimate differences in variables between countries. *Logistic regressions* were used to estimate the relationship between hotel means of Autocratic, Malevolent and Self-Centred leadership on the one hand and employee Mental Health, Vitality, and Behavioural Stress on the other hand. The analyses were built in four steps, with adjustment for: 1) sex, and age, 2) professional category (blue/white collar worker), and type of hotel (local hotel/national hotel chain/international hotel chain), 3) country, and 4) working conditions (hotel means of iso-strain). Nine separate logistic regression analyses were conducted, where odds ratios were calculated per one step increase in leadership score (1-7).

3.3.1.3 Study III

In the third study, five separate *multiple logistic regressions* were conducted, built in three steps. The first step was adjusted for age, marital status, having children living at home, taking care of an elderly or handicapped person, employment category, and labour-market sector. In the second step we added the workplace variables demands, control, and social support, and in the third model self-reported general health and degree of satisfaction with life in general. In the regression model with sickness presenteeism, we did not adjust for self-reported general health, because poor health is one component of the term sickness presenteeism. First, all five leadership dimensions (and all adjustment variables) were included in the models, mutually adjusting for each other. Those leadership dimensions that were not significant were then deleted stepwise. The final models, presented as model 1, model 2, and model 3 in the tables, include only those leadership variables that, for either men or women or both, were significant after adjustment for control variables (cf. Study III for details).

3.3.1.4 Study IV

In study IV, two *exploratory factor analyses* were performed in the process of creating the leadership dimensions, and the long lasting stress-scale. Principal components analysis with varimax rotation was used and factors with eigenvalues >1 were selected.

Multiple logistic regressions were conducted in two steps for each of the outcomes. Positive leadership, Dictatorial leadership, age, gender, marital status, labour market sector and staff category (as well as job insecurity) were mutually adjusted for each other in the first model. In the second model also satisfaction with life in general in 2006 was adjusted for. Since the cases were few in several of the studied outcomes and power could be lost, adjustment variables which were not significant in step two, were removed from the final models (with the exception of age and gender). When predicting emotional exhaustion and symptoms of long lasting stress, only respondents who worked at least 30% of full-time in 2006 and reported no symptoms of emotional exhaustion were included in the analyses. When predicting poor general health, only respondents who worked in 2006, and reported good general health were included in analyses. Due to a limited number of cases for some of the outcomes, it was unfortunately not possible to analyse men and women separately, although gender differences in symptoms and other consequences of managerial leadership could be expected.

3.3.1.5 Study V

For each IHD outcome, the time to the event was defined as the number of days between baseline screening and the first diagnosis after baseline but before 31 December 2003. For employees with no events, the end of follow-up was 31 December 2003 or the date of death if earlier. Outcome of the primary analysis was a composite measure of acute myocardial infarction, unstable angina and cardiac death. A subsidiary analysis excluded unstable angina from the outcome to examine whether the association was seen with myocardial infarction and cardiac death only. We calculated age-adjusted hazard ratios with 95% confidence intervals from Cox proportional-hazards analyses for incident IHD per 1 standard deviation (SD) increase in standardised leadership score (mean 0, SD 1). Additional adjustments included socioeconomic characteristics and conventional risk factors. An interaction term between leadership and time worked in the current workplace was entered in a subsidiary analysis.

3.4   ETHICAL APPROVALS

3.4.1.1   Study I

The project "Development of work environment and employee well-being in merging organisations" was based in Finland, and the Ethical committee of the Finnish Institute of Occupational Health approved the study on August 19, 1999. The Swedish part of the study was approved by the Regional Ethics Board in Stockholm (no 99-367).

3.4.1.2   Study II

An ethical permit for the research project "Ledarskapets påverkan på medarbetares hälsa (i Europa)" was obtained from Karolinska Institutet (no 04-733) for the Swedish part of the study. The Polish and Italian researchers were not obliged to have an ethical permit in order to carry out their research, but the procedure for data collection was identical to that approved in Sweden.

3.4.1.3   Study III and IV

Ethical permits for the SLOSH study were obtained from the ethics committee at Karolinska Institutet (nos 92-198, and 03-125), the Regional Research Ethics Board in Stockholm (nos 2006/158-31, and 2008/1808/32), and from Statistics Sweden (nos 24/9784/2001, and 115894/820137-8).

3.4.1.4   Study V

The Regional Ethics Board in Stockholm and the ethics committee at Karolinska Institutet approved the WOLF study (nos 2006/158-31, 2008/240-32, 92-198, and 03-125), and from Statistics Sweden (nos 24/9784/2001, and 115894/820137-8).

4 RESULTS

4.1.1.1 Study I

Attentive managerial leadership (AML) was associated with perceived stress, age-relative self-rated health, and sickness absence due to overstrain/fatigue after controlling for the Demand-control-support model. Lack of AML was significantly associated with a high stress level in all subgroups (OR=1.68-2.67). Associations with age-relative self-rated health and sickness absence due to overstrain/fatigue were weaker, but still significant, and in the expected direction for several of the subgroups studied, suggesting an association between lack of AML and negative health consequences.

4.1.1.2 Study II

Autocratic and Malevolent leadership were rated significantly lower in Sweden than in the other two countries and were at the organisational level, after adjustments, related to low vitality among subordinates (OR 1.67, 95% CI 1.04; 2.69 and OR 1.80, CI 1.19; 2.72). There was no difference in Self-centred leadership between countries, but Self-centred leadership at the organisational level was, after adjustments, significantly associated with poor mental health (OR 1.87, CI 1.15; 3.05), low vitality (OR 1.78, CI 1.09; 2.90), and high behavioural stress (OR 1.75, 1.05; 2.90) among employees. Autocratic and Malevolent leadership were more strongly related to demands, control, and social support (iso-strain), than was Self-centred leadership.

4.1.1.3 Study III

Inspirational leadership was associated with a lower rate of short spells of sickness absence (<1 week) for both men and women. Autocratic leadership was related to a greater amount of total sick days taken by men. Sometimes showing integrity was associated with higher rate of sickness absence >1 week among men, and seldom showing integrity was associated with more sickness presenteeism among women. Managers performing Team integration sometimes were associated with women taking fewer short (<1 week) and long (>1 week) spells of sickness absence. Adjustment for self-reported general health did not alter these associations for men, but did so to some extent for women.

4.1.1.4 Study IV

Lack of Positive leadership in 2006 was a significant predictor of increased symptoms of emotional exhaustion (OR 1.33, 95% CI 1.01; 1.74), increased symptoms of long lasting stress

(OR 1.26, CI 1.03; 1.53), and of deteriorated general health (OR 1.44, CI 1.07; 1.94) among employees in 2008 (the latter two non-significant after adjustment for satisfaction with life in general). Dictatorial leadership in 2006 was a significant predictor of long lasting stress (OR 1.47, CI 1.19; 1.80), of having quit work due to health problems (non-significant after adjustment for satisfaction with life in general) (OR 1.89, CI 1.04; 3.41) and of having become unemployed in 2008 (OR 2.38, CI 1.17; 4.86). The relationship with unemployment was significant also after adjustment for job insecurity at baseline. Results also indicated a weakly significant (p = 0.044) relationship, in the second step of the analysis only, between lack of Positive leadership in 2006 and a lower risk of unemployment in 2008. An unexpectedly large proportion of the participants who were employed in 2006, but unemployed in 2008, seemed to have chosen to leave their employment.

4.1.1.5 Study V

A total of 74 incident IHD events occurred during the mean follow-up time of 9.7 years (range: 3 days to 10.5 years). In age-adjusted analyses, a higher (better) leadership score was associated with a lower IHD risk. This association was stronger the longer the participant had worked in the same workplace. This suggests a dose–response association between leadership and incident IHD. The association was robust to adjustments for socioeconomic factors and conventional risk factors for ischemic disease. In age-adjusted models of men with a minimum of 4 years in the current workplace, the hazard ratio for incident IHD was 0.63 (95% CI 0.46 to 0.86, p = 0.005).

5 SUMMARY OF THE FIVE STUDIES

Table 2. Descriptive data of the five manuscripts. Title, aim, sample, number of participants, data collection, study design, methods of analysis, measures, and main results are included.

	Study I	Study II	Study III	Study IV	Study V
Title	Managerial leadership is associated with employee stress, health, and sickness absence independently of the Demand-control-support model	Destructive managerial leadership and psychological well-being among employees in Swedish, Polish, and Italian hotels	Managerial leadership is associated with self-reported sickness absence and sickness presenteeism among Swedish men and women	Destructive managerial leadership – stress or exit? A prospective study of Swedish employees	Managerial leadership and ischemic heart disease among employees: The Swedish WOLF study
Aim of the study	To investigate the associations between Attentive managerial leadership and employee stress, health, and sickness absence for overstrain/fatigue, while adjusting for the Demand-control-support model	To investigate destructive components of managerial leadership in the hotel industry in Sweden, Poland, and Italy in relation to employee psychological well-being	To investigate the relationship between managerial leadership and self-reported sickness absence and sickness presenteeism among Swedish men and women	To explore the prospective relationship between managerial leadership on the one hand, and on the other hand employees' symptoms of long-lasting stress, emotional exhaustion, general health, and exit from the workplace due to bad health, change of jobs, or unemployment	To investigate the association between managerial leadership and ischemic heart disease (IHD) among employees
Sample	Employees in a forest industry company in Sweden, Finland, and Germany	All staff categories in 33 hotels in Sweden, Poland, and Italy	SLOSH 2006: A representative sample of the Swedish working population	SLOSH 2006 and 2008: A representative sample of the Swedish working population	WOLF Stockholm: Male inhabitants in the Stockholm area
No of participants	12.622	554	5.141	4.052	3.122
Data collection	Questionnaire	Questionnaire	Questionnaire	Questionnaires	Questionnaire, Registers
Study design	Cross-sectional	Cross-sectional	Cross-sectional	Prospective	Prospective

Method of analysis	Logistic regression analysis	Logistic regression analysis	Logistic regression analysis	Logistic regression analysis	Cox regression analysis
Measure of Managerial leadership	Attentive managerial leadership (internal company work environment survey)	Autocratic leadership Malevolent leadership Self-centred leadership (GLOBE)	Autocratic leadership Self-centred leadership Team-Orientation Integrity Inspirational leadership (GLOBE)	Dictatorial leadership Positive leadership (GLOBE)	Leadership Climate (the Stress Profile)
Outcome measure	Self-rated stress, age-relative self-rated health, and sickness absence due to overstrain/fatigue	Psychological well-being (mental health, vitality, behavioural stress) (COPSOQ)	Self-reported sickness absence, sickness presenteeism, and SRH	Emotional exhaustion, long lasting stress, self-reported general health, change of jobs, quit work due to poor health, unemployment	Register-based ischemic heart disease
Factors controlled for	Age, sex, demands, control, and social support (proxy measures). Stratified by occupational category (blue/white collar worker).	Age, sex, staff category, type of hotel, country, and hotel level iso-strain	Age, marital status, number of children at home, care for family member, staff category, labour market sector, demands, control, social support, SRH, and satisfaction with life in general. Stratified by sex.	Age, sex, marital status, staff category, labour market sector, job insecurity, and satisfaction with life in general in 2006	Age, education, supervisory status, social class, income, physical load at work, BMI, smoking, physical exercise, systolic and diastolic blood pressure, total cholesterol, total/HDL cholesterol ratio, triglycerides, fibrinogen, and diabetes
Main results	Lack of AML was significantly associated with a high stress level in all subgroups (OR=1.68-2.67). Associations with age-relative self-rated health and sickness absence due to overstrain/fatigue were	Autocratic and Malevolent leadership were rated lower in Sweden than in the other two countries and were at the organisational level related to low vitality among subordinates. There was no difference in Self-centred	Autocratic leadership, Integrity, Inspirational leadership, and Team Integration were found significantly related to sickness absence among employees.	Lack of Positive leadership was a significant predictor of increased symptoms of emotional exhaustion, increased symptoms of long lasting stress, and of deteriorated SRH among	A dose-response relationship was found between good managerial leadership and a lower risk for IHD among employees

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weaker, but still significant, and in the expected direction for several of the subgroups studied	leadership between countries, but Self-centred leadership at the organisational level was significantly associated with poor mental health, low vitality, and high behavioural stress among employees	employees. Dictatorial leadership was a significant predictor of long lasting stress, of employees having quit work due to health problems, and of having become unemployed

6   DISCUSSION

The overall aim of this thesis was to explore the relationship between managerial leadership on the one hand and stress, health, and other health related outcomes among employees on the other. This was done in five studies, three using a cross-sectional and two a prospective design. In all studies the employees rated their managers with a self-administered questionnaire. The health outcomes were in four of the studies self-reported, but in the last study register-based diagnoses were used to determine incidence of ischemic heart disease. Logistic and Cox regression analyses were used to estimate the associations. In three of the five studies, the association between managerial leadership and the outcomes were adjusted for the dimensions in the Demand-control-support model. Other adjustments included staff category, labour market sector, job insecurity, marital status, satisfaction with life in general, and biological risk factors for cardiovascular disease.

In the first study (I) Attentive managerial leadership was found to be significantly related to the employees' perceived stress, age-relative self-rated health and sickness absence due to overstrain or fatigue in a multi-national company. The associations remained significant after adjustment for the dimensions of the Demand-control-support model. In the second study (II) focussing hotel employees in Sweden, Poland, and Italy the factors Autocratic and Malevolent leadership (less common in Sweden than in the other two countries) aggregated to the organisational level were found to be related to poorer individual ratings of vitality. The relationships were significant also after adjustments for the dimensions of the Demand-control-support model aggregated to the organisational level. Self-centred leadership (which was as common in Sweden as in the other two countries) was related to poor mental health, vitality, and behavioural stress after these adjustments. The third study (III) showed significant associations in the expected directions between Inspirational leadership, Autocratic leadership, Integrity, and Team-integrating leadership on the one hand and self-reported sickness absence among employees on the other in SLOSH, a nationally representative sample of the Swedish working population. These associations were adjusted for the Demand-control-support model and SRH. In the fourth (IV) prospective study significant associations were found between Dictatorial leadership and lack of Positive leadership on the one hand, and long-lasting stress, emotional exhaustion, deteriorated SRH, and the risk of leaving the workplace due to poor health or for unemployment on the other hand. In the fifth study (V) a prospective dose-response relationship between positive aspects of managerial leadership and a lower incidence of hard end-point ischemic heart

disease among employees was observed. This relationship was very little affected by adjustments for conventional risk factors for cardiovascular disease.

These results will be discussed below.

6.1 METHODOLOGICAL CONSIDERATIONS

6.1.1 Cross-sectional and self-reported data

Three of the studies in this thesis were based on cross-sectional data, where the participants rated the immediate manager and their own well-being, health, or sickness absence at the same time. This design is widely used within the research fields of leadership and psychosocial work environment [56, 152]. Cross-sectional analyses based upon self-ratings of both explanatory and dependent variables have obvious limitations - it is not possible to conclude anything about causality in observed associations. It could be that the manager's leadership caused variation in well-being, health, and sickness absence among employees. But the opposite could also be true – that the employees' experienced well-being and health cause variation in how managers act. A third possibility is that the ratings are influenced by a third factor, such as negative affectivity, causing a reporting bias which possibly inflates the associations [147]. The best way to drastically reduce the uncertainty due to these possible biases is to use prospective or longitudinal research designs, allowing a time period between measurements of independent and dependent variables, and to use more "objective" estimations of managerial leadership and the outcome. However, to at least limit the effects of same source bias, adjustments for reporting bias are sometimes introduced in cross-sectional research. In the first study (I), there was no possibility to limit the influence of these methodological problems. In the second study (II) hotel means of individuals' ratings of their manager were used. This procedure has been suggested in recent discussions within epidemiological work stress literature as a means to limit influences of common method variance [153]. In the third study (III) we adjusted for the individuals' "satisfaction with life in general", assumed to possibly affect both the ratings of the managers' leadership and the outcomes.

As is the case with all self-reported assessments of the psychosocial work environment, we do not know how well the individuals' estimations of their managers' behaviours correspond to what could be described as the true conditions. Sources of errors could emanate both from participants' tendency to complain about most things (negative affectivity), and to deny possible adverse working conditions [152]. The most intriguing result presented in a review of empirical studies of Leader-Member-Exchange Theory of leadership, was the large discrepancy between

how managers rated their relationship with their subordinates and how the subordinates rated that same relationship [91]. However, Waldenström and Härenstam found a generally high correspondence between self-reports and externally assessed demands and control at work, with one exception. There was a tendency among women who were assessed to have high strain jobs to report that they had active jobs, i.e. to have more control than an external assessor estimated [154]. Similarly Theorell and Hasselhorn (2005) showed that external ratings of decision latitude were lower than self-ratings in low decision latitude jobs both for men and women. It was also reported in another study, comparing self-reports with expert assessments, that the self-reports of psychological demands and control at work were as valid for distressed as for non-distressed employees [155]. Other results regarding confounding of psychological factors such as negative affectivity and hostility in the relationship between working conditions and coronary heart disease and high blood pressure indicate that individual psychological factors may also play a role, but do not falsify the relationship between adverse working conditions and ill-health [156, 157]. In reviews and meta-analyses of studies of the association between managerial leadership and employee effectiveness, comparing studies where the same source was used for independent and dependent variables with those where different sources were used, it has been concluded that common method variance does explain some of the association, but not all of it [23, 59, 64, 65, 158, 159] This is in accordance with results presented in a dissertation, where group estimations of leadership were found to explain less of the variance in individual employee health and sickness absence than individual estimations [160]. The limitation of using group values as estimations of working conditions or managerial leadership is however that true differences between individual employees are left out, meaning that such measures may not come closer to capturing the true conditions than what individual estimations do [119, 152].

6.1.2 Instruments

6.1.2.1 The GLOBE leadership scales (study II-IV)

The GLOBE leadership scales were originally developed to measure implicit leadership theories (as leadership "should be") and to differentiate between organisational and societal cultures. However, it is stated in the official guidelines for the use of GLOBE leadership scales [161]: "Indeed, since the underlying theory driving this aspect of the GLOBE project (i.e., implicit leadership theory) is an individually focused theory, it is possible that the items could be useful for measuring individual level leadership schemas. It is entirely reasonable, given constraints of sample size, to conduct analysis of the leadership scales at the individual level within a particular society", and "The GLOBE project has not demonstrated the usefulness of using the leadership scales at the individual level of analysis within a society. Future research efforts will have to assess the utility of doing this".

GLOBE researchers are currently developing the GLOBE leadership instrument for the purpose of 360° evaluations of leadership practice (subordinates, superiors and colleagues evaluate leadership qualities of the same manager) [162]. Likewise, we used the GLOBE leadership scales on an individual level, measuring leadership practice (as "it is").

The first order factor GLOBE leadership as it "should be" scales (originally validated on an individual level of analysis and then aggregated to the societal level) overlapped somewhat both theoretically and empirically [97]. This finding is equivalent to ours regarding the leadership as "it is" scales; several of the individual scales were highly correlated. In Study II, our main aim was to investigate the well-being outcomes related to leadership criteria viewed as impeding successful leadership in the countries studied (Poland, Italy, and Sweden). Empirical data from GLOBE publications [97] therefore guided us in the choice of keeping the three impeding factors (malevolent, self-centred, and autocratic leadership) as they were structured in the GLOBE as it "should be" version. Due to that especially malevolent and autocratic leadership correlated highly, and to avoid problems with multicollinearity they were however not analysed in the same regression models.

Also in study III we used the scales as they were composed in the GLOBE study. Our main aim in study IV, however, was to evaluate the impact of managerial leadership on several employee outcomes in a prospective dataset. For the purpose of simplicity, we therefore decided to reduce the number of leadership indices. The factor analysis conducted revealed that all positively worded leadership items loaded on one single factor, which we then labelled "Positive leadership". The lack of differentiation between the positively worded leader attributes and behaviours needs to be addressed. It is possible that the GLOBE leadership scale items, developed to measure "perceptions" or values regarding outstanding leadership, are worded in a value-based manner not suitable for the purposes of evaluation of the "as is" condition – how managers actually are or behave. Whether employees have either predominantly positive or negative emotions towards the leader may be what distinguishes between managers in this study, rather than how the managers actually are or behave. This methodological issue has been raised repeatedly within the field of leadership research since same sources of independent and dependent variable without control for e.g. negative affectivity is the most common research methodology [56]. It has for example been shown that whether employees generally "like" (i.e. have positive affect toward) their managers to a large extent affects how they rate him or her. As much as 32% of the variance was in one study shown to be explained by liking [163]. This would indicate that, rather than measuring the leaders' actual characteristics and behaviours, we

are measuring an unknown component in the relationship manager-employee, generating a sense of "liking" in the employee.

Criticism against the GLOBE leadership scales including e.g. the procedure by which the scales were developed, and on which level data should be analyzed has been put forward by some researchers [164-167]. Other methodological issues raised are the one of cultural differences in interpretations of meanings of the different items (although thorough translation and re-translation procedures were followed) as well as cultural differences in response styles [28]. These issues are of course difficult to control in cross-cultural studies.

6.1.2.2 The Demand-control-support model in study I and II

The work characteristics in Study I were measured with proxy scales of the demand-control-support model. Although the items (derived from the internal work environment survey) were selected carefully according to theory, we do not know how well they correspond with the validated demand-, control-, and support scales (e.g. the JCQ). In study II, the validated instrument Copenhagen Psychosocial Questionnaire was used to measure demands, control, and social support (from colleagues only). The three dimensions are measured in a somewhat different manner than in the original instruments, with e.g. a differentiation between qualitative, quantitative, and emotional demands [149]. There has been limited standardization of measurements of the dimensions in the Demand-control-support model in work environment epidemiology in general, causing difficulties in comparing results between studies [13]. In this case, the use of different measures imply that we cannot generalize our conclusions about effects of leadership on employee well-being and health that are independent of the Demand-control-model as it was originally measured. However, in study III, the original Demand-control-support scales were used as adjustments and we still see an independent contribution of perceived managerial leadership on self-reported sickness absence among Swedish employees.

6.1.2.3 Iso-strain in study II

The original hypotheses of combinations of high job demands, low decision authority and poor social support, was that the effect was multiplicative [48]. Empirical findings regarding this hypothesis are inconclusive. Although a couple of reviews of the research indicate an additive rather than multiplicative effect of the combined scales [14, 15], de Lange and her colleagues concluded that the nature of the interaction is ambiguous, and that it is probably legitimate to accept both additive and multiplicative interactions as support for the model [168]. In study II our main aim was not to determine which part(s) of the Demand-control-support model was the

most strongly related to managerial leadership and our outcomes, but rather to adjust for work characteristics as a whole. Since the empirical findings are inconclusive regarding the nature of the interaction between demands, control, and social support, we decided to comply with the original theory.

6.1.2.4 Cross-cultural ratings of health

In study I and II, ratings of well-being and health were collected from employees in different northern, central and southern European countries. One recent study comparing self-rated health with more objective health criteria in ten European countries, showed that Swedes tended to over-rate their health, whereas Germans and Italians under-estimated it relative these more objective criteria (Poland and Finland were not included in the study)[124]. These findings have implications for the results presented in study I and II. In study I, a larger proportion of the German employees reported high perceived stress, compared with the Swedish (and Finnish), which could be due to differences in response styles between employees in the respective countries, rather than differences in stress levels. The same could be true regarding the higher means of reported behavioural stress in Italy compared to Sweden in study II. In study I, the regression analyses were stratified by country, and observed differences in OR between Swedish and German employees could be affected by these differences in response styles.

6.1.2.5 Long lasting stress in study III

The long-lasting stress scale introduced in the 2008 wave of the SLOSH cohort builds upon general stress theory, and is constructed to measure symptoms of a prolonged stress reaction. A high level of arousal for an extended period of time leads to e.g. difficulties in winding down [110, 169]. The scale showed good internal consistency reliability (a Cronbach´s alpha of 0.86), and a principal components factor analysis showed that all items loaded on one factor. The correlation between the long lasting stress scale and Maslach´s emotional exhaustion scale was 0.63. The long lasting stress scale was developed to measure a high stress level hypothesized to precede a possible exhaustion in time. The long lasting stress scale's relative overlap as well as relative independence from the emotional exhaustion scale seems to correspond with this hypothesis. However, further validation regarding e.g. correspondence with other well-established stress scales, objective criteria of long lasting stress (e.g. stress hormones), and relationship with a prolonged exposure to for example work stress is needed in order to ascertain the independent value of the long lasting stress scale.

6.1.3 Drop-out

In study I, 12,622 respondents out of a total of 15,532 were included in analyses, the rest being excluded due to incomplete data. The subjects included were slightly younger (~0.3 years) than those excluded, and reported less often low decision authority (29.1% vs. 32.2%), low skill discretion (28.7% vs. 32.2%), high stress (12.7% vs. 16.7%), poor health (6.7% vs. 7.6%), and absenteeism (6.6% vs. 8.3%). German employees were more often excluded than Finnish and Swedish (28.1% vs. 14.5% and 19.6%), women more than men (17.8% vs. 14.9%), and blue-collar workers slightly more than white-collar workers (17.6% vs. 15.2%). There were no differences in leadership, demands, or social support. The above numbers indicate that in general employees reporting slightly better working conditions and less stress, poor health, and absenteeism were included in our analyses compared to the average in the company. Information from employees with the worst working conditions and health status may have been lost to our analyses. The implications for our results are that slight under-estimations of the associations between especially the control dimension in the Demand-control-support model on the one hand and stress, health, and absenteeism on the other, may have arisen. Decision authority and skill discretion were however not significantly related to the outcomes (except among white-collar Swedish employees), and consequently the slight under-representation of employees with poor control and poor health outcomes probably does not affect the conclusion regarding the independent association between less Attentive managerial leadership and employee stress, poor age-relative self-rated health, and sickness absence for overstrain or fatigue.

In study II there was quite a low response rate among the hotel employees asked to participate in our study (48% in Sweden, 52% in Poland, and 36% in Italy). The contact persons at the hotels reported that the language in the questionnaire was hard for many non-native Polish/Italian/Swedish speaking hotel workers to understand. Generally, those professions within hotels not requiring average language skills are thereby to a lesser degree represented in our study (e.g. cleaners and janitors as opposed to receptionists and other administrative personnel). This may well have implications for our results. For example, transformational and transactional leadership have been reported to be estimated differently between organisational levels and between labour market sectors, and the degree to which the leader behaviours correlated with effectiveness outcomes varied between these categories [64]. Different leader behaviours may be preferred by employees in different occupational categories within hotels, which may have implications for their psychological well-being. An example is that cleaners reported, in data not presented in our article, as the only professional category in the data material, that they would prefer their managers to be more autocratic than what they were. In

sum, we have to restrict the generalization of our results regarding associations between Autocratic, Malevolent, and Self-centred leadership on the one hand and psychological well-being among hotel employees on the other, to especially the more skilled personnel within hotels.

Study III and IV: A total of 5985 individuals responded to the 2006 SLOSH questionnaire, which constitutes 65.4 % of those who filled out the 2003 SWES questionnaire. A somewhat larger proportion of women (69.5%) than of men (61.1%) responded to the questionnaire, and a larger proportion of those who were born in Sweden (65.8%) than of those who were born abroad (61%). There was a general tendency that older individuals responded to a greater extent than younger (75.9% among 60-69 year-olds compared with 50.7% among 20-29 year-olds). The same gradient was observed for income with a response rate of 48.8% of those who earned up to 84 999 SEK per year and of 70.2 % among those who earned more than 310 000 SEK per year. The respondents to the 2003 SWES were selected to represent the Swedish working population. In sum, in the 2006 SLOSH cohort, there is a somewhat greater representation of older employees, women, individuals born in Sweden, and individuals with a higher income than the Swedish working population as a whole.

Study V: The selection to the WOLF Stockholm study was done through occupational health care units in the Stockholm area, with a participation rate of 76%. Represented in the sample are both blue and white collar workers, with a slight over-representation of white-collar workers compared with the average Swedish employee. The individuals in the study also have better health care support than the average Stockholm inhabitant. The sample consists of individuals who have favourable preconditions for good health, which is also reflected in the relatively low number of IHD cases during the approx. ten year follow-up. Most importantly, the sample included in this specific study consists of men only. Previous studies of the relationship between work stress and IHD has shown that results differ between men and women. The results from Study V can therefore not be generalized to include women [13]. Other possible implications of the sample's characteristics for our results are discussed under the subheading Moderators below.

6.2   WHAT IS HEALTH PROMOTING LEADERSHIP?

The strongest evidence of a relationship between managerial leadership and employee health presented in this thesis is the one reported in study V. Seven of ten items in the leadership scale showed significant associations with a decreased risk of ischemic heart disease among (male)

employees during the follow-up of approximately ten years. The difference in impact between these seven items was small, but yet, the four most important ones were "My boss gives me the information I need", "My boss is good at pushing through and carrying out changes", "My boss explains goals and subgoals for our work so that I understand what they mean for my particular part of the task", and "I have sufficient power in relation to my responsibilities". Cross-sectional research has shown strong associations between relationship oriented leader behaviours and employee well-being. The item "My boss shows that he/she cares how things are for me and how I feel" was therefore expected to be strongly related to the outcomes [102]. Instead, results from study V suggest that providing employees with the prerequisites (information, clarity, and power) to carry out their work in an independent manner was the most important for IHD risk. Having "power in relation to responsibilities" is of course conceptually akin to having a decision latitude that corresponds to the psychological demands at work (described in the Demand-control model, see the introductory section). The results of this study support the job strain hypothesis, although the relationship between job strain and IHD in the same population showed a weaker association [170]. This may be due to that the leadership scale of the present study includes a wider variety of factors relevant to work stress.

The contribution of managerial leadership to self-reported stress, age-relative general health, and sickness absence due to overstrain or fatigue, independently of demands, control, and social support, was explored in the first study presented in this thesis. This scale contains, similarly to the one in the Stress Profile (described above), a wide variety of managerial behaviours, bearing conceptual similarities to the dimensions social support and organisational justice, as well as aspects of transformational leadership, and relationship oriented leader behaviours. The single items were not tested separately against the outcomes, but the highest factor loadings of the scale are represented by items pertaining to the manager's relationship orientation/social support, and encouragement of employees to partake in innovation, development and improvements at work. This last dimension could, similarly to what was found in study V, be understood as behaviours on behalf of the manager facilitating autonomy and employees' independent contribution to the work in the work group/unit.

In study III, more specific aspects of managerial leadership were investigated in relation to self-rated sickness absence, and presenteeism in the Swedish working population. Perceived lack of Inspirational leadership (positive, morale booster, motive arouser, and enthusiastic, see table 1) was the dimension shown to be the most strongly related to male and female employees reporting having had four or more spells of short-term sickness absence (< 1 week) over the past

12 months (compared with zero to three spells). Perceived lack of Inspirational leadership was, however, not significant for the reported number of spells of sickness absence > 1 week, or for the total amount of sick leave taken the past 12 months. Inspirational leadership is part of the well-established scale of transformational leadership, and although several cross-sectional studies of the relationship between perceived transformational leadership and self-reported employee well-being have shown significant associations, a longitudinal study of employees in elderly care in Denmark could not support the findings of a direct relationship, when studied longitudinally [102, 103]. These results suggest that inspirational qualities among managers may have a more short-term than long-term effect on employee well-being and health, perhaps pertaining more to motivational aspects and behaviours among employees. The lack of effect of inspirational/transformational leadership over time may also be valid regarding organisational success. One finding reported by Collins, from his large scale study of American companies developing from being moderately to extremely successful, was that building a company on personal charisma was not as sustainable an approach as building it on e.g. more "authentic" values, high moral standards, and being open to positive as well as negative information [69].

Perceived Integrity (honest, sincere, just, and trustworthy) in the manager was a dimension shown to be important for both men and women regarding self-reported sickness absence. This was expected based on the findings regarding organisational justice [10]. Interestingly enough, reporting that the manager "sometimes" showed integrity was the dimension most strongly related to sickness absence among men, with a likely explanation being that instability in behaviours related to integrity generates an insecurity and quite the opposite to a trustful relationship. Managers showing integrity "sometimes" may also be associated with a decrease in employee morale, affecting the amount of sickness absence taken.

Similarly, the most intriguing result regarding Team Integration (integrator, informed, communicative, and team builder), was that reports of the manager "sometimes" acting team integrating was associated with the lowest amount of sickness absence reported to be taken by women. The lack of studies investigating non-linear relationships between leader behaviours and employee outcomes has been acknowledged [59]. The present results suggest that more of seemingly positive behaviours may not always be "better". The results could be interpreted as these managers lacking other important leadership qualities, probably sorting under task-oriented behaviours (see introductory section) aiming at facilitating for employees to get the work at hand done. High job demands have been reported to be negatively associated with high sickness absence, which could be related to this interpretation of a possible lack of task oriented

behaviours among managers [171], but another likely explanation is that high job demands lead to more sickness presenteeism.

In the fourth, prospective study, the three leadership dimensions Inspirational leadership, Integrity, and Team Integration are presented as one dimension; "Positive leadership". Perceived lack of Positive leadership was among healthy Swedish employees found to predict an increase in reported symptoms of emotional exhaustion two years later. That a perceived lack of a combination of positive managerial behaviours could cause stress among employees, when measured over time, was also found in a study of leadership and employee well-being in two community trusts in the British National Health Service [119].

Autocratic leadership (autocratic, bossy, elitist, dictatorial) was the only leadership dimension in study III that was significantly associated with reporting 31 or more days of sickness absence over the past 12 months, compared with having had up to 30 days. The relationship was significant only for men. An autocratic manager is likely to decrease job control and participation among employees (see results from study I and V), previously shown to be related to lower sickness absence [171]. An aggregate measure of autocratic leadership (to the hotel level) was associated with poor employee psychological well-being at the individual level in study II, and dictatorial leadership (see table 1 for a list of items) was in study IV significantly associated with an increase in reported symptoms of long lasting stress among previously healthy Swedish employees. Consequently, three studies presented in the present thesis support the notion that a leadership characterized by telling subordinates what to do in a commanding way, making decisions in dictatorial ways, forcing values and opinions upon others, and exhibiting elitist values is associated with negative health consequences among employees. Quite highly correlated with autocratic leadership is the dimension malevolent leadership (hostile, dishonest, vindictive, and irritable), also found related to poor psychological well-being in study II. This dimension is conceptually akin to previous definitions of actively destructive leadership, such as abusive supervision or petty tyranny.

It has been concluded from an extensive review of psychological research, that negative (undesirable, harmful, unpleasant) events are associated with a greater impact on individuals (e.g. on a marriage, on learning, child development, information processing, memory, forming impressions, and self-concepts) than positive (desirable, beneficial, pleasant) events [79]. The authors write that "to say that bad is stronger than good is to say that bad things will produce larger, more consistent, more multifaceted, or more lasting effects than good things", and assert

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that this appears to be a general law, applying to a broad variety of contexts. One study investigating employee burnout in relation to transformational, transactional, and passive-avoidant leadership in the Norwegian IT sector supports the notion of bad being stronger than good. Passive-avoidant leadership was found to be somewhat more strongly related to employee burnout than transformational and transactional leadership [63]. Related to passive-avoidant leadership is the dimension Self-centred leadership, explored in study II and III. The self-centred leader pursues his/her own best interests, prefers to work and act separately from others, and avoids people or groups. Self-centred leadership aggregated to the hotel level in study II, was related to employee psychological well-being at the individual level and was more independent from the Demand-control-support model than autocratic and malevolent leadership. However, there were no significant associations between self-centred managerial leadership and employee sickness absence and sickness presenteeism among a representative sample of the Swedish working population in study III, when adjusting for the other leadership dimensions. The impact of passive-avoidant leadership compared to the impact of more actively destructive leader behaviours has to my knowledge not been investigated. A study of consequences of workplace conflict resolution in a multinational forest industry company showed that no attempts being made to solve the conflict was as strongly and negatively related to employee stress, poor general health, exhaustion, and sickness absence, as when authority was used to resolve the conflicts. The most health promoting situation was when differences were resolved through discussion [172]. Results presented in this thesis do, however, suggest that actively destructive managerial behaviours may have a more consistent negative effect on employee stress, health, and health effects. The impact of passive-avoidant leadership could be more dependent on contextual factors (such as e.g. how well structured the organisation as a whole is, or the skill level of the individual employee, i.e. the employees' need for leadership).

The results from study I-V in the present thesis suggest that both positive leader behaviours (e.g. providing information, support, power, and encouragement to partake in improvements, change orientation, team integration, integrity, and inspirational leadership) and negative ones (acting in bossy, dictatorial, malevolent, or withdrawing ways) are associated with stress, health, and other health related consequences among employees. Whether bad leadership has a stronger, more multifaceted and long-lasting negative effect on employee stress and health than good leadership has a positive effect, is not possible to say from the current state of research. The topic is interesting and important for practical implications, however, and will hopefully be given more attention by researchers in the future.

6.3 MODERATORS

During recent years it has been stated that leadership research has not sufficiently taken contextual (or moderating) factors in the leader-follower relationship into account [56, 90, 173]. Although contextual factors have not been the primary focus of the research questions investigated within the frame of this thesis, several different countries, industries, and professions are represented in our samples. Their relative importance for the relationship between perceived managerial leadership and employee stress, health, and other health related outcomes will be discussed in relation to other research findings below.

6.3.1 Culture

In Study I and II data was collected from several countries within Europe, which represent different cultural clusters. In study II where between-country differences in ratings of leadership practice were tested specifically, both similarities (regarding autocratic and malevolent leadership) and differences (regarding self-centred leadership) in relation to previous GLOBE studies were found [97]. The deviation regarding self-centred leadership may be due to the different sector studied (the service sector was not represented in the GLOBE study), that leadership practice rather than leadership ideals were measured, or that an aggregated measure to the organisational level was used. In study I, country differences in ratings of attentive managerial leadership were not explored specifically. The lowest percentage to report less attentive managerial leadership was, however, found among Swedish employees, and the highest among German (regarding blue-collar workers) and Finnish (regarding white-collar workers) employees. This is in line with previous research indicating that Swedish leadership, in relation to other cultural clusters, is high in employee participation in decision making processes, and has a strong focus on interpersonal relations [18].

Cross-cultural leadership research has shown that there are both similarities and significant variations between cultures regarding estimation of ideal forms of outstanding leadership, and leadership practice [27, 28]. Cultural differences can be distinguished also between the Nordic countries, and even between different sectors within Sweden [18, 97, 174]. Leadership categorization theory holds that an individual is perceived as a leader only if he/she corresponds to prototypes of what a good leader is, held by the perceiver [95]. The leader categorization theory is an individual level theory, and could be argued to be relevant also for stress theory. For example, the Cognitive activation theory of stress (CATS) holds that when there is a discrepancy between how an individual perceives what "should be" and what "is", the individual experiences a stress reaction [108]. This could easily translate into a relationship between the employee and

his/her supervisor. Perceptions of how a manager should be and act, appears to, on an individual level, be influenced by different layers of cultural values (related to country, type of business etc). When a superior to a large extent differs from these expectations, still holding the formal position from which he/she is entitled to exert influence on the subordinate, the subordinate may experience stress. An example could be that since there appears to be a culturally endorsed higher tolerance for malevolent behaviours among managers in Italy than in Sweden [97], employees in Italy may react with less stress to managers exhibiting malevolent behaviours than Swedish employees. This was one of the hypotheses that we wished to explore in the data material of Study II. Unfortunately, the sample was not robust enough for this kind of analysis. Cultural influences in experienced stress due to managers not corresponding to perceptions of what constitutes a "good manager" remains an interesting question to be explored in the relationship between leadership and employee health.

6.3.2 Type of industry or organisation

The samples analyzed in the studies of this thesis represent the forest industry (I), the hotel industry (II), several different public and private organisations within the Stockholm area (more white than blue collar workers) (V), and the Swedish working population at large (III and IV). What conclusions can be drawn regarding differences in the relationship between managers' leadership and the health of employees between different industries or organisations?

In the study of how differences in the workplace usually were resolved in a forest industry company, referred to above, the laissez-faire option was found to be the most strongly related to negative health outcomes among employees [172]. Self-centred leadership is a dimension describing a manager who withdraws from work and contact with others, who prefers to work alone and pursue own best interests. It is quite likely that a person described in these terms is not engaging in leadership activities. This dimension, aggregated to organisation level, was clearly associated with employee psychological well-being in the hotel industry (Study II), but not associated with employees' SRH or being sickness absent or sickness attendant in the representative sample of the Swedish working population in Study III. It could be hypothesized that laissez-faire leadership is more destructive in certain types of organisations. For example, a study within the IT sector in Norway showed that passive-avoidant leadership was more important than other positive leader behaviours for employee burnout, which may be due to the unregulated work characterizing many IT companies [63]. Employees may be especially susceptible to the lack of leadership when organisational boundaries are loose. On the other hand, employees in less skilled jobs may be susceptible to the lack of leadership for other

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reasons; they may need guidance due to e.g. lack of overview of the work situation or due to not knowing, or not finding it a part of their work role to know, how to carry out their work more specifically. This would explain the destructiveness of self-centred leadership in the hotel industry, and laissez-faire leadership (regarding problem solving) in the forest industry among mainly blue-collar workers described above [172]. When exploring several industries and types of organisations, as in Study III, the effect of laissez-faire leadership may level out due to being less important in e.g. better structured organisations, and/or in organisations employing more skilled personnel.

Autocratic leadership was, on the contrary, found to be the most relevant leadership dimension for employee long term sickness absence (among men) in the representative sample of the Swedish working population (Study III). This relationship was adjusted for SRH, which means that men, who perceive their managers to be more autocratic, may be more prone to take sick leave without being particularly sick. This could be interpreted as a means of protesting against a perceived lack of participation in decision making at the workplace, which Swedish employees generally hold as a high ideal. In Study II the association between autocratic leadership (on the hotel level) and employee psychological well-being was however not as strong, which could be interpreted in terms of this type of leadership not being as destructive in the hotel industry as in the Swedish working population at large. In organisations where lower skills are required to perform the work, employees may find autocratic leadership less stressful. It was, as mentioned previously, found in data not presented within the frame of this thesis that cleaners at the Swedish hotels would have liked to have a more autocratic leadership than what they had.

No direct comparisons between industries or types of organisations have, however, been made in the studies presented in this thesis. It can be concluded that the question of type of organisation and industry as a moderator in the managerial leadership-employee well-being relationship needs to be addressed specifically in future studies.

6.3.3 Organisational prerequisites for leadership

The antecedents of destructive leadership (e.g. abusive supervision, petty tyranny, malevolent leadership) or of the lack of constructive leadership (e.g. laissez-faire leadership, self-centred leadership) could be many. One possible reason for leadership failure is poor organisational prerequisites to exert a health promoting leadership. For example, an interview study of managers in team- and project organisations showed that the leadership ideals expressed by managers to a high degree corresponded with transformational leadership (e.g. relationship

orientation, participation, commitment, inspiration, and motivation). The managers aspired to lead through consensus and good relations, but in reality the managers expressed that they were flooded by administrative tasks and had very little personal contact with their employees. Leadership was more indirect, authoritarian, and relied more upon hierarchies than was expressed in the managers' ideals [24]. Yukl describes managerial work as characterized by a hectic work pace with constant interruptions, a work content that is varied and fragmented, and activities that are more often reactive than proactive. Planning is seldom carried out in a systematic way, but rather informally and adaptively [27]. Employees with managerial positions on average report higher psychological demands than employees who do not hold a managerial position, they work longer hours, but they do not generally have a higher degree of social support at work (known to buffer against negative effects of high demands at work). Managers do however report better possibilities to influence their work situation and was in one study found to have better social support in private life [8, 175-177]. Skagert, Dellve et al [178] concluded from a study of middle managers in public human service organisations in Sweden that the strategies that managers use to balance demands and maintain trust from higher and lower levels in organisations could be described as acting as stabilising factors, or *shock absorbers.* Managers' strategies included *leading in continuous change* (i.e. structuring tasks and stabilising the staffing situation) *whilst maintaining trustworthiness* (i.e. strengthening their position, communicating and filtering problems, supporting and encouraging employees). Poor workplace social support, limited decision latitude and ethical dilemmas were described to give rise to feelings of loneliness, insufficiency and frustration among these middle managers.

An interview study including 42 middle and top managers in the telecommunication business in Germany were asked about their views on antecedents to negative leadership. Over 70% of the statements were related to environmental factors such as the leader *task, field* or *role* (e.g. number of subordinates, amount of operational work, difficulties in leader role, 20%), *followers* (e.g. employees' lack of work ethics, intrinsic motivation, skills, and employees' fear and insecurity, 30%), *supervisors* (pressure from own supervisor), *environment* (e.g. increasing market competition), *goals*, *culture*, and *values* (e.g. conflicting corporate goals) and *processes*, *structures*, and *resources* (e.g. downsizing, deficient succession planning or reward systems, 10%). Only around 25% of the statements regarding antecedents to negative leadership was by these middle and top managers attributed to personal factors, such as *traits* (lack of leader abilities, personality, character), *states* (fear), *knowledge* and *learning* (lack of knowledge, experience, chances of behavioural change), and *goals* and *needs* (e.g. authoritarian leadership

philosophy). Thus, especially organisational factors giving the prerequisites to exert good leadership were among these managers perceived as crucial for leadership success [179].

To my knowledge, no study of the relationship between managers' leadership and employees' stress, well-being, and health has taken managers' organisational prerequisites to exert a health promoting leadership into consideration. Nor in the work presented in this thesis has this been done, although the results presented above indicate that several factors related to the organisation and environment may be relevant moderators.

6.3.4 Employee job position

It has been asserted that the meaning attributed to workplace stressors may vary with contextual factors such as power (or job position within the firm), but that these contextual influences on employee health are insufficiently explored in the work-stress literature. It has been argued, for example, that individuals with degrading jobs and little power may use social support to re-establish their self-esteem and dignity, whereas professionals with more control and higher status may be satisfied with less social interaction and prefer instrumental aspects of support. [46]. It has also been reported in a literature review that managers on lower levels within organisations are generally estimated as more transformational than managers on higher organisational levels, which could reflect what kind of leadership is demanded by employees on different levels [64]. In accordance with the theory of power as a mediator in the work stressor-strain relationship is a finding indicating that the negative effect of abusive supervision was buffered when the employee was employed in a high-power customer service occupation (e.g. physician or professor) that society generally holds in high esteem [180]. The authors argue that employees in higher power occupations have more financial and social resources compared with low power employees and therefore experience less threat from supervisor-perpetrated verbal aggression.

The above theories and findings may have implications for some of the results presented in this thesis. For example, in study V there is an over-representation of well-educated employees (all males), which could partly explain why social support of managers was more weakly related to employee IHD than managerial behaviours enhancing autonomy and power among the employees. Social support is, on the other hand, a dominant feature in the Attentive managerial leadership scale used in study I, showing relatively strong associations with perceived stress and age-relative self-rated health in the sample consisting predominantly of blue-collar workers within the forest industry. In study II-IV we adjusted analyses for employee job position.

However, further exploration of job position within the organisation as a moderator in the managerial leadership-employee health relationship seems warranted.

6.3.5 Gender

It has been concluded from literature reviews that it is more likely that men emerge as leaders in previously leaderless groups, especially in groups not demanding complex social interaction [181]. Women more often emerge as social leaders, and are generally estimated to be somewhat more transformational than men [182]. Regarding effectiveness correlates, there is little difference between men and women, although women are more likely to be successful in more femininely defined roles, and men in more masculinely defined roles [183]. Regarding the relationship between managers' leadership and employees' stress, well-being, and health, very little is known about gender differences.

The most recent review of studies of work-related psychological factors and the development of IHD concluded that studies involving women are too few to draw any conclusions regarding this relationship [16]. Differences between men and women regarding which factors at work and at home are more stress inducing has been discussed in relation to the heterogeneity of results regarding the work stress - IHD relationship when women are included as subjects [13, 184].

It is well known in research on workplace factors and employee sickness absence that the relationships differ substantially between men and women [128, 129]. Although no statistical tests were conducted to estimate differences between men and women in Study III, the patterns of the relationship between managerial leadership on the one hand and SRH and sickness absence on the other, differed between men and women. For example, there appeared to be a more direct relationship between managerial leadership and sickness absence among men, whereas the relationship to a greater extent may be mediated by SRH among women. This could be related to the fact that men more often use active coping than women [185-187]. Autocratic forms of leadership were significantly related to the total amount of sick days during the past 12 months reported by men, but not to the total amount of sick days reported by women. This could be interpreted as men reacting more strongly against loss of control than women. Generally, the results from Study III indicate that analyses of the effects of managerial leadership should be conducted separately for men and women, when possible, since patterns in relation to outcomes may vary substantially. This is probably partly due to factors discussed above, e.g. women generally having lower job positions and less power at work, and being employed in different sectors and occupations compared with men.

6.3.6 Psychological factors

Very little can be concluded from the work stress literature regarding individual differences in susceptibility to work stress [13, 14].   Harvey, Stoner et al [134] explored the moderating influence of positive affect (defined as "the tendency to have an overall sense of well-being, to experience positive emotions and to see oneself as pleasurably engaged in terms of both interpersonal relations and achievements") in the relationship between abusive supervision and employee tension, emotional exhaustion, and turnover intention. Their results suggest that the optimistic emotions and perceptions associated with high levels of positive affect buffer against the negative effect of abusive supervision. Another possible moderator to be tested in future research is self-esteem. For example, individuals with low self-esteem who seek to increase esteem through work performance may be more susceptible to laissez-faire leadership in boundaryless work situations [20, 52] than people higher in self-esteem.

Adjusting for satisfaction with life in general in study III and IV may be a potential over-control for a true relationship. It could be that employees who are less satisfied with their life in general are colored by this general negativity when assessing their managers, giving rise to a reporting bias. On the other hand, it is also likely that employees who are less satisfied with their life in general are more susceptible to managers' behaviours. Or it could also be so that employees who are exposed to bad managers for a long time actually become less satisfied with their lives. Satisfaction with life in general could then instead be a relevant moderator in the managerial leadership – employee health relationship.

6.4 MECHANISMS

It has been asserted repeatedly that the mechanisms by which managers exert influence on subordinates are relatively unexplored [56]. Mediating factors explored in studies of the relationship between managerial leadership and employee stress and well-being published recently are related to the work characteristics reported by employees. That the relationship between transformational leadership (idealized leadership, inspirational motivation, individualized consideration, and intellectual stimulation) and employee well-being to a large extent is mediated through employee perceptions of having a meaningful work, has been reported in a couple of publications [101, 103]. Abusive supervision has been reported to be mediated by employee perceptions of injustice [83], and laissez-faire leadership has been linked to employee psychological distress through mediating factors related to the work group climate, such as role ambiguity, role conflicts, conflicts with co-workers, and bullying [78].

In Study I, II, and III in the present thesis we explored the independent role of leadership as a work stressor in relation to the well-established factors high psychological demands, low control and poor social support. We adjusted for these variables rather than exploring their mediating role. It was in all studies found that leadership contributed independently to employee stress, psychological well-being, SRH, and sickness absence. However, mediation through high demands, low control, and poor social support is also highly possible since the adjustments for these variables attenuated the relationships with the outcomes. Exploring these factors as mediators in the relationship between managerial leadership and employee well-being in future studies therefore seems warranted.

The psychological pathway by which leadership affects employee stress, well-being and health has not, to my knowledge, been explored. The findings reported from the study of the Canadian working population, that the relationship between work stressors (a composite measure of psychological demands, lack of control, lack of support, and job insecurity) and employee distress (feeling e.g. sad, nervous, restless, hopeless, worthless) was almost entirely mediated through the psychological factors mastery and self-esteem [140] appear highly relevant also regarding distress due to e.g. abusive, authoritarian or laissez-faire leadership.

Also the mechanisms between work stress and cardiovascular disease are up to date largely unknown. It is increasingly recognized that the recovery process after stress exposure is crucial for the health outcome [188]. Insufficient recovery leads to accumulated stress and negative health responses such as prolonged fatigue, disturbed sleep, and chronic tension, which in the long run may turn into manifest disease [189-191]. Increased health risk behaviours (such as increased smoking intensity, reduced physical activity, unhealthy diet, weight gain and obesity) as well as several biological factors (such as metabolic and homeostatic disturbances, reduced heart rate variability and vagal tone, early atherosclerosis, impaired inflammatory and immune response) are known to be related to stress, and may mediate the relationship between work stress and cardiovascular disease [13].

Better knowledge regarding mechanisms in the relationship between managerial leadership and work stress on the one hand and mental disorders and coronary heart disease on the other is important since it would strengthen the causal evidence as well as broaden our understanding regarding effective interventions to reduce adverse working conditions for employees.

6.5 LEADERSHIP AND OTHER PSYCHOSOCIAL FACTORS

We have in all five studies presented in this thesis measured managerial leadership without taking organisational factors into consideration, as is most commonly done in leadership research [56, 90, 173]. This means that we do not know with certainty if the dimensions that we have measured can be attributed to individual managers, or if organisational aspects, e.g. different prerequisites to exert leadership or other aspects of management on higher levels are hiding behind these measures. To answer the question of how much of the leadership influence that we are measuring can be attributed to individual managers, and how much has to do with organisational characteristics on higher levels, we would have to explore this specifically, e.g. with multilevel techniques.

Contributions of results presented in this thesis include, from Study II: Significant variation between hotels regarding the three destructive forms of leadership was seen, indicating that a "common leadership practice" seemed to have developed within hotels, providing support for organisational rather than individual level influences; and from study I-III: A contribution of managers' leadership to health-related outcomes independently of the work characteristics measured in the Demand-control-support model was found in all three studies within this thesis, exploring this topic. These results suggest that managers do not affect employees solely by determining their work characteristics but also directly, e.g. by emotional components in the direct relationship.

The general need for increased standardization of measurement scales within the field of psychosocial work environment epidemiology has been pointed out [13]. Although some studies indicate separate effects of the three different most influential models of work stress (job strain, effort-reward imbalance, and organisational injustice) [125, 192], there are also several overlaps. For example, distributive justice overlaps with aspects of the effort-reward imbalance model [153], and individual items in the procedural justice index overlap with the construct of decision authority. In addition, the relational justice scale overlaps somewhat with the construct of supervisor support at work [193].

Where the influence of managers fits into these models of work stress is not possible to conclude from the current state of evidence in the literature. As mentioned above, there is to my knowledge no leadership theory developed specifically to estimate health outcomes among employees. Given the above confusion regarding standardization of scales also within rather established models of work stress, the development of an instrument assessing health promoting

leadership and leadership detrimental to employee health, which is validated against other work-stress models and organisational factors, seems warranted.

6.6 DO WE KNOW IF LEADERSHIP MATTERS?

The strength of the evidence regarding the impact of managerial leadership on stress and health among employees is to date rather weak, mainly due to the low number of good quality prospective studies [131]. Especially the fifth study of this thesis adds to the state of this evidence by demonstrating a strong relationship between several leader behaviours and ischemic heart disease among (male) employees. However, the study needs to be replicated and there are also several methodological issues to be resolved before conclusions about causality can be drawn. These include e.g. reporting biases, the impact of duration of exposure, individual differences in susceptibility to poor managerial leadership, mechanisms in the relationship between exposure to poor leadership and the development of disease, and the validation of the contribution of individual managers' leadership to disease development relative to general work characteristics and relevant organisational factors.

6.7 CONCLUSIONS AND IMPLICATIONS FOR RESEARCH AND PRACTICE

6.7.1 Conclusions

The past years of research on health effects of managerial leadership suggest that managers have a significant impact on the development of stress and ill-health among employees. The contribution of the present thesis to this field of research is summarized below:

- Managerial leadership is relevant to study independently of the well-established Demand-control-support model in relation to employee stress, well-being, SRH, and sickness absence.

- The dimensions of the Demand-control-support model may act as mediators in the relationship between managerial leadership and employee stress, well-being, and health.

- Estimating managerial leadership on the organisational level appears meaningful when studying health consequences among employees.

- Managers' leadership may affect not only levels of stress, emotional exhaustion, and health among employees, but also the extent to which employees are absent from work, indicating costly negative consequences of poor managerial leadership.

- Support was found for a prospective relationship between dictatorial and lack of positive managerial leadership on the one hand, and an increase of symptoms of stress, emotional

exhaustion, and SRH, and an increased risk for leaving the workplace due to poor health or unemployment among employees on the other hand.

- Support was found for a dose-response relationship between positive aspects of managerial leadership and a lower incidence of hard end point ischemic heart disease among employees.

- Health promoting leadership was found to include providing employees with the prerequisites to carry out their work in an independent manner (providing information, power, clarity), to encourage employees to partake in the development of the workplace, to provide support, to inspire employees, to show integrity (justice), and to integrate team members to work well together.

- Both actively destructive behaviours (such as acting dictatorial, forcing own opinions on others, being insincere and actively unfriendly) and passively destructive behaviours (such as withdrawing from employees) on behalf of the manager were found associated with negative health consequences among employees.

6.7.2 Implications for research and practice

To measure aspects of managers' characteristics and behaviours specifically and independently of the well-established demand-control-support model of work-stress seems adequate in work environment surveys aiming at mapping and improving psychosocial working conditions at workplaces, as well as in research on antecedents to stress and ill-health among employees.

The concrete managerial behaviours measured in the Stress Profile (e.g. "My boss gives me the information I need", "My boss is good at pushing through and carrying out changes at work", "My boss explains goals and subgoals for our work so that I understand what they mean for my particular part of the work", and "I have sufficient power in relation to my responsibilities") could be used in future interventions to improve leadership at workplaces, as well as in research on health consequences of leadership.

Future research on the relationship between managerial leadership and employee health needs to focus on theory development and the development of a leadership instrument measuring health promoting leadership as well as leadership detrimental to employee health, needs to further distinguish managerial leadership from other stressors in the work environment, to explore the influence of moderating factors (e.g. type of industry and organisation, organisational prerequisites to exert leadership, gender, and psychological factors among employees), as well as to map relevant mediating factors (both work characteristics and psychological pathways) in

the relationship between managerial leadership and employee health. Longitudinal research designs are needed in order to come to terms with common method biases, and understand the nature of causality. The most relevant leader characteristics and behaviours for health outcomes among employees need to be further mapped in order to refine interventions. "General leadership practices" within organisations may be as relevant to measure, and direct interventions toward, as individual managers' leadership.

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