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Karolinska Institutet, Stockholm, Sweden

INTERPERSONAL RELATIONSHIPS AT WORK

ORGANIZATION, WORKING
CONDITIONS AND HEALTH

Ulrich Stoetzer



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ABSTRACT

The overall aim of this thesis was to study the association between interpersonal relationships at work and organizational factors, working conditions and health. Interpersonal relationships are regarded as an important component of the psychosocial working conditions, but inadequately studied. Interpersonal relationships at work can be considered to be mainly governed by personality traits. Alternatively, interpersonal relationships are potentially affected by other psychosocial working conditions or rooted in the organizations, thus accentuating the need to study the relation to organizational factors. In epidemiology interpersonal relationships at work are traditionally defined as detrimental factors, for example conflicts. Among many measures designed to capture the concept of interpersonal relationships at work social support is probably the best known and the most studied. The first and second studies (I-II), examine the relation between working conditions, dimensions of interpersonal relationships and depression using a traditional longitudinal epidemiological design. The third and fourth studies (III-IV), explore the relation between interpersonal relationships at work, organizational factors and sickness absence using a qualitative analysis of interviews with managers at Swedish companies. In the first study (I) high demands showed effects on serious conflicts at work and exclusion by co-workers. Low skill discretion showed effects on exclusion by co-workers. The effects were adjusted for confounders. Furthermore, serious conflict or exclusion by co-workers developed over time for the groups' that didn't indicate such problems at the time of the first questionnaire. In the second study (II) low social support, serious conflict, exclusion by superiors or co-workers showed effects on depression. These effects remained when adjusting for confounders and previous depression meaning that those exposed and not depressed risked depression over time. In the third study (III) organizational factors that seem to be distinguishing for companies with low sickness absence were found. These were elaborate, explicit strategies and procedures dealing with for example leadership, employee involvement, corporate values and visions, which can be related to interpersonal relationships between employees and leaders. In the fourth study (IV) strategies, procedures or values that could be related to items of the relational justice scale for example "the supervisors considers the employees' viewpoints" were more expressed in companies with low numbers of sickness absence. In conclusion: improvements in psychosocial working conditions may help to diminish conflicts and exclusion. Promoting good interpersonal relationships at work may help to reduce the risk of employees developing depression. Furthermore, important factors on the organizational level associated to the interpersonal relationships appear to differentiate companies with low levels of sickness absence from companies with average levels. Organizations that seem to be healthy for the employees are organized in the spirit of relational justice i.e., perceived as fair, kind, considerate, and impartial and personal viewpoints are considered. Relational justice may be used as a proxy to measure organizational change and health at companies.

Key words: Interpersonal relationship, work, health, depression, social support, conflict, exclusion, organization, relational justice, epidemiology, interview-study

SAMMANFATTNING

Syftet med denna avhandling var att undersöka sambandet mellan mellanmännsliga relationer på arbetsplatsen och organisatoriska faktorer, arbetsförhållanden och hälsa. Mellanmännsliga relationer anses som en viktig del av de psykosociala arbetsförhållandena, men det finns få studier. Relationerna mellan de anställda kan betraktas som i huvudsak styrta av personlighetsdrag hos individerna. En alternativ förklaring är att mellanmännsliga relationer påverkas av andra psykosociala arbetsförhållanden eller är grundade i organisationen, vilket visar behovet av att studera relationer i förhållande till organisatoriska faktorer. I epidemiologi brukar mellanmännsliga relationer traditionellt definieras som negativa faktorer, till exempel konflikter. Bland många koncept som syftar till att fånga begreppet mellanmännsliga relationer på arbetsplatsen är socialt stöd förmodligen den mest kända och mest studerade. I den första och andra studien (I-II) studeras arbetsvillkor, mellanmännsliga relationer och depression med hjälp av en traditionell longitudinell epidemiologisk design. I den tredje och fjärde studien (III-IV) studeras mellanmännsliga relationer på arbetsplatsen, organisatoriska faktorer och sjukfrånvaro med hjälp av en kvalitativ analys av intervjuer med chefer på svenska företag. Den första studien (I) visade att höga krav kan leda till allvarliga konflikter på arbetsplatsen och utfrysning av medarbetare. Låg stimulans kan leda till utfrysning av medarbetare. Effekterna var justerade för confounders. Allvarliga konflikter och utfrysning av medarbetare riskerade att uppkomma över tid för gruppen som inte angett motsvarande vid tidpunkten för det första frågeformuläret. Den andra studien (II) visade att lågt socialt stöd, allvarliga konflikter, utfrysning av chefer eller arbetskamrater kan leda till depression. Dessa effekter var justerade för confounders och tidigare depression vilket innebär att de som var utsatta och inte deprimerade riskerade depression över tid. I den tredje studien (III) hittades organisatoriska faktorer som verkar vara utmärkande för företag med låg sjukfrånvaro. Dessa var genomarbetade, tydliga strategier och tillvägagångssätt för att hantera till exempel ledarskap, anställdas delaktighet, företagets värderingar och visioner, vilka kan relateras till relationer mellan medarbetare och ledare. I den fjärde studien (IV) visades att strategier, tillvägagångssätt eller värden relaterade till "Relational Justice", till exempel "Chefer tar hänsyn till de anställdas åsikter", i större utsträckning uttrycktes i företag med låg sjukfrånvaro.

Sammanfattningsvis: förbättrade psykosociala arbetsförhållanden kan bidra till att minska konflikter och utfrysning. Att främja goda relationer på jobbet kan bidra till att minska risken för depression. Viktiga faktorer på organisationsnivå som är associerade till mellanmännsliga relationer tycks skilja företag med låg sjukfrånvaro från företag med genomsnittliga nivåer. Organisationer som verkar vara bra för de anställda är organiserade i en anda av "Relational Justice" dvs upplevs som rättvisa, vänliga, omtänksamma, opartiska och där personliga synpunkter beaktas. "Relational Justice" kan eventuellt användas som ett mått för att mäta organisatoriska förändringar och hälsa på företag.

Nyckelord: Relationer, arbete, arbetsvillkor, hälsa, depression, socialt stöd, konflikter, utfrysning, organisation, relational justice, epidemiologi, intervjustudie

LIST OF PUBLICATIONS

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LIST OF ABBREVIATIONS

CEO	Chief-executive-officer
CI 95 %	Confidence interval of 95 percent
DALYs	Disability-adjusted-life-years
DCM	The demand-control-model
DCSQ	Swedish version of the Demand Control Support Questionnaire
DSM IV	Diagnostic and statistical manual of mental disorders, fourth edition
ERI	Effort-reward-imbalance
HOF	Swedish acronym for the Health and Future study
HRM	Human-resources-management
ICD-10	International classification of diseases, version 10
Iso-strain	The demand-control-support model
MDI	Major-depression-inventory
OR	Odds ratios
PART	Swedish acronym for the research project on psychiatric diagnoses, work and relations
SCAN	Schedules for clinical assessment in neuropsychiatry
T ₁	Time one, first survey of the PART study
T ₂	Time two, second survey of the PART study
WHO	World Health Organization

1 INTRODUCTION

The work environment is a multifactorial aspect of people's life that affects health both in a positive and negative way. The concept of health is complex and comprising both illness and ability to function. For example, someone with a disease that is properly treated can still function at work. Consequently, illness related physical and mental functioning is related to sickness absence. In traditional epidemiology the study of work and health is mainly focused on detrimental working conditions, i.e. problems and impediments related to different health outcomes. Such studies have often been cross-sectional; however cross-sectional studies can not establish any causal relations why the need for longitudinal studies has been stressed¹⁻³. An alternative way to study work and health is to identify factors that promote health and permits working while ill.

An important component of the work environment is the so called psychosocial working conditions which are linked to psychological strain. Interpersonal relationships at work are considered an essential part of the psychosocial working conditions^{1,4}, but studies relating interpersonal relationships at work to different health outcomes are limited⁵. Social support or the lack of social support is the most studied dimension of interpersonal relationships which has been related to mental health such as depression^{1,6-13}. Depression being one out of the top ten health problems in the world today according to the WHO¹⁴.

Interpersonal relationships at work is considered by some to be mainly governed by personality traits^{3,15}. Other psychosocial working conditions may also affect interpersonal relationships. Studies in work and organizational psychology have shown that psychosocial stress affects the emotions and mood of individuals¹⁶⁻¹⁹, which can be theorized to induce behavioral modifications affecting how individuals relate to one another^{16,17}. Well known psychosocial working conditions are high demands and low control⁴. Studies that investigate interpersonal relationships at work and its relations to other psychosocial working conditions are to the best of my knowledge lacking.

Interpersonal relationships at work are in epidemiology traditionally defined as detrimental factors, for example conflicts, in an attempt to capture a part of the broad framework of interpersonal stressors. These studies are largely based on individuals' reports, thus statistically aggregated to a population level. Alternatively, some consider the characteristics of interpersonal relationships at work to be rooted in the organizations and accentuates the need for studies on how organizational factors affects interpersonal relationships^{3,18}. Examples of organizational factors that could be related to interpersonal relationships at work is strategies and procedures to involve the employees¹⁹. To my knowledge there are no studies on organizational factors, interpersonal relationships at work and health.

The concept relational justice has been developed to capture an aspect of interpersonal relationships at work which reflects the organization. Relational justice is describing the relation between employees and their managers, how the employees usually are

treated. Relational justice has been related to health outcomes such as sickness absence
20-22 .

The present thesis explores the concept of interpersonal relationships at work; both on an individual and organizational level, as it relates to health outcomes. It begins with, using an epidemiological longitudinal design to determine whether psychosocial working conditions affect interpersonal relationships at work. It proceeds similarly to determine whether interpersonal relationships can affect health outcomes such as depression. It concludes by deepening the understanding of the mechanisms behind interpersonal relationships at work and health on an organizational level, using qualitative methods.

2 BACKGROUND

2.1 INTERPERSONAL RELATIONSHIPS AT WORK

Interpersonal relationships at work constitute the day to day interaction between co-workers, or managers and employees. These relations are a natural part of the work environment and are usually pleasant and creative, but sometimes the source of tension and frustration⁵. There are also other relationships at work such as with patients, costumers, professionals, colleagues etc, but these lie outside the scoop of the present thesis. There are a number of measures intended to capture the nature of interpersonal relations at work and lately there has been a debate on what to use as an umbrella label for this domain of research including “Counter-Productive Work Behavior”²³. However, the term “interpersonal relationships at work” is in our view preferable as it captures both positive and negative aspects.

Interpersonal relationships at work can be described from an individualistic viewpoint or an organizational viewpoint. The individual perspective refers to how each individual evaluates the relationships. These evaluations are then measured using questionnaires. The results are then aggregated to present an average evaluation of the relationships. This aggregation of individual data to group or population levels is also used when studying different work groups or occupational groups.

If we change perspective and try to capture interpersonal relationships at an organizational level we have to clarify what we mean by organizational level. Typically, an attempt to capture an average representation of an organization is still built on aggregating individual points of view. An alternative perspective would be how relationships are dealt with on an organizational level, i.e., strategies and procedures affecting many employees simultaneously. To change the perspective to an organizational level is methodological challenging, how do we capture the nature of an organization without rely solely on the individuals’ experiences^{24,25?}

An important aspect when studying organizational factors at the company level is management or leadership that deals with strategies and procedures that directly affect the employees²⁶. For interpersonal relationships this means how managerial decisions can directly or indirectly influence the relationships among the employees. Direct influences include decisions resulting in more or fewer contacts, such as opportunities for team meetings. Indirect influences include working conditions that may affect individuals’ ways of interacting, e.g., high work load that hinders spontaneous interaction. Managerial decisions may affect interpersonal relationships not only quantitatively, but qualitatively; an employer can provide possibilities for sociable intrapersonal exchange that is not directly work related, such as extracurricular activities.

To the best of my knowledge there are no studies on how organizational factors affect interpersonal relationships at work and more studies are needed on the subject, relating organizational aspects to working conditions and individual behaviours.

2.1.1 Social support

Social support is probably the most studied dimension of interpersonal relationships at work^{1,2,9,28}. Generally social support is defined as helpful social interactions often divided into instrumental support, e.g., the individual is given the resources or the information needed to do the requested tasks, and emotional support, e.g., backup, personal feedback and appreciation^{4,8,29}. Karasek and Theorell (p. 69)⁴, referring to Johnsons work²⁷, recognized the importance of incorporating some aspect of interpersonal relationships in their well-known demand-control model, creating the iso-strain model, in which social support is considered a buffer that dampens the negative effects of high demands and low control.

“While workplace control issues are certainly reflected in all these studies, the social interaction itself is obviously a major component of health and behavioural reactions. We must therefore expand our original demand/control model to include social support as a third dimension...”

That is, social support is considered to be a positive aspect of interpersonal relationships counterbalancing other negative psychosocial factors at work. Conversely, the lack of social support is not restricted to a mere lack of positive buffering but can itself create stress or tension. One way social support can lead to stress is in relation to the level of support expected from colleagues, employees or supervisors. Usually the norms and established traditions for interpersonal interaction will set the standard to what we consider minimum level of support. Lower levels of support can lead to stress due to a feeling of loss of security.

Social support scales exist in many different variations and measure various aspects of support at work. The social support scale in the Swedish version of the job control questionnaire (DCSQ)²⁸ measures the emotional quality of interpersonal relationships at work. Instead of capturing the instrumental dimension of support, i.e., being given the help or information needed to do one’s work, it focuses on relational aspects, e.g., whether there is a pleasant atmosphere, if there is good collegiality and how the subjects get along with co-workers and supervisors, etc.

2.1.2 Interpersonal relationship problems

In general, the most used term to describe interpersonal relationship problems at work is probably “conflict”²⁹. In order to incorporate other negative personal relationships that cannot be classified as open conflict/argument the generic term “interpersonal relationship problems” is used instead.

There are cultural and societal differences regarding what is considered interpersonal relationships problems at work. What is considered a serious conflict in some countries is not in others. In any case, given these differences one can distinguish two major perspectives on reasons for such problems. One perspective considers interpersonal relationship problems to be a consequence of personality traits and another is a more environment-individual-interaction perspective. Personality traits, for example aggressiveness or negative affectivity^{3,15}, will affect individuals’ ways of mutually interacting. Being aggressive increases the risk of starting arguments which may lead to

conflict and negative affectivity may lead to withdrawal behavior and trigger others to behave negatively to the subject. Personality traits are difficult to change which consequently limits the possibilities to diminish risk of interpersonal relationship problems at work. One way to handle the problem is with selective recruitment, to not allow individuals at clear risk of interacting negatively to enter the workplace. Once the individual has entered the work-place, however, the task is to try to minimize the interaction between the troublesome individuals and other employees, e.g., assigning work tasks that minimizes contacts with others.

The individual intrapersonal explanation can be complemented by the environment-individual-interaction perspective. Such an environmental perspective is that organizational factors, such as insufficient leadership, affects the individuals negatively^{3, 18}, leading to stress³⁰⁻³⁴. Theoretically, organizationally related stress can induce psychological changes and subsequent behavioral changes that affect individuals' interaction with others^{16, 17}. In accordance, studies in the field of family-work conflict have shown that negative work stress can have a spillover effect and negatively affect relations at home and social behavior in general^{35, 36}.

The psychobiological theory of fight or flight responses³⁷, also proposes a possible environmental explanation to why individuals relate in a negative way. Any environmental stress will be experienced as a threat both biologically and psychologically (not necessarily consciously) and evoke two basic responses, predispositions to fight or to flight. Work-related stress may lead to a fight response i.e. aggression or a flight response such as avoidance, which subsequently could lead to interpersonal relationship problems at work^{38, 39}.

The most plausible explanation is a combination of both an individual and environmental perspective; stating that reasons for problematic relationships at work may be found in the interaction between the organizational level and the personal or individual level.

2.1.2.1 Conflicts

Conflicts should be defined as open arguments between one or more persons. Conflicts are not always defined this way, which make for confusion²⁹. Certainly conflicts can lead to or be parallel to several other interpersonal relationship problems, e.g., lack of support or bullying, but it is imprecise to call these conflicts. An individual can be subjected to others detrimental behaviors without being an active counterpart.

Studies on conflicts at work and health are limited but most researchers agree on that conflicts are potential stressors plausibly related to several negative outcomes^{28, 43}. Sometimes the notions of conflicts at work are included in general indices used to measure detrimental working conditions^{36, 43}. However, most studies on conflicts are generally related to productivity and conducted in research fields such as organizational psychology and management.

Due to the small number of studies that investigate conflicts at work in relation to health outcomes, comparisons have to be made with non work-related studies. Brown

and Harris have shown that serious life events and difficulties such as conflicts involving humiliation and entrapment can cause depression. Examples include, during a conflict, a close friend discloses to others information you believe to be confidential. Whether or not a conflict at work is humiliating depends on whether there are elements of demeaning remarks and real or perceived loss of face⁴⁰.

Not all conflicts are negative. They may instead represent dynamic ways to solve problems and develop relations within a workgroup⁵. There may also be uncertainty about whether one is in conflict or simply offering differing opinions or having a discussion. For research reasons the concept of conflict needs to be well defined in order to retain utility. Accordingly, this thesis adheres to a strict definition of conflicts as a detrimental stressor that involves two or more individuals engaged in open argument.

Regarding the stressful nature of conflicts and their probable relation to several outcomes, indentifying the predictors of conflicts at work may be useful in minimizing the risk of conflicts^{5, 38, 41-43}.

2.1.2.2 *Exclusion*

Exclusion or social isolation at work includes being excluded from meetings or necessary information or being excluded from social gatherings. This is sometimes considered as a dimension of bullying or mobbing and has only recently become a research topic, although already recognized as an essential predictor of negative performance and health outcomes^{3, 48}. Exclusion is not a conflict *per se* meaning two persons engaged in an open argument or hostility. Instead, it is an one-way oppression of a person. In some cases it can follow a conflict. This makes exclusion an important factor in itself capturing a unique aspect of relationship problems at work⁴⁴.

Exclusion or social isolation may be considered a part of the social support dimension of the iso-strain model⁴ reflecting the interpersonal climate or normative relationships at a company. Although, exclusion may be an aspect not covered by the usual social support scale. For example, a subject may regard the work place to be peaceful and collegial in general but still feel excluded from meetings and information, and in thus capturing a separate aspect of interpersonal relationships at work.

Research on causes of exclusion or harassment at work is limited but various propositions on the subject have been presented. Negative working conditions have been suggested as being able to affect individuals in such way that it may lead to exclusion, mobbing or bullying^{34, 45-47}. A more organizational perspective views exclusion as rooted in deficient organizations and leadership^{3, 18}. Another view based on case-studies, often regards exclusion as a consequence of personality traits of the victim, traits that provoke others to act hostilely. The victim may also have an avoidant personality that provokes others to act hostile against them. The perpetrator's personality is also regarded a plausible cause^{3, 15}. A perpetrator may have an aggressive or low-empathy personality feature. Zapf¹⁵ concluded that the causes of exclusion are potentially multiple and complex, involving both individual and organizational factors. Whatever the reasons are, the consequences for the individual can be devastating.

2.1.3 Organizational Justice

The concept of organizational justice, namely being treated fairly by the organization, i.e., one's superiors, can be considered as an organizational aspect of interpersonal relationships. Originally the concept was divided into a distributive, a procedural and an interactional dimension. The distributive dimension concerns a just allocation of resources or rewards. The procedural dimension concerns how decisions are made, reasonably or not. Finally the interactional dimension concerns the relationship between superiors and employees, how employees are treated⁴⁸. Currently the concept has evolved into a procedural and a relational dimension where the relational dimension is a development of the interactional dimension²⁰.

Fair treatment and justice have previously been shown to be important for organizational commitment, motivation and employee health⁴⁹⁻⁵¹. Nyberg and colleagues³⁰ showed that being praised by one's boss is inversely dose-response related to ischemic heart disease. Organizational justice may be an important factor in understanding how work can contribute to different performance and health outcomes; directly related to stress and as a mediator, for example explaining the effects of the concept control^{20, 21, 55, 56}.

2.1.4 Relational Justice

The concept of relational justice describes the relation between the employees and their managers, the managers supposedly representing the organization. Relational justice deals with whether personal viewpoints and employee rights are considered and whether the employees are handled unbiased, promptly and with kindness. There is not a standard scale for measuring aspects of relational justice^{20-22, 48, 52}.

Moliner and colleagues⁵³ developed the concept of relational justice and associated it to the group- or work-unit level and to employee burnout, suggesting that perceived justice among employees can explain well-being beyond the individual level. Individuals levels of burnout were related not only to each individual's experience of justice but also the work team's average evaluation of justice.

The association between interpersonal relationships on an individual level and relational justice on an organizational level has been described by Head and colleagues. They suggest that being treated with kindness and consideration reflects the quality of interpersonal relationships in the hierarchies and subsequently the interpersonal and organizational environment²¹. The leaders will not let the matter of hierarchic position influence their relations to the employees or there are organizational systems that will regulate the leaders' behaviour accordingly. This reasoning suggests that relational justice can be used as a measure of the quality of interpersonal relationships at a work place.

2.2 PSYCHOSOCIAL WORKING CONDITIONS

Heavy lifting or exposure chemical hazards are probably not that important when studying interpersonal relationships at work. Instead the interest is on the psychosocial aspects of the working conditions, i.e., mental load or psychological stress.

Psychosocial working conditions constitute not only mental demands in quantitative ways, i.e., production rates and/or time pressure, but also relationships to costumers or demanding patients. Managers and supervisors can impose demands through norms, dependency, loyalty, contradictious requirements and/or decisions. Co-workers can also inflict mental demands through norms and peer pressure.

In order to study the relationships between psychosocial working conditions and interpersonal relationships at work, a choice has to be made between a large number of different concepts and measures designed to try to capture the complex reality of psychosocial working conditions. Most concepts include some form of demands or mental work load ⁵⁴.

2.2.1 Demand and control model

Probably the best known of all psychosocial working conditions are those described by the Demand-Control Model (DCM), which hypothesizes high demands and low control interacting to create highly stressful psychosocial working conditions detrimental for the individual ⁴. Although a full discussion of the interaction effect within this model is beyond the scope of our research strong evidence remains for an association between demands and control and a number of outcomes, such as job satisfaction, job turnover and numerous diagnoses such as myocardial infarction and depression ^{4, 61-63}.

Demands as included in the DCM are used to characterize a psychosocial workload in terms of qualitative aspects, e.g., contradicting requirements and in terms of quantitative aspects, e.g., time pressures ⁵⁴.

Control over one's work situation may be seen as the individual's ability or possibility to handle psychosocial demands. The control dimension in the DCM is a combination of the dimensions; *skill discretion* and *decision authority*. Skill discretion is the individual's possibility to utilize and develop his or her skills in facing new problems. Decision authority is the individual's possibility to make decisions regarding his or her work situation to meet demands.

2.3 DEPRESSION

Given the stressful nature of interpersonal relationship problems at work it is reasonable to regard psychological distress or depression as a possible outcome. According to WHO, depressive disorders are among the top ten causes of life years lost due to premature mortality and disability (Disability-Adjusted Life-Years, DALYs) ¹⁴. Since most people suffering from depression never seek medical care and obtain a diagnosis, population-based studies are important to determine the causes and consequences of depression ⁵⁵. A large group of the Swedish population suffers from impairing mental health problems. The Swedish National Board of Health and Welfare ⁵⁶ has estimated the prevalence of depressive and anxiety symptoms in need of treatment to be between 12% and 18%.

Absenteeism from work due to mental problems grew dramatically in Sweden from 1997. Days of sick leave paid by public health insurance or rehabilitation more than doubled from 1997 to 2001, mainly due to increased long time sick leaves, e.g., more

than 60 days. Since then the levels have declined but the problem is still large. Neck-, shoulder- and back problems are the most common diagnoses for lengthy sickness absence, but mental illness has become the second most common diagnoses. The main reasons for certified sickness absence due to mental illness in 2005 were depression, various worry- and anxiety disorders and reactions to stress, including sleep disorders⁵⁶.

According to DSM-IV major depression is defined as low mood and/or anhedonia and at least four or more of certain stated criterion such as weight loss, sleep disorder and reduced cognitive capabilities. Clearly, this not only affects an individual's well being but also that person's work performance.

2.3.1 Reasons for depression

Reasons for depression are multifactorial, both intrapersonal and environmental factors are active. Brown and Harris⁴⁰ have shown that the likelihood of developing depression increases when exposed to severely stressful life events and ongoing difficulties. In particular, events and difficulties that encompass humiliation and entrapment are related to the onset of depressive disorders. Entrapment is defined as impaired possibilities of offsetting adverse conditions, and humiliation as the risk of losing personal worth in the eyes of others.

One proposed cause of depression is detrimental psychosocial working conditions. Among the most studied conditions have been high demands and low control or the combination of both^{6, 61, 63, 66, 67}. Two recent reviews have concluded that there is clear evidence for associations between high demands and depression. Also, there is evidence for the association between low social support and depression^{7, 13}.

2.3.2 Depression in epidemiological studies

Most studies in the field of work and mental health are cross-sectional. Longitudinal studies were made by Stansfeld et al^{57, 58}. These studies established links between the iso-strain model, effort-reward imbalance- (ERI) and psychological distress. Only a few studies have investigated the effect of negative psychosocial factors at work on well known scales intended to assess depression but these have shown a relation^{6, 11}.

When measuring depression in questionnaires the major depression inventory (MDI) is useful. The MDI can be used as a diagnostic criterion using an algorithm complying with the DSM-IV or ICD-10 or it can be used as a summed score⁵⁹, ranging between 0 and 50. One recommended usage of the summed score scale is to create a dichotomous variable indicating depression or not, with a cut-off at twenty points. This recommendation is based on validation studies, including one from the first phase of the PART-study where the MDI was validated using schedules for clinical assessment in neuropsychiatry (SCAN) that are considered as the golden standard^{70, 71} for such assessments.

2.4 SICKNESS ABSENCE

Sickness absence makes for an interesting outcome in relation to interpersonal relationships at work both regarding the prospect of reducing sickness absence and the prospect of improving rehabilitation back to work. Sickness absence is an important occupational problem associated with high costs for society, companies and, maybe most important, individual costs both economically and in the form of suffering related to illness and contingent effects such as the risk of exclusion from the labour market. In 2008, public health insurance costs in Sweden for people on sickness absence amounted to about 13 billion Euros⁶⁰. The problem is probably similar for most western societies today⁶¹, although there are regional and cultural differences⁶².

If companies are made comparable with regard to their line of business, size and structures, there are still differences in sickness absence levels. A limited number of studies have examined these differences^{29, 75-78}. Although inconclusive, these studies suggest various possible reasons for the discrepancies such as regional differences, local practices and cultures, workplace factors or organizational factors. These somewhat wide-ranging results show the need for further conceptualization and investigation to understand differences in sickness absence.

When studying sickness absence it is necessary to define its type or duration for the purpose of the study. Short-term sickness absence can be from a few days to several weeks. Long-term sickness absence can be from about 30 days and upwards. This thesis uses a definition of sickness absence as long-term sickness absence more than 90 days. There is most likely a correlation between short term and long term sickness absence⁶³.

2.4.1 Reasons for sickness absence

The reasons for sickness absence are multifactorial. A number of factors associated with individual, societal and specific workplace and work environment conditions have been considered⁶⁸⁻⁷⁰. Important workplace factors include working conditions such as the psychological work load, decision authority and support⁶⁴⁻⁶⁹. However, more research is needed on the reasons for and the nature of sickness absence^{70, 71}.

2.4.2 Organizational reasons for sickness absence

The need to study how organizational conditions affect different health outcomes has been stressed^{28, 30, 86}. There are a limited number of studies that have focused on organizational causes of sickness absence, including Vahtera and colleagues^{72, 73} who have studied the effects of organizational down-sizing on sickness absence.

There are two major types of organizational factors to consider when studying sickness absence. Some refer to intraorganizational factors for example management and work organization, others refer to interorganizational factors and relationships to the environment, such as politics and economical circumstances^{25, 74}.

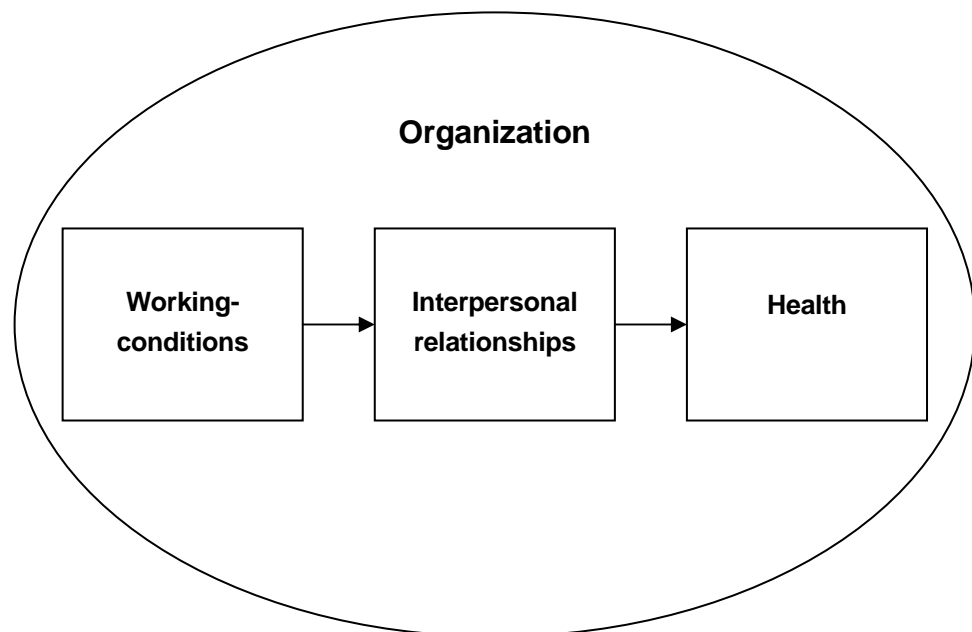
2.4.3 Illness flexibility model

Health or illness will affect work ability and subsequent sickness absenteeism⁶⁶. There are also other factors that will affect the individual's decision to call in sick or not⁷⁵. Johansson⁶⁵ suggests in the illness flexibility model that work ability is determined by health, skills and adjustment latitude at work. An individual can attend when sick depending on the nature of sickness and the possibility of adjusting work tasks. According to the model the decision to attend work or be absent when ill is not only a result of being able to do one's work. Motivational conditions, i.e., requirements and inducements to attend or to be absent will also affect the decision to call in sick.

2.5 ORGANIZATION, WORK, INTERPERSONAL RELATIONSHIPS AND HEALTH

An integrated view of interpersonal relationships at work and its associations to organizational factors, working conditions and health can be seen in a figure 1. The figure illustrates the four studies forming the thesis work: first, the relation between working conditions and interpersonal relationships; second the relation between interpersonal relationships and depression; third the organizational effect on low sickness absence levels and fourth and lastly, organizational aspects of interpersonal relationships at work. The organization is depicted as a circle to show that it is a system influencing all the aspects inside.

Figure1. The relation between working conditions, interpersonal relationships and health, in an organizational setting



2.6 SUMMARY

Interpersonal relationships at work are an aspect of the psychosocial working environment that has not so far been studied to any great extent. Interpersonal relationships can be defined in several ways where the concept of social support is probably the most known. Other definitions include conflicts at work and exclusion. Usually, in accordance with epidemiological traditions, the definitions imply some kind of problem, e.g., conflicts at work and how it relates to poor health, but a change of perspectives to how to endorse positive relationships can be a way to promote health.

While interpersonal relationships have been related to different outcomes, for example productivity and psychological distress, prospective studies related to mental health such as depression are rare. Another interesting outcome would be sickness absence with reference to societal and individual costs.

Factors that affect or changes interpersonal relationships at work is an interesting and little-studied question. Nonetheless, some suggestions have been made including individual factors and environmental factors, i.e., environmental stress heighten the risk for interpersonal relationships problems. Such stress can be the result of poor psychosocial working conditions, e.g., high demands and low control. Also organizationally induced stress may be considered. A health-promoting perspective, i.e., what may improve the interpersonal relationships at work and subsequent health has to the best of my knowledge not yet been studied.

Strategies and procedures on an organizational level may be related to interpersonal relationships and health outcomes. To answer this question one has to know which organizational factors that are related to health and whether they can be related to interpersonal relationships. Designing a traditional epidemiological study using questionnaires distributed to a sample of the population and pre-supposing which factors to ask for can be timely, costly and in the worst case, unrewarding. Interviews with strategic persons on an organizational level can be one way to methodologically approach the organizational perspective and identify factors that seems to be important for employees' health.

One attempt to capture interpersonal relationships at work on an organizational level is through the concept of relational justice which is designed to describe the relationships between employees and their managers and have been related to e.g., sickness absence. Yet here too, relational justice traditionally represents an aggregated view of the individuals studied. If relational justice can be related to an organizational level, overall strategies and procedures, then changes at that level may affect many individuals simultaneously and, hopefully, promote health.

The combination of an epidemiological longitudinal and individually oriented study design and an organizational oriented qualitative design focused on health promoting aspects at work, may contribute to the knowledge of interpersonal relationships at work. This knowledge might be used in developing the work environment towards healthier work places.

3 AIMS

The aim of the thesis work is to investigate the association between interpersonal relationships at work and organizational factors, working conditions and health.

3.1 SPECIFIC RESEARCH QUESTIONS

Can psychosocial working conditions, namely high demands, low skill discretion and low decision authority predict interpersonal relationships problems at work such as conflicts and exclusion? (Paper I)

Can interpersonal relationship problems at work such as conflicts, exclusion and low social support be associated to depression? (Paper II)

Which organizational factors seem to be related to health, i.e. low sickness absence, and can these theoretically be related to interpersonal relationships at work? (Paper III)

Can the concept of relational justice, a measure of the quality of the relationships between leaders and employees, be used to understand organizational differences that seem to differentiate companies regarding sickness absence? (Paper IV)

4 SAMPLES AND METHODS

4.1 SAMPLES AND DATA COLLECTION

4.1.1 The PART Study

Studies I and II were conducted using data from the PART study, (an acronym in Swedish for psychiatric disorders, work and relations). The PART study is a population-based longitudinal study of mental health in Stockholm County. The main goal was to investigate probable risk factors for and social consequences of non-psychotic mental illness and psychological distress. The PART study was conducted using original cross-sectional data collection with a follow-up, i.e., a panel study using repeated questionnaires. From 1998 to 2000 19742 randomly selected persons ages 20 to 64 years from Stockholm County were asked to respond to a questionnaire. 10,441 persons answered the survey (53%). The survey contained questions regarding: childhood conditions, present family conditions, education, personal finances, social networks, coping strategies, life events, occupation, employment and working conditions. Questions on health included self-reported health, sickness absence during the last month, psychological well being, depression, psychological functioning and alcohol and drug use.

A second phase of the study started in 2001. The persons who answered the first survey were sent a second survey, largely identical to the first but with some additions and exclusions. The response rate was 84%. Both postal surveys were answered by 8,613 individuals. For each individual there were approximately three years between the surveys. A database was created containing a number of variables per individual including demographic information obtained from national registers.

Nonresponse analyses based on population registers from the first and the second phase have been published. Both concluded that the prevalence of mental health problems in the respondent group was likely to be lower than among non-responders. However, associations between risk indicators and mental health problems were likely to be correctly depicted since associations between a number of exposure variables (income, civil status, education etc) obtained from population registers and outcome variables (in-patient care or disability pension) were very similar between participants and non-participants. Moreover there was no difference between those who answered in the second phase and those who did not regarding their answers on potential determinants for mental health problems at the first phase^{76, 77}.

The survey questions that covered working conditions and interpersonal relationships at work were:

- Demands
- Skill discretion
- Decision authority
- Social support
- Serious conflict

- Exclusion by superiors
- Exclusion by co-workers

4.1.2 The Health & Future Study

The HOF study (Swedish acronym for Health & Future) was an unique project to study health-promoting factors on an organizational level in private companies. The project was a collaboration between researchers, two major Swedish insurance companies insuring blue- and white collar workers and the major Swedish employer and employee organizations.

Although sickness absence has been regarded a problem in Sweden there are workplaces where sickness absence numbers are very low. The aim of the project was to study whether there are conditions on an organizational level that can explain differences in sickness absence.

The project consists of four substudies that have been completed and the results have been published in four reports⁷⁸. The registers of sickness absence held by the insurance companies for blue-collar (AFA insurance) and white-collar workers (Alecta) were merged into a database containing statistics of sickness absence among both blue- and white-collar workers at the same companies. Blue-collar workers generally had higher levels of sickness absence, although the levels of sickness absence among blue- and white collar worker did correlate within the company. 2,036 companies with more than 74 employees each were assigned to one of four quartiles according to the overall incidence of long-term sickness absence (more than 90 days) in 2004. The 25 percent with the lowest incidence of long-term sickness absence were assigned to Quartile 1 and the 25 percent with the highest incidence were assigned to Quartile 4. Quartiles 2 and 3, the remaining 50%, were combined into one group of companies with average long-term sickness absence, which accounted for the average of 3.6 times higher sickness absence compared to the companies in Quartile 1⁶³.

4.1.2.1 The interview study

Papers III and IV of this thesis were based on the data from the interview study, a qualitative study with 204 deep interviews (76 women and 128 men) in 38 companies with more than 74 employees each. Forty companies representative of the different trades in Sweden were selected from the first three quartiles, 20 with low and 20 with average levels of sickness absence. The companies with low levels of sickness absence were matched with companies with average levels of sickness absence according to the line of business, number of employees, gender and geographical location. Due to late cancellations, two companies were not matched, which led to a total of 38 companies, 20 with low levels of sickness absence and 18 with average levels of sickness absence.

The interviews lasted about an hour and were semistructured asking about well known areas from work-life research as an interview guide. Primarily managers were interviewed, from senior to first-line managers at companies with low and average numbers of sickness absence. Employees representing their co-workers, like union representatives where also interviewed. The interviews where conducted at the companies by two interviewers, one researcher from Karolinska Institutet and one

consultant from one of the insurance companies, AFA or Alecta. All interviews were recorded and transcribed into a large database.

The interviewers met before and during data collection to discuss theories, methodology and data issues. The interview technique stressed descriptions and examples of actions in contrast to examples of policies, personal opinions or company values. The interview template was based on knowledge of individual factors detrimental to health and organizational, economic and human relational research. The template was evaluated and developed using test interviews.

The following areas were covered in the interviews:

- Recruitment and development of employees
- Work organization and management strategies
- The psychosocial and physical work environment
- Employee health and corporate health care
- Strategies for change
- An open question about causes and prevention of sickness absence

All interviewees were guaranteed anonymity and no individuals or companies can be identified. One interviewer conducted the interview and the other took notes, observing and asking clarifying questions when needed. Impressions and differing views between the interviewers was discussed. After every set of interviews the two interviewers met the research group for discussions. Prior the interviews information about the company through the registers, official company information and annual reports, was gathered. Hence, the interviewers were aware of the rates of sickness absence for the company. The semistructured format of the interviews identical for all companies, asking about action, consensus meetings, a scientific advisory board and no prior knowledge as to what would actually differ between the companies, vouched for impartiality.

4.1.2.2 The survey and rehabilitation-back-to-work study

The third study was a survey study, based on the results from the interview study, sent to about 600 companies. The results confirmed most of the findings in the interview study.

The fourth study was an interview- and survey-study on rehabilitation-back-to-work, examining whether there were differences between healthy and average companies in their strategies, routines or well-known procedures handling rehabilitation.

4.1.3 Subjects

4.1.3.1 Paper I

For the first paper 4,710 persons were selected who responded to both postal surveys in the PART study and held the same job with the same work tasks over the three-year period between the surveys. These persons had no changes of work tasks or workplace of greater than six months during the interim. This was done in order to reduce variation in the exposure variables due to change in task or work turnover and thus narrowing the scope of interpretation of the results. The final analysis included 4,049

persons (2,273 women and 1,776 men) after excluding cases with missing values for any of the included variables. The high number of cases with missing values (14%) was partly due to the nature of some questions, e.g., self-employed persons could not answer questions about their relations to superiors.

4.1.3.2 Paper II

For paper II, 4,040 individuals (2,265 women and 1,775 men) were chosen who had held the same job over three years and had no missing values in the variables studied. This information was obtained the same way as in paper I (above). This was done in order to reduce variation in the exposure variables due to work turnover.

4.1.3.3 Paper III

Paper III was based on the selection of companies in the database containing sickness absence information. Among the 2,036 companies assigned to one of four quartiles based on the overall incidence of long-term sickness absence, 40 companies representative of the different trades in Sweden were selected. 20 with low and 20 with average levels of sickness absence. The companies with low levels of sickness absence were matched with companies with average levels of sickness absence according to the line of business, number of employees and geographical location. Due to late cancellations, two companies were not matched, which led to a total of 38 companies, 20 with low levels of sickness absence and 18 with average levels of sickness absence. The average number of employees in the studied companies was 550, 45% women and 55% men (figures from 2004).

From the two cases (low and average levels of sickness absence), a total of 204 middle and high managers and employee representatives were interviewed. Of those interviewed, 76 were women (37%) and 128 were men (63%).

Table 1

Table of interviewed, position and number:

CEO	23
Head of production	33
HRM	27
Financial manager	6
Supervisors	37
Union representatives	36
Employees	42

4.1.3.4 Paper IV

For paper IV, 11 companies with low and 11 with average sickness absence from the initial selection of the HOF study (Paper III) were used according to a multiple-case study design⁷⁹. For the analysis interviews with upper management and human resources managers were chosen, 22 CEOs' or equivalent and 22 Human Resources managers or equivalent, i.e., a person with approximately the same responsibilities and/or authority.

4.2 VARIABLES OF INTERPERSONAL RELATIONSHIPS AT WORK

4.2.1 Paper I and II

The measures of interpersonal relationship problems in paper I and II was taken from the PART study and survey I and II. Information about Social support was obtained from the Swedish version of the job-content questionnaire, (JCQ)^{4,80}. The index for social support contains six items regarding the interpersonal atmosphere in the workplace, the items are: “There is a calm and pleasant atmosphere at my workplace”, “There is a good sense of fellowship”, “My workmates support me”, “If I have a bad day I’m met with acceptance”, “I get on well with my superiors”, “I get on well with my workmates”. The four response alternatives are: “Perfectly true”, “True”, “Not true” and “Not at all true”. The question about serious conflict at work was included among questions about serious life events that had occurred during the past 12 months. The inserted question read “Have any of following events happened to you during the last twelve months, “yes” or “no”?”⁸¹. The question about exclusion by superiors at taken from the Stockholm County public health questionnaire, 1998⁸² and reads “Do you feel excluded by your superiors, (not being supplied with necessary information or being ignored)?” The response alternatives were: “Yes, to a large extent, To a certain extent, To a small extent or Not at all” The answers were dichotomized to create two groups containing those who answered: “Not at all” and those that had chosen any of the other alternatives. Only those who answered: “Not at all” were considered as not having been subjected to exclusion. The question about exclusion by co-workers was handled in the same way as the question about exclusion by superiors. It was phrased identically with the exception that “Superiors” was replaced by “Co-workers”.

4.2.2 Paper III

No prior definition of interpersonal relationships at work was made.

4.2.3 Paper IV

Interpersonal relationships in paper IV were defined as relational justice which uses six items ranging from 1-5, from “strongly agree” to “strongly disagree”, although there is no standard scale used to measure aspects of relational justice^{20, 21, 48, 52, 83}. The items in the Relational justice scale were reformulated from an individual perspective, e.g., “Your supervisor considered your viewpoint” to focus on the supervisors in general and how they deal with employees in general, for example “The supervisors consider their employees’ viewpoints.” These formulations were basically designed to capture the face-value meaning of the phrase and change them to dealing with an organizational aspect:

- The supervisors consider the employees’ viewpoints.
- The supervisors are able to suppress personal biases.
- The supervisors provide the employees with timely feedback about decisions and their implications.
- The supervisors treat employees with kindness and consideration.
- The supervisors’ shows concern for the employees rights as employees.

- The supervisors deal with the employees in a truthful manner.

4.3 VARIABLES OF PSYCHOSOCIAL WORKING CONDITIONS

4.3.1 Paper I

The dimensions of demands and control from the DCM were chosen because they are well-known measures of working conditions and probably the most tested. The questions concerning demands (5 questions), skill discretion (4 questions) and decision authority (2 questions) were from the Swedish version of the JCQ^{4, 80} as presented in the PART study. A summed index was created for each of the dimensions of the DCM, and then dichotomized at the median resulting in high and low demands, high and low skill discretion and high and low decision authority.

4.4 VARIABLES OF ORGANIZATION

4.4.1 Paper III and IV

Paper III and IV studied intra-organizational factors such as management, internal organizational structures, communication, control, monitoring and corporate values. Given these organizational aspects, policies, strategies, leadership and procedures are important, as is Human Resources Management (HRM). HRM in companies can embrace purely administratively supportive structures as well as important strategic functions concerning all human aspects of the organization such as recruitment, training, and team performance^{26, 74}.

The headings covering topics to be included in the interviews were taken from a wide range of working-life research on how working conditions relate to employee health. The headings were intended to capture organizational aspects, i.e., strategies, procedures and company values while covering main areas of working conditions^{1, 4, 29, 87}.

- Recruitment and development of employees
- Work organization and management strategies
- The psychosocial and physical work environment
- Employee health and corporate health care
- Strategies for change and development

4.5 VARIABLES OF DEPRESSION

4.5.1 Paper II

The major depression inventory (MDI) from the second survey in the PART study was used as an outcome measure in paper II. The summed score and a cut-off of twenty points were used to create a dichotomous variable indicating depression or not. Also, an algorithm following the DSM-IV was used to diagnose major depression.

4.6 VARIABLES OF SICKNESS ABSENCE

4.6.1 Paper III and IV

Sickness absence was defined as being on sick leave for more than 90 consecutive days. Four quartiles of companies were created according to the overall incidence of long-term sickness absence (more than 90 days) in 2004. The 25 percent with the lowest incidence of long-term sickness absence were assigned to Quartile 1 and the 25 percent with the highest incidence were assigned to Quartile 4. Quartiles 2 and 3, i.e., the average 50%, were combined into one group of companies which accounted for 3.6 times higher sickness absence compared to the companies in Quartile 1.

4.7 ANALYSIS

4.7.1 Paper I

An analysis was carried out, testing the exposure variables, demands, skill discretion and decision authority from time 1 (T_1) against all three outcomes at time 2 (T_2): serious conflict at work, exclusion by superiors or exclusion by co-workers. Logistic regressions were used to calculate odds ratios (OR) with 95 % confidence intervals (CI 95 %), using SPSS. Odds ratio is a risk measure calculating any differences in probability or odds for an exposed group compared to a non-exposed group to encompass a certain outcome. Possible interaction effects of demands and control on the outcome were tested for by entering interaction terms in the logistic regression model for all three outcomes. No significant interaction was found and it was therefore not considered in the final analysis. For each outcome, all variables were tested separately, univariate, then each main effect was tested separately in a multivariate model containing all confounders and previous interpersonal relationship problems, the corresponding outcome measure at T_1 . Finally, a fully adjusted multivariate model was tested, including all main effects, confounders and corresponding previous interpersonal relationship problems at T_1 .

The potential confounders were chosen according to the known relations between demographics, education, social background, social situation and a number of outcomes including working conditions⁸⁴. They were also chosen according to their potential relation to conflict and exclusion at work, potential in the sense that there is a reasonable possibility for confounding which has not been studied before. The variables were sex, age, education, severe conflict in the childhood family, financial situation, and occupational class. Age was divided into three groups: 20-34 years, 35-49 years, 50-64 years. Education was divided into three different levels depending on completed studies: compulsory school (≤ 9 years), upper secondary school or at most two years of university studies ($10 \leq 14$ years) and at least three years of university studies ($15 +$ years). Severe conflict in the childhood family was divided into two categories: severe conflict and no or moderate conflict. Financial situation was measured by asking whether the subjects could raise 14,000 SEK (about 1500 Euros) in a week if necessary. The response alternatives were yes, no and uncertain. The participants were divided into five occupational classes: higher, intermediate and lower non-manual

employees, and skilled and unskilled manual workers. This division was based on the general educational level required for the occupation. Those self-employed (n=180) are excluded from the analysis due to their heterogeneity regarding educational level, income and the likelihood of few or no co-workers. Both education and occupational class, two closely related concepts were included since it is not known whether these differ in relation to severe conflict at work, exclusion by superiors or exclusion by co-workers.

The decision not to use social support as an outcome was based on the high correlation between social support and demands and control, as these are dimensions of the same model.

4.7.2 Paper II

In multivariate logistic regressions, OR and CI 95 % for the determinant variables, low social support, conflicts, and exclusion by superiors or co-workers were computed with all confounding variables controlled for using SPSS. All models tested effects on the MDI (depression) at T₂. First, the crude OR for each determinant variable was computed and then adjusted for age (Model 1). Then the potential confounder severe conflict in family during childhood, financial situation, lacking a close friend or partner and severe life events was added (Model 2). Next the potentially work-related confounders such as job demands, skill discretion and decision authority was added (Model 3). After this education was entered (Model 4). Finally, depression according to MDI at T₁ was added (Model 5). We next ran the same analysis as above stratified by sex. In addition we performed an analysis with major depression based on the algorithm in DSM-IV, as the outcome. This analysis was not stratified by sex due to the low prevalence (1 % men and 4 % women with major depression at T₂).

Nine potential confounders variables were identified from the literature and measured at base line (T₁). They were; age, severe conflict in family during childhood, education, financial situation, lacking a close friend or partner, severe life events, job demands, skill discretion, decision authority and depression. Age, severe conflict in family during childhood, education and financial situation were obtained in the same way as in paper I. Lack of a close friend or partner was derived from a Swedish modification of the interview schedule for social interaction (ISSI)⁸⁵; three questions on accessibility of friend/partner were used to create a dichotomous variable. Information about severe life events that had occurred the last year were attained according to Theorell and colleagues⁸¹. Examples of severe life events outside work are: "separation/divorce", "conflict with spouse/friend", "close relative's death" and "serious illness". A summed score was created counting the number of life events. This summed score was dichotomized into "No severe life events" and "One or more severe life events". Information on demands (5 questions), skill discretion (4 questions) and decision authority (2 questions) was obtained from the Swedish version of the JCQ^{4, 80}. A summed score for demands was dichotomized at the median into high or low demands. Skill discretion and decision authority were dichotomized in the same manner as demands. Depression at T₁ was obtained using the MDI score dichotomized in the same way as at T₂.

4.7.3 Paper III

204 interviews were used as the basis for the analysis, 76 women (37%) and 128 men (63%). The recorded and transcribed interviews were thematically analysed by a systematic process of coding and identifying themes⁸⁶ with the help of the qualitative software NVivo 7.

The transcripts were read through and a basic coding was made of the content according to the interview template. Coding definitions were compared, discussed and redefined in relation to prior research and other information about the company. The definitions of the codes were determined and labelled. Data from each company was recoded according to the new definitions. Because of the strategic power of their positions, interviews with middle and upper managers were further analyzed. The coded extracts were grouped into themes anonymous to company of origin. Relationships between themes and between different levels of the themes were analyzed and discussed according to meaning and distinctness and compared to the original coding. The process and tentative results of analysis were presented to and discussed by the members of the analysis group until consensus was reached. The themes were further refined and organized coherently. A reduction of the number of companies for further analyses was made based on saturation and representativeness, e.g., when the line of trade was covered and if a case did not add new information it was dropped. Eleven companies with low levels of sickness absence and eight with average levels of sickness absence were analyzed in the final sample. The coded extracts were connected to the group of “low sickness absence companies” and “the average sickness absence companies” respectively. Within-case analyses and thereafter a cross-case comparison were made between “low sickness-absence companies” and “average sickness-absence companies”. The preliminary results of the cross-case comparison were presented to and discussed with representatives of the analyzed companies, which led to the final themes. The final themes were regarded as factors distinguishing companies with low and average levels of sickness absence respectively.

4.7.4 Paper IV

A qualitative text content analysis was used for paper IV. The recorded and transcribed interviews were thematically analysed through a systematic process of coding using the items from the relational justice concept²⁰. This was done with help of the qualitative software NVivo 7. The items in the Relational justice scale were reformulated to focus on the supervisors in general and how they deal with employees in general. The new formulations formed the criteria with which the text was analysed, criteria in the sense that quotes were identified that reasonably could be considered to deal with or were describing the face-value meaning of the item. Each item thus comprises specific quotes and may be considered what in qualitative analysis traditionally is called a theme.

The first pair of companies was chosen to find as great a difference as possible regarding organizational factors found in the earlier study¹⁹. For each company a senior manager, a human resource manager (or someone responsible for personnel) was chosen. Each interview was read through to find quotes that could reflect a systematic approach or a clear and established value-system that could be defined as one of the

items from the relational justice concept. Next, pairs of companies were chosen to ensure that different lines of businesses were represented. Further analysis was conducted in the same way as described. The analysis was finished when saturation was reached; i.e., no new unique information seemed to be added. Two colleagues with good methodological knowledge and knowledge about the Health and Future project separately coded four of the interviews to validate the criteria. The validation interviews were chosen to be representative. The concordance was found to be satisfactory. A within-case analysis and thereafter a cross-case comparison was made between the groups ⁷⁹, low levels of sickness absence and average levels of sickness absence.

4.8 ETHICAL APPROVALS

The Ethical Committee at Karolinska Institutet approved the PART Study as being in accordance with ethical standards. (Ref.No. 96-260 and 01-218)

The HOF-study is not considered to be subjected to ethical considerations by the Ethical Committee at Karolinska Institutet. The research is not regarded to encompass any prejudicial information. (Ref.No. Protocol 2009/5:6)

5 RESULTS

5.1 WORKING CONDITIONS AS DETERMINANTS OF SERIOUS CONFLICT AND EXCLUSION BY CO-WORKERS

High demands at T₁, were related to serious conflict at work at T₂ (OR 1.3 CI 95 % 1.1-1.6), and exclusion by co-workers at T₂ (OR 1.3 CI 95 % 1.1-1.6). Low skill discretion at T₁ showed effects on exclusion by co-workers at T₂ (OR 1.4 CI 95 % 1.1-1.7). No effect was found regarding exclusion by superiors. The effects were all adjusted for confounders. Furthermore all the mentioned effects remained when adjusted for the equivalent to the outcome measured at T₁, i.e., the effects developed over time for the exposed groups that did not indicate serious conflict or exclusion by co-workers at the time of the first questionnaire. Interestingly, one confounder variable seemed related to each of the studied outcomes; this was severe conflict in the childhood family. Another interesting confounder was financial difficulties which was related to exclusion by superiors and to some extent to exclusion by co-workers.

When adjusting for sex the effects did not change markedly which seems to indicate no gender differences regarding a relationship between high demands, skill discretion, decision authority and the three outcomes of interpersonal relationship problems.

5.2 INTERPERSONAL RELATIONSHIPS AT WORK ASSOCIATED TO DEPRESSION

Low social support, serious conflict, exclusion by superiors or co-workers were all associated to depression over time. These effects remained when adjusting for the confounders and previous depression at T₁ (low social support OR 1.5, CI 95 % 1.1-2.0, serious conflict OR 1.4, CI 95 % 1.1-1.9, exclusion by superiors OR 1.6, CI 95 % 1.2-2.1 and exclusion by co-workers OR 1.7, CI 95 % 1.2-2.3). Adjusting for previous depression measured at T₁ means that an exposed subject who had no depression at the time for the first questionnaire had a risk to developed depression over time.

The odds ratios (OR) based on the DSM-IV algorithm for accessing major depression were similar to the ones found using the summed score (MDI), with the exception for exclusion by superiors where the effects were not significant ($p > 0.05$) when adjusting for potential confounders.

No gender differences were found.

5.3 ORGANIZATIONAL FACTORS RELATED TO SICKNESS ABSENCE

Organizational factors that seem to distinguish those companies with low sickness absence were: strategies and procedures dealing with leadership, employee development, communication, employee participation and involvement, corporate values and visions, health and absence. The differences found were not discriminating or discrete but were in the nature of levels or degrees. The results will be presented under each factor.

5.3.1 Leadership

Companies with low levels of sickness absence tended to promote in-house recruitment of managers and knowledge of costumes and values, that is, they valued experience from different positions in addition to specific knowledge of the line of business. There were also more explicit leadership policies, and overall leadership characteristics were accentuated. These policies expressed, in addition to professional requirements, a desire to promote social interaction, creating functional teams and an awareness of individuality. Furthermore, interpersonal skills, i.e., the ability to interact with others, to be considerate and to show respect, were more clearly stressed.

Companies with low levels of sickness absence featured more extensive management support such as mandatory leader-development programs. In addition, day-to-day support to managers in various positions was more developed, for example, opportunities to discuss problems, responsibilities and limits. Resources were more often allocated to create better overall conditions for all managers instead of focusing on individual managers.

5.3.2 Employee development

Companies with low levels of sickness absence seemed to have more long-term, structured and elaborate strategies for recruiting. In companies with low levels of sickness absence, greater consideration was given to creating functional teams and to the context in which the recruit would work. Shared values, principles and traditions were considered when hiring in order to adapt the recruit more easily to the work team and to endorse loyalty towards the company in contrast to just fulfilling the immediate need for the position to be filled.

Companies with low levels of sickness absence considered training important for personal growth and development to a greater extent. This was regarded as productive with regard to future possible needs and employee loyalty.

5.3.3 Communication

Companies with low levels of sickness absence endorsed communication in several different elaborate ways even given large physical distances separating sections of the company.

Companies with low levels of sickness absence stressed the opportunity to express differing opinions and to criticise managers' decisions, and there were consequently more procedures to support these dialogues. Person-to-person contacts were preferred.

5.3.4 Employee participation and involvement

Management in companies with low levels of sickness absence expected employees to participate and be involved in various ways and used ambitious models and programs to promote involvement.

Many companies with low levels of sickness absence had routines for ongoing problem-solving. An important factor for participation was to develop routines and

programs that gave room for ideas and improvement but also worked as training in decision-making. This also promoted interpersonal interaction.

5.3.5 Corporate values and visions

Companies with low levels of sickness absence worked more methodically to maintain the prevailing values, often through actively engaging the employees in elaborate programs, spreading the values throughout the company, using the work teams, and/or conducting regular meetings at divisional and regional levels. Support among the employees for these values was regarded as important to strengthen the company's identity and the employees' sense of loyalty.

5.3.6 Health and absence

Companies with low levels of sickness absence were more aware of the extent of both long-term and short-term sickness absence and why the employees were sick. They actively tried to devolve the responsibility of monitoring sickness absence and rehabilitation to all levels of management. In companies with low levels of sickness absence, there was a greater concern about how working conditions and organisational factors were related to sickness absence. An increase in sickness absence was regarded as possibly generated by changes in working conditions and not just incidents of illness. Companies with low levels of sickness absence frequently expressed the importance of possibly adjusting the work situation to meet the needs of employees with impaired ability to work.

5.4 RELATIONAL JUSTICE ON AN ORGANIZATIONAL LEVEL AND SICKNESS ABSENCE

There were clearly differences in the numbers of statements received related to the presence of relational justice between the companies with low- and normal sickness absence numbers. For example, the number of statements that somehow expressed "the supervisors consider the employees' viewpoints" for companies with low sickness absence exceeded companies with normal sickness absence by 39 to 12 or for "the supervisors are able to suppress personal biases" by 20 to 2. Although the differences were not always this marked the presented differences were clear both in relation to number and explicitness. Strategies, procedures or values regarding relational justice was much more often expressed for the group of companies with low numbers of sickness absence. There were also differences regarding which separate items from the Relational Justice scale predominated for each group. Kindness and Consideration and Personal Viewpoint Considered were most emphasized in both groups although the internal relationships differed. Personal viewpoint was more emphasized than kindness and consideration for the group low sickness absence and vice-versa. For companies with Low Sickness Absence, No Bias and Truthfulness was more emphasized compared to Rights and Timely Feedback albeit Rights was also quite large. For companies with average Sickness Absence emphasis was on Rights and Timely Feedback compared to No Bias and Truthfulness.

5.4.1 Illustrative examples

Below are examples of statements from the interviews, illustrating each item of the relational justice scale. The statements have been translated and revised to insure anonymity and enhance readability.

5.4.1.1 *The supervisors consider the employees' viewpoints*

Either the CEO summons all or he has individual meetings with the managers... and then it's the next manager level and then the employees where each manager has the responsibility to update and discuss... I have seen examples of a suggestion to changes that has been withdrawn... and that is originated at the employee level

I: This has become a strategy?

S: Yes, we use it every time we can.

5.4.1.2 *The supervisors are able to suppress personal biases*

(About leadership programs)... this first part is self-knowledge, who you are... I was very negative first... but I became positively surprised with this one... you gain insight how the world functions, how people function, how you function, how to deal with that, I believe you get affected and hopefully become a little bit better.

5.4.1.3 *The supervisors provide the employees with timely feedback about decisions and their implications*

I posted three mailboxes... where people could place their questions and in twenty four hours they had their answers, on everything. So, the CEO and I answered all questions no matter what... You could see the question, then the answer, question, answer, question, answer and so on.

5.4.1.4 *The supervisors treat the employees with kindness and consideration*

We put enormous effort in to the few rehabilitation-back-to-work cases we have. We have a girl now that we have worked with for four years to get her back... It's not only about welfare or humanity; it is also a way to signal back in to the company, that we care.

5.4.1.5 *The supervisors' shows concern for the employees rights as employees*

That's why I think we have a great responsibility, they are young and that's why I want to make the right thing especially concerning the work environment and structures around the rules, its somewhat fostering, as they are suppose to go out in the world.

5.4.1.6 *The supervisors deal with the employees in a truthful manner*

I think they know we get to the bottom of it immediately at the department

level, and they have a good relation to their supervisors so they can deal with it in a direct way, and they are very frank and precise and open regarding these issues.

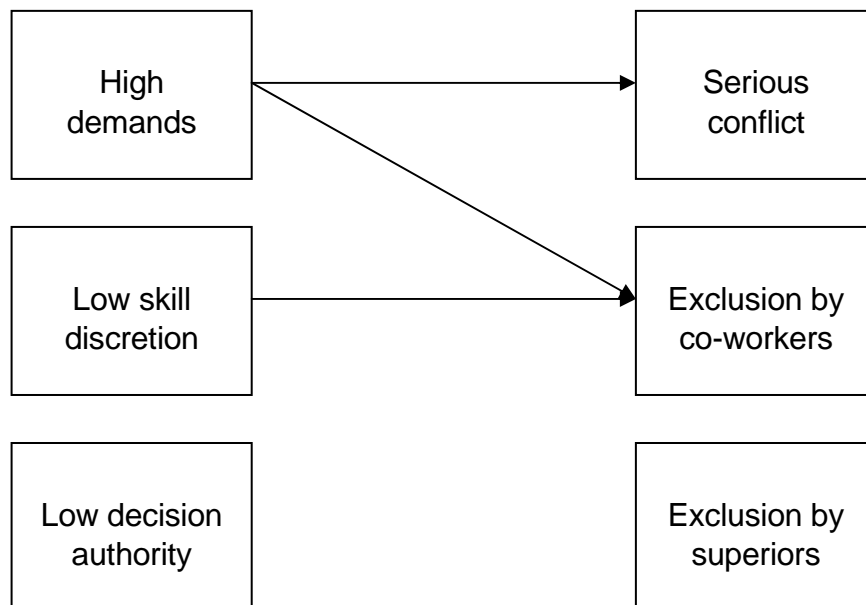
6 DISCUSSION

6.1 INTERPERSONAL RELATIONSHIPS AT WORK

The four papers of the thesis show that there are associations between interpersonal relationships at work and organizational factors, working conditions and health-related outcomes like depression and sickness absenteeism. There seems to be a causal relation between working conditions and interpersonal relationships at work and between interpersonal relationships at work and depression. Due to limitations of the cross-sectional design, no causal association can be made concerning interpersonal relationships at work, organizational factors and the concept of relational justice. Thus, it may be that organizational factors can create a psychosocial climate that promotes relational justice; or, alternatively, a psychosocial environment signified by relational justice can be the basis for organizational factors. Regarding the reversed causality and paper III, i.e., how sickness absence affects organizations, low sickness absence may affect organizational factors via more motivated and less absent employees who are involved in the development of the organizations.

6.1.1 Relation to working conditions

Figure2. Working conditions as predictors of interpersonal relationship problems.



The results from paper I supported the hypothesis that high demands can be predictors of serious conflict at work and exclusion by co-workers. That demands according to the DCM were associated with interpersonal relationship problems may well be in line with the reasoning that demands are a measure of work load and that subsequent stress or strain may lead to emotional, cognitive and coping reactions that can eventually affect relationships at work. Why the results support the hypothesis for high demands and serious conflict and exclusion by co-workers but not for exclusion by superiors is intriguing. One possible interpretation could be that the working conditions are

differently associated to supervisors than co-workers. It may be difficult for subjects under a high work load to maintain a good relation to their co-workers simply due to a lack of time and the same situation may not affect relations to their supervisors. The relation to supervisors may be more of an instrumental relation and good relations is defined by practical implications in contrast to their social consequences. A busy employee can be thought of favorably by supervisors with regards to the production goals. Busy and hard-working employees can be seen as competitors.

Low skill discretion could lead to exclusion by co-workers. Subjects who report low skill discretion have also been referred to as being understimulated. Understimulation can be due to too easy or few work tasks or being overqualified, or the combination of both, i.e., lack of task demands in relation to qualifications. What the specific mechanisms are that underlie low skill discretion is not known but the dimension of understimulation has been associated with a number of negative outcomes^{4, 87-89}. Kawakami and colleagues^{90, 91} theorized that jobs that are understimulating can decrease self-esteem through reduced job satisfaction and job satisfaction has been related to different job characteristics in which both skill variety and task identity can be related to skill discretion⁹². One can speculate that job satisfaction affects mood, you are less happy attending a unsatisfactory job, which may lead to aggression or avoidance, which subsequently can lead to interpersonal relationship problems at work³¹. The reason to why low skill discretion in our study only is related to exclusion by co-workers and not to serious conflicts or exclusion by supervisors, is intriguing. Regarding serious conflict it is hard to find a reasonable explanation without speculating. Perhaps low skill discretion reflects a work situation where one is doing a simple, uncomplicated job, one not affected by co-workers to any greater extent; furthermore low skill discretion will lead to passivity and withdrawal, and not to activity and aggressiveness, which reduce the possibility of conflict. Regarding the lack of effects on exclusion by superiors, an understimulated employee still may do what is required and as mentioned earlier; the relationship with the supervisor may be mainly instrumental. It is somewhat surprising that low decision authority does not show the same effect as low skill discretion. At first glance, not having decisional authority over one's work situation could also be related to job satisfaction and subsequently affect the person's mood and interpersonal relationships. Yet perhaps that employee is finding satisfaction in doing one's job well without being able to affect the work situation at large, supporting the initial separation of the dimensions by Karasek & Theorell⁴. Furthermore, there are jobs where employees have no expectations of exercising any authority over the work situation due to the nature of tasks or the business.

Conflicts in the childhood family and financial difficulties seem particularly interesting among the potential confounders in relation to interpersonal relationship problems, demands, skill discretion and skill authority. Financial difficulties may be related to working conditions for some badly paid jobs^{84, 93, 94}, but how they relate to relationship problems at work is not known. However, it is reasonable to think that they can be a severe difficulty for the subject which Brown & Harris⁴⁰ have shown to be highly stressful and subsequently may affect one's ability to concentrate, increasing the risk of aversive relationships to their superiors and co-workers. The reason to why severe conflict in the childhood family is related to interpersonal relationship problems at work is somewhat puzzling. As a measure of social background it is related to a more

unfavorable position on the labor market and worse working conditions^{95,96}, and more subsequent stress. Another explanation could be that subjects that have been exposed to a lot of conflicts and harsh relations in their childhood are more apt to solve discrepancies through conflicts.

6.1.2 Relation to depression

Figure3. Interpersonal relationship problems at work as determinants for depression



That different interpersonal relationship problems are related to depression can be an effect of the personal importance of relationships at work. It is reasonable to suppose that one's work group is crucial considering the time spent and the consequences if excluded, both social and financial. When involved in a conflict or at risk of isolation at work, there may be a feeling of losing fundamental security which can be related to anxiety which if prolonged may lead to depressive mood and, for example, to concentration and sleep problems, all symptoms related to depression.

That low social support can predict depression over time is in accordance with findings from previous studies with psychological distress and/or psychiatric morbidity as outcomes^{1, 6-10, 12, 13, 27, 68, 97, 98}. Stansfeld, Furher and Shipley⁹⁸ tested the relationship for types of social support and concluded that low emotional support was associated with greater risks of depression, in accordance with our results where our social support scale can be said to measure the emotional aspects of support.

Due to the small number of studies that investigate conflicts at work in relation to depression, comparisons have to be made with studies from outside that field. As Brown and Harris⁴⁰ have shown life events and difficulties involving humiliation and entrapment are likely to cause depression. We do not know how the individuals in our study in general experience interpersonal relationship problems at work, but it is plausible that being excluded at work, not being invited to social events or not being given information, may be experienced as humiliating. Entrapment may also be important. Individuals may fear the consequences of leaving their job and thus remain trapped in a degrading environment; this of course is also true regarding low social support and exclusion at work.

That exclusion by superiors or by co-workers is related to depression is in agreement with studies showing that mobbing or harassment is related to impaired mental health^{3, 48, 49}. Zapf and colleagues³ consider social isolation an indicator of mobbing and an important, but little studied, social stress factor at work. They also suggest that social isolation may be related to depression. Social isolation is obviously closely related to exclusion but also to low social support, and not obtaining needed support, instrumental or emotional, can be experienced as being left out.

6.1.3 Methodological issues Paper I and II

When relating organizational factors to mobbing, Zapf and Einarson⁴⁷ proposed that in certain businesses, career opportunities depend on personal relationships and that this could increase the risk for interpersonal conflicts. Although this reasoning is not conclusive, being dependent on personal relationships and fear of the consequences of losing them could also work as a damper leading to fewer conflicts. Still, it is possible that certain businesses are more detrimental for interpersonal relationships and mental health. On the basis of the results of paper I and II, we cannot argue against the view that certain businesses or jobs are more based on interpersonal relationship than others, i.e., cooperation is needed to solve the work tasks. However, we found rather strong associations in our population-based studies. Hence, if the relationships are markedly job related the risks should be notably higher in jobs that are intensely affected compared to a general population.

Individuals that did not change work place or tasks over a three-year period were selected as the study population. This was done in order to reduce variation in the exposure variables due to work turnover. However, this may lead to an underestimation of the odds ratios if those not included in the analysis are at higher risk of developing depression, compared to those included.

Three years elapsed between gathering the determinant variables at baseline and the outcome variables at follow-up. A period of three years may be too long and spuriously diminish true effects due to non-differential misclassification. This study nonetheless found apparent effects, which might have been stronger had a shorter time-period been used. A general problem with panel studies is that they mostly consist of data from two or more data collections separated by one or more years and where the duration of exposure or the outcome are not known. The effect in these studies is considered to be caused by the exposure variable if there is a correlation to the outcome variables

collected later. However, it cannot be ruled out that what is considered an effect may be due to a synchronous correlation between the exposure variable and the outcome variable only in the later data collection and the auto-correlation of the exposure variables between the two data collections. The ideal study design would probably be a prospective study with a large sample regularly interviewed at short time intervals. To the best of our knowledge, there are few studies that have examined the longitudinal relationship between the determinant variables and the outcomes we have studied. Thus, nothing is known about the optimal time interval between data collections for these kind of studies⁹⁹. Nevertheless, even though three years between data collections may seem too long an interval, risking an underestimation of the observed effects, the results did reveal an association of potential importance.

The possibility of reversed causality should also be considered. We have adjusted at T_1 for the variable corresponding to the outcome at T_2 , which should reasonably well control for reverse causation. In addition we also performed analyses only among those who did not report any of the outcomes at T_1 . The odds ratios were very similar in the two analyses.

All of our data both exposures as well as outcome were self-reported. Any outcome associated with over-reported exposure would result in improperly inflated risk estimates. Waldenström et al.^{8,100} compared reported levels of exposure to externally assessed exposure and found that the risk of over-reporting negative working conditions among those with depressive symptoms may be exaggerated. However, we have partly diminished the risk of such common method variance by controlling for the equivalent of the outcome at T_1 (baseline).

Although the measures of serious conflict at work, exclusion by superiors or exclusion by co-workers have been used in primarily epidemiological studies, to the best of our knowledge the measures have not been tested for reliability and validity. Investigating conflict at work using a single, dichotomous question, open to broad interpretations, is a crude and imprecise method. Individuals can interpret what constitutes serious conflict differently²⁹. In research, the notion of conflict is rarely defined as an open interaction between two or more persons in which they behave in a hostile way towards each other. Consequently, the term conflict sometimes contains dimensions of being subjected to other people's behavior without necessarily having to respond to them⁴². Thus, conflict can easily be interpreted as meaning lack of or poor support and hard to differentiate, which makes interpretation of the results complicated²⁹. Using composite score variables and more objective methods to measure conflicts would be ways of enhancing reliability and validity and would make an interesting target for further studies.

We have not controlled for personality characteristics such as negative affectivity (the tendency to regard the world in a negative and dysphoric manner), which may affect reporting exposure as well as outcome. This is because there are likely to be numerous personality characteristics that tend to attenuate or inflate relationships between the exposures and any of the studied outcomes, making it difficult to estimate the degree to which an observed effect is distorted. A further complication is the difficulty of distinguishing common method variance from an underlying effect of the exposure.

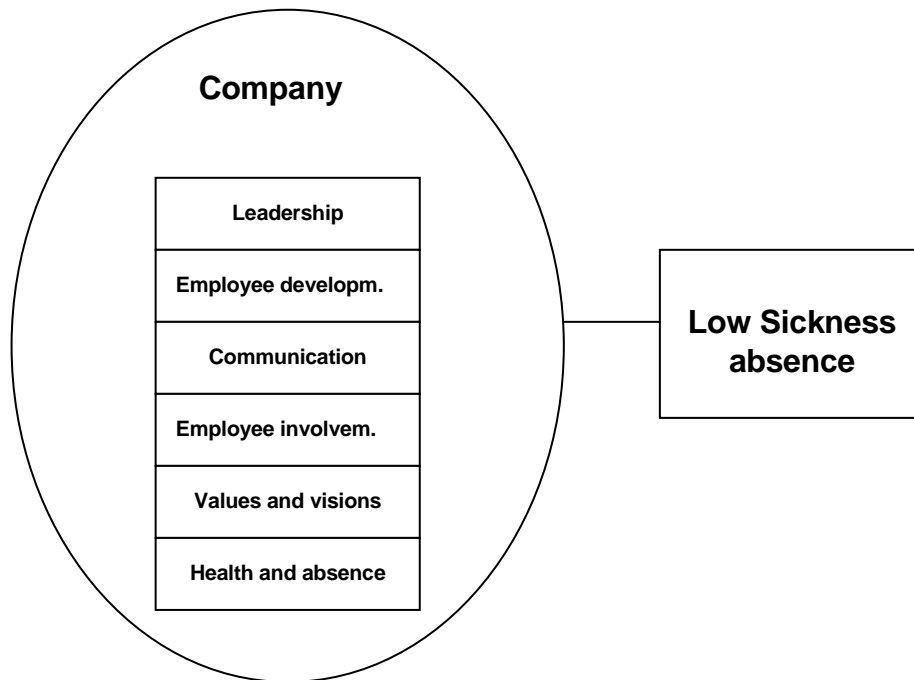
Also, concerns about whether or not the traits are stable or whether there are transitory fluctuations of the measurements made us decide not to control for specific personality characteristics. This is in accordance with suggestions from several authors¹⁰¹⁻¹⁰⁴. However, by statistically excluding those reporting negative outcomes at T₁, we have reduced the risk of over-reporting both outcomes and exposure.

The MDI is a self-report scale to assess depression. We chose a cut-off at 20 points, based on recommendations by Forsell and others^{109, 110}. In Forsell's article, evaluating self-reported depression according to the MDI vs. clinically-assessed depression using SCAN in a population sample, it was concluded that a 20-point cut-off was optimal in terms of the combination of sensitivity (0.74) and specificity (0.73) for major depression, and sensitivity (0.63) and specificity (0.81) for all depressive disorders. We also performed an analysis using the algorithm for the DSM-IV criterion for major depression. The results from these calculations were similar to the results obtained with the 20 point cut-off. This suggests that those labelled as depressed in our study also can be regarded as clinically depressed.

At least one recent study has shown indications of gender differences regarding the relations between working conditions and depression¹⁰⁵. However, we did not find indications of such differences in our analyses in paper II since confidence intervals for the point estimates showed considerable overlap between the sexes. Thus, in our study the risks of developing depression due to problematic interpersonal relationships at work have been similar for women and men. The similarity between women and men was also seen in paper I.

6.1.4 Relation to organizational factors and sickness absence

Figure 4. How certain organizational factors (according to paper III) relates to low sickness absence. The company (the circle) is the organizational setting for the specific organizational factors (boxes).



The third study has discerned six organizational factors that seemed to be important for low levels of sickness absence, namely: leadership, employee development, communication, employee participation and involvement, corporate values and visions, health and absence. The results point out certain factors on an organizational level, but the link to sickness absence is complex. A possible association between the found organizational factors and sickness absence is mediated through health, i.e., organizational factors affecting working conditions and subsequent levels of stress. Also, the factors found can affect individual motivation to go to work or not when sick. Some of the organizational factors found can be theoretically related to interpersonal relationships at work, which will be discussed below.

A systematic leadership philosophy and consistent support to the managers, can reduce risks of stress among managers¹⁰⁶, giving them the possibility to deal with their subordinates in a relaxed way. It has been shown that a manager who creates a pleasurable workplace reduces stress. This may also be related to the fact that companies with low levels of sickness absence emphasize interpersonal skills among managers^{107, 108}. One tendency was that companies with low levels of sickness absence had to a greater extent, a policy of recruiting managers internally making it easier to promote good relationships with the employees, a former co-worker is easier to relate to than an externally recruited stranger.

Companies with low levels of sickness absence seem to consider the team composition when recruiting to a greater extent. Team composition in terms of gender, education,

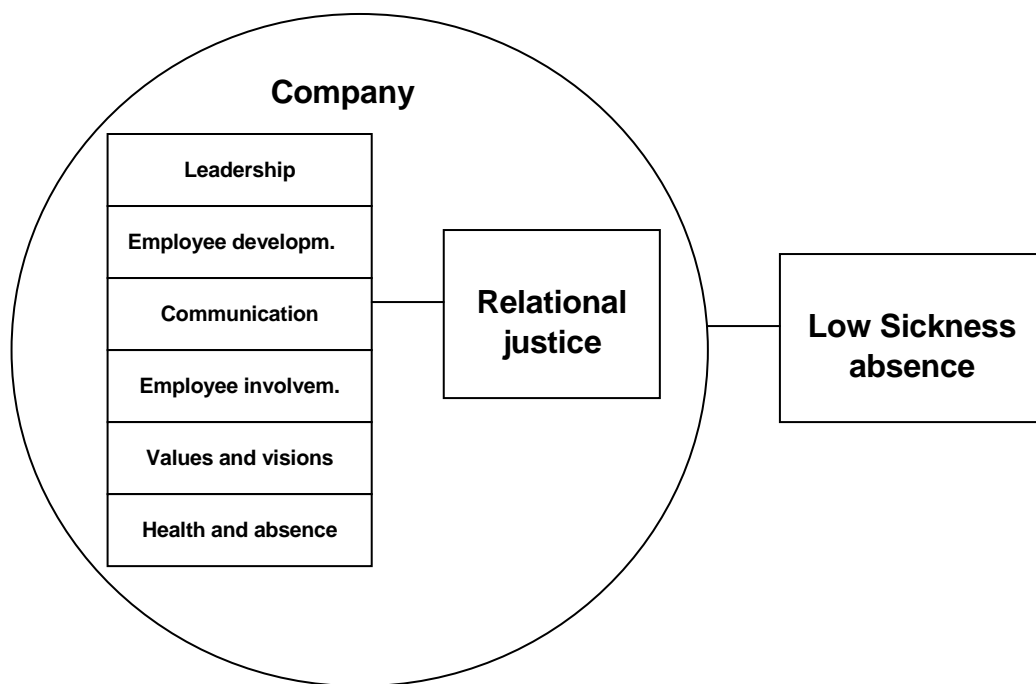
age, personality and values have previously been shown to be of importance for health². When regarding team composition they not only emphasize that the team members have to be complementary regarding the work tasks, but also to get along socially. This implements positive interpersonal relationships.

Being involved in a company’s decisions regarding both the individual work situation and company issues, i.e., organizational changes may increase feelings of cohesion¹⁰⁹, vouching for good relationships at work. The level of involvement is a matter of desired participation from the point of view of both the company and the employee. Participation can be systemised and governed by strategies and procedures. Being able to participate or not depends on the possibilities of being heard and getting feedback which is related to the quality of the interpersonal relationships to the management.

Having clear structures and systems for handling sickness absence and possibilities for individual adaption for ill employees may reflect that the company takes care of its employees. This in itself can be an incentive for an individual to go to work even when feeling ill. Being recognized and noticed when ill may also reflect the interpersonal relationships in general, a general policy of a good interpersonal environment with genuine concern for the employees.

6.1.5 Relation to relational justice and sickness absence

Figure5. Organizational factors affecting relational justice within the company and its relation to low sickness absence



It seems more common for companies with low sickness absence to have elaborate and explicit systems and/or well-defined values about handling the employees with kindness and consideration, considering their personal viewpoints, intending to eliminate bias among leaders and being truthful. Other values seem not that important,

e.g., getting feedback on decisions in a timely manner does not seem to be overly important, relatively speaking. One interpretation of this could be that honest consideration of personal viewpoints, being treated kindly, truthfully and without bias leads to trust of managers' decisions even if information is not timely. The same could be the case for the item "rights as an employee"; other aspects are more important than following formal procedures.

The relation between relational justice and sickness absence can be explained by the direct implications it may have on health. Low relational justice may induce stress and related sickness and subsequently affect one's ability to go to work. However, other factors such as motivation and loyalty can also influence sickness absence through an employee's decisions to call in sick or not⁶⁵. Fair treatment, trust and justice have previously been shown to be important for organizational commitment⁵⁰. Relational justice can thus influence sickness absence in that feelings of good personal relationships with the managers will make an employee more committed towards the organization, if the managers are perceived as representative of the company.

Permissive and well-developed systems for employee participation and involvement, considering the employees viewpoints in day-to-day work may be experienced by the employees as a good relationship with the managers¹⁹. Also to be treated in a kind and considerate way will be experienced as a part of a good relationship affecting motivation and employee health. Nyberg and colleagues³⁰ showed that being praised by the boss inversely correlated to ischemic heart disease.

The possibilities to be heard and be able to question decisions are important aspects of the relational justice concept^{20, 52, 116, 117}. Having your personal viewpoint considered can be seen as having influence over one's work situation. Influence can also be expressed as control, the opportunity to use one's competence to affect the working situation. Control is well-studied in a number of various contexts and has been related to work satisfaction, engagement and commitment, performance and motivation, but also to mental health and sickness absence^{11, 64}.

It is possible that being treated with kindness and consideration reflects the quality of interpersonal relationships in hierarchies and subsequent the interpersonal or organizational environment^{21, 51}. A good interpersonal environment can be related to the notion of social support which has been shown to reduce stress. This reasoning can also be related to the item "supervisors treating the employees with no bias". The managers should not let the matter of power related to hierarchic position influence their social relations with the employees otherwise there are organizational systems in place to regulate the managers' behavior accordingly.

Trust can be an important link related to the whole concept of relational justice⁵⁰. Most people will regard trust as being a cornerstone of, or a consequent effect of, good interpersonal relationships. Trust refers to beliefs that people have about others' future behavior. Are behaviors, decisions, etc predictable? Is the behavior in line with expectations built on earlier behaviour, are the behaviors in line with what is said to be intended? Trust seems to be important in the relationships between employees and their managers. Are the managers truthful, do they act as they say and can one trust that what

is said will be done? It is not only one's own experience, but also the treatment of others that may determine trustworthiness and consequently relates the concept of trust to organizational aspects such as general strategies and procedures. The link between trust and health deserves more studies ¹¹⁰, but it can be theorized that low levels of trust and subsequent low predictability can be stressful for some subjects and therefore directly related to ill health. It can also be theorized that trust is related to positive evaluation of managers and organizations and subsequent commitment, affecting sickness behaviour.

6.1.6 Methodological issues Paper III and IV

A common concern about this type of studies (papers III and IV) is that they provide limited basis for generalization. However, a comparison with the SCB (Statistics Sweden) register of private companies demonstrates that our selection frame satisfactorily represents companies in the private sector and various industries ⁶³. The matching of the companies also permits generalization ¹¹¹, and a comparison of the empirical results of the study with prior research and theory makes an analytic generalization possible ⁷⁹. Also feedback from the companies during the analysis phase added to the validity and subsequent generalization.

The interviews in the matched companies were conducted during a single point in the nation's economy, but we cannot exclude the possibility that the results would have been different during a different period. However, it is unlikely that the fundamental mechanisms behind interpersonal relationships at work are subjected to economical fluctuations.

It was considered advantageous to have as much information as possible about the company under study. Both practically (not wasting time during the interview to understand specific details of the business) and methodologically (being able to follow up on policy and strategy documents). However, this also means that the interviewers knew whether the company belonged to the low or average sickness absence group. This could possibly bias results both while interviewing and in the analyze phase. Hence, to minimize subjectivity and improve both the reliability and the validity of the data collection we used experienced interviewers, a homogenous interview technique, the use of pilot interviews with concordant refining of the interview template and consensus meetings. The structured analyses and the measures undertaken to secure valid and clear definitions, codes and meaningful themes enhance the reliability of the results. Following Yin's ⁷⁹ recommendations, tentative results were discussed with representatives of the companies under study to test construct validity.

In study IV we evaluated, based on textual interpretations, selected statements or quotes as a proxy reflecting items in the relational justice scale. This procedure could seem to be a matter of interpretation and thus not objectively reflecting the concept of relational justice. There may always be a distance between how subjects perceive their managers' behaviors individually and how managers claim they behave according to policies or procedures. However, in the first Health and Future study representatives of the employees were interviewed and such differences were not discovered ¹⁹.

6.2 TOWARD AN INTEGRATED VIEW

Interpersonal relationships at work are an integrated aspect of the work environment that comprises all levels of human interaction from the organizational level to the individual level. The integrated view implies that health consequences of interpersonal relationships at work may have reciprocal effects affecting all levels from individual relationships to organizational factors. A person experiencing bad interpersonal relationships at work will risk depression or sick leave, less favourable work tasks due to loss of ability and loss of possibilities to be involved and influence the organization. In contrast, a person that experiences good interpersonal relationships at work will be less stressed, leading to better health, leading to more energy to be involved in developing the organization etc. In addition, less stress may lead to more improved interpersonal relationships and so on, an upward spiral. A company can promote interpersonal relationships through psychosocial working conditions such as demands and skill discretion. Another way to promote interpersonal relationships is through managing organizational factors such as leadership, team-composition and employee involvement, where “managing” means strategies and procedures that are applied throughout the organization. These organizational factors can be organized in ways related to aspects of the relational justice scale, i.e., consideration for the employees, regards to personal viewpoints and leadership built on impartiality and truthfulness.

7 CONCLUSIONS

7.1.1 Implications

In conclusion, our results support the assumption that high demands according to the demand-control model can affect aspects of interpersonal relationships at work, namely; serious conflict and exclusion by co-workers. Low skill discretion was prospectively related to exclusion by co-workers. Low decision authority was not related to any outcome. This may have important implications for interventions at workplaces. Improvements in psychosocial working conditions may help to diminish conflicts and social exclusion. It may be important to analyze the psychosocial working conditions at hand, for example an employee's possibilities to utilize his or her skills.

Our findings may have implications for the prevention of depression and the rehabilitation of depressed patients. Early identification and targeting of problematic interpersonal relationship problems at the workplace may help to diminish the risk of employees developing depression. Such measures may also increase the opportunities for depressed persons to return to work after a period on sick leave.

This study shows important factors at the organizational level that appear to differentiate companies with low levels of sickness absence from companies with average levels of sickness absence. Sickness absence is related to high human and monetary costs and reducing these is justified. There is a strong possibility that the factors found have an impact on other important areas such as motivation and loyalty and thus are important for further developing well-functioning companies to pursue excellence.

Organizations that seem to be healthy for the employees, or at least showing low levels of sickness absence are organized in a way that is perceived as fair, kind, considerate, impartial and that personal viewpoints are considered, i.e., in the spirit of relational justice. These organizational aspects of relational justice can be interpreted as a general positive attitude towards the employees which can have effects on their motivation and devotion and indirectly affect sickness absence. A more direct affect on psychological health is also possible, e. g., reducing stress via feelings of self-efficacy, trust and safety. This implies that in order to reduce sickness absence and enhance health in companies through policy systems, strategies and procedures, the concept of relational justice should be considered. When discussing organizational issues or organizational change, a question should be "is this fair, kind, considerate, impartial and are personal viewpoints considered?" Also, the concept of relational justice may be used to measure effects of organizational change. Another interesting use of the concept of relational justice would be to use it as a proxy indicating healthiness in companies.

7.1.2 Future research

Further studies are needed to verify the association between working conditions and interpersonal relationships at work, and if these can be verified, to understand the links between working conditions and severe conflicts and social exclusion at workplaces.

Low social support, severe conflict and exclusion by superiors or by co-workers seemed to be determinants of depression. Further studies with data collected at several periods, with diagnosis of depression obtained using interviews and dated to its debut during the studied period would be ideal for confirming the results.

To verify the results regarding organizational factors associated with health, studies with different designs, e. g., survey studies, are needed. In addition, an important question for further studies is whether the organizational factors found actually can be modified in a specific company. In other words, will an intervention in a company targeting these organizational factors actually lead to persistent change and subsequent affect sickness absence and/or health? Furthermore, companies with low levels of sickness absence seemed to work with the factors related to sickness absence in an integrated, ongoing process; one or two factors independently did not appear to be sufficient. This preliminary finding is based on the fact that, when asked about a particular subject, the interviewed person often mentioned several factors, such as recruitment, incorporated aspects of leadership, employee development and values and visions. Further analyses to confirm these preliminary findings are of interest for the reasons of intervention. It may be ineffective from a health perspective, to work at changing only some factors within the organization.

Studies to confirm the association between the concept of relational justice and organizational factors are needed. Also, additional studies are needed to find out whether the concept of relational justice can be used as a measure of results of organizational intervention or as a proxy indicating individual and organizational health.

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