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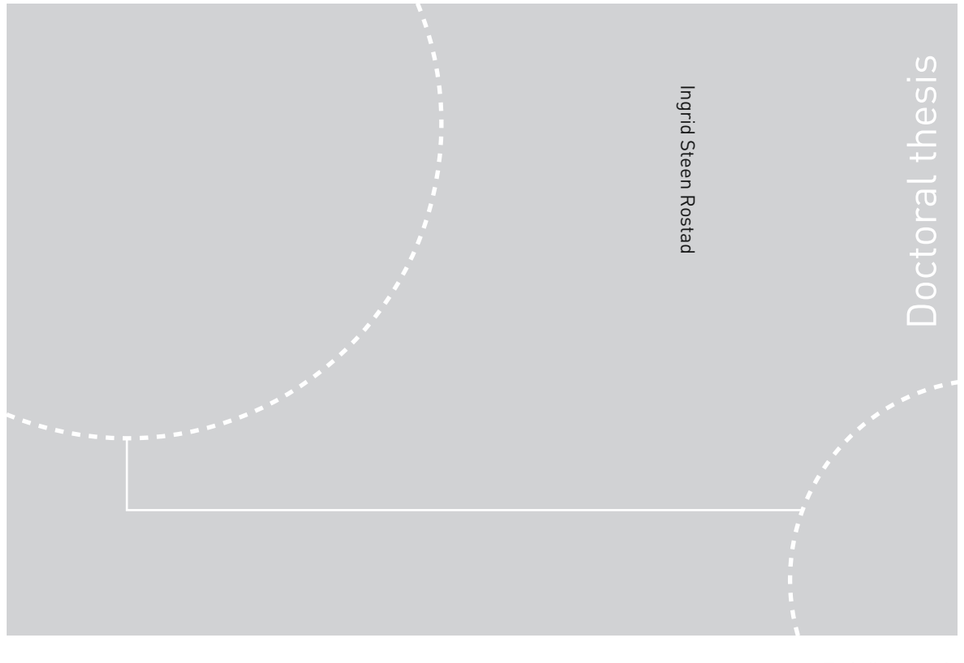

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Thesis for the Degree of Philosophiae Doctor

Trondheim, June 2018

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Summary

Sickness presenteeism has received increased scientific attention in recent decades due to its high prevalence and negative consequences on both an individual and organizational level. Accordingly, there has been focus on identifying factors in the organization that influence presenteeism. However, as with most psychological phenomena, presenteeism can be influenced by a wide array of factors that range from our most personal self to the wider social and cultural context. In an ecological perspective, multiple layers of factors interactively and interchangeably influence human behavior. This includes micro-layer (personal and environmental factors in specific settings), meso-layer (social influencers such as social networks or neighborhoods), exo-layer (organizational influencers such as worksite or community systems), and macro-layer (larger social influencers such as government, policy, or large economic structure) factors. These layers can include factors that both positively and negatively influence presenteeism.

The current thesis propose an ecological perspective on presenteeism that emphasizes a broader view of context beyond the organizational framework where this behavior is manifested. In this regard the current thesis aimed to investigate the interconnected relationships between individual-, organizational (interpersonal and system)-, and societal factors and presenteeism, and to investigate both positive and negative factors at these layers. The thesis consist of three papers which each investigated parts of this aim.

The study reported in Paper 1 investigated how psychosocial work place factors (at the micro-, meso-, and exo-layer) were associated with attendance dynamics in a Norwegian company ($N = 477$) participating in a governmental initiative to promote the positive aspects of presenteeism (IA-agreement). Attendance dynamics included presenteeism, absenteeism, and long-term health (zero episodes of presenteeism combined with zero episodes of

absenteeism during the last 12 months). The results of three separate logistic regression analyses showed that the three variables of attendance dynamics were associated with both shared and unique factors. The paper discussed the dynamics of employee attendance and how organizational factors at the exo-layer, such as perceived attendance pressure and organizational adjustment, can influence how employees relate to their work and their own perception of health (micro-layer).

The study reported in Paper 2 investigated if prevalence of presenteeism varied according to national differences in economic compensation for sick leave among physicians employed in selected university hospitals in Sweden, Norway, and Italy. Paper 2 was based on repeated cross-sectional data from senior consultant physicians (N = 1326 at phase I; N = 1402 at phase II) participating in a study of Health and Organization among University Hospital Physicians in Europe (HOUPE study). Results showed that prevalence of presenteeism varied to some extent with national differences in economic compensation for sick leave. The results were discussed in relation to how employee behavior may be influenced by organizational initiatives at the specific hospitals (the exo-layer), and national legislations (the macro-layer).

Paper 3 reported a study of how the association between job demands and job resources (exo-layer) and presenteeism varied according to mental health (micro-layer) and nationality (macro-layer). Paper 3 used data from phase II of the HOUPE study. The sample consisted of physicians employed in selected university hospitals in Sweden (n = 1049) and Norway (n = 545). In support of the initial hypotheses, the result showed that different job demands and resources were associated with presenteeism in the four subsamples of good and poor mental health.

Together, the findings from Papers 1-3 show that presenteeism is associated with factors within multiple ecological layers. Moreover, the thesis emphasizes that the interconnected relationships between these layers can be involved in two processes that trigger presenteeism, a negative strain process and a motivational process, and argues that each of these processes can simultaneously initiate presenteeism. To better understand the sometimes contradictory findings in the presenteeism literature, future research would benefit from a more ecological approach to presenteeism. For practitioners, this knowledge is important for developing workplace interventions that can reduce the negative aspects of presenteeism, while at the same time, promoting the positive aspects.

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Trondheim, February, 2018

Ingrid Steen Rostad

List of Papers

Paper 1

Rostad, I. S., Milch, V., & Saksvik, P. Ø. (2015). Psychosocial workplace factors associated with sickness presenteeism, sickness absenteeism, and long-term health in a Norwegian industrial company. *Scandinavian Psychologist, 2*.

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Paper 2

Rostad, I. S., Fridner, A., Sendén, M. G., & Løvseth, L. T. (2017). Paid Sick Leave as a Means to Reduce Sickness Presenteeism Among Physicians. *Nordic Journal of Working Life Studies, 7*(2), 71. doi:http://dx.doi.org/10.18291/njwls.v7i2.81595

Received: August 19, 2016. Accepted: February 25, 2017. Published: June 14, 2017

Paper 3

Rostad, I. S., Tvedt, S. D., Sendén, M. G., & Løvseth, L. T. Physicians' mental health and nationality affect how work characteristics influence presenteeism.

Submitted.

Abbreviations

ANOVA	Analysis of variance
GHQ	General Health Questionnaire
HOUPE	Health and Organization among University Hospital Physicians in Europe
IA	Inclusive work life
JD-R	Job Demand - Resources
OR	Odds Ratio
PCPQ	Physicians Career path Questionnaire
SPSS	IBM Statistical Package for the Social Sciences
VIF	Variance Inflator Factor
QPS-Nordic	General Nordic Questionnaire for Psychological and Social Factors at Work

Introduction

Presenteeism refers to employees turning up at their jobs despite ill health (Aronsson, Gustafsson, & Dallner, 2000), and emerges as a behavior that pertain to a large number of employees (Claes, 2011). Due to its profound negative consequences at both the individual, organizational, and societal level (e.g., Dellve, Hadzibajramovic, & Ahlborg, 2011; Hemp, 2004; Schultz, Chen, & Edington, 2009; Widera, Chang, & Chen, 2010), presenteeism has received increased scientific attention in recent decades. The growing body of literature on presenteeism has shown that factors in the work environment are important influences on this behavior (e.g., Aronsson & Gustafsson, 2005; Janssens et al., 2016; Johns, 2010, 2011; Miraglia & Johns, 2015). Less attention has been devoted to studying factors outside the organizational context. Like all types of human behavior, presenteeism does not exist in a vacuum, and is influenced by the environment in which we live and act. As Johns (2006, 2017) points out, context is essential in studies of organizational behavior. From an ecological perspective, a person's choice to work while ill depends not only on organizational factors, but may also depend on individual factors and social systems framing the context in which individuals make their choice. As such, an ecological perspective can provide a holistic approach to presenteeism by focusing on several layers of influencers, including the context in which the behavior takes place.

In addition, each layer in the ecological model may consist of both positive and negative influences on presenteeism. Although, a considerable amount of research has focused on presenteeism as a negative phenomenon associated with high job demands and pressure to attend work, there is a growing body of studies showing that presenteeism also can be associated with positive factors, such as good job resources and positive attitudes (Claes, 2011; Giæver, Lohmann-Lafrenz, & Løvseth, 2016; Johansen, Aronsson, &

Marklund, 2014; Marklund, Aronsson, Johansen, & Solheim, 2015). The Job Demands-Resources theory (JD-R; Bakker & Demerouti, 2014, 2017) is a good theoretical framework that illustrate how the interaction between positive and negative factors influences workplace outcomes, such as stress and health, among employees. The dual-path model of Miraglia and Johns (2015) draws explicitly on the processes proposed in the JD-R theory and illustrates some of the mechanisms underlying the act of presenteeism. The model derives from an extensive meta-analysis of the correlates of presenteeism in which it was shown that presenteeism can derive from a health impairment path and from a motivational path (Miraglia & Johns, 2015).

The main objective of the current thesis is to present an ecological perspective on presenteeism and to investigate the interconnected relationship between individual-, organizational (interpersonal and system)-, and societal factors and presenteeism. The thesis contributes to the growing body of research on presenteeism by broadening the understanding of its causes and correlates to include factors at multiple ecological layers and by highlighting the importance of context.

Structure of the Thesis

The current thesis is based on three papers, that each exemplify the overall aims. The current thesis will begin with an overview of empirical findings, theoretical frameworks, and central concepts of presenteeism in an ecological perspective. The main aim of the thesis and the objectives of the papers is then stated, supported by figures illustrating the included variables in the papers. The Method section presents procedures, materials, sample, and methods for collecting data, statistical analyzing, and ethical considerations. The Results section presents a summary of the results from the included papers. The Discussion section then discusses the results in relation to the aims of the thesis, as well as methodological

considerations and implications for practice and future research. Finally, I present some concluding remarks. The papers are listed as appendices at the end of the thesis.

Background and Conceptual Definitions

Sickness Presenteeism

A commonly used definition of presenteeism is 'the phenomenon of people, despite complaints and ill health that should prompt rest and absence from work, still turning up at their jobs' (Aronsson et al., 2000, p. 503). Population studies have demonstrated that presenteeism is just as prevalent as absenteeism (Aronsson & Gustafsson, 2005; Aronsson et al., 2000; Caverley, Cunningham, & MacGregor, 2007; Hansen & Andersen, 2008). Presenteeism and absenteeism have been treated as two equally relevant options when an employee is faced with illness or health complaints (Aronsson & Gustafsson, 2005; Aronsson, Gustafsson, & Mellner, 2011; Bierla, Huver, & Richard, 2013; Hansen & Andersen, 2008; Johansson & Lundberg, 2004). Still, these behaviors are also separate phenomena as studies have demonstrated that some employees do not take sick leave and manifest high levels of presenteeism (Rosvold & Bjertness, 2001), and have zero-absenteeism (Schreuder, Roelen, van der Klink, & Groothoff, 2013), while some employees seldom get sick and have what we may call good long-term health (zero absenteeism in combination with zero presenteeism; Aronsson & Blom, 2010). High prevalence of presenteeism has been found in the educational sectors and the care and welfare sectors (Aronsson et al., 2000; Elstad & Vabø, 2008), and especially among physicians (Bracewell et al., 2010; McKevitt, Morgan, Dundas, & Holland, 1997; Rosvold & Bjertness, 2001; Sendén, Løvseth, Schenck-Gustafsson, & Fridner, 2013; Waldron, 1996).

The consequences of presenteeism have been devoted much attention, as it appears to have negative influence on individual health, performance, and productivity (e.g., Aronsson et al., 2011; Bergström, Bodin, Hagberg, Aronsson, & Josephson, 2009; Conway, Hogh, Rugulies, & Hansen, 2014; Cooper & Dewe, 2008; Goetzel et al., 2004; Gustafsson & Marklund, 2011; Hansen & Andersen, 2009; Hemp, 2004; Kivimäki et al., 2005; Lu, Lin, & Cooper, 2013; Schultz et al., 2009). However, some dissenting viewpoints on the merely negative consequences of presenteeism have been expressed (Claes, 2011; Vingård, Alexanderson, & Norlund, 2004), and recent research has emphasized a more positive perspective. Going to work and being part of a work environment may be beneficial even for sick employees, as it provides the employee with structure and support from colleagues (Sanderson, Tilse, Nicholson, Oldenburg, & Graves, 2007). Presenteeism can also be self-affirming (Johansen et al., 2014; Roe & van Diepen, 2011), as work is important for identity and social status (Waddell & Burton, 2006).

For many employees suffering from health problems, the only alternative to presenteeism is absenteeism. Long-term absenteeism can have individual consequences such as isolation, marginalization, and feelings of shame, guilt, and anger (Eriksson, Starrin, & Janson, 2008; Jansson & Björklund, 2007), as well as organizational and societal consequences in terms of financial costs related to paid sick leave. To prevent such consequences, the Norwegian government has established an initiative that provides companies with economic and practical resources to promote the positive aspects of presenteeism. To take part in this initiative, all Norwegian companies can sign an agreement for an inclusive work life (The IA agreement; Government, 2014). The IA agreement encourages employers to make necessary work adjustments when an employee has health

problems, reports injuries, or can no longer carry the normal work tasks, and emphasizes a positive view of presenteeism.

Studies on antecedents of presenteeism have traditionally focused on negative presence factors such as health problems, job insecurity and various types of job demands (e.g., Aronsson & Gustafsson, 2005; Bockerman & Laukkanen, 2010b; Elstad & Vabø, 2008; Gosselin, Lemyre, & Corneil, 2013; Janssens et al., 2016; Johansson, 2007; Johns, 2010, 2011; Lovell, 2004; McKevitt et al., 1997; Rosvold & Bjertness, 2001). In contrast, recent studies demonstrates that presenteeism can be associated with positive factors such as high job enjoyment (Johansen et al., 2014; Marklund et al., 2015; Miraglia & Johns, 2015), job satisfaction and work involvement (Claes, 2011; Giæver et al., 2016; Miraglia & Johns, 2015); professional identity, support, and positive leadership (Giæver et al., 2016). This indicates that there are positive and negative aspect of presenteeism both in terms of consequences and antecedents, which is important to consider when adopting an ecological perspective focusing on the multiple layers of factors influencing presenteeism.

Ecological Perspectives

As a conceptual framework, the ecological perspective introduced by Bronfenbrenner (1977) serves to direct attention to multiple layers of influence. Ecological perspectives have been important in social sciences because of their view of behavior as affected by, and affecting the social environment (McLeroy, Bibeau, Steckler, & Glanz, 1988). As such, an ecological perspective serves as a framework to study the relationship between individuals' contexts within organizations and the wider society. As many ecological models divide the social environment into analytic layers, an ecological perspective can be used to focus attention on different layers and types of social influencers on the specific outcomes of interest, such as presenteeism (McLeroy et al., 1988). The ecological perspective has been

used to investigate various types of social behavior, and the ecological models applied in these studies have varied in both numbers of layers and the components of these layers (McLeroy et al., 1988).

According to the early models of the ecological perspective, Bronfenbrenner (1977) proposed that environmental influences on behavior can be divided into four layers and referred to these layers as systems of influencing factors. The microsystem refers to relations between the person and environment in specific settings. The mesosystem refers to proximal social influencers such as social networks or neighborhoods, and is sometimes referred to as 'the system of microsystems' (Bronfenbrenner, 1977, p. 515). The exosystem refers to organizational influencers such as worksite or community systems. The macrosystem refers to larger social influencers such as government, policy, or large economic structure. Bronfenbrenner (1979) later included the chronosystem, which refers to development over time, life stage, and history. In an ecological perspective not only do these subsystems affect behavior, but the subsystems are interrelated and can be changed as their members are replaced or altered (McLeroy et al., 1988). Moreover, individual behavior also affects the subsystems, which consequently implies a reciprocal causation between the individual and the environment.

As Bronfenbrenner later reflected and criticized his earlier models for discounting the role the person plays in his or her own development (Bronfenbrenner, 1989), the focus on *processes* of human development became more important (Tudge, Mokrova, Hatfield, & Karnik, 2009). His theorizing was primarily ecological, stressing person-context interrelatedness (Tudge, Odero, Hogan, & Etz, 2003). By emphasizing that human behavior is reciprocally related to contextual factors ranging from intrapersonal and proximal social

influencers to the larger social environment, an ecological perspective is relevant to broadening the understanding of the factors important for presenteeism.

Yet, ecological perspectives are less clear in their description of the linkages between the layers of influencers (ten Brummelhuis & Bakker, 2012), and consequently in how a specific behavior is influenced by the ecological layers of factors. The current thesis proposes an ecological perspective to give attention to the different layers of contextual factors influencing presenteeism. This theoretical structure can provide a framework for empirical testing on the interconnected relationship between the multiple layers of factors associated with presenteeism.

Theoretical Framework

Job Demands-Resources Theory

The JD-R theory (Bakker & Demerouti, 2007, 2014, 2017; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) provides a suitable theoretical framework to explain how presenteeism can be associated with both negative and positive factors in each layer within an ecological model of presenteeism. As an extension of the job demands-resources model (Demerouti et al., 2001), the JD-R theory has become an established theoretical framework in occupational research accounting for various types of employee well-being (Bakker & Demerouti, 2017). The JD-R theory emphasize that all types of work environments constitute job demands and job resources derived from physical, psychological, social, or organizational characteristics of the job. While job demands require sustained effort and are associated with certain physiological or psychological costs, job resources are either functional in achieving goals at work or stimulate personal growth, learning, and development (Demerouti et al., 2001).

Moreover, the JD-R theory postulates that there is a dynamic relationship between job demands and job resources that can trigger one of two psychologically different processes: a health impairment process or a motivational process (Bakker & Demerouti, 2007, 2014, 2017; Demerouti et al., 2001). In the health impairment process, poorly designed jobs or high job demands over time are assumed to decrease employees' mental and physical resources, and may lead to strain, as well as health problems. Behind the motivational process it is assumed that job resources have the potential to motivate employees, leading to work engagement and good performance (Bakker & Demerouti, 2007, 2014, 2017). As for presenteeism, this implies that employees can perceive attendance pressure and pressure to work while ill due to high job demands, and be motivated to work while ill due to high job resources, which is concordant with the empirical findings in the presenteeism literature (Miraglia & Johns, 2015).

In addition to the main effects of job demands and job resources, the JD-R theory postulates that job demands and job resources interact in predicting job strain and health outcomes (such as presenteeism). Job resources may buffer the impact of job demands on strain and particularly influence motivation when job demands are high (Bakker & Demerouti, 2007, 2014, 2017). This implies that job resources can influence presenteeism in two ways (Miraglia & Johns, 2015). First, job resources can decrease presenteeism by reducing the effect of job demands on strain through the health impairment process. Second, job resources can facilitate positive attitudes, motivation and dedication and thus increase presenteeism through a motivational process. Moreover, job demands can be reconstructed into hindrance demands and challenging demands (Bakker & Demerouti, 2017; Crawford, LePine, & Rich, 2010; Schaufeli & Taris, 2014; Van den Broeck, Van Ruysseveldt, Vanbelle, & De Witte, 2013). Hindrance job demands require high effort, and can be appraised as

having the potential to harm or block personal growth, whereas challenging job demands can be viewed as obstacles to overcome and tend to be appraised as having the potential to promote personal growth (Bakker & Demerouti, 2017; Bakker, Demerouti, & Sanz-Vergel, 2014; Crawford et al., 2010). This implies that job demands also can influence presenteeism in two ways. In addition to the proposed main effect that job demands increase presenteeism through a health impairment process, challenging job demands may increase presenteeism through the motivational process, as they have been positively associated with work engagement (Crawford et al., 2010). The relationships between job demands and job resources and presenteeism are illustrated in Figure 1.

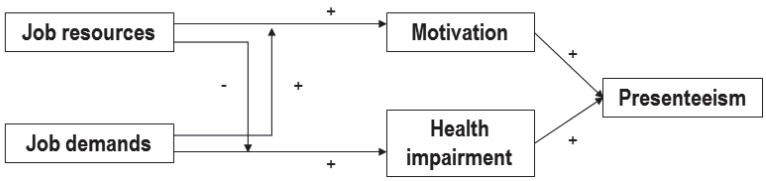

Figure 1. Illustration of the relationship between job demands and job resources and presenteeism.

The JD-R theory is an extensive theory that includes several concepts of employee well-being and job performance which will not be described here, as they are beyond the scope of this thesis. Still, the JD-R theory and its classification of work environments in terms of job demands and job resources and the dynamic relationship between the two

processes of health impairment and motivation illustrates aspects of employee well-being that are relevant for the understanding of presenteeism.

Empirical Models of Presenteeism

Empirical models have been developed to systematically incorporate what is already known about presenteeism and to formulate theoretical insights about the relationship between possible factors influencing this behavior. Common features of these models are that health serve as the primary determinant, whereas individual and organizational factors are the decision levers determining the choice to be present despite suffering from illness (Gosselin et al., 2013). In the following, I will give a brief presentation of three of these models before the most recent model in the presenteeism literature is outlined.

In Aronsson and Gustafsson's (2005) outline of a model for research into presenteeism it is proposed that presenteeism and absenteeism are mutually exclusive alternatives for sick employees, and the decision between the two alternatives is affected by a set of work-related and personally-related demands for presence.

The illness flexibility model put forward by Johansson and Lundberg (2004) proposes that adjustment latitude and attendance requirements are central concepts in workers' decision to be absent or present when ill.

In Johns' (2010) dynamic model of presenteeism and absenteeism it is assumed that a fully productive worker is met by a health event that can be either acute, episodic or chronic. The choice between presenteeism and absenteeism is further influenced by contextual and personal factors. However, the severity of the health event will dictate, to some extent, how influential these factors will be in employees' decision to be present or absent when ill.

According to Johns' (2010) model, factors in the work (organizational) context will be more influential in moderate cases than in extreme cases of illness.

The most recent model of presenteeism, the dual-path model of Miraglia and Johns (2015), draws on earlier models of stress, such as the demand-control-support model and the JD-R framework (Bakker & Demerouti, 2014; Johnson & Hall, 1988; Johnson, Hall, & Theorell, 1989; Karasek, 1979) and follows the spirit of earlier models of presenteeism (Aronsson & Gustafsson, 2005; Caverley et al., 2007; Johns, 2010) in that both contextual and personal factors influence presenteeism. By conducting a meta-analysis of some key correlates of presenteeism, Miraglia and Johns (2015) built an empirical mediation model of presenteeism.

In line with the JD-R theory, the model of Miraglia and Johns (2015) suggests that presenteeism can stem from a double pathway. The model specifies that contextual and personal factors influence presenteeism and absenteeism both directly and indirectly through a decline in health, following a negative strain path, and through a more positive, motivational path. The relative influence of contextual and personal factors on presenteeism is expected to vary depending on the followed path (Miraglia & Johns, 2015). This draws parallels to the JD-R theory and the dynamic relationship between job demands and job resources and presenteeism. To recap, job demands were expected to be positively associated with presenteeism as they can lead to stress and ill health, which is indicated by a health impairment path. Moreover, some job demands can be appraised as motivating and thus indirectly increase presenteeism following a motivational path. Job resources were expected to be positively associated with presenteeism as a consequence of elevated motivation, as indicated by a motivational path. Indirectly, job resources can decrease presenteeism through a health impairment path, as they have the potential to reduce or buffer the effect of high job

demands. By suggesting a link between presenteeism and its correlates through a dual pathway, the dual-path model illustrates some of the underlying mechanisms involved in the behavior of going to work ill.

Integrating an Ecological Perspective and the Dual-path Model of Presenteeism

In an ecological perspective, the dual-path model includes factors in the micro-, meso-, and exo-layers, and contributes an understanding of the linkages between the ecological layers of factors. The dual-path model suggests that work and personal factors relate differently to presenteeism depending on whether they follow a health impairment or motivational path. In an ecological perspective, the model demonstrates that work characteristics in the exo-layer can relate differently to presenteeism depending on individual health and motivation in the micro-layer. Together an ecological perspective in conjunction with the dual-path model can contribute valuable insights into the mechanisms of presenteeism, by both emphasizing the multiple layers of influencers and acknowledging that presenteeism can stem from different processes. The following paragraphs present some of the most salient causes and correlates of presenteeism found in the literature (Miraglia & Johns, 2015), and incorporate these in the multiple layers of an ecological perspective. Furthermore, it is demonstrated how macro-layer factors are relevant in the study of presenteeism. Figure 2 illustrates a summary of relevant factors that can be placed within the multiple ecological layers.

Micro-layer. The micro-layer refers to characteristics of the individual as well as the relation between the individual and the environment in specific settings. In the meta-analysis by Miraglia and Johns (2015), women and younger and more tenured employees were marginally more inclined toward presenteeism. Family life, such as number of children, have also been shown to influence presenteeism (Hansen & Andersen, 2008). Moreover, Miraglia

and Johns (2015) showed that 'negative' personal factors, including general ill health, low optimism, and felt stress, increase presenteeism through the health impairment path (Miraglia & Johns, 2015). Another factor that can increase presenteeism is attendance pressure (Steers & Rhodes, 1978), which refers to the employees' perception of the environmental reactions associated with being absent from work and how this could be interpreted by colleagues and management (Saksvik, 1996). One type of attendance pressure that can be placed at the micro-layer is termed moral pressure, and refers to an inner felt pressure to attend work relating to employee's conscience (Saksvik, 1996). On the more positive side, the dual-path model showed that positive personal attitudes, such as job satisfaction, engagement, and commitment, increased presenteeism through the motivational path (Miraglia & Johns, 2015).

Meso-layer. The meso-layer refers to proximal social influencers such as social networks or neighborhoods. Presenteeism have been associated with being exposed to harassment, abuse, and perceived discrimination at work (Miraglia & Johns, 2015). These are all types of negative relational experiences which are associated with psychological distress leading to poor health (Agervold & Mikkelsen, 2004; Frone, 2000), and as such work through the health impairment path. Moreover, fearing being accused of shirking responsibility by colleagues has been demonstrated as a pressure to work while ill (Biron & Saksvik, 2010; Saksvik, 1996). Work-family interface may also be at the meso-layer (ten Brummelhuis & Bakker, 2012), as it involves the relationship between the individual and the stress associated with work and family (Allen, Herst, Bruck, & Sutton, 2000; Carlson, Kacmar, & Williams, 2000). Presenteeism have also been associated with positive relational experiences, such as harmonious relationships with colleagues (Biron, Brun, Ivers, & Cooper, 2006), and collegial support (Dew, Keefe, & Small, 2005; Miraglia & Johns, 2015). Miraglia and Johns (2015)

discussed how collegial support could buffer strain and obstacles at work, thus lowering the risk of presenteeism.

Exo-layer. The exo-layer refers to influencers in the organization. Organizational factors that have been associated with presenteeism include different types of job demands and job resources. Among job demands, role conflict and time demands have been shown to increase presenteeism (Miraglia & Johns, 2015). Furthermore, restructuring processes represent a job demand that can increase stress (Tvedt, Saksvik, & Nytrø, 2009) and consequently influence worker health and pressure employees to work while ill (Saksvik, 1996). Pressure to attend work can also result from constraints on absenteeism (Miraglia & Johns, 2015), and from difficulties in staff replacements (Aronsson & Gustafsson, 2005) or importance pressure (Saksvik, 1996). With regard to job resources, the dual path-model showed how job control and workplace support seem to work through both paths of the model, by buffering the negative impact of job demands on health, following the health impairment path, and by increasing positive attitudes, following the motivational path (Miraglia & Johns, 2015). Moreover, adjustment latitude or work adjustment can constitute a job resource that provides employees with opportunities to adjust work to their health (Johansson & Lundberg, 2004), and thus can stimulate presenteeism via the motivational path. However, contrary to expectations, studies have found that employees with high adjustment latitude are less likely to report presenteeism than those with fewer opportunities to adjust (Johansson, Gustafsson, & Marklund, 2015).

Macro-layer. The macro-layer refers to larger social influencers, such as government, policy and economic structure. Within the macro-layer, researchers have argued that the broader societal environment influences presenteeism (Claes, 2011; Dew et al., 2005; Hansen & Andersen, 2008; Hansson, Bostrom, & Harms-Ringdahl, 2006; Johns, 2010).

Muckenhuber, Burkert, Dorner, Großschädl, and Freidl (2014) directly applied macro-layer factors into a study of presenteeism and did a multivariate multilevel analysis of the relationship between psychosocial job demands, presenteeism and the Human Development Index (HDI; a measure of human progress and quality of life at the global level that is used for comparison of governmental policies, among others regarding health care and education). They found that psychosocial job demands were more strongly associated with presenteeism in countries with high HDI than in countries with low HDI (Muckenhuber et al., 2014). This highlights the relevance of an ecological approach to presenteeism and indicates that macro-layer factors (such as HDI) are important for how exo-layer factors (such as psychosocial job demands) influence presenteeism.

As presenteeism and absenteeism are different but highly related concepts, factors that affect absenteeism can be relevant correlates of presenteeism. Researchers have argued that culture is an important context for employee absenteeism (Nicholson & Johns, 1985), and showed that the legitimacy of absence differs both within and between nations (Addae, Johns, & Boies, 2013). There is also an established relationship between absenteeism and unemployment rate (Shoss & Penney, 2012), which can influence employees' felt work security and thus increase the pressure to work when ill (Saksvik, 1996). Absenteeism has also been linked to sickness insurance systems, where a more generous sickness insurance system usually relates to an increase in the aggregated number of sick days (Aaviksoo & Kiivet, 2016; Henrekson & Persson, 2004; Sjöberg, 2017).

The empirical and theoretical contributions on presenteeism indicate that macro-layer factors, such as nationality and culture, labor market indicators, welfare benefits, and the larger economy, are important for how employees relate to their jobs when ill, and consequently, that macro-layer factors are relevant in the study of presenteeism.

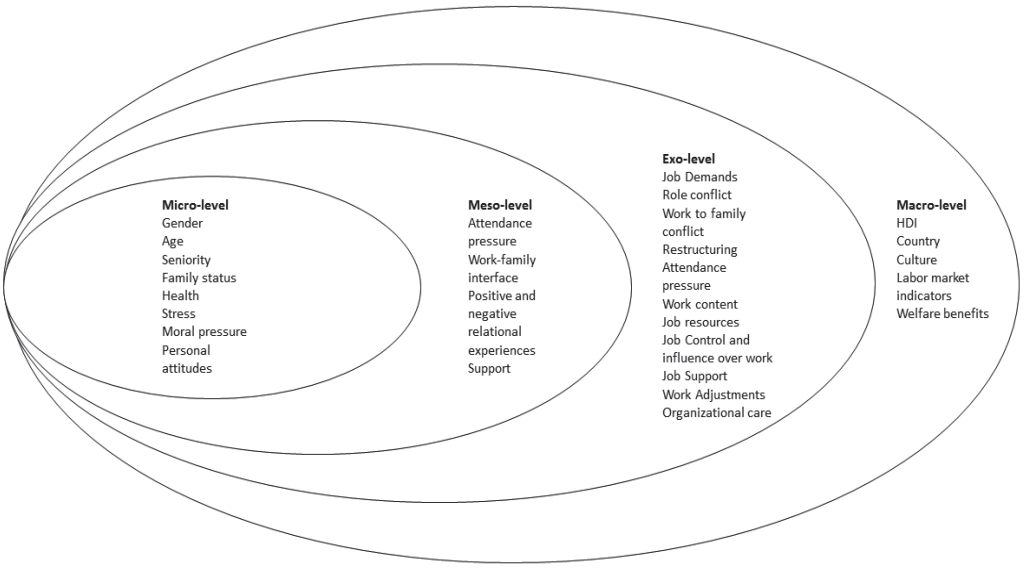

Figure 2. Examples of relevant factors influencing presenteeism illustrated at multiple layers of an ecological perspective.

The Overall Aims of the Thesis

The main purpose of this thesis was to introduce an ecological perspective on presenteeism. More specifically, to illustrate that presenteeism can be associated with factors at the micro-, meso-, exo-, and macro-layers of an ecological perspective. To investigate both positive and negative factors in these layers is also of interest.

By taking into account that human behavior is affected by personal and contextual variables ranging from intrapersonal variables to the larger social environment, an ecological perspective contributes to further theoretical development on the mechanisms involved in presenteeism.

Paper 1 investigates positive and negative factors in the micro-, meso-, and exo-layers in a national sample of Norwegian employees. Paper 2 and Paper 3 investigate positive and negative factors at multiple ecological layers in cross-national samples.

By comparing results across nationality, the thesis emphasizes the influence of macro-layer factors and discusses how the broader social environment can be relevant in studies of presenteeism, which have been devoted less attention in earlier research. Included variables in each paper are illustrated by Figure 3-5.

Aims of the Papers

Paper 1

The objective of Paper 1 was to study factors related to sickness presenteeism among employees in a company participating in a governmental initiative to promote the positive aspect of presenteeism (the IA-agreement) and to investigate whether sickness presenteeism shares correlates with other attendance dynamics, such as sickness absenteeism and long-term health (zero absenteeism and zero presenteeism). The hypotheses were:

Hypothesis 1: Factors associated with sickness presenteeism are also associated with sickness absenteeism.

Hypothesis 2: Perceived organizational adjustment and attendance pressure correlates positively with sickness presenteeism.

Hypothesis 3: Attendance pressure correlates positively with long-term health.

From an ecological perspective, Paper 1 investigated how micro-, meso-, and exo-layer factors are associated with attendance dynamics (Figure 3) in a very unique macro-layer setting/context initiated by the Norwegian government (the IA-agreement).

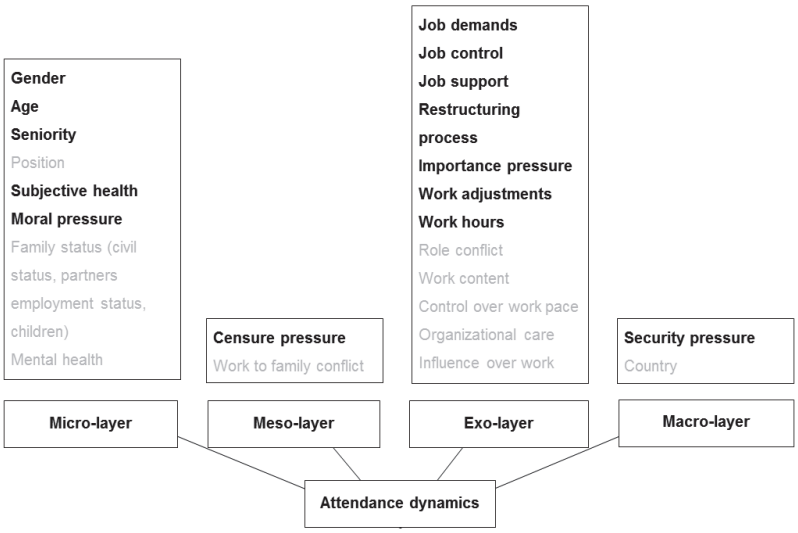

Figure 3. Illustration of variables included in the thesis in multiple layers of an ecological perspective, highlighted variables of Paper 1.

Paper 2

In Paper 2, the objective was to investigate if prevalence in sickness presenteeism varied according to national legislation on compensation for sick leave among physicians employed in selected university hospitals in Sweden, Norway, and Italy. We hypothesized that less economic compensation for illness-related absence from work leads to increased probability of presenteeism. In accordance with the level of economic compensation for paid sick leave provided by the national legislations in each country, we expected that physicians from Italy would report higher scores on presenteeism that those from Norway and Sweden, and that Swedish physicians would report higher presenteeism scores than those from Norway. Consequently, Norwegian physicians was expected to have the lowest scores of presenteeism of the three countries. We also hypothesized that the association between presenteeism and country would remain after controlling for gender, age, family status, work hours, and work content.

From an ecological perspective, Paper 2 investigates the relationship between presenteeism and macro-layer factors, while controlling for factors within the micro- and exo-layers. Included variables in the analyses are illustrated in Figure 4.

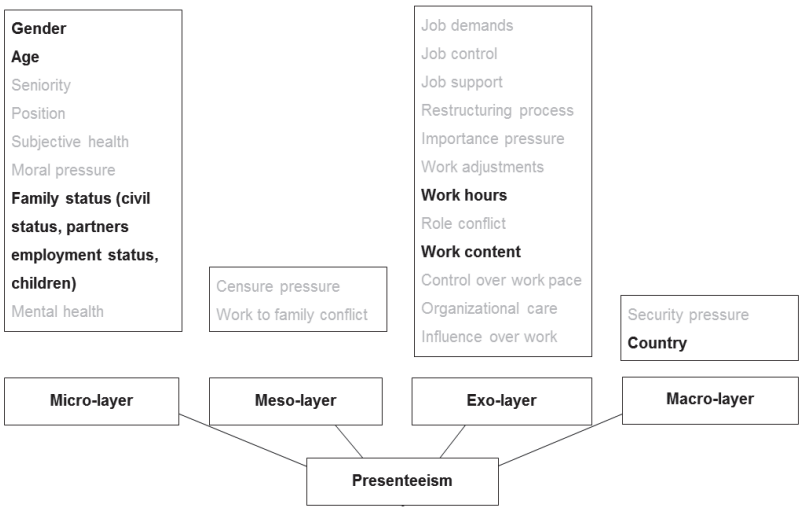

Figure 4. Illustration of variables included in the thesis in multiple layers of an ecological perspective, highlighted variables of Paper 2.

Paper 3

The objective of Paper 3 was to investigate how the association between job demands and job resources and presenteeism varied according to mental health and nationality among university hospital physicians in Sweden and Norway. In line with the JD-R model, Paper 3 differentiated between hindrance job demands (role conflict, work to family conflict) and challenging job demands (percentage of time spent on patient care and on research), and between buffering job resources (control over work pace, organizational care) and motivational job resources (influence over work methods, and influence over work amount). By doing so, Paper 3 investigated the mechanisms involved in physicians' presenteeism and conducted separate analyses for respondents with good and poor mental health within two countries. The following hypotheses were tested:

Hypothesis 1: Hindrance demands increase presenteeism in all physicians.

Hypothesis 2: Challenging demands increase presenteeism in physicians with good mental health (but not in physicians in poor mental health).

Hypothesis 3: Buffering resources decreases presenteeism in all physicians.

Hypothesis 4: Motivational resources increase presenteeism in physicians in good mental health (but not in physicians in poor mental health).

Paper 3 directly addresses the interconnected relationship between the multiple layers of factors associated with presenteeism by investigating the effect of factors in the exo-layer and differentiating the estimates by factors in the micro- (mental health) and macro-layer (nationality). Included variables are illustrated in Figure 5.

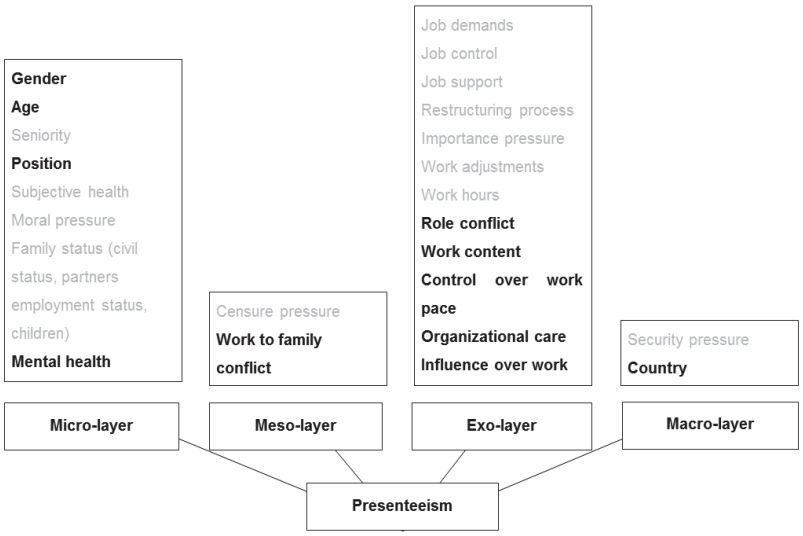

Figure 5. Illustration of variables included in the thesis in multiple layers of an ecological perspective, highlighted variables of Paper 3.

Method

Procedures and Participants

Paper 1. Paper 1 used survey data from a large industrial company (roughly 740 employees) collected in 2010. The company was involved in a governmental program to reduce sick leave, and had registered low levels of sick leave for a longer period (company rate in 2010: 4%, national rate in 2010: 7.4%). All employees working and present at the time of data collection were invited to participate. The questionnaire was administered in paper format. As many of the employees worked on a shift schedule, data collection was carried out over a five day period to reach all shifts. The total response rate was 69.5% (477/686).

Paper 2 and 3. The samples consisted of physicians who participated in the study of Health and Organization among University Hospital Physicians in Europe (HOUPE), phase I and phase II. Phase I was collected in 2004-2005, and phase II in 2012-2013. In total, four hospitals participated in phase I (one hospital each from Sweden, Norway, Italy, and Iceland), and in phase II, six hospitals participated (one hospital from each of the following countries: Sweden, the Netherlands, Norway, Austria, Hungary, and Italy).

All permanently employed and actively working physicians at the participating hospitals at the time of data collection were invited to participate. Eligible participants received a written invitation with information about the study. The questionnaire was administered both on the web and in paper format. Those who filled out the web-based questionnaire received a letter with a personal password and log-on information. The survey was conducted in English in all countries, except in Italy, where the respondents received the questionnaire in Italian, and only on paper.

Paper 2 utilized data from the countries participating in both phases of the HOUPE study: Sweden, Norway, and Italy. The samples included 1326 senior consultant physicians from phase I (Sweden N = 753, Norway N = 223, and Italy N = 350), and 1403 senior consultant physicians from phase II (Sweden N = 735, Norway N = 331, and Italy N =337). In phase I the response rate for senior consultants was 58.8% in Sweden, 54.7% in Norway, and 41.3% in Italy. In phase II it was 37.0% in Sweden, 66.3% in Norway, and 39.4% in Italy.

Paper 3 used data from Norway and Sweden from phase II of the HOUPE study. In total, 1596 physicians employed at selected university hospitals in Sweden (1049) and Norway (545) were included in the analyses. The response rates were, respectively, 41% (1049/2589) in Sweden and 71.8% (545/759) in Norway.

Dependent Variable List

Paper 1. The dependent variables in Paper 1 were sickness presenteeism, sickness absenteeism, and long-term health. Sickness presenteeism was measured with an item developed by Aronsson et al. (2000) 'During the past 12 months, how many times did you go to work even though you should have taken sick leave?'. Response categories were 'I have not been sick the last 12 months', 'None', 'Once', '2-5 times', and 'More than 5 times'. The responses were dichotomized as follows: 0 = 'I have not been sick the last 12 months', 'None', and 'Once'; 1 = '2-5 times', and 'More than 5 times'. Sickness absenteeism was measured with the item 'How many days in the last 12 months have you been absent from work because of sick leave?'. Response categories were 'None', 'Five days or less', '6-10 days', '11-23 days', and 'More than 24 days'. Responses were dichotomized as follows: 0 = 'None' and 'Five days or less'; 1 = '6-10 days', '11-23 days', and 'More than 24 days'. Long-term health was operationalized based on earlier research by Aronsson and Lindh

(2004) as a combination of low absenteeism and low presenteeism. Respondents were categorized as long-term healthy if they had no sickness absenteeism (i.e., responded 'None') in combination with no sickness presenteeism (i.e., responded, 'I have not been sick the last 12 months' or 'None') in a 12-month period.

Paper 2 and Paper 3. Sickness presenteeism was a dependent variable in Paper 2 and Paper 3, measured with the item 'Have you gone to work with an illness in a situation where you would have recommended a patient to stay at home?' (Rosvold & Bjertness, 2001; Sendén et al., 2013). Responses were given on a 5-point scale from 'very seldom or never' (1) to 'very often or always' (5).

Independent Variable List

All variables included in the thesis were measured by self-reported questionnaires. The variables were measured and analyzed at an individual level. The differentiation between layers refer to an ecological perspective which views individual behavior as guided by layers of influences (Fisher, 2008).

Paper 1.

Micro-layer. Gender was coded 1= men, 0 = women. Age was entered as a categorical variable with the intervals '29 years or younger', '30-49 years', and '50 years or older'. The category '29 years or younger' was used as a reference category. Seniority was coded 1 = 10 years or more, 0 = under 10 years. Subjective health was measured with the question 'How would you generally describe your health?' Responses was given on a 5-point scale from 'Very good' (1) to 'Very bad' (5), and dichotomized into 1 = 'Very good'/'Good', 0 = 'Neither'/'Bad'/'Very bad'. Moral pressure was measured with four items (Saksvik, 1996) that related to pressure from the respondents' own conscience about being absent from work

(α = .68). Responses were given on a 5-point scale ranging from ‘completely disagree’ (1) to ‘completely agree’ (5).

Meso-layer. Censure pressure was measured with three items (Saksvik, 1996) that related to the respondents’ fear of being accused of shirking work responsibilities by colleagues (α = .72). Responses were given on a 5-point scale ranging from ‘completely disagree’ (1) to ‘completely agree’ (5).

Exo-layer. Job demands (five items α = .74), job control (four items, α = .80), and job support (three items, α = .67) were measured using the Job Content Questionnaire (Karasek, 1985). Responses were given on a 5-point scale ranging from ‘very seldom’ (1) to ‘very often’ (5). The restructuring process was measured using a short version of the Change Process Healthiness Index (Tvedt et al., 2009). The index consisted of 15 items (α =. 85) concerning various aspects of restructuring, and responses were given on a 5-point scale ranging from ‘completely disagree’ (1) to ‘completely agree’ (5). Importance pressure was measured by four items (α = .76) related to the degree of difficulty in finding a replacement in case of absence (Saksvik, 1996). Responses were given on a 5-point scale ranging from ‘completely disagree’ (1) to ‘completely agree’ (5). Work adjustment was measured by a scale measuring perceived organizational adjustment norms (Hammer, Saksvik, Nytrø, Torvatn, & Bayazit, 2004; Ose et al., 2009; Thun, Saksvik, Ose, Mehmetoglu, & Christensen, 2013), and included seven items that reflected the respondents’ perception of the workplace adjustment norms (α =. 82). Responses were given on a 5-point scale ranging from ‘completely disagree’ (1) to ‘completely agree’ (5). Work hours included three categories: ‘Daytime’, ‘Daytime with flexible hours’, and ‘Shift schedule’, and working on a ‘Shift schedule’ was used as a reference category.

Macro-layer. Security pressure was measures with two items (α =. 61) that related to the degree of job insecurity and fear of job loss if absent (Saksvik, 1996). Responses were given on a 5-point scale ranging from 'completely disagree' (1) to 'completely agree' (5).

Paper 2.

Micro-layer. Gender was coded 1 = women, 0 = men. Age was entered as a categorical variable with the intervals 'Under 39', '40-54 years', and '55 years or older'. The category 'Under 39' was used as a reference category. To control for family status, we included civil status (1 = in a relationship, 0 = not in a relationship), partner's employment status (1 = partner in paid employment, 0 = partner not in paid employment), and number of children (1 = one or more children, 0 = no children).

Exo-layer. Work hours was categorized as 1 = night shifts or call duty, 0 = employees who do neither night shifts or call duty. Work content was measured with a question derived from the Physician Career Path Questionnaire (PCPQ; Fridner, 2004). Respondents were asked how much of their work was taken up by patient care, research, teaching, and management/administration. Response was given in percentages, which were summed to 100%.

Macro-layer. Country was included as a macro-layer factor that represented difference in paid sick leave legislations. Included countries were Sweden, Norway, and Italy

Paper 3.

Micro-layer. Gender was coded 1 = women, 0 = men. Age was included as a continuous variables with the intervals '29 or younger', '30-34', '35-39', '40-44', '45-49', '50-54', '55-59', '60-64', '65 or older'. Position was coded 1 = senior consultants, 0 = residents. Mental health was measured using the 12-item version of the General Health

Questionnaire (GHQ-12; Goldberg, Williams, & Williams, 1988). The respondents were asked if they had experienced 12 symptoms of psychological distress (e.g., depression, loss of confidence, sleep disturbance) in the past six months. Responses were given on a scale from 1 (not at all) to 4 (much more than usual). We used the standard GHQ-12 scoring method with cut-off ≥ 4 (Ramirez, Graham, Richards, Gregory, & Cull, 1996). The proportion of those with GHQ-12 score of ≥ 4 was 26 %. According to validation studies, GHQ-12 is predictive of the need for treatment and onset of more severe mental disorders (Goldberg et al., 1997; Makowska, Merecz, Moscicka, & Kolasa, 2002). Mental health was used as a grouping variable in the analyses.

Meso-layer. Work to family conflict was measured by three items (α = .85) asking the respondents about their experience of strain related to the interplay between work and family (Carlson et al., 2000). The participants provided their responses from 'Totally agree' (1) to 'Totally disagree' (4).

Exo-layer. Role conflict was measured with three items (α = .73) deriving from the General Nordic Questionnaire for Psychological and Social factors at work (QPS Nordic; Lindström, 2000) and concerned the level of confronting assignments and incompatible requests. Responses were given on a 5-point scale from 'Very seldom or never' (1) to 'Very often or always' (5). The questions used to measure respondents time spent on research and patient care derived from the questions measuring work content in Paper 2 (PCPQ; Fridner, 2004). Control over work pace was measured with four items (α = .81) deriving from QPS Nordic (Lindström, 2000). Organizational care was measured with three items (α = .81) regarding the perception of the level of managerial concern and interest (QPS Nordic; Lindström, 2000). Responses were given on a 5-point scale from 'Very seldom or never' (1) to 'Very often or always' (5). Influence over work methods were measured with the question

'If there are alternative methods for doing your work, can you choose which method to use?' (QPS Nordic; Lindström, 2000). Responses were given on a 5-point scale from 'Very seldom or never' (1) to 'Very often or always' (5). Influence over work amount was measured with the question 'Can you influence the amount of work assigned to you?' (QPS Nordic; Lindström, 2000). Responses were given on a 5-point scale from 'Very seldom or never' (1) to 'Very often or always' (5).

Macro-layer. Country was used as a grouping variable in the analyses. The paper included physicians from Sweden and Norway.

Statistical Analyses

Correlation matrices, the Variance Inflator Factor (VIF), and Tolerance statistics were checked for multicollinearity between the independent variables. The Durbin-Watson test was performed to check for independent errors. Normality of the residuals was visually inspected from the normal probability plots, and scatterplots were produced to see that there was no substantial heteroscedasticity. In Paper 1, the linearity of the logit was tested by looking at whether the interaction term between each predictor and its log transformation was significant. All indicators were within the recommended criteria, and the independent variables were sufficiently normally distributed to warrant parametric tests (Field, 2009). Non-respondent analysis of the HOUPE data (Paper 2 and Paper 3) showed a representative response rate based on gender and age. All analyses were conducted with the statistical software IBM SPSS version 19 (Paper 1), 20 (Paper 2), and 24 (Paper 3). Descriptive analyses, inter-rater reliability (Cronbach's alpha), and correlation analyses were utilized in all studies.

Paper 1. Logistic regression was used to test the hypotheses of Paper 1. Three separate logistic analyses were performed to test the relative influence of the same set of independent variables on three different attendance behaviors; sickness presenteeism, sickness absenteeism, and long-term health.

Paper 2. Analysis of variance (ANOVA) was applied to test the research question of mean differences in sickness presenteeism between the country-samples. Post-hoc comparisons were performed using the Games-Howell test. To adjust for demographic variables, linear regression was conducted in two steps. The analyses first presented the unadjusted betas of the effect of country on sickness presenteeism. In the second step the demographic variables were included as controls. Univariate linear regression was utilized to test if the variation in sickness presenteeism scores by country at phase I differed from the variation in sickness presenteeism scores by country at phase II.

Paper 3. Independent sample *t*-tests were used to calculate the difference in prevalence of presenteeism and between countries and the subsamples of good and poor mental health within each country respectively. Multivariate, hierarchical block-wise regression analyses with enter method were performed for each of the four subsamples to examine the associations between presenteeism and the independent variables.

Ethical Considerations and Approvals

Participation in all three studies, was voluntary. All participants received a letter containing information about the study and an informed consent form. Anonymity was guaranteed and it was assured that no individual information could be identified. The study in Paper 1 was approved by the Norwegian Social Science Data Services and followed the ethical standards required. The HOUPE project was approved by the administration of the

hospital, the union representatives of the physicians at the hospital, and the Regional Committees for Medical and Health Research Ethics and National Data Inspectorates.

Results

Paper 1

Partial support was found for *Hypothesis 1*, which stated that the factors associated with absenteeism are also associated with presenteeism. Results of the logistic regression analyses showed that both presenteeism and absenteeism were positively associated with censure pressure (presenteeism OR = 1.46, $p < .001$; absenteeism OR = 1.48, $p < .01$) and negatively associated with subjective good health (presenteeism OR = 0.22, $p < .001$; absenteeism OR = 0.40, $p < .01$). Presenteeism was additionally negatively associated with working daytime with flexible hours (OR = 0.25, $p < .05$), and absenteeism was negatively associated with moral pressure (OR = 0.65, $p < .01$).

Some support was found for *Hypothesis 2*, which stated that sickness presenteeism is positively associated with perceived organizational adjustment and with attendance pressure. The result showed no association between presenteeism and organizational adjustment, and a positive association between presenteeism and one type of attendance pressure (censure pressure OR = 1.46, $p < .001$).

Hypothesis 3 proposed that long-term health is negatively associated with attendance pressure. The results showed that long-term health was negatively associated with censure pressure (OR = 0.70, $p < .01$), and positively associated with moral pressure (OR = 1.45, $p < .05$), indicating that long-term healthy employees do experience some types of attendance pressure and therefore our third hypothesis was not supported. Long-term health was additionally associated with working daytime with flexible hours (OR = 2.72, $p < .05$), having good health (OR = 7.06, $p < .001$), and with perceived adjustment (OR = 1.45, $p < .05$).

Paper 2

The main aim of Paper 2 was to investigate if prevalence of presenteeism was higher in countries with lower levels of paid sick leave. Country differences in reported sickness presenteeism were confirmed at both phase I, $F(2, 1323) = 9.89$, $p < .001$ $\omega = .12$, and phase II $F(2, 1400) = 11.08$, $p < .001$ $\omega = .12$. At phase I, the mean scores of presenteeism in each country were: Italy = 3.37, Sweden = 3.10, and Norway = 2.97, and at phase II: Italy = 3.14, Norway = 3.06, and Sweden = 2.82. The Games-Howells post-hoc test showed a significant difference between Italy and Sweden ($p < .001$), and between Italy and Norway ($p < .001$) at phase I. At phase II, significant differences were found between Italy and Sweden ($p < .001$), and between Sweden and Norway ($p < .01$).

To test if the differences between countries were significant after controlling for demographic variables, we performed hierarchical regression analyses with two steps. In Model 1 the unadjusted betas (β) were calculated for the effect of country on presenteeism (Italy served as reference category), and in Model 2 the betas were adjusted for gender, age, work hours, family status, and work content. In support of our hypothesis, Sweden (Model 1: $\beta = -.12$, Model 2: $\beta = -.12$) and Norway (Model 1: $\beta = -.15$, Model 2: $\beta = -.14$) had a significant negative association with presenteeism compared with Italy in both models at phase I ($p < .001$). At phase II, the negative association was only significant for Sweden (Model 1: $\beta = -.20$, Model 2: $\beta = -.21$ $p < .001$).

The variation in sickness presenteeism scores by country at phase I differed significantly from the variation in sickness presenteeism scores by country at phase II ($p < .004$ in Model 1 and $p < .001$ in Model 2).

Paper 3

Hypothesis 1 stated that hindrance demands increase presenteeism in all physicians. Included hindrance demands were role conflict and work to family conflict. Results showed that there were examples of hindrance demands with positive associations with presenteeism in all subsamples. Role conflict was positively associated with presenteeism in the Swedish sample of physicians in good mental health (β = .14) and in the Swedish sample of physicians in poor mental health (β = .19). Work-family conflict was positively associated with presenteeism in the Swedish sample of physicians in good mental health (β = .18), in the Norwegian sample of physicians in good mental health (β = .22), and in the Norwegian sample of physicians in poor mental health (β = .21).

Hypothesis 2 stated that challenging demands increase presenteeism in physicians with good mental health (and not in physicians with poor mental health). Included challenging job demands were time spent on research and time spent on patient care. Challenging demands were associated with presenteeism in only one of the four subsamples. In the Norwegian sample of physicians in good mental health, research tasks (β = .15) were positively associated with presenteeism.

Hypothesis 3 stated that buffering resources decrease presenteeism in all physicians. Included buffering job resources were control over work pace and organizational care. Control over work pace was negatively associated with presenteeism in the Norwegian sample of physicians in good mental health (β = -.18) and in the Swedish sample of physicians in good mental health (β = -.15). Organizational care was negatively associated with presenteeism in the Norwegian sample of physicians in poor mental health (β = -.23).

Hypothesis 4 stated that motivational resources increase presenteeism in physicians with good mental health (and not in physicians with poor mental health). Included

motivational job resources were influence over work methods and influence over work amount. Results showed that only the subsamples of physicians in good mental health showed a significant positive association between motivational resources and presenteeism. In the Swedish sample of physicians in good mental health, having influence over amount of work was associated with presenteeism ($\beta = .10$, $p < .05$), while in the Norwegian sample of physicians in good mental health, having influence over work methods was associated with presenteeism ($\beta = .13$, $p < .05$).

Discussion

The papers included in the current thesis have demonstrated that factors in multiple ecological layers are associated with presenteeism. In line with earlier empirical findings, the results from Paper 1-3 of this thesis show that factors at the micro-layer, such as gender and general health, are associated with presenteeism (Bockerman & Laukkanen, 2010a; Gosselin et al., 2013; Johns, 2010; Leineweber et al., 2011). In the meso-layer, results from Paper 1 and 3 showed how censure pressure and work to family conflict are associated with presenteeism. The effect of factors in the meso-layer represent an interesting area for future research, as few studies have included variables that reflect proximal social relations in the study of presenteeism. In the exo-layer, results from Paper 1 and 3 showed that work characteristics such as job demands, job resources and working hours are associated with presenteeism, which is in line with earlier literature (e.g., Aronsson & Gustafsson, 2005; Hansen & Andersen, 2008; Johansson & Lundberg, 2004; Johns, 2010; Miraglia & Johns, 2015). In the macro-layer, the results from Paper 1, 2, and 3 show that the broader social environment includes relevant factors that can influence employee behavior. Paper 1 discussed the influence of a governmental initiative to increase the positive aspects of presenteeism in a national sample of Norwegian employees. Papers 2 and 3 have demonstrated that cross-national comparisons are highly relevant in the study of presenteeism, and illustrate how presenteeism can vary according to national legislation regarding paid sick leave and other structures of the labor market. In sum, the results of the papers included in the current thesis highlight the relevance of an ecological perspective on presenteeism by demonstrating that in addition to the focus of earlier research on organizational factors, presenteeism can be influenced by positive and negative factors in the personal-, relational-, and societal- layers.

Moreover, the results from Paper 1 and Paper 3 show that both job demands and job resources are associated with presenteeism, which is in in line with earlier research showing that presenteeism can be associated with both positive and negative factors (Claes, 2011; Giæver et al., 2016; Johansen et al., 2014; Marklund et al., 2015; Miraglia & Johns, 2015). This result can be interpreted in line with the JD-R theory (Bakker & Demerouti, 2017) and the dual-path model (Miraglia & Johns, 2015) in that presenteeism can stem from both a decline in health and elevated motivation. Job demands can increase presenteeism as a consequence of a decline in health, while job resources can increase presenteeism as a consequence of elevated motivation. Furthermore, the results from Paper 3 shed some light on the relationship between these two processes as high job demands and intrinsically motivation to work can represent a double-risk of working while ill (Giæver et al., 2016). In the case of physicians in good mental health, Paper 3 demonstrated that both job demands and job resources were positively associated with presenteeism. Arguably, it seems that the two processes of health impairment and motivation can work simultaneously, which finally points to a spiraling effect of both positive and negative factors (Giæver et al., 2016).

The simultaneous effect of job demands and job resources was only demonstrated in physicians in good mental health. This is in line with earlier research that has demonstrated that the effect of job demands on presenteeism was highly conditional on a worker's self-rated health (Bockerman & Laukkanen, 2010a). Furthermore, this points to an interaction between factors in the different layers, where factors in the exo-layer (job demands and job resources) influence presenteeism differently depending on factors in the micro-layer (state of health). Thus, employees' state of health can constitute a relevant context in which presenteeism can be better understood.

Paper 2 and Paper 3 compared analyses of cross-national samples and discussed the influence of macro-layer factors on presenteeism. Results from Paper 2 indicated that

presenteeism scores varied, to some extent, with national policies on paid sick leave, while Paper 3 demonstrated that nationality can influence how work characteristics are associated with presenteeism. These results supports the arguments from earlier researchers that the broader societal environment can influence presenteeism (Claes, 2011; Dew et al., 2005; Hansen & Andersen, 2008; Hansson et al., 2006; Johns, 2010), and are in line with the findings from Muckenhuber et al. (2014) which demonstrated that macro-layer factors play an important role in how exo-layer factors influence presenteeism. Also, Paper 1 contributes to the discussion of macro-layer factors by investigating presenteeism and related concepts in a macro-layer context where the Norwegian government provided companies with economic and practical resources to promote the positive aspects of presenteeism.

From an ecological perspective, the IA-agreement highlights how employee presenteeism can be influenced by factors in the macro-layer (the IA-agreement) that are being expressed at the level of the exo-layer (by providing work adjustments). However, results of Paper 1 showed that perceived organizational adjustment was positively associated with long-term health and not with presenteeism. In the discussion, Paper 1 proposed the possibility that organizational adjustment can influence employees' perception of working while ill. This implies that the lack of association between presenteeism and organizational adjustment can be due to reporting bias (Johansson et al., 2015). As argued in Paper 1, when employees with health problems have the opportunity, or are given this opportunity by management and colleagues, to adjust their work, they may no longer perceive themselves as working while ill. This explanation suggesting a conceptual confusion between presenteeism and work adjustments was first proposed to explain the unexpected negative association between presenteeism and adjustment latitude (Johansson et al., 2015; Johansson & Lundberg, 2004). Although adjustment latitude is limited to the employee's opportunity to use their decision authority to adjust their work when feeling ill, it is related to the concept of

perceived organizational adjustment insofar as both terms emphasize employees' possibilities for work adjustments. The results from the current thesis emphasize the need to include factors in the macro-layer in the study of presenteeism by illustrating the nested relationships between the multiple layers of an ecological perspective.

The multiple layers of an ecological perspective may constitute important contextual factors that can contribute to the understanding of when, where, and for whom presenteeism can represent a 'sustainable' choice (Miraglia & Johns, 2015, p. 16). Although the current thesis did not investigate the consequences of presenteeism, some reflections are in order, as research has demonstrated rather contradictory findings. On the one hand presenteeism seem to emerge as a risk factor for future ill health, decreased performance and productivity, and withdrawal from work (Aronsson et al., 2000; Bergström, Bodin, Hagberg, Aronsson, et al., 2009; Bergström, Bodin, Hagberg, Lindh, et al., 2009; Caverley et al., 2007; Cooper & Dewe, 2008; Deery, Walsh, & Zatzick, 2014; Hansen & Andersen, 2009; Hemp, 2004; Lu, Peng, Lin, & Cooper, 2014). On the other hand, going to work and being part of a work environment during illness can be beneficial (Howard, Mayer, & Gatchel, 2009; Lau, Victor, & Ruud, 2016), as work is important for identity and social status (Waddell & Burton, 2006). Consequently, this implies that, as well as being associated with both positive and negative antecedents, which can follow either a health impairment path or a motivational path, presenteeism has been associated with both positive and negative consequences. An interesting question in this regard concerns whether the consequences of presenteeism differ in relation to the followed path. If so, are we talking about the same phenomenon, and is it possible to separate 'the good' from 'the bad'? These questions represent some of the aspects that are conceptually confusing in presenteeism research. Although studies have been designed to probe and resolve some of these contradictions (cf., the dual-path model;

Miraglia & Johns, 2015), more research is needed to understand when presenteeism should be promoted, and when it should be prevented.

However, studies have shown that both in regard to patients in treatment for common mental disorders (Lau et al., 2016) and patients with musculoskeletal disorders (Howard et al., 2009), being present at work leads to favorable outcomes such as better functioning and greater well-being, compared to being totally absent from work. By structuring activity and stimulating mental and bodily functions, work can have therapeutic effects (Roe & van Diepen, 2011). Being part of a work environment can provide social interaction and a sense of belonging. As such, work can be important to prevent inactivity and isolation in patients with chronic diseases. However, if employees do not have adequate resources to perform their work and to get adequate rest and recovery after demanding work tasks, work can become too demanding and have a negative impact on employee health. In cases of diseases with acute phases, absence from work may be needed to get adequate rest and recovery. Arguably, studies on presenteeism would benefit from differentiating between types of illnesses. One could, for example, differentiate between illnesses that are acute, episodic or chronic, or/and by the severity of the illness (Johns, 2010). Finally, it becomes a particularly fruitful path for future research to explore what works for whom, and in which circumstances. The current thesis has shed some light on these questions by highlighting the relevance of including factors at multiple ecological layers in studies of presenteeism.

Theoretical Implications

Ecological perspectives aim to explain human behavior in terms of the interaction between the person and several layers of environmental influences surrounding the person. The current thesis illustrates the relevance of an ecological perspective on presenteeism by demonstrating that factors at multiple layers influence presenteeism. The results from the

current thesis show that in addition to the focus of earlier studies on factors in the organizational layer, factors within the personal-, relational-, and societal- layers are important to understanding the underlying mechanisms of presenteeism.

An ecological perspective can extend the understanding of what factors can be relevant for future studies. However, the illustration of the multiple layers of factors presented in the introduction of this thesis also demonstrates the interconnected relationship of these layers, as some influencers can be expressed at several layers. As a psychological concept, attendance pressure consists of four factors that can pressure employees to work while ill (Saksvik, 1996). These factors can be identified within each layer of an ecological perspective: moral pressure in the micro-layer, censure pressure in the meso-layer, importance pressure in the exo-layer, and security pressure in the macro-layer. Moreover, influences can also be manifested within one layer and expressed within another layer. Paper 1 describes how the Norwegian government provides companies with guidelines and resources to actively adjust the work situation for employees suffering from illness, injury or other problems that otherwise would have excluded them from working (IA-agreement). In an ecological perspective on presenteeism, the IA-agreement represent an example of a macro-layer initiative that influences presenteeism by enabling employers and employees with job resources within the exo-layer. Although, there are some difficulties regarding the differentiation between the different layers, it is relevant to look both inside and outside the organization in trying to explain the act of presenteeism.

The current thesis provides insights into the processes of presenteeism by emphasizing the joint effect of both job demands and job resources. The JD-R theory postulates that job demands and job resources instigate two very unique processes (Bakker & Demerouti, 2017), and studies have suggested that these processes also have unique outcomes

(Bakker, Demerouti, De Boer, & Schaufeli, 2003; Bakker, Demerouti, & Verbeke, 2004; Hakanen, Schaufeli, & Ahola, 2008). However, in line with a dual-path model of presenteeism (Miraglia & Johns, 2015), the results of the current thesis suggest that in the case of presenteeism the two processes can be associated with the same outcome. Moreover, the current thesis emphasizes that the spiraling effect of a health impairment- and motivational- process may represent an added risk to working while ill in occupations characterized by high job demands and high resources in combination with highly committed and motivated workers.

Another theoretical implication that can be drawn from the perspective of this thesis is the processual interactions between the person and the context. The results from Paper 3 demonstrated that mental health and nationality influence the effect of different work characteristics on presenteeism. This indicates that factors within the micro- and macro-layers can be important for the relative influence of factors within the exo-layer on presenteeism. This implies that a model of presenteeism should also include factors in the macro-layer. Furthermore, the premise of an ecological perspective that the layers are nested and inextricably connected consequently implies that presenteeism itself can be a predictor of other outcomes, such as burnout (Thun, Fridner, Minucci, & Løvseth, 2014). This implies that the link between presenteeism and health outcomes, such as exhaustion, can be reciprocal (Demerouti, Le Blanc, Bakker, Schaufeli, & Hox, 2009). Moreover, presenteeism can constitute a job demand that is inherent in the work culture (Simpson, 1998), and can be used as a means to prove organizational commitment (Snir & Harpaz, 2012) and to uphold a certain professional identity (Giæver et al., 2016). This finally implies that in addition to normal effects, in which work characteristics lead to employee well-being (presenteeism),

also reversed effects may take place, in which employee well-being (presenteeism) influences working conditions (Demerouti et al., 2009; Taris & Kompier, 2014).

Moreover, an ecological perspective emphasizes a chronosystem, which refers to development over time, life stage, and history. In line with Johns' (2010) model of presenteeism and absenteeism, this can reflect the cumulative importance of attributions made concerning absenteeism and presenteeism behavior, both by the employee themselves or by managers and colleagues. It can also represent the cumulative consequence of an individual's presenteeism over time. Longitudinal studies considering individual health consequences of presenteeism have adopted different time-lags between data collection (Skagen & Collins, 2016). In a systematic review of the health consequences of presenteeism over time, Skagen and Collins (2016) found studies supporting the claim that presenteeism at baseline is a significant predictor of future poor self-rated health at 12-months (Gustafsson & Marklund, 2011), 18-months (Bergström, Bodin, Hagberg, Lindh, et al., 2009), 24-months (Dellve et al., 2011), and 36-months follow-up (Bergström, Bodin, Hagberg, Lindh, et al., 2009). Moreover, a study by Lu et al. (2013) indicates that presenteeism may have both short and long term consequences in regard to individual health. As Skagen and Collins (2016) point out, although the majority of the studies in their review support the contention that presenteeism is a risk factor for future sickness absence and poor self-rated health, further studies are needed to reach consensus regarding the physical and mental health effects of presenteeism.

Methodological Considerations

All three studies included in this thesis used a questionnaire with cross-sectional self-reports. Though self-reports have shortcomings and may increase the risk of common method variance in terms of social desirability and recall-bias (Miraglia & Johns, 2015; Podsakoff,

MacKenzie, Lee, & Podsakoff, 2003), it is difficult to avoid self-report of presenteeism, as the construct itself is a subjective evaluation. In contrast to mandatory reporting of sickness absence, the employee is under no obligation to attest formally to being present while sick (Claes, 2011). Participation in all studies utilized in this thesis was voluntary and respondents' anonymity was assured, which is relevant to decreasing strategic responding and increasing valid answers (Podsakoff et al., 2003). The prevalence of presenteeism ranged from 38% in Paper 1, to 64-86% in Paper 2, and 77-82% in Paper 3, which corresponds with earlier studies (Aronsson et al., 2000; Rosvold & Bjertness, 2001). All papers included large samples, with relatively high response rates (69.5% in Paper 1, 37.0 to 66.7% in Paper 2, and 41.0 and 71.8% in Paper 3). Non-respondent analysis was performed on the samples in Paper 2 and 3, which demonstrated a representative sample with regard to gender and age. In Paper 3, Harman's single factor test demonstrated that a single factor solution could not explain the majority of variance, indicating that common method variance is within acceptable limits (Podsakoff et al., 2003).

Cross-sectional data limits conclusions about causality. The expected direction of the effects of contextual and personal variables was based on theory and earlier empirical findings. Though the current findings confirms an association between organizational factors and presenteeism, it is important to consider possible reversed influence of ill health, such as presenteeism, on work characteristics (De Lange, Taris, Kompier, Houtman, & Bongers, 2004). Suggesting that employees who have high levels of ill health can report a more negative work environment over time, De Lange et al. (2004) discussed several mechanisms that could account for reversed effects. To include a perspective of time and reciprocal effects longitudinal studies are more appropriate (Taris & Kompier, 2014).

The data used in Paper 1 were collected in a company participating in a governmental initiative to promote presenteeism through adjustment opportunities, which provides a unique opportunity to study presenteeism and to compare its correlates with the correlates of long-term health and absenteeism. Papers 2 and 3 used samples of an occupational group that has been shown to consist of healthy and motivated workers (Aasland, 2015; Caplan, Cobb, & French, 1975), which provides the opportunity to examine presenteeism in a sample where both positive and negative factors may influence attendance and the consequent elevation of presenteeism (Johns, 2011). At the same time, the occupational group of physicians has a history of high prevalence of presenteeism (Bracewell et al., 2010; McKevitt et al., 1997; Waldron, 1996) that provides an opportunity to explore presenteeism among those experiencing it. The antecedents of presenteeism can be heterogeneous across occupations, which infers with the generalizability of the results to other occupations. Yet, studies into specific occupations are relevant to understanding the context specific mechanisms of presenteeism. The result can be generalizable to other occupations that share the same work characteristics and level of presenteeism.

Two different measures of presenteeism were used in the current thesis. Paper 1 adopted the commonly used “days-present” item developed by Aronsson et al. (2000). The study measured presenteeism over a 12-month time frame with a fixed discontinuous frequency format. Consequently, responses may have suffered from recall bias. However, a substantial amount of research supports the validity of such items (Aronsson & Gustafsson, 2005; Aronsson et al., 2000; Bockerman & Laukkanen, 2010b; Caverley et al., 2007; Demerouti et al., 2009; Hansen & Andersen, 2008; Munir et al., 2007; Sanderson et al., 2007).

Paper 2 and Paper 3 used self-report of presenteeism or what Johns (2011) terms 'subjective presenteeism'. The latter incorporates a more perceptual take on respondents' experience with health and attendance (Johns, 2011). Explicitly forcing the responding physicians to consider themselves as patients, the question used in Paper 2 and 3 asked if the respondents had gone to work in situations in which they would have sick listed their patients. As physicians have shown barriers to taking sick leave and an unwillingness to adopt the patient role (Henderson et al., 2012; McKevitt et al., 1997; Thompson, Cupples, Sibbett, Skan, & Bradley, 2001), this question applied more to the physicians' attitudes toward their own illness than those of earlier studies. The item used to measure presenteeism in Paper 3 was confounded with national differences in physicians' sick-listing practices. A study by Werner et al. (2016) has shown that Norwegian physicians recommend sick leave more often to patients with severe subjective health complaints than Swedish physicians. Moreover, Swedish physicians have been presented with a national guideline assigning a specific length of sick leave to all medical conditions (Werner et al., 2016). Norwegian physicians have not been presented with such guidelines. This can explain why the Norwegian sample in Paper 3 had higher levels of presenteeism even though they get more economic compensation for sick leave, and generally seem to have better working conditions compared to the Swedish sample (i.e., lower job demands and higher job resources). However, the study by Werner et al. (2016) was restricted to severe subjective health complaints, which refers to health complaints defying the clinical picture of known diseases (Fink, Toft, Hansen, Ørnbøl, & Olesen, 2007).

National differences in prevalence of presenteeism can be related to cultural differences in how legitimate it is to be absent from work when sick. In a study by Addae et al. (2013), the legitimacy of absenteeism was found to differ significantly across countries.

This may be relevant in studies of presenteeism, as cultures where absenteeism is viewed as less legitimate can be inclined towards more presenteeism, compared to cultures where absenteeism is viewed as more legitimate. Physicians' prevalence of presenteeism has been shown to be consistently high across cultures. Therefore, physicians' presenteeism may also reflect a need to uphold a certain professional identity related to physicians' need to portray a healthy image (Thompson et al., 2001), and their unwillingness to adopt the patient role (Henderson et al., 2012; McKevitt et al., 1997).

Practical Implications and Future Research

For policy makers the findings of the current thesis are important for regulations of welfare benefits that can have an impact on employee behavior, including presenteeism. By providing economic compensation for work days lost due to illness, many countries offer employees paid sick leave. Paid sick leave constitutes a welfare benefit that enables workers to rest and access medical care that, in turn, can improve their health. Paper 2 in the current thesis demonstrated how the prevalence of presenteeism can vary according to the level of economic compensation offered in national paid sick leave legislation. This can imply that the level of economic compensation for sick leave potentially can influence presenteeism levels. In other words, an attempt to reduce absenteeism levels by lowering the level of compensation for sick leave may directly impact presenteeism levels. As presenteeism can have profound negative effects on the person, organization and society, it is important for policy makers to be aware of this effect.

Nonetheless, for some employees with health problems, attending work is a positive experience (Johansen et al., 2014; Lau et al., 2016; Roe & van Diepen, 2011; Sanderson et al., 2007). This may require work adjustments at the individual level. Managing such individual adjustments can be challenging and effort demanding. In order to make suitable

and efficient workplace arrangements to adjust work and promote health for employees with health problems, this is an important field for future research. The results of Paper 1 in the current thesis contribute in this debate by highlighting the association between work adjustments and long-term health. To enable organizations to manage the challenging task of individual work adjustments, it can be relevant to provide companies with practical and economic resources.

An important goal for future research is to enhance the understanding of when working while ill is health deteriorating and when it is health promoting. Attention should be focused on personal factors, as well as factors in the proximal and broader social environment. As Paper 3 demonstrated, differentiating and comparing estimates by subsamples can be beneficial, as the factors influencing presenteeism can be dependent on factors such as nationality and individual health. However, more research is needed to understand the mechanisms of presenteeism, and how its antecedents may be linked to different consequences and cumulative effects over time. In this regard, diary studies are highly relevant, as they would permit a within-person examination of these dynamics in real-time. Moreover, qualitative studies can be more appropriate to investigate the personal experience of presenteeism and the decisional process behind going to work while ill.

Concluding Remarks

This thesis adds to the current body of knowledge on presenteeism by broadening the view of the factors that can influence the behavior of working while ill. By doing so this thesis contributes to an ecological perspective on presenteeism, which emphasizes that human behavior is influenced by an interplay of factors ranging from our inner personal feelings to the larger structures of the social environment. By directing attention to the multiple layers of

influences and the interconnected relationship of these layers, the current thesis stresses the importance of context in organizational behavior. Increased attention to the multiple layers of factors can give future research a more holistic and context specific approach to presenteeism, which is important to further understanding some of the contradictory findings in the presenteeism literature. Moreover, the current thesis emphasizes that the act of presenteeism can be simultaneously driven by two processes, a health impairment process and a motivational process. The coexistence of these processes can contribute to the further development of theory on presenteeism.

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Paper I

Psychosocial workplace factors associated with sickness presenteeism, sickness absenteeism, and long-term health in a Norwegian industrial company

psykologisk.no/sp/2015/06/e11/

Our study confirms that sickness presenteeism, sickness absenteeism, and long-term health are associated with common psychosocial workplace factors that include attendance pressure, write Ingrid Steen Rostad and colleagues.

BY: Ingrid Steen Rostad, Vibeke Milch and Per Øystein Saksvik

There has been a longstanding debate in Norwegian work life concerning the amount of public resources spent on paid sick leave. Paid sick leave is a statutory right and employees are provided with full salary from the first day of sick leave. In the case of short-term illness, the employer is responsible for covering associated expenses (up to 16 days). However, if the illness is prolonged, the employee receives full salary for up to 1 year, in which compensation is provided by the Norwegian Labor and Welfare Administration. It is the employer who receives this compensation and pays the employee; thus, the employer has no further expenses after 16 days. To date, expenses associated with paid sick leave are considered high. Consequently, a central national and governmental objective has been to develop a strategy to reduce the general level of sickness absence (Norwegian Labor and Welfare Administration, 2012). This includes work adjustment so that employees can attend work despite having health conditions or impairments that otherwise would exclude them from working. In research, the phenomenon of employees going ill to work has been termed sickness presenteeism (e.g., Aronsson & Gustafsson, 2005).

In Norwegian work life, sickness presenteeism with adjustment opportunities could be regarded as a better option than sickness absenteeism. It could also be regarded as beneficial both for the individual and for the organization. However, this focus stands in stark contrast to a common perspective on sickness presenteeism, which regards working while ill as problematic because it can have negative consequences for individual productivity (Hemp, 2004; Schultz, Chen, & Edington, 2009). When sick, workers are not fully productive, so, being present may entail greater expenses than being absent. To our knowledge no earlier study has addressed sickness presenteeism in a context where governmental initiatives have been made to provide employees with adjustment opportunities. We aim to explore psychosocial workplace factors related to sickness presenteeism in a company participating in this governmental initiative. A second objective is to investigate whether sickness presenteeism shares antecedents with sickness absenteeism and long-term health.

Sickness presenteeism.

Sickness presenteeism commonly refers to situations in which employees, despite being ill, attend work (e.g., Aronsson & Gustafsson, 2005; Bergström, Bodin, Hagberg, Aronsson, & Josephson, 2009; Caverley, Cunningham, & MacGregor, 2007; Hansen & Andersen, 2008; Johns, 2010). This phenomenon has in recent years received increased attention in occupational health research, and a growing body of literature suggests that sickness presenteeism can impair employee health, leading to outcomes such as poor general health (Aronsson, Gustafsson, & Mellner, 2011; Bergström, Bodin, Hagberg, Lindh, et al., 2009; Gustafsson & Marklund, 2011), increased risk of heart disease (Kivimäki et al., 2005), and future sickness absenteeism (Bergström, Bodin, Hagberg, Aronsson, et al., 2009; Hansen & Andersen, 2009).

When investigating psychosocial workplace factors related to sickness presenteeism it is important to include known correlates. Studies have found that job demands such as a high level of responsibility (Gosselin, Lemyre, & Corneil, 2013), job stress (Elstad & Vabø, 2008; Leineweber et al., 2011), time pressure (Hansen & Andersen, 2008), and organizational change (Saksvik, 1996) are associated with sickness presenteeism. Perception of low control and limited support from colleagues also seem to be related to sickness presenteeism (Gosselin et al., 2013; Leineweber et al., 2011). Therefore, psychosocial workplace factors, such as job demands, job control, and social support are relevant when investigating sickness presenteeism.

Earlier research has shown that sickness presenteeism can be caused by high attendance pressure (Aronsson & Gustafsson, 2005; Kristensen, 1991; Saksvik, 1996) and identified four types of attendance pressure which induce employees to work while ill: importance pressure refers to worker indispensability and difficulties with finding a replacement in case of absence; censure pressure involves fear of being accused for shirking by management or colleagues; security pressure concerns job insecurity and fear of job loss if absent, and finally; moral pressure is a form of pressure related to employee's own conscience (Saksvik, 1996). In line with research indicating that presenteeism is associated with poor health outcomes (Aronsson et al., 2011; Bergström, Bodin, Hagberg, Aronsson, et al., 2009; Bergström, Bodin, Hagberg, Lindh, et al., 2009; Gustafsson & Marklund, 2011; Hansen & Andersen, 2009; Kivimäki et al., 2005), it is likely that presenteeism resulting from such pressure negatively impacts employee health.

Studies focusing on sickness presenteeism resulting from more constructive or positive psychosocial workplace factors are scarce. Organizational adjustment is one such variable that are thought to be relevant to sickness presenteeism (Thun, Saksvik, Ose, Mehmetoglu, & Christensen, 2013). This assumption is based on research models summarizing variables influencing employee attendance (Johns, 2010; Steers & Rhodes, 1978). We define *perceived organizational adjustment* as the employee's perception of management's willingness to adjust the job so that it can be performed or to find other tasks that can be performed with the illness, without getting worse or, preferably, with improvements in health status (Biron &

Saksvik, 2010; Thun et al., 2013). Johansson and Lundberg (2004) defined *adjustment latitude* as the opportunity employees have to reduce or change work effort. The findings showed that women with low adjustment latitude had more sickness absence after controlling for potential confounders including age, health, financial position, and family demands. However, adjustment latitude was not associated with sickness presenteeism (Johansson & Lundberg, 2004). Results from patients with chronic occupational musculoskeletal disorders who worked post-injury in a modified, adjusted work situation revealed that patients who were present returned to work faster than patients who had been absent, and they were more likely to resume normal work after one year (Howard, Mayer, & Gatchel, 2009). These results indicate that organizational adjustment may impact both employee presenteeism and absenteeism, as they are considered to be part of the same decision process (Aronsson & Gustafsson, 2005).

Sickness absenteeism and long-term health.
As employees who often are sickness absent also tend to be sickness present (Aronsson, Gustafsson, & Dallner, 2000; Gustafsson & Marklund, 2011), research on attendance behavior includes both phenomena (Aronsson & Gustafsson, 2005; Johns, 2010; Steers & Rhodes, 1978). A Canadian study found that employees were substituting presenteeism for absenteeism and that those who were sickness present did not suffer from different ailments and were not any less sick than those who were sickness absent (Caverley et al., 2007). It has been hypothesized that the ailments of the sickness present are milder than those resulting in sickness absenteeism (Hemp, 2004). However, the results of Caverley et al. (2007) indicate that some employees continue to work with health problems, despite the fact that full recovery normally requires sick leave. As such, low absence rates are not necessarily synonymous with low morbidity and healthy workers. This means that absence rates may be poor indicators of productivity. In general, this demonstrates the importance of including both sickness absenteeism and sickness presenteeism in research on employee health (Caverley et al., 2007).

While some employees get sick and must choose whether to work, research suggests that others seldom get sick and exhibit what has been called excellent work ability (Lindberg, Josephson, Alfredsson, & Vingard, 2006) or long-term health (Aronsson & Lindh, 2004). Employees classified as long-term healthy have attended work over a longer period without being sickness absent and without considering themselves as sickness present. Long-term healthy employees are thus considered to have generally good health (Aronsson & Lindh, 2004).

The primary aim of this study is to explore psychosocial workplace factors associated with sickness presenteeism in a Norwegian working life context. To obtain a more nuanced picture of employee attendance dynamics, we included analyses of sickness absenteeism and long-term health. By entering the same set of variables in three separate logistic regression analyses, we can identify whether the concepts share correlates. Based on previous research, we included psychosocial workplace factors, such as job demands, job control, social support, attendance pressure, perceived organizational adjustment, and restructuring

experience, as predictors in the analyses.

- **Hypothesis 1.** Because research models of sickness presenteeism also include sickness absenteeism (Aronsson & Gustafsson, 2005; Johns, 2010; Steers & Rhodes, 1978), our first hypothesis was formulated: *Factors associated with sickness presenteeism are also associated with sickness absenteeism.*

- **Hypothesis 2.** Earlier research suggests that sickness presenteeism is positively associated with both attendance pressure (Saksvik, 1996) and perceived organizational adjustment (Howard et al., 2009; Johansson & Lundberg, 2004; Thun et al., 2013); hence, our second hypothesis was proposed: *Perceived organizational adjustment and attendance pressure correlates positively with sickness presenteeism.*

- **Hypothesis 3.** We defined long-term health as having had no sickness presenteeism and no sickness absenteeism during the last year. It is therefore reasonable to assume that long-term healthy employees have not faced situations where attendance pressure arose. This led to our third hypothesis: *Attendance pressure correlates negatively with long-term health.*

Method

Participants and procedures.
This study was conducted in a large industrial company involved in a government-funded program to reduce sick leave. The program was initialized in 2001 and offered Norwegian organizations economic support in providing organizational adjustment for employees with health conditions as a means of reducing sickness absenteeism (Norwegian Labor and Welfare Administration, 2012). The company's registered sick leave had been at low levels for a long period of time. It was approximately 4%, compared to the national rate of 7.4%, in 2010. At the time of the study, the company had been involved in extensive restructuring and downsizing. Nevertheless, the sick leave rate had remained unchanged.

The company comprised roughly 740 employees, including operators, engineers, engineering scientists, and management. Operators constituted the majority of the employees and were engaged in various aspects of the production process. Their working conditions were physically demanding and involved noise, high temperatures, and heavy lifting. While most operators worked on a shift schedule involving night shifts and 12-hour shifts, engineering personnel and management tended to work during the daytime, and some had flexible work hours.

The data used were derived from a self-report questionnaire consisting of validated instruments collected in 2010. The study was conducted with the approval of the Norwegian Social Science Data Services and followed the ethical standards required. Questionnaires were distributed during working hours to employees present at the time.To involve all employees working on the various shifts, data collection was performed during 5 days. Respondents were given a brief

presentation of the questionnaire and the study objective. Participation was voluntary and anonymity guaranteed. Of 686 questionnaires distributed, 477 were returned (69.5%).

Of the sample, 86.4% were male, 60.3% worked on a shift schedule, 30.5% worked during the daytime, and 8% reported working daytime with flexible hours. In all, 71.4% had worked at the company for more than 10 years, and 30.3% had management responsibility. Regarding age, 13.1% were 29 years or younger, 51.7% were between 30 and 49 years, 35.2% were 50 years or older.

Measurements.

Dependent variables. Sickness presenteeism was measured using the following question: «During the past 12 months, how many times did you go to work even though you should have taken sick leave?» Response categories were «I have not been sick the last 12 months,» «None,» «Once,» «2-5 times,» and «More than 5 times.» The measure was developed by Aronsson et al. (2000) and corresponds with current research practice (Aronsson & Gustafsson, 2005; Aronsson et al., 2011; Bergström, Bodin, Hagberg, Aronsson, et al., 2009 ; Bergström, Bodin, Hagberg, Lindh, et al., 2009; Claes, 2011; Gosselin et al., 2013; Gustafsson & Marklund, 2011, 2014; Hansen & Andersen, 2008, 2009; Leineweber et al., 2011). Demerouti, Le Blanc, Bakker, Schaufeli, and Hox (2009) performed test-retest reliability for this question and reported a value of 0.58 ($p < .01$) or greater for 6- and 12-month intervals. Sickness presenteeism was defined as reporting two or more incidents during the last 12 months,which corresponds with the cut-off used in earlier research (Aronsson & Gustafsson, 2005; Aronsson et al., 2000; Gustafsson & Marklund, 2011; Leineweber et al., 2011).

Sickness absenteeism was measured using the question, «How many days in the last 12 months have you been absent from work because of sick leave?» Response categories were «None,» «Five days or less,» «6-10 days,» «11-23 days,» and «More than 24 days.» Sickness absenteeism was operationalized as having taken sick leave for 6 days or more during the last 12 months. The cut-off corresponds with that used in earlier studies, where sickness absenteeism was operationalized as having taken sick leave for one week or more (Gustafsson & Marklund, 2011, 2014).

Long-term health was defined as a combination of low absenteeism and low presenteeism (Aronsson & Lindh, 2004). We operationalized long-term health more rigorously than those conducting earlier research, given the company's low sick leave rates. Respondents categorized as long-term healthy had no sickness absenteeism (i.e., responded «None») in combination with no sickness presenteeism (i.e., responded «I have not been sick the last 12 months» or «None») in a 12-month period.

Independent variables. The demand, control, and support dimensions were measured using items from the job content questionnaire (Karasek, 1985), responses to which were given on a 5-point scale ranging from «very seldom» (1) to «very often» (5). Job demands were measured using five items that gauged how

often respondents had to work fast and with short deadlines, among other factors (α = .74). Job control was measured using four items including how often respondents had the opportunity to influence decisions at work (α = .80). Job support was measured using three items (e.g., «How often do you get support from your co-workers?» α = .67).

Attendance pressure was measured using a 13-item scale (Saksvik, 1996) that measured four types of attendance pressure: importance pressure (four items, e.g., «I go to work despite being ill because it is hard to get hold of a substitute,» α = .76), censure pressure (three items, e.g., «I am afraid of being accused of shirking by my colleagues/management,» α = 72), security pressure (two items, e.g., «One should be glad to have a job today when so many are unemployed,» α = .61), and moral pressure (four items, e.g., «I have a guilty conscience if I stay at home,» α = .68). Responses were given on a 5-point scale ranging from «completely disagree» (1) to «completely agree» (5).

The scale used to obtain information about perceived organizational adjustment consisted of seven items and gauged respondents' perceptions of workplace norms concerning adjustment (Hammer, Saksvik, Nytrø, Torvatn, & Bayazit, 2004; Ose et al., 2009; Thun et al., 2013) with statements such as «Employees with health problems get the help and support they need to do their job» and «In this workplace it is taken into consideration that different health problems may demand different arrangements,» (α = .82). Responses were given on a 5-point scale ranging from «completely disagree» (1) to «completely agree» (5).

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Perception of the restructuring was measured using a short version of the Change Process Healthiness Index (Tvedt, Saksvik, & Nytrø, 2009), which consists of 15 items concerning various aspects of reorganization (e.g., «Management has tried to get every view of this reorganization out in the open,» α = .85). Responses were given on a 5-point scale ranging from «completely disagree» (1) to «completely agree» (5).

Control variables. Control variables in the analyses were sex, age, seniority, working hours and subjective health. Sex was dichotomized (men = 1; women = 0), while age was entered as a grouped variable with the intervals «29 years or younger,» «30–49 years,» and «50 years or older.» The category «29 years or younger» was used as the reference category. Seniority was defined as having worked in the organization for more than 10 years. Working hours included three categories: «working daytime,» «working daytime with flexible hours,» and

«working shift schedules», the last of these serving as the reference category. Information about subjective health was obtained using the question: «How would you generally describe your health?» Response categories ranged from «very good» (1) to «very bad» (5). The measure was dichotomized in accordance with earlier research (very good/good = 1; neither/bad/very bad = 0; Bergström, Bodin, Hagberg, Lindh, et al., 2009).

Analyses.
Scale reliability was tested using Cronbach's alpha. Because variables were ordinal, Goodman and Kruskal's gamma was used to estimate the correlations between them. Three separate logistic regression analyses were conducted using the same statistical model. The variables were entered into each model simultaneously, and the results were obtained as odds ratios with 95% confidence intervals.

Results

Descriptive statistics of the dependent variables are presented in Table 1. There was a 14.5% overlap between sickness presenteeism and sickness absenteeism. We found that only 33.1% of respondents classified as long-term healthy answered that they had not been sick. Accordingly, 66.9% of the long-term healthy did not report being without health problems or illness the last year.

TABLE 1: Frequencies of the dependent variables; Sickness Presenteeism, Sickness Absenteeism, and Long-Term Health.

	Sickness Presenteeism		Sickness Absenteeism		Long-Term Health	
	Yes	No	Yes	No	Yes	No
Frequency	180	295	97	378	124	351
Percent	37.9	62.1	20.4	79.6	26.4	73.6

Table 2 presents the inter-correlations for all variables in the analyses. Results from the logistic regression analyses are presented in TableDescriptive statistics of the dependent variables are presented in Table 1.3. In support of hypothesis 1, censure pressure (presenteeism *OR* = 1.46; absenteeism *OR* = 1.48) and subjective good health (presenteeism *OR* = 0.22; absenteeism *OR* = 0.40) significantly predicted both sickness presenteeism and sickness absenteeism. In addition, sickness absenteeism was associated with experiencing significantly less moral pressure (*OR* = 0.65), and sickness presenteeism was negatively associated with working daytime with flexible hours (*OR* = 0.25).

TABLE 2: Correlations for the variables included in the analyses. Means are shown were applicable.

Variable	Mean	Correlations (Goodman and Kruskal's gamma)																	
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16	17.	18.	19.
1. Sex	-	-																		
2. Age	-	.19	-																	
3. Shift Work	-	.06	-.37***	-																
4. Daytime With Flex	-	-.56*	.33*	-1.0***	-															
5. Daytime	-	.25	.30***	-1.0***	-1.0***	-														
6. Seniority	-	.21*	.86***	-.18*	-.05	.22**	-													
7. Subjective health	3.99	.07	.24**	.22**	-.28	.15	.33***	-												
8. Demand	3.39	.26*	.04	.27***	-.16	-.24**	.05	.07	-											
9. Control	2.96	-.02	.09	-.68***	.54***	.59***	.02	-.26***	-.10	-										
10. Support	3.55	-.02	-.10	-.21**	-.02	.24**	-.18**	-.24***	.00	.48***	-									
11. Importance Pressure	2.51	-.11	.06	-.41***	.58***	.27***	.06	-.05	.13*	.31***	-.03	-								
12. Censure Pressure	2.95	.06	-.04	.25***	-.25*	-.19**	-.04	.16**	.17**	-.13*	-.06	.24***	-							
13. Security Pressure	2.81	.01	-.07	.10	-.26	-.02	-.08	.07	.11	-.01	.05	.25***	.50***	-						
14. Moral Pressure	3.90	-.17	.04	-.17*	.26	.10	.00	-.05	.13	.17**	.07	.35***	.32***	.35***	-					
15. Perceived Adjustment	3.04	.03	-.03	-.51***	.50***	.40***	-.15*	-.39***	-.14*	.46***	.46***	.16**	-.09	.02	.14*	-				
16. Restructure Experience	2.65	-.16	.19**	-.40***	.60***	.21*	.14*	-.22***	-.12	.53***	.34***	.22***	-.20**	-.14*	.03	.52***	-			
17. Long-Term Health	-	.13	.18*	-.37**	.48**	.20	.01	.53***	-.22*	.16*	.14	.05	-.29***	-.11	.13	.38***	.25**	-		
18. Presenteeism	-	-.08	-.02	.27**	-.56**	-.13	.03	-.56***	.26**	-.15*	-.13	.06	.40***	.24***	.18*	-.30***	-.27***	-1***	-	
19. Absenteeism	-	-.16	-.05	.38***	-.53**	-.28*	.03	.49***	-.04	-.24**	-.04	-.20*	-.30***	.15	-.18*	-.20*	-.28**	-1***	.71***	-

*p < .05, **p < .01, ***p < .001.

Partial support was found for hypothesis 2. Sickness presenteeism was positively associated with one type of attendance pressure which involves fear of being accused of shirking; censure pressure (*OR* = 1.46). The other three types of attendance pressure (important pressure, security pressure, and moral pressure) and perceived organizational adjustment were not significantly associated with sickness presenteeism.

Hypothesis 3, which states that long-term healthy employees do not experience attendance pressure, was not supported. Even though long-term health was negatively associated with censure pressure (*OR* = 0.70), it was positively associated with moral pressure (*OR* = 1.45). In addition, long-term health was associated with higher levels of perceived organizational adjustment (*OR* = 1.45), and with working during the daytime with flexible hours (*OR* = 2.72).

TABLE 3: Odds ratios and confidence intervals for the separate logistic regression analyses with the dependent variables; Sickness Presenteeism, Sickness Absenteeism, and Long-Term Health.

	Sickness Presenteeism		Sickness Absenteeism		Long-Term Health	
Variable	OR	95% CI	OR	95% CI	OR	95% CI
Constant	0.73		3.38		0.01	
Sex						
Male	0.72	[0.38, 1.37]	0.62	[0.30, 1.28]	1.76	[0.83, 3.72]
Age						
30-49 Years	1.69	[0.73, 3.91]	0.83	[0.30, 2.30]	1.06	[0.41, 2.75]
50 Years or Older	1.24	[0.47, 3.27]	0.64	[0.20, 2.02]	2.06	[0.71-5.98]
Working Hours						
Daytime	0.94	[0.54, 1.64]	0.56	[0.28, 1.09]	1.37	[0.76, 2.47]
Daytime With Flex	0.25*	[0.08 ,0.82]	0.16	[0.02, 1.25]	2.72*	[1.09, 6.79]
Seniority						
More than 10 Years	0.77	[0.39, 1.49]	1.75	[0.72, 4.26]	1.03	[0.50, 2.10]
Good Health	0.22***	[0.13, 0.39]	0.40**	[0.22, 0.72]	7.06***	[2.66,18.73]
Demand	1.28	[0.93, 1.74]	0.71	[0.49, 1.03]	0.83	[0.59, 1.16]
Control	1.10	[0.81, 1.50]	0.99	[0.70, 1.42]	0.84	[0.60, 1.17]
Support	0.89	[0.65, 1.21]	1.23	[0.85, 1.77]	1.07	[0.75, 1.53]
Importance Pressure	0.99	[0.77, 1.82]	0.79	[0.59, 1,07]	1.02	[0.77, 1.34]
Censure Pressure	1.46***	[1.17, 1.82]	1.48**	[1.14, 1.91]	0.70**	[0.55, 0.89]
Security Pressure	1.05	[0.83, 1.32]	1.18	[0.91, 1.54]	1.05	[0.82, 1.35]
Moral Pressure	1.14	[0.85, 1.52]	0.65**	[0.47, 0.90]	1.45*	[1.05, 1.98]
Perceived Adjustment	0.82	[0.60, 1.11]	1.04	[0.74, 1.48]	1.45*	[1.04, 2.03]
Restructure Experience	0.81	[0.56, 1.16]	0.80	[0.53, 1.21]	1.00	[0.68, 1.46]
-2 Log Likelihood	480.997***		376.308***		417.999***	
Nagelkerke R^2	0.26		0.19		0.23	

Note. OR = odds ratio; CI = confidence interval. *p < .05, **p < .01, ***p < .001.

Discussion

The primary aim of the present study was to explore psychosocial workplace factors associated with sickness presenteeism in a Norwegian work life context, where governmental initiatives have been taken to reduce sickness absence. In addition, this study investigated if the psychosocial workplace factors associated with sickness presenteeism was also associated with sickness absenteeism and long-term health. After entering sickness presenteeism, sickness absenteeism, and long-term health as dependent variables in the same regression model, we compared the results and found all to be associated with one common psychosocial workplace factor: censure pressure.

The results partially support hypothesis 1, proposing that sickness presenteeism and sickness absenteeism share common antecedents (Aronsson & Gustafsson, 2005; Johns, 2010; Steers & Rhodes, 1978). The only common psychosocial

workplace factor found was censure pressure. Contrary to hypothesis 2, employees exhibiting sickness presenteeism did not perceive more organizational adjustment than other employees. These findings suggest that sickness presenteeism was not resulting from organizational adjustment, but rather from fearing negative reactions from colleagues and management. In addition, sickness presenteeism was associated with reporting poorer subjective health.

Previous research has shown that censure pressure may be regarded as the most serious pressure factor from an individual health perspective (Saksvik, 1996), and suggested that sickness presenteeism is associated with future poor health and long-term sickness absenteeism later on (Bergström, Bodin, Hagberg, Aronsson, et al., 2009; Kivimäki et al., 2005). The combination of high censure pressure and poor health may, therefore, represent a problem for employees who often choose presenteeism. We recognize that how employees perceive attendance pressure may relate to personal characteristics and position. In this study, personality-related factors and position were not included. However, such variables may be interesting to explore in future research.

Hypothesis 3, proposing a negative association between long-term health and attendance pressure, was not supported. Those employees who were classified as long-term healthy seemed to experience an internal form of attendance pressure related to their own conscience. At the same time, they reported less censure pressure. Moreover, employees classified as long-term healthy reported higher levels of perceived organizational adjustment compared to other employees. Results also revealed that 66.9% of the long-term healthy did not report being without health problems, which indicates that, they may very well have been sick during the last year. Nevertheless, they reported neither sickness presenteeism nor sickness absenteeism. Perceiving more organizational adjustment may, therefore, alter employees' perception of working while ill. When employees with health problems have the opportunity to either adjust their work themselves or receive help from management and colleagues to restructure the work situation, they may no longer think of themselves as going to work ill. Employees may have this perception because their health problems do not hinder their work and, more importantly, work does not influence their health problems. Accordingly, employees who perceive constructive adjustment might not report sickness presenteeism. To capture such nuances, more refined measures are needed. Furthermore, the results imply that employees do not have to be healthy in medical terms to be classified as long-term healthy. However, compared to other employees, those classified as long-term healthy were associated with reporting subjective good health.

Perceived organizational adjustment may be related to the type of health problem or illness employees' experience. Some illnesses require medical treatment and/or rest that make it impossible to go to work, while other illnesses may have less severe health implications and thus adjustments can be more easily made. Furthermore, type of adjustments and employees' perception of these can be associated with job position. The current sample comprised employees with various

job positions involving different work tasks and work hours. However, variables in the analyses considered only work hours. Compared to employees reporting sickness presenteeism and sickness absenteeism, those classified as long-term healthy were more likely to work during the daytime with flexible hours. Consequently, this finding implies that employees with long-term health had the opportunity to leave earlier when sick and to regain lost hours later on. The fact that engineers and managers tended to work during the daytime with flexible hours and that operators tended to work in shifts, suggests that job position may be related to long-term health.

No significant association was found between the demand, control, and support dimensions and the dependent variables. This finding contradicts earlier studies (Aronsson & Gustafsson, 2005; Biron, Brun, Ivers, & Cooper, 2006; Hansen & Andersen, 2008). One explanation may be the relevance of the items in this particular sample. Bakker and Demerouti (2007) argued that each occupation has unique risk factors associated with job-related demands and resources. We included both employees working at an operational level with physically demanding work tasks and those engaged in office-related work. The scale items may therefore have been more relevant for some employees than for others. Future research may gain from including variables that are more occupational specific according to the sample.

Furthermore, no relationship was found between the restructuring experience and the dependent variables. This is in contrast with earlier research, finding that during times of insecurity, employees might go to work while ill as a result of security pressure (Saksvik, 1996). However, though the company was involved in extensive restructuring and downsizing, none of the dependent variables were associated with security pressure. A possible explanation is that in times of insecurity, various forms of pressure arise depending on the fluctuations in the labor market. For example, the unemployment rate in Norway is considered to be low in comparison with other countries (Organization for Economic Co-operation and Development, 2014). Security pressure may therefore be more relevant in countries where the unemployment rate is higher and social benefits are lower. It may be that the employees were more sensitive to what management and colleagues would think if they were absent from work (i.e., censure pressure), instead of fearing job loss (i.e., security pressure).

Limitations.

Our finding that there was an overlap between sickness presenteeism and sickness absenteeism is consistent with previous research (Bergström, Bodin, Hagberg, Aronsson, et al., 2009; Caverley et al., 2007; Hansen & Andersen, 2008), indicating that employees exhibiting sickness presenteeism also tend to exhibit sickness absenteeism. It is important to recognize this result; if we were to use mutually exclusive variables, the results would not be generalizable in real work settings. Nevertheless, overlapping variables may be regarded as a limitation because some employees then are included in two analyses. However, we argue that employees tend to engage in both, and it would be unsatisfactory to conduct research that did

not allow overlap. In fact, they are mutual alternatives when an employee is sick (Aronsson & Gustafsson, 2005), so an overlap should be expected.

Moreover, the measures of sickness presenteeism and sickness absenteeism were collected via self-report; therefore recall bias may be a limitation. However, to date there are no alternatives for measuring sickness presenteeism (Claes, 2011). Our measure corresponds to that of previous research showing high test-retest reliability (>.58; Demerouti et al., 2009), and the sickness presenteeism rate of our sample (37.9%) was comparable to that of other studies with the same cut-off, whose values ranged from 37% to 53% (Aronsson & Gustafsson, 2005; Aronsson et al., 2000; Gustafsson & Marklund, 2011).

It is regarded a strength if register data for sickness absenteeism could be used on an individual level. However, we could not obtain these data from the company because of ethical restrictions. Nevertheless, self-report of sickness absenteeism has proven consistent with register data (Gustafsson & Marklund, 2011; Voss, Stark, Alfredsson, Vingard & Josephson, 2008).

In our sample, 26.4% of respondents were categorized as long-term healthy, but our conceptualization of long-term health was stricter than that used in earlier studies. However, the sample rate is comparable to earlier research. In Aronsson and Lindh (2004) 28% of respondents were classified as long-term healthy. As a consequence of the strict criterion for defining long-term health, it is important not to consider the remainder of the sample as sick. We found that employees classified as long-term healthy perceived their own health as better than other employees. The results revealed that long-term healthy employees may very well experience illness or health issues, but they also have the opportunity to adjust work according to their health condition. Arguably, the opportunity to adjust work may be among the differences between those classified as long-term healthy and those who were not.

Implications for future research.
This study contributes to the research field by emphasizing the need for more refined measures. Results revealed that not all employees without sickness presence and absence (i.e., the long-term healthy) report being without illness or health problems. This could mean that some of those who were categorized as long-term healthy have engaged in sickness presenteeism without reporting it. We argue that this may be a result of the question asked; that is, if the respondents have gone to work even though they should have taken sick leave. Furthermore, the long-term healthy reported higher levels of perceived organizational adjustment and were positively associated with working daytime with flexible hours. Sickness presenteeism, on the other hand, was not associated with perceived organizational adjustment and was negatively associated with working daytime with flexible hours. Therefore, adjustment opportunities might have affected the perception of under which circumstances employees worked while ill. Future research should, therefore, focus on further development of measures of sickness presenteeism that capture the diversity in employees' perceptions of working through illness.

We argue that sickness presenteeism is associated with employees' perception of

organizational adjustment and attendance pressure. The phenomenon of sickness presenteeism can be more complex than previously presumed. By providing employees with adjustment opportunities in form of increased flexibility, in combination with preventing attendance pressure factors in the work environment, may actually influence employees' perceptions of attending work while ill. As such, it is plausible that such measures may contribute to more constructive forms of sickness presenteeism that do not entail negative implications for employee health. An important future research objective is therefore to further explore factors associated with positive and negative health outcomes related to sickness presenteeism. This may enhance our understanding of sickness presenteeism and organizational factors that stimulate a healthy work environment. Norway may be regarded as somewhat unconventional, considering that the government actually supports sickness presenteeism to reduce the cost of absenteeism. Nevertheless, this makes Norway an interesting example. Perspectives regarding sickness presenteeism as productivity loss may also gain from research focusing on the distinction between constructive and detrimental sickness presenteeism by acknowledging that employees may be productive while sick if they are provided suitable organizational adjustment.

Conclusion

This study confirms that sickness presenteeism, sickness absenteeism, and long-term health are associated with common psychosocial workplace factors that include attendance pressure. However, the results also indicate that the phenomena have separate antecedents and stress the complexity of sickness presenteeism. Capturing such complexities needs more refined measures of sickness presenteeism. To contribute to further development of these measures, it is important to recognize that an important aspect of attendance dynamics seems to be how employees perceive attendance pressures and organizational adjustment. Opportunities to adjust work tasks may again be related to occupational factors and position, which constitutes an interesting area for future research.

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Citation

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Abstract

Psychosocial workplace factors associated with sickness presenteeism, sickness absenteeism, and long-term health in a Norwegian industrial company

Sickness presenteeism is defined as attending work while ill. The present study investigated how psychosocial workplace factors affect sickness presenteeism, sickness absenteeism, and long-term health. So far, the combination of these parameters has been unusual in research. Data were collected in a Norwegian company with low levels of absenteeism. Three separate logistic regression analyses were performed with sickness presenteeism, sickness absenteeism, and long-term health as dependent variables. Results revealed that all dependent variables were associated with attendance pressure in the form of censure pressure. Sickness absenteeism and long-term health were also related to moral pressure. In addition, long-term health was related to perceived organizational adjustment. This paper discusses neglected aspects of attendance dynamics by exploring how employee presenteeism may be related to perceived organizational adjustment.

Keywords: attendance pressure, long-term health, Norwegian work life, organizational adjustment, psychosocial workplace factors, sickness absenteeism, sickness presenteeism.

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Paper II

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Paid Sick Leave as a Means to Reduce Sickness Presenteeism Among Physicians

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ABSTRACT

Recurrent international data show that physicians often attend work while ill, termed sickness presenteeism. The current study investigated if sickness presenteeism scores among European physicians varied according to national paid sick leave legislation. We hypothesized that prevalence of presenteeism was higher in countries with lower levels of paid sick leave. We used repeated cross-sectional survey data, phase I (2004/2005, N = 1326) and phase II (2012/2013, N = 1403), among senior consultants at university hospitals in Sweden, Norway, and Italy. Analyses of variances assessed cross-country differences in presenteeism. To assess the impact of country on presenteeism, we used multiple regression analyses controlled for sex, age, family status, work hours, and work content. The results from phase I supported the initial hypothesis. At phase II, presenteeism scores had decreased among the Italian and Swedish sample. The results are discussed with regard to changes in legislation on workhours and medical liability in Italy and Sweden between phase I and II.

KEYWORDS

Economic compensation / paid sick leave / physicians / sickness presenteeism / the HOUPE study / welfare benefits

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Introduction

In many countries, paid sick leave is an important means for improving employee health and organizational productivity. Societies aim to sustain the productivity of their human resources by enabling workers to access medical care and follow the

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recommended treatment to facilitate faster recovery and illness prevention. This is done by providing economic compensation for work days lost to worker illness through social health insurance or national health systems (Heymann et al., 2010; Lovell, 2004; Scheil-Adlung & Sandner, 2010).

Despite economic compensation for sick leave, many employees occasionally attend work when unwell, termed presenteeism (Johns, 2010). This behavior is prevalent among employees within the educational sector and the health and welfare services (Aronsson et al., 2000), and is particularly seen among physicians. International studies have registered that more than 80% of physicians report working through illness (Bracewell et al., 2010; McKevitt et al., 1997; Rosvold & Bjertness, 2001; Sendén et al., 2013), while being unable to carry out their duties to the best of their ability (Waldron, 1996). This behavior is unlikely to benefit the physicians, their colleagues, or their patients. Presenteeism has been associated with negative personal outcomes, such as decreased general health (Aronsson et al., 2011; Bergström et al., 2009), depression (Conway et al., 2014), burnout (Miraglia & Johns, 2015; Thun et al., 2014), and future sickness absenteeism (Bergström et al., 2009; Gustafsson & Marklund, 2011; Hansen & Andersen, 2009), and with negative organizational outcomes such as decreased performance and productivity (Dellve et al., 2011; Hemp, 2004; Schultz et al., 2009). Presenteeism has also been identified as a risk factor for committing serious errors and safety violations (Niven & Ciborowska, 2015), and in disease transmission (Widera et al., 2010). To limit presenteeism's role as a health hazard (Widera et al., 2010) and to promote health among physicians and their patients, it is vital to investigate initiatives to decrease this behavior among physicians.

Research has focused on identifying occupational, personal, and work factors in the medical profession that contribute to presenteeism among physicians (Gudgeon et al., 2009; Henderson et al., 2012; McKevitt et al., 1997; Rosvold & Bjertness, 2001; Sendén et al., 2013; Thompson et al., 2013; Waldron, 1996). An often overlooked aspect is possible societal level antecedents that are the result of welfare benefits such as paid sick leave. The latter is a highly relevant factor, as it aims to facilitate a healthy balance between work, economic loss, and necessary rest and restitution in times of ill health among employees.

Several researchers have emphasized that the broader societal environment affect work conditions and employee's perceptions, attitudes, and behaviors concerning sickness presenteeism (Claes, 2011; Dew et al., 2005; Hansen & Andersen, 2008; Hansson et al., 2006). Findings from a recent meta-analysis of the correlates of presenteeism show that stricter absence policies were associated with higher presenteeism (Miraglia & Johns, 2015). A study among Swedish employees found that when insurance systems were more generous, the aggregate number of sick days increased, and when the systems were more austere, the number fell (Henrekson & Persson, 2004). These results may indicate that employees working in countries with less generous insurance systems replace absenteeism with presenteeism due to economy. Arguably, generous public insurance systems can potentially inhibit sickness presenteeism, while more austere systems are expected to increase sickness presenteeism. If so, it is relevant to investigate if sickness presenteeism scores among European physicians vary according to national legislations concerning paid sick leave.

To classify the welfare regimes of the included countries, we used Bonolis (1997) classification on the degree of social welfare provided and mode of delivery within each

country as an analytic tool (Hagelund & Bryngelson, 2014). According to Bonoli (1997), Sweden and Norway have a Nordic welfare state regime with high social expenditure, financed through taxation and designed to prevent poverty for the entire population. Italy has a Southern welfare state regime with low social expenditure, which is financed through earnings-related contributions to provide income maintenance. The International Social Security Association (2004, 2012) shows that welfare state regimes vary substantially in their legislation concerning paid sick leave. Despite the many similarities between the Norwegian and Swedish welfare states, their sickness insurance systems have developed differently (Hagelund & Bryngelson, 2014). Employees in Norway are guaranteed full pay from the first day of illness-related absence. In Sweden, employees are entitled to receive 80% of wages, with no legal guarantee of pay for the first day of illness-related absence. Italian employees are entitled to receive between 50.0 and 66.7% of their wages, depending on the length of absence, with no legal guarantee of pay for the first 3 days. No changes in wage replacements levels have occurred in any of these countries between 2005 and 2012 (International Social Security Association, 2004, 2012). If paid sick leave indeed leads to decreased sickness presenteeism among physicians, then it is relevant to investigate whether physicians working in countries with lower economic compensation for illness-related absences report higher rates of presenteeism than those working in countries with more extensive economic compensation.

Research on presenteeism has uncovered a range of demographic variables that potentially influence the decision to work when sick, including gender (Gosselin et al., 2013; Johns, 2010), age (Aronsson & Gustafsson, 2005; Gosselin et al., 2013), work hours (Bockerman & Laukkanen, 2010b), and family status (i.e., having children; Aronsson et al., 2000). In addition, type of work has been associated with presenteeism among physicians (Rosvold & Bjertness, 2001). The social responsibilities found in university hospitals that include patient treatment, teaching, and research (Borges et al., 2010) constitute care demands that affect presenteeism among physicians (Elstad & Vabø, 2008). Sick leave has also been shown to be more frequent among women, older employees, and single parents (Scheil-Adlung & Sandner, 2010). On a societal level, the unemployment rate and female employment rate are relevant indicators of the labor market and may influence presenteeism. High unemployment has been related to lower absence rates (Shoss & Penney, 2012) and may stimulate presenteeism, as it reflects job insecurity (Claes, 2011). As women have a tendency to have higher presenteeism than men (Bockerman & Laukkanen, 2010a; Leineweber et al., 2011), a high female employment rate may stimulate presenteeism. These demographic variables are important confounders in the association between paid sick leave and presenteeism, as they play a crucial role in reported incidents of paid sick leave across countries (Scheil-Adlung & Sandner, 2010).

The aim of the current study was to investigate if sickness presenteeism varied according to differences in economic compensation for sick leave among senior consultant physicians working in Sweden, Norway, and Italy. We hypothesized that less economic compensation for illness-related absences from work leads to increased probability of presenteeism. Accordingly, we expected that senior consultant physicians from Italy would report higher scores of sickness presenteeism than senior consultant physicians in Sweden and Norway. Sweden was expected to report higher presenteeism scores than Norway, while Norway was expected to have the lowest scores of the three countries. We also hypothesized that the association between presenteeism and country would remain even after controlled for gender, age, family status, work hours, and work content.

Method

Sample

The sample consisted of senior consultants who participated in phase I (2004–2005) and phase II (2012–2013) in the study of Health and Organization among University Hospital Physicians in Europe (HOUPE). The HOUPE-study is a research program concerning work-related health, organizational culture, career paths, and working conditions among university hospital physicians. We used repeated cross-sectional data from university hospitals in Sweden, Norway, and Italy. The repeated cross-sectional design enables us to analyze aggregated change over time and is commonly used to analyze population or group change (Rafferty et al., 2015).

All permanently and actively working physicians at the three university hospitals were invited to participate in the two phases of date collection. Because of differences in employment status in the three countries, resident physicians were not included in the current study. The study sample consisted of 1326 senior consultant physicians from phase I (Sweden N = 753, response rate = 40.0%, Norway N = 223, response rate = 50.2%, and Italy N = 350, response rate = 41.3%) and 1403 senior consultant physicians from phase II (Sweden N = 735, response rate = 37.0%, Norway N = 331, response rate = 66.7%, and Italy N =337, response rate = 39.4%). Nonrespondent analysis of the samples showed a representative response rate based on sex and age in all three countries.

Procedure

Eligible participants received a written invitation that included information about the purpose of the study, guarantees for their anonymity, and plans for subsequent dissemination of the results. Swedish and Norwegian participants received a letter containing log-on information for accessing a web-based questionnaire at www.houpe.no, hosted in Norway. A paper version of the questionnaire was sent to respondents in Italy, as well as to respondents in Sweden (phase I) and Norway (phase I and II) who were reluctant to respond electronically. The survey used for Swedish and Norwegian participants was conducted in English, and Italian respondents received the questionnaire in Italian. Back-translation (Brislin et al., 1973) between English and Italian was used for the Italian questionnaire. Participation was voluntary and confidentiality was guaranteed. The study was approved by the administrations of each hospital, in addition to the respective national Regional Ethical Boards and data inspectors.

Measures

Sickness presenteeism

A single self-reported item measured sickness presenteeism (Rosvold & Bjertness, 2001; Sendén et al., 2013): 'Have you gone to work with an illness in a situation where you would have recommended a patient to stay at home?' Responses were given on a 5-point scale from Very seldom or never (1) to Very often or always (5).

Demographic variables

Gender, age (under 39, 40–54 years, and 55 years and over), and work hours (employees who work night shifts or on call duty = 1, employees who do neither = 0) were included as potential confounders in the analysis. To control for respondents' family status, we included civil status (in a relationship = 1, not in a relationship = 0), partner's employment status (partner in paid employment = 1, partners not in paid employment = 0), and children (one or more children = 1, no children = 0). Work content was measured by how much of the respondents' work was taken up by patient care, teaching, research, and management/administration. Response were given in percentages and summed to 100%.

Statistical Analysis

Cross-country differences in sickness presenteeism were analyzed by analysis of variance (ANOVA). Due to unequal sample sizes, post-hoc comparisons were performed using the Games-Howell test (Field, 2009).

Ordinary linear regression analyses were conducted to adjust for demographic variables and work tasks on the relationship between country and sickness presenteeism. Sickness presenteeism served as the dependent variable, with Italy as the reference category for country. The analyses were conducted with two models. The unadjusted betas were calculated in Model 1. Model 2 adjusted for the demographic variables of gender, age, work hours, family status, and work content (patient care, research, teaching, and management and administration). No multicollinearity between the demographic variables was detected, and the dependent variable was sufficiently normally distributed for use in ordinary linear regression.

To investigate if the variation by country at phase I differs from the variation by country at phase II, we performed a univariate linear regression with sickness presenteeism as the dependent variable and, country, time, and the interaction between country and time as fixed factors. Gender, age, work hours, family status, and work content were covariates.

Differences between country scores of sickness presenteeism between phase I and phase II were tested by independent sample *t*-test.

The statistical software IBM SPSS version 20 was used throughout the analyses.

Results

Table 1 summarizes a country comparison of welfare state regime, labor market indicators, and registered sick leave by the hospitals included in the current study. Unemployment rate and female employment rate were stable from 2005 to 2012 in all three countries with the exception of the unemployment rate in Italy, which increased from 7.7% in 2005 to 10.6% in 2012. Norway had the highest rate of practicing physicians per 1000 population (4.3), while Italy had the lowest (3.9). Hospital-registered sick leave rates in Sweden (3.0–2.8%) and Norway (3.4–3.7%) indicate stability between phase I and II. However, we were not able to gain information from Italy because of ethical restrictions by the hospital.

Table 1 Characteristics of the three European countries surveyed

Indicator	Sweden	Norway	Italy
Type of European welfare state regime (Bonoli, 1997)	Nordic	Nordic	Southern
Labor market indicators			
Unemployment rate, 2005/2012 (%) (OECD, 2015a)	7.6/8.0	4.5/3.2	7.7/10.6
Female employment rate, 2005/2012 (%) (OECD, 2015a)	70.2/71.8	71.8/73.8	45.5/47.1
Practicing physicians per 1000 population in 2013 (OECD, 2015b)	4.0	4.3	3.9
Sick leave			
Registered sick leave by the respective hospitals in 2005/2012, (%)	3.0/2.8	3.4/3.7	–

Table 2 Means, prevalence, standard deviations, and 95% confidence interval of self-reported sickness presenteeism by country at phases I and II

	Phase I				Phase II				*d*
	n	M (%)	SD	95% CI	n	M (%)	SD	95% CI	
Sweden	753	3.10_{a} (73)	1.18	3.02–3.19	735	2.82_{a} (64)	1.17	2.74–2.91	.23**
Norway	223	2.97_{a} (74)	1.07	2.83–3.11	331	3.06_{b} (76)	1.04	2.95–3.18	n.s.
Italy	350	3.37_{b} (86)	1.06	3.25–3.48	337	3.14_{b} (79)	1.13	3.02–3.26	.20*

Note: Between-country differences are marked with different subscripts. Within-country differences between phase I and phase II were tested using the Student's *t*-test. *d* = Cohen's *d*; n = sample in each country; M = mean; (%) = percentage of the respondents who sometimes or often had gone to work while ill; SD = standard deviation; CI = confidence interval; n.s. = not significant.
* $p < .01$, ** $p < .001$

Table 2 provides an overview of mean scores, prevalence, standard deviations, and 95% confidence intervals of sickness presenteeism in Sweden, Norway, and Italy. Italian respondents had the highest mean score of presenteeism in both phases of the study. Norway had the lowest mean score at phase I, while Sweden had the lowest mean score at phase II. To compare our results with other studies, the prevalence of sickness presenteeism was computed, defined as those who indicate that they sometimes or often went to work while ill (phase I: Sweden = 73%, Norway = 74%, and Italy = 86%; phase II: Sweden = 64%, Norway = 76%, and Italy = 79%). Country differences in reported sickness presenteeism were indicated by inspection of 95% confidence intervals, and were confirmed at both phase I, $F(2, 1323) = 9.89$, $p < .001$, $\omega = .12$, and phase II, $F(2, 1400) = 11.08$, $p < .001$ $\omega = .12$. The observed effect sizes were considered small (Cohen, 1992). A test of the within-country differences between the two phases showed that Sweden and Italy reported significantly lower scores of sickness presenteeism at phase II.

At phase I, the Games-Howells post-hoc test revealed that Italy had significantly higher scores of sickness presenteeism than Sweden ($p < .001$) and Norway ($p < .001$). Even though Sweden did report higher presenteeism scores than Norway, the difference was not significant. At phase II, the higher scores of presenteeism in Italy were significant

Table 3 Country as a predictor of sickness presenteeism at phase I and phase II

	Phase I				Phase II			
	β	*p*	95% CI	ΔR^2	β	*p*	95% CI	ΔR^2
Model 1				.02				.03
Country								
Italy (ref)								
Sweden	–0.12	.00	–0.43 to –0.10		–0.20	.00	–0.66 to –0.25	
Norway	–0.15	.00	–0.68 to –0.25		–0.05	.23	–0.37 to 0.09	
Model 2				.03				.06
Country								
Italy (ref)								
Sweden	–0.12	.00	–0.45 to –0.11		–0.21	.00	–0.71 to –0.27	
Norway	–0.14	.00	–0.64 to –0.19		–0.05	.31	–0.37 to 0.12	
Gender (ref men)	0.12	.00	0.14 to 0.44		0.17	.00	0.23 to 0.53	
Age								
Under 40 (ref)								
From 40 to 54	0.07	.13	–0.05 to 0.39		–0.03	.56	–0.27 to 0.15	
55 and over	0.06	.23	–0.10 to 0.40		0.05	.25	–0.10 to 0.36	
Night shift and/or call duty	0.03	.40	–0.10 to 0.25		0.04	.27	–0.08 to 0.28	
In a relationship	0.00	.98	–0.53 to 0.52		0.06	.14	–0.12 to 0.85	
Partner works	–0.02	.53	–0.33 to 0.17		0.01	.82	–0.25 to 0.32	
Have children	–0.02	.45	–0.31 to 0.14		–0.05	.11	–0.48 to 0.05	
Work content								
Patient care	0.13	.08	0.00–0.01		0.03	.55	0.00–0.01	
Research	0.04	.41	0.00–0.01		0.10	.01	0.00–0.01	
Management administration	0.12	.05	0.00–0.01		0.04	.38	0.00–0.01	
Teaching	0.06	.19	0.00–0.02		0.06	.11	0.00–0.02	

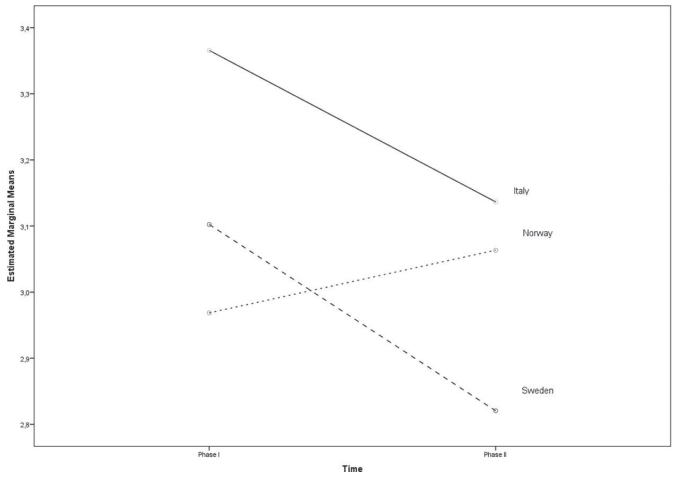
Note: β = standardized beta CI = confidence interval; ΔR^2 = adjusted R square; *p* = *p* value, and is considered significant at $p < .05$.

when compared to Sweden ($p < .001$), but not significant when compared to Norway. Sweden had significantly lower scores of sickness presenteeism than Norway ($p < .01$) at phase II.

The regression analyses at phase I (Tab. 3) show that Sweden and Norway had significant lower mean values than Italy in both Model 1 and Model 2. At phase II, the beta values were significant for Sweden and not significant for Norway in both Model 1 and Model 2. Of the control variables, gender was significant in both phase I and II, and doing research was significant at phase II.

The univariate linear regression showed a significant effect of both country, time, and their interaction ($p < .004$ in Model 1 and $p < .001$ in Model 2). An illustration of the difference between country mean scores of sickness presenteeism at the two phases is shown in Fig. 1.

Figure 1 Marginal means of sickness presenteeism by country and time.



Discussion

This two-phased cross-sectional study has shown that, in a sample of senior consultant physicians employed at university hospitals in Sweden, Norway, and Italy, sickness presenteeism scores did, to some extent, vary in accordance with national policies on paid sick leave. The prevalence of presenteeism in the current study corresponds to similar studies that report that up to 80% of physicians work while ill (Bracewell et al., 2010; McKevitt et al., 1997; Rosvold & Bjertness, 2001; Sendén et al., 2013; Waldron, 1996). The current results also show there were country differences in presenteeism among senior consultants. The results partly support our main hypothesis that countries with higher economic compensation for illness-related absences, such as Scandinavian countries, have lower scores of presenteeism than countries with less economic compensation, such as Italy. However, the difference in presenteeism scores between the three countries at phase I varied from the difference at phase II, despite there being no changes in wage replacement covered by the national insurance system in each country in the same period (International Social Security Association, 2004, 2012). The current results can reflect changes in the labor market in the countries of the physicians participating in the current study. Although Italy increased its unemployment rate, both general unemployment rate and female employment rate were stable in the Scandinavian countries from phase I to phase II (OECD, 2015a). Presenteeism can be a manifestation of job insecurity in periods of high unemployment rate. However, reported presenteeism decreased in a period of higher prevalence of unemployment in Italy, and decreased in Sweden in the same period. Accordingly, it might be more relevant to explain these changes in terms of important system factors that could be influential for the professional group within each hospital.

After the initial data collection of the HOUPE-study in 2005, the Swedish host hospital introduced an intervention project in 2006 that used survey feedback seminars to initiate organizational change (Fridner et al., 2014). Altogether, 20 feedback seminars were conducted and 250 physicians participated in these meetings, which aimed to improve physicians' health and work satisfaction. These seminars were regarded as successful, as they achieved acceptance for organizational change and may have influenced pressure to attend among the physicians (unpublished data).

In Italy, a recent debate concerning medical liability (Motta & Nappi, 2014) and the high costs of the criminal proceedings related to medical malpractice (Traina, 2009) has been prominent in the national arena. The debate has resulted in physicians' increasingly practicing defensive medicine (Traina, 2009). As physicians become more defensive so as to avoid potential litigation, they may also become more cautious of going to work while ill, as this may increase the risk of making mistakes. Recently, the Italian parliament approved a new law that includes physicians in the right to at least 11 hours of rest after a 24 hours shift [Law of 30 October 2014 (Legge 30 ottobre 2014)]. The ongoing debate that occurred in the lead up to this legislation may have influenced the physician's behavior in this study, and reduced the observed presenteeism scores of Italian physicians.

Of the control variables included in the current study, gender and conducting research made a significant contribution in the models. Women had higher sickness presenteeism than men in both phases of the study, which is parallel with earlier findings (Aronsson & Gustafsson, 2005; Gosselin et al., 2013). Conducting research was associated with increased sickness presenteeism among physicians included in the current study. The competing responsibilities of research, teaching, and clinical work represent a difficult demand for all clinical academics (Conrad et al., 2010), which could fortify higher attendance pressure. The results of the current study may indicate that conducting research represents a demand that pressures physicians to work while ill.

When interpreting the results from this study, it is important to keep in mind that our sample consisted of senior consultants working at university hospitals. The situation may be different for physicians working in private practice (Rosta et al., 2014; Rosvold & Bjertness, 2001), or for other health care professionals working under different working conditions. A high prevalence of presenteeism has not only been reported among physicians, but also in other occupations in the health and welfare services as well (Aronsson et al., 2000). As physicians may be regarded as financially privileged, the impact of the financial aspects of paid sick leave may be of greater importance in occupational groups in the health and welfare services, where average earnings are lower. Aronsson et al. (2000) investigated sickness presenteeism in relation to occupation and personal income among employees in Sweden. Contrary to their findings that those with the lowest monthly income were more likely to attend work while ill, medical doctors was the only occupation that manifested high monthly income and high sickness presenteeism. This can reflect that having the economic resources and work stability to support the current standard of living in the foreseeable future is equally as important for physicians as it is for the rest of the workforce. The extensive negative consequences of presenteeism among physicians, referred to in the introduction of this paper, underpin the importance of investigating potential factors that may reduce such behavior.

Future research in the domain of presenteeism is recommended, including further investigation of differences in national insurance systems and how changes in these

systems are reflected in employee behavior. As discussed, there are a range of aspects in the higher structural environment that may influence whether and how workers change their behavior. Longitudinal studies that track the development of national insurance policies together with measures of sickness presenteeism would be of high relevance to understand how the social structures of welfare systems affect employee behavior. An obstacle to performing such international cross-country comparisons is the complete lack of international databases measuring sickness presenteeism (Claes, 2011).

With regard to hospital physicians, research on ways to reduce the high prevalence of presenteeism is still highly relevant. As physicians from Norway (who are fully paid when sickness absent) and physicians from Italy (who first after 3 days of absence receive between 50 and 66.7% of their wage after the first 3 days of absence) both report high levels of sickness presenteeism, paid sick leave alone may not explain the high prevalence of presenteeism among physicians. Paid sick leave is an important tool for society to sustain the productivity of its human resources, by enabling workers to access medical care and follow the recommended treatment to facilitate faster recovery and illness prevention. However, factors other than economic compensation may have greater influence on presenteeism behaviors among hospital physicians. Concern over patient care (Gudgeon et al., 2009), difficulties in arranging cover (McKevitt et al., 1997), and the role identity that physicians are invincible (Henderson et al., 2012; Thompson et al., 2013) may all be challenges that are inherent to the work environment and may influence presenteeism.

Strengths and Limitations

This study contributes to the existing literature by investigating the relationship between sickness presenteeism and paid sick leave in an occupation that has shown to have a high prevalence of sickness presenteeism worldwide. The major strength of this study was the repeated cross-sectional design and the inclusion of countries with various paid sick leave policies. Nevertheless, there are several limitations to account for while interpreting the results of this study. The current results derived from cross-sectional data rely on self-reported data, and were thus not oriented toward causality but rather toward variations in sickness presenteeism. With regard to the use of self-reported data, it is difficult to use other measures of sickness presenteeism because only the individual knows if he or she is sickness present or not (Claes, 2011; Johns, 2011).

However, one must be cautious in generalizing the study findings, as the sample consists of senior consultants. In contrast, residents are employed in an educational position and are less economically robust than their senior colleagues. Therefore, residents may be more prone to sickness presenteeism, as they are more exposed to the economical consequence of absence. There may also be structural factors or processes in each hospital not accounted for in the current study that may affect sickness presence. As the welfare system constitutes an important facilitator for all ill workers within a country, regardless of profession, these results could be relevant to other occupations. However, one must be cautious in generalizing cross-sectional data, as there can be systematic differences in presenteeism rates between sectors and occupations within a country (Aronsson et al., 2000). Research investigating occupational differences in the relative importance of sickness benefits within each country can be relevant in future discussions and decisions about national benefit schedules.

Another limitation is that sickness presenteeism was measured with a single-item question, asking if the physicians had gone to work with an illness they would have recommended a patient to stay at home. However, in some cases, single-item questions are appropriate measures to use (DeSalvo et al., 2006). Our question differed from that of other studies in that our question was not limited to a defined period of 6 or 12 months (e.g., Aronsson et al., 2000), and it thus forced physicians to consider themselves as patients and better relate to situations where they would have recommended patients to take sick leave (Sendén et al., 2013). Arguably, the question that was used applied more to the specific context of physicians than those of earlier studies.

Cultural differences on how legitimate it is to be absent from work have also shown differences between countries (Addae et al., 2013), and are not accounted for in this study. However, we asked a question on presenteeism that forced the physicians to answer concerning a common context (i.e., in which they would have recommended their patient to stay home from work). Consequently, the symptoms that the physicians reported as presenteeism in this study were severe enough to be entitled to sickness certificates.

Conclusion

Sickness presenteeism is prevalent among physicians, and the need to investigate initiatives to reduce presenteeism among physicians is evident, due to its harmful consequences. In this regard, paid sick leave is a relevant factor for potentially reducing presenteeism. However, other pieces of legislations, such as workhours and medical liability, may also influence how employees think about sickness presenteeism. To reduce the high prevalence of harmful presenteeism among physicians, it is important further to investigate potential social initiatives including national schedules for welfare benefit.

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Paper III

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