

PRESENTEEISM: THE DARK SIDE OF EMPLOYEE ATTENDANCE

by

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DEDICATION

This work is dedicated to my patient and supportive husband Keith, and my brilliant and talented daughters Allison and Kate without whom I would have never survived this process.

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That which does not kill you makes you stronger was an adage probably written by a person working on her dissertation. I greatly appreciate the love, support, patience and ability to tolerate carry-out dinners displayed by my husband Keith and daughters Allison and Kate during this long process. Thanks also go to my parents, Bettie and Larry Wheeler and my mother-in-law Sheila Poms for their expert babysitting skills during the early days of this process. I also thank them for quietly insisting that it was not a good idea to go too long without seeing your parents, because you never know what could happen. I also greatly appreciate the cheerleading provided by that unique collective known as the Robinson Drama Mamas, a group I wouldn't have met if it wasn't for the theatrical interests of my girls. For gentle prodding, constructive feedback and creative ideas, I thank my advisor and dissertation chair, Dr. Lois Tetrick. I am still looking for that "Easy Button." My dissertation committee was outstanding in providing timely commentary and unconditional positive regard; so many thanks go to Dr. Kathryn Jacobsen and Dr. Lou Buffardi. While it takes a village to raise a child, I think it takes an entire social network to finish a dissertation and I could not survive without mine.

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ABSTRACT

PRESENTEEISM: THE DARK SIDE OF EMPLOYEE ATTENDANCE

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Employee attendance is of primary importance to virtually every organization. Until recently this research has focused primarily on absenteeism. Researchers have now begun to focus on the other side of the attendance equation, presenteeism, which is going to work despite feeling ill. This study examined both presenteeism and absenteeism and provides the beginning of a theoretical rationale based on the effort-reward imbalance framework for how certain factors influence an employee's decision to attend or not attend work when sick. Using an internet-based survey, data from 424 working adults in the United States were collected. Results suggest that individuals high in overcommitment are more likely to come to work when sick, to have lower self-reported health and to continue to work at home, even when they are supposed to be taking sick leave. A direct effect on health was found for recovery, suggesting that individuals who participate in activities that help them disengage from work were healthier. These results

imply that organizations should consider policies and supervisor training programs that encourage employees to use sick leave when needed.

INTRODUCTION

Employee attendance is of primary importance to virtually every organization. Until recently, organizational researchers have confined the study of attendance dynamics to absenteeism. Absenteeism is an employee's failure to report to work as scheduled such that he or she is not physically present when there is a social expectation for him or her to be there (Johns, 2008; Martocchio & Harrison, 1993). This includes absenteeism related to health issues, or sickness absenteeism. More recently, researchers have begun to focus on the other side of the attendance equation, presenteeism. Presenteeism is going to work despite feeling ill (Aronsson, Gustafsson, & Dallner, 2000; Dew, Keefe, & Small, 2005; Johns, 2010) and could be considered the opposite of sickness absence. Essentially, an employee comes to work despite ill health and complaints that should prompt him or her to rest and take sick leave (Aronsson & Gustafsson, 2005). These health problems may be chronic, as in the case of allergy, asthma, depression, arthritis and migraine headaches or acute, such as when an employee has a cold, the "flu" or other contagious disease (Shamansky, 2002). An employee with a health problem could be considered as making a choice between engaging in sickness absence or presenteeism. To date, no one has examined both presenteeism and sickness absence in the same study, thus understanding

the individual and organizational factors that relate to both presenteeism and sickness absence is the focus of this study.

Why Study Presenteeism?

Recent evidence indicates that the lost productivity due to presenteeism costs the United States economy roughly \$180 billion annually. This averages to about \$225 per employee per year, which exceeds the combined costs of absenteeism, medical and disability benefits (Collins, et al., 2005; Goetzel, et al., 2004). Lost productivity is due to both employee and organizational dynamics. Individual performance decreases because sick employees can only perform as well as healthy co-workers by investing more time and effort, which they may not be able to do (Demerouti, Le Blanc, Bakker, Schaufeli, & Hox, 2009). Engaging in this extended time and effort may prolong illness. Group performance may suffer because sick colleagues may need extra help from their co-workers or may infect their co-workers (Demerouti, et al., 2009).

In general, employees who repeatedly postpone taking sick leave that would allow recovery from minor illness are at risk of developing more serious illnesses (Grinyer & Singleton, 2000). If a more serious illness develops, an employee is likely to require a longer leave than that dictated by the original illness. Consequently, the costs to the organization are much higher.

Although some organizations may consider presenteeism a positive employee behavior because of the reduced absenteeism costs, it is important for employers to consider the downside of presenteeism behavior and the long-term costs associated with it in terms of employee well-being (Demerouti, et al., 2009). In fact, presenteeism may be

a precursor of absenteeism (Johns, 2009). Several studies have found that a greater frequency of presenteeism is associated with increased absenteeism (Aronsson, et al., 2000; Caverley, Cunningham, & MacGregor, 2007; Elstad & Vabo, 2008; Hansen & Andersen, 2008). Further, Grinyer and Singleton (2000) found that presenteeism related to increased risk of poor health and subsequent prolonged sick leave. Bergstrom and colleagues (Bergstrom, Bodin, Hagberg, Aronsson, & Malin, 2009) in a prospective cohort study, confirmed the relationship between presenteeism and absenteeism, finding that presenteeism was a significant risk factor for absenteeism.

As presenteeism is a relatively new concept, limited research has been conducted on why an individual might come to work when he or she is ill as opposed to taking sick leave (Biron, Brun, Ivers, & Cooper, 2006). Most studies of presenteeism appear in the medical, occupational health and epidemiology literature; very little work in this area has been done in the business or industrial/organizational psychology literatures (Johns, 2008), which tend to concentrate more on absenteeism. In addition, most presenteeism studies are atheoretical and overlook, for the most part, psychosocial contributors to presenteeism (Johns, 2008, 2010). It is clear that studying sickness absence and presenteeism together provides a more robust picture of employee attendance, increasing our understanding of why people do or do not miss work and why they return to work, even if they are not fully recovered or ready (Johns, 2010).

Given the current state of the literature, the purpose of this research is to better understand the relations between sickness absence and presenteeism by simultaneously examining their correlates. To focus this analysis, I provide a theoretical model of

employee attendance encompassing both sickness absence and presenteeism using the Effort-Reward Imbalance (ERI) framework (Siegrist, 1996).

Effort Reward Imbalance and Employee Attendance

The majority of absenteeism studies suggest that an employee's motivation to attend is the main influence on actual attendance, assuming the employee has the ability to attend (Brooke, 1986; Brooke & Price, 1989; J. P. Burton, Lee, & Holtom, 2002; Harrison & Martocchio, 1998; Steel, Rentsch, & Van Scotter, 2007; Steers & Rhodes, 1978). Attendance motivation is determined by a combination of the employee's affective responses to the job situation and internal and external pressures to attend (J. P. Burton, et al., 2002; Steel, et al., 2007; Steers & Rhodes, 1978). This conceptualization of attendance motivation directly corresponds to the basic tenants of the effort-reward imbalance framework (Siegrist, 1996).

The effort-reward imbalance model suggests that the interaction between a person's thoughts, emotions and behaviors and his or her social environment defines whether one's psychosocial work environment is health promoting or health adverse (Siegrist, et al., 2004). Rooted in social exchange theory and the notion of distributive justice, the ERI model assumes that effort at work is exerted as part of a contract based on the norm of social reciprocity.

The ERI model is typically used to consider health outcomes stemming from an adverse psychosocial work environment (Godin & Kittel, 2004). A handful of studies have considered the ERI framework as it relates to absenteeism but it has yet to be applied to presenteeism. A general overview of previous presenteeism research indicates

that this model may be useful in understanding why an individual might engage in presenteeism versus sickness absence when he or she is ill. Please see Figure 1 for hypothesized relations.

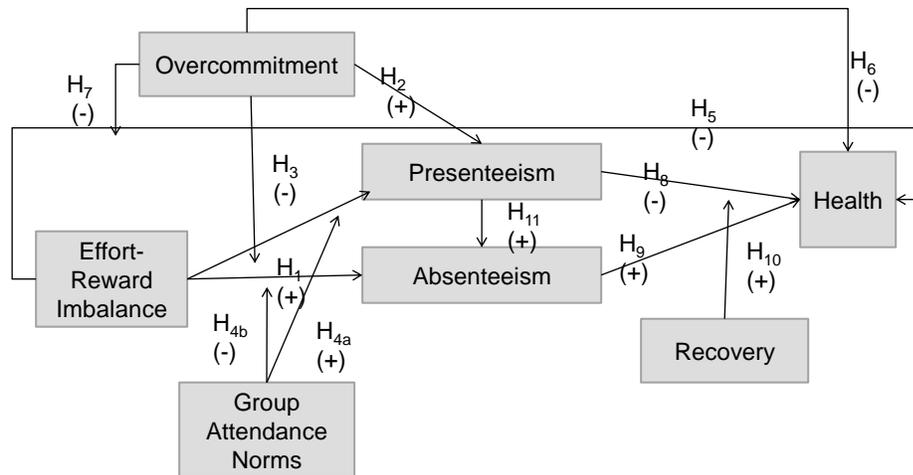


Figure 1: Hypothesized Model

Effort

Efforts result from job demands and obligations imposed upon the employee (van Vegchel, de Jonge, Bosma, & Schaufeli, 2005). Regarding job demands and absenteeism, a recent meta-analysis explored the relations among various job demands, including role overload and other job situation variables, illness and absenteeism, finding positive but

small associations (Darr & Johns, 2008). To explain this finding, Johns (2009) suggested that it is far more likely that job demands compel attendance as opposed to compel absence as one might expect. Further, it is possible that absenteeism is more likely to occur in response to acute stressors, which tend to be discrete events, and that presenteeism is the more likely response to chronic stressors, which are long-term and continuous and that are usually assessed in work stress research (Johns, 2009; Wheaton, 1997).

Johns' (2009) contention is born out in several presenteeism studies that have found that individuals with high job demands such as role overload (Biron, et al., 2006); low replaceability (Aronsson, et al., 2000); time pressures (Aronsson & Gustafsson, 2005; Aronsson, et al., 2000; Biron, et al., 2006; Demerouti, et al., 2009; Hansen & Andersen, 2008; McKeivitt, Morgan, Dundas, & Holland, 1997); and jobs that require the use of a variety of skills (Biron, et al., 2006) are more inclined to engage in presenteeism than are those employees who do not have these demands. Employees with heavier workloads, both psychologically (Biron, et al., 2006) and physically (Demerouti, et al., 2009), and insufficient resources (Aronsson & Gustafsson, 2005; Aronsson, et al., 2000) are also more likely to come to work when sick than are those without these demands.

Reward

Siegrist posited three aspects of rewards within the ERI model – esteem, job promotion and job security (Siegrist, et al., 2004). Esteem relates to receiving respect, support and fair treatment at work, reflecting both social support and organizational justice. Job promotion focuses on job prospects and whether one's current position is

commensurate with the individual's training and education. Job security reflects whether an individual expects a negative change in his or her work situation.

Regarding the social support aspect of esteem, several studies found that a lack of coworker support is related to sickness absence (Melchior, Niedhammer, Bergman, & Goldberg, 2003; Moreau, et al., 2004; Roelen, Weites, Koopmans, Van der Klink, & Groothoof, 2008) . Lack of supervisor support is also related to absenteeism (Caverley, et al., 2007; Nielsen, Rugulies, Christensen, Smith-Hansen, & Kristensen, 2006).

Regarding presenteeism and social support, Hansen and Anderson (2008) found that relationships with colleagues were more important than personal attitudes when deciding whether to work while ill.

Based on Siegrist's model, the second aspect of reward is job promotion. To my knowledge, there are no studies that have considered the association between job promotion and employee attendance, either from an absenteeism or presenteeism perspective.

In recent years, restructuring, downsizing and offshoring have threatened employees' feelings of job security (Johns, 2009), Siegrist's third component of reward. Several studies found that absenteeism is negatively related to unemployment rates (Daniels, Tregaskis, & Seaton, 2007; Johns, 2009; Markham & McKee, 1991) and that attendance markedly improves when companies downsize (Markham & McKee, 1991). Job insecurity also has been found to be related to presenteeism (Biron, et al., 2006). The perceived threat of unemployment may encourage individuals to engage in presenteeism because they are afraid to miss work and possibly may feel the need to work longer hours

in order to preserve their jobs despite being in ill health (Biron, et al., 2006; Caverley, et al., 2007).

Effort-Reward Imbalance

Issues arise for employees when the exchange of effort and rewards is not congruent (Siegrist, et al., 2004). When an individual experiences a lack of reciprocity, in terms of high costs and low gains, characterized by high efforts and low rewards, there is imbalance. This imbalance elicits emotional distress in employees. According to Siegrist and colleagues, feelings of not being appreciated or of being unfairly treated and subsequently disappointed by inappropriate rewards cause strain reactions in the autonomic nervous system. This constant experience of reward deficiency impairs an individual's ability to successfully self-regulate (Siegrist, 1996, 2000; Siegrist, et al., 2004). Over the long run, the imbalance between high effort and low reward increases illness susceptibility (Siegrist, 2000), resulting in negative physical and mental health outcomes for the employee (de Jonge, van der Linden, Schaufeli, Peter, & Siegrist, 2008; Kinnunen, Feldt, & Mäkikangas, 2008; Tsutsumi & Kawakami, 2004).

A few studies have used the interaction of effort and reward to predict employee attendance. Tsutsumi and colleagues (2003 as cited in Tsutsumi & Kawakami, 2004) found that employees with deteriorated effort-reward imbalance (high perceived effort coupled with low perceived reward) were less likely to use either long- or short-term sick leave, which these authors treated as indicative of presenteeism. Conversely, Peter and Siegrist (1997) found increased risks of both short-term and long-term absence and an increase in the number of absence episodes when effort-reward imbalance existed.

Supporting this finding, Head and colleagues (2007) demonstrated that higher levels of effort-reward imbalance were predictive of both long-term and short-term sickness absence. Further, in Godin and Kittel (2004), effort-reward imbalance was also associated with absences of more than one week and for longer absence spells. There is clear support for the relationship between effort-reward imbalance and absence; however, few if any, studies have considered presenteeism.

The ERI model is fundamentally rooted in social exchange theory with a strong emphasis on the norm of reciprocity. Based on this, employees who constantly perceive that their efforts are not rewarded by their organizations are likely to reduce their efforts. As noted by Godin and Kittel (2004), one way of reducing effort is by engaging in withdrawal behaviors. Thus employees who do not feel that their efforts are recognized by their organization will be more inclined to take sick leave when they are ill, as a way of balancing inputs and outcomes. Further, individuals who believe they are not recognized for their contributions may feel less committed to the organization (Godin & Kittel, 2004) and be less likely to “fight” through an illness and engage in presenteeism, therefore the following is posited:

H₁: Effort-reward imbalance is positively related to absenteeism.

Overcommitment

The ERI model assumes that there is also a personal component regarding how employees experience effort-reward imbalance (de Jonge, et al., 2008), referred to as overcommitment. Overcommitment is a set of attitudes, behaviors and emotions that reflect excessive endeavor coupled with a high need for approval and esteem (de Jonge,

et al., 2008; Tsutsumi & Kawakami, 2004). The ERI model posits that excessive efforts are the result of an underestimation of challenges and the overestimation of coping resources (Siegrist, 1996).

Overcommitment is an individual difference in the way employees experience effort-reward imbalance and appears to be relatively stable over time. (Preckel, Meinel, Kudielka, Haug, & Fischer, 2007; Siegrist, 1996). Overcommitment is considered to be a risk factor for strain even when there is no effort-reward imbalance, likely because it appears to be a personal, exhaustive work-related coping style (Preckel, et al., 2007; Siegrist, 1996; Tsutsumi & Kawakami, 2004). The ERI model suggests that an individual is most adversely affected when job and personal conditions interact (Siegrist, et al., 2004), thus the negative effects of effort-reward imbalance are exacerbated for individuals who are overcommitted (Tsutsumi & Kawakami, 2004).

According to ERI theory, individuals who are overcommitted tend to expose themselves more often to increased demands at work, they may work excessively hard to meet those demands (Siegrist, 1996), often beyond what is formally needed (Siegrist, et al., 2004). Overcommitted employees seem to have difficulty in recognizing that there is a negative trade-off between high effort and low reward (Preckel, et al., 2007). Thus they often misjudge the effort required to cope with their job demands and may overestimate their own coping resources (Preckel, et al., 2007; Tsutsumi & Kawakami, 2004). As a result, they may be more at risk for strain from unbalanced exchanges and more susceptible to increased frustration arising from effort-reward imbalance (Siegrist, et al., 2004). Individuals who see themselves as irreplaceable, whose jobs cannot be delegated

or who have no back-up may in fact be exerting excessive effort to keep up with their job demands. High need for approval may be shown by those individuals who do not want their co-workers burdened with additional tasks.

In the few studies that specifically focused on overcommitment, no association was found between overcommitment and absenteeism (Godin & Kittel, 2004). Further, Tsutsumi et al. (2003 as cited in Tsutsumi & Kawakami, 2004) found that employees high in overcommitment were less likely to take sick leave than were their counterparts, which these authors assumed was presenteeism. The lack of relationship between overcommitment and absence suggests that some individuals are so highly committed to their jobs that they will continue to work while sick.

To my knowledge, there are no studies that directly evaluate the relations between overcommitment and presenteeism; however, several presenteeism studies asked participants why they engaged in presenteeism rather than taking sick leave, which resulted in answers that clearly parallel overcommitment. Some participants cited low replaceability, which is defined as the extent to which employees are responsible for performing work which is not done when they are absent. Employees must catch up with their work upon their return (Aronsson, et al., 2000), thus they are less inclined to take sick leave (Aronsson & Gustafsson, 2005; Aronsson, et al., 2000). Additional studies found that individuals “worked through” illness because they had no back-ups, it was difficult to find replacements or the work simply could not be delegated and they did not want their colleagues carrying out additional work duties (Aronsson & Gustafsson, 2005; Aronsson, et al., 2000; Biron, et al., 2006; Caverley, et al., 2007; McKeivitt, et al., 1997).

These explanations for presenteeism seem in keeping with Siegrist's and colleagues (Preckel, et al., 2007; Siegrist, 1996; Siegrist, et al., 2004) conceptualization of overcommitment.

The ERI model indicates that overcommitment is relatively stable over time and is a personal pattern of coping with job demands independent of any anticipated rewards (Siegrist, 1996; Siegrist, et al., 2004; Tsutsumi & Kawakami, 2004). Consequently, overcommitment may override the lack of equity felt from effort-reward imbalance such that there is a direct relationship between overcommitment and employee attendance, thus

H₂: Overcommitment is positively related to presenteeism.

Effort-reward Imbalance/Overcommitment Interaction

The ERI model suggests that while both effort-reward imbalance and overcommitment independently contribute to poor health (Preckel, et al., 2007; Siegrist, 1996), the interaction between failed reciprocity (high effort, low reward) and high overcommitment leads to the highest risk of poor health and well-being (Kinnunen, et al., 2008; Preckel, et al., 2007; Tsutsumi & Kawakami, 2004). Overcommitted individuals often underestimate job demands and overestimate their own coping resources, thus they may contribute to the risk of prolonged exposures to a non-reciprocal exchange (Preckel, et al., 2007; Siegrist, 2005), increasing their risk of illness. Essentially, this means that individuals who give greater effort, receive fewer rewards and are higher in overcommitment may be more likely to become ill. They are unlikely to take sick leave when they are ill because overcommitted individuals do not easily disengage from work

(Preckel, et al., 2007). They are consequently less likely to take sick leave, are more likely to engage in presenteeism and do not permit themselves time to recover from an illness, thus possibly prolonging the illness. Overcommitment thus strengthens the adverse effects of ERI. To my knowledge, there are no studies that investigate this interaction with employee attendance, however, it can be hypothesized that:

H₃: The relationship between effort-reward imbalance and absenteeism is moderated by overcommitment such that there is a more negative relationship between effort-reward imbalance and absenteeism for individuals high in overcommitment.

Group Attendance Norms

A more recent trend in employee attendance has been to study the effects of an individual's work group on sickness absenteeism behavior (Gellatly & Luchak, 1998; Johns, 1997; Nicholson & Johns, 1985; Väänänen, et al., 2008). Essentially, the relationship between an individual's attitudes toward taking sick leave and whether sick leave is actually taken is affected by his or her work group's tolerance of absence behavior (Nicholson & Johns, 1985; Steers & Rhodes, 1978; Väänänen, et al., 2008; Xie & Johns, 2000).

Group norms are agreed upon guidelines for appropriate and inappropriate behavior that develop through group member interactions (Cialdini & Trost, 1998). Work groups are likely to vary in their tolerance of absence (Nicholson & Johns, 1985; Rentsch & Steel, 2003; Väänänen, et al., 2008) and what is acceptable is communicated through group absence norms. Individual level group absence norms refer to a person's

perceptions of the level of sickness absence tolerance in that person's own work group (Väänänen, et al., 2008).

Several absenteeism studies have focused on group absence norms, considering how employees perceive their managers' and coworkers' reaction to their possible absence (Aronsson & Gustafsson, 2005; Grinyer & Singleton, 2000; Johns, 2009, 2010; McKeivitt, et al., 1997; Saksvik, 1996). In general, these studies have found negative relationships between intolerant group absence norms or norms requiring stricter attendance and absence behaviors (Gellatly & Luchak, 1998; Harrison, 1995; Martocchio, 1994; Xie & Johns, 2000).

A few presenteeism studies have considered group norms as well. If employees deem that their absence is viewed negatively or that it may ultimately affect their employment, they tend to come to work even when they are sick (Grinyer & Singleton, 2000). Some employees indicated that they would feel guilty that they did not come to work because there were attendance norms regarding the number of acceptable sick absence days (Biron, et al., 2006).

It appears that an individual's perception of group absence norms can exert a strong pressure to attend. Extending the effort-reward imbalance framework, group absence norms are likely to moderate the relationship between effort-reward imbalance and employee attendance depending on how the individual perceives the restrictiveness of the norms.

H_{4a} and H_{4b}: An individual's perception of group attendance norms moderates the relationship between effort-reward imbalance and attendance behavior such that

the individual is more likely to engage in presenteeism and less likely to engage in absenteeism when more restrictive attendance norms are perceived.

Health

Health refers to a range of states of physical, mental and social well-being, not just the absence or presence of disease. Health can be characterized by variations in healthful signs and lifestyles (Sarafino, 2004). The ERI model was initially developed to evaluate how stress at work influenced health and well-being (Siegrist, 1996; van Vegchel, et al., 2005). Both effort-reward imbalance and high levels of overcommitment directly increase the risk of poor health and decreased well being (Kinnunen, et al., 2008; Preckel, et al., 2007; Tsutsumi & Kawakami, 2004).

The interaction of effort-reward imbalance and high levels of overcommitment heighten the risk of ill health (Kinnunen, et al., 2008; Preckel, et al., 2007; Tsutsumi & Kawakami, 2004). The interaction of ERI and overcommitment has been linked to decreased well-being, specifically emotional exhaustion and decreased personal accomplishment (Bakker, Killmer, Siegrist, & Schaufeli, 2000) Thus:

H₅: Effort-reward imbalance is negatively related to health.

H₆: Overcommitment is negatively related to health.

H₇: The relationship between effort-reward imbalance and health is moderated by overcommitment such that there is a stronger negative relationship between effort-reward imbalance and health for individuals high in overcommitment.

Across the health literature, significant relations have been found between presenteeism and allergies, arthritis, chronic pain, diabetes, gastro-intestinal conditions, depression, anxiety, migraine headache and musculoskeletal problems (Sanderson & Andrews, 2006; Schultz & Edington, 2007) indicating that individuals with those chronic conditions tended to engage in presenteeism and supporting the idea that health influences attendance behaviors. In addition, employees with multiple health conditions report greater presenteeism than those with few or no health conditions. Further, each additional chronic condition reported was associated with significantly higher odds of presenteeism (Lerner, Amick, Malspeis, & Rogers, 2000; Schultz & Edington, 2007), perhaps because those individuals so affected feel they have already taken too much time off and are obligated to work.

A recent meta-analysis found support for the role of illness as a mediator between work strain and absenteeism, however the amount of variance explained in absenteeism was less than 10%, prompting the authors to suggest that some employees were engaging in presenteeism rather than absenteeism (Darr & Johns, 2008). The authors posited that work strain and absence are indirectly connected via both psychological and physical illness. This finding meshes well with ERI theory as effort-reward imbalance is representative of work strain, which contributes to increased risk of illness (Kinnunen, et al., 2008; Preckel, et al., 2007; Tsutsumi & Kawakami, 2004) which in turn potentially effects employee attendance.

H₈: Presenteeism is negatively related to health.

H₉: Absenteeism is positively related to health.

Recovery

Presenteeism is related to increased risk of ill health because it restricts opportunities for recuperation (Aronsson & Gustafsson, 2005). Recovery and unwinding processes are important predictors of individual health and well-being (Meijman & Maulder, 1998; Sonnentag, 2001). According to Meijman and Mulder (1998), expending effort at work leads to physiological, behavioral and subjective load responses, which under normal circumstances are reversible. When the individual is no longer stressed by work demands, the systems previously affected by the demands return to their normal pre-demand level, resulting in recovery (Meijman & Maulder, 1998; Sonnentag, 2001). Recovery allows for the reduction of the deleterious effects of a stressful work situation. If an individual is experiencing continuous work demands with no break, recovery cannot occur. The accumulation of load reactions can result in longer term negative health issues and impaired well being (Meijman & Maulder, 1998; Sonnentag, 2001).

Recovery is necessary to prevent decrements in performance and well-being and is positively related to work-related outcomes such as work engagement, personal initiative, and the pursuit of learning (Meijman & Maulder, 1998; Sluiter, Van der Beek, & Frings-Dresen, 1999; Sonnentag, 2003, 2012). Incomplete recovery from work is associated with long-term stress related to high work demands (Jansen, Kant, van Amelsvoort, Nijhuis, & van den Brandt, 2003; Kivimaki, et al., 2006; Sluiter, Frings-Dresen, van der Beek, & Meijman, 2001). Recent work has suggested four possible diversionary strategies that are likely to help recovery because they do not make demands

on functional systems used during work: psychological detachment, relaxation, mastery experiences and control during leisure time (Sonnentag & Fritz, 2007).

Psychological detachment from work means that an individual is not only physically absent from work, he or she is also refraining from job-related tasks and is not thinking about job related issues or problems (Sonnentag, 2012; Sonnentag & Bayer, 2005). Employees who are able to detach from their jobs during off-work hours and refrain from negative thoughts about their work experience less psychological (Fritz & Sonnentag, 2006; Sonnentag & Fritz, 2007) and physiological strain symptoms (Brosschott, Gerin, & Thayer, 2006). Continued preoccupation with work precludes recovery as strain processes continue to occur (Meijman & Maulder, 1998; Sonnentag, Binnewies, & Mojza, 2008).

Relaxation is a positive experience both physically and mentally, characterized by a reduction in sympathetic activation and resulting in a decrease in heart rate and muscle tension (Sonnentag, et al., 2008). Activities that provide positive experiences, for example, nature walks, or listening to music, result in relaxation. Relaxation can also occur through meditation, progressive muscle relaxation and other techniques (Sonnentag, et al., 2008). Over the long term, relaxation techniques reduce tension and other symptoms of poor well-being (Van der Klink, Blonk, Schene, & Van Dijk, 2001).

Mastery experiences include activities that provide challenging experiences and learning opportunities in areas unrelated to an individual's job (Sonnentag & Fritz, 2007). Mastery experiences challenge the individual without overtaxing him or her and offer opportunities to experience competence and proficiency. These experiences are varied

and can range from studying a new language to learning a new hobby to volunteer opportunities within a person's area of expertise (Fritz & Sonnentag, 2006; Ruderman, Ohlott, Panzer, & King, 2002). While mastery experiences do put demands on the individual, they are expected to result in recovery because they build new internal resources, including skills, competencies and self-efficacy (Bandura, 1997; Hobfoll, 1998). Research into the value of mastery experiences as a contributor to recovery is somewhat limited; however, preliminary evidence suggests that mastery experiences during vacation were negatively related to exhaustion after the vacation (Fritz & Sonnentag, 2006).

In general, individuals seek to control events in their lives (Kelley, 1971) thus control is defined as person's ability to choose an action from several options (Sonnentag & Fritz, 2007). Control is a positive experience as individual well-being is improved when a person feels in control of important life domains (Bandura, 1997). Conversely, perceived lack of control is associated with higher levels of psychological distress (Rosenfeld, 1989). Control within the recovery framework refers to the degree to which a person can decide which activity to pursue during leisure time, including when and how to pursue the activity (Sonnentag & Fritz, 2007). This may satisfy a person's desire for control, increasing self-efficacy and feelings of competence, which then promote well-being (Sonnentag & Fritz, 2007). Control acts as an external resource that enhances recovery from work. The ability to choose one's recreational activities is thought to be especially helpful for the recovery process and is associated with increased well-being (Sonnentag & Fritz, 2007).

Recent research has suggested the need for recovery following periods of not only stress but illness as well (Aronsson, Svensson, & Gustafsson, 2003; Biron, et al., 2006; Sonnentag, 2003). Sickness absence allows sick and stressed employees some recovery time whereas those employees who do not use sick leave may experience accumulated stress, a risk factor for many diseases from the common cold to cardiovascular disease (S. Cohen, Tyrrell, & Smith, 1991; Kivimaki, et al., 2005). To illustrate this point, the longitudinal Whitehall II study found that unhealthy individuals who took fewer sick days were twice as likely to experience a serious coronary event than unhealthy employees with a record of moderate levels of sickness absence (Kivimaki, et al., 2005).

While employees who attend work while they are sick miss the opportunity for recovery from their specific illnesses, it may be that some of these individuals are protected from the negative effects of presenteeism because they are able to detach from work, which contributes to the maintenance of their health (Sonnentag, et al., 2008). Individuals who engage in presenteeism yet also are able to unwind through various recovery activities (Sonnentag & Fritz, 2007) may have better self-reported health and well-being than those who engage in presenteeism and do not take opportunities for recovery.

H₁₀: Recovery moderates the relations between presenteeism and health such that the relationship between presenteeism and health is more positive when recovery is high.

Presenteeism/absenteeism relations

As previously noted, presenteeism is a likely precursor of absenteeism (Johns, 2009). Because several studies have found that a greater frequency of presenteeism is

associated with increased absenteeism (Aronsson, et al., 2000; Caverley, et al., 2007; Elstad & Vabo, 2008; Hansen & Andersen, 2008), it is posited that:

H₁₁: Presenteeism is positively related to absenteeism

Control variables

Adjustment latitude. Adjustment latitude refers to opportunities an employee has for reducing work output or for altering work procedures in response to being ill (Hultin, et al., 2010; Johansson & Lundberg, 2004; Johns, 2010). Examples of flexibility include changing work hours, choosing among work tasks, working at a slower pace or telecommuting (Hultin, et al., 2010; Johansson & Lundberg, 2004; Rousculp, et al., 2010). Employees who have some flexibility in how they accomplish their work when they are ill are less likely to come to work when they are sick.

Replaceability. Individuals who see themselves as irreplaceable, whose jobs cannot be delegated or who have no back-up tend to engage in presenteeism and in fact, these individuals may be exerting excessive effort to keep up with their job demands (Aronsson & Gustafsson, 2005; Aronsson, et al., 2000; Bockerman & Laukkanen, 2009; Johns, 2011). It is important to know which employees have substitutes available and which do not, as this may influence presenteeism behavior.

Pharmaceutical treatment. Many chronic or recurrent conditions, such as migraine, asthma, and diabetes, intermittently affect work performance but are not completely debilitating. These types of conditions can often be prevented or treated successfully by pharmaceuticals (W. N. Burton, Morrison, & Wertheimer, 2003). When pharmaceutical treatment is effective, employees are able to manage their chronic

conditions (W. N. Burton, et al., 2003; Schultz & Edington, 2007). Thus an individual may have a condition that might lead to presenteeism but he or she is handling the condition using prescribed treatments. It is important to consider this variable when assessing the hypothesized relationships in the proposed model.

Demographic variables. Additional demographic variables of interest that may influence attendance behaviors include sex, income and access to sick leave. Some studies have shown higher sickness presenteeism in women than men and in fact, many of the occupations that show a strong presenteeism tendency are female dominated (Aronsson, et al., 2000). An individual's financial position may influence whether he or she takes sick leave or comes to work when ill, especially if that person does not have access to paid sick leave (Johansson & Lundberg, 2004). Further, generally speaking, individuals with greater income tend toward better health because of better access to resources and the opportunity to alter life circumstances (Marmot, 2002). Given these findings, it is important to control for these variables.

METHODS

Participants

Participants were recruited to complete a web based survey from Amazon Mechanical Turk (MTurk), a "crowdsourcing" web service. MTurk is on-line marketplace connecting people willing to pay for the completion of human intelligence tasks (HITs) with workers willing to complete such tasks. While this is a relatively new concept, several recently published articles have found strong evidence of reliability and validity of the data collected from MTurk (Barger, Behrend, Sharek, & Sinar, 2011; Buhrmester, Kwang, & Gosling, 2011; Paolacci, Chandler, & Ipeirotis, 2010).

Five hundred thirty-one individuals began the survey. To reduce the odds of random responding, a question was inserted half way through the survey that stated "I am still paying attention so I will select strongly agree for this statement" (Buhrmester, et al., 2011). Individuals who did not select "strongly agree" were removed from the data base. Listwise deletion was then used, resulting in complete data from 408 participants.

Procedure

The on-line survey was posted to MTurk. Participants were given two weeks to respond and were paid \$.50 each for completing the survey. Participants were required to reside in the United States, be a minimum of 18 years of age and work at least 30 hours

per week. Participants were instructed to complete the survey using the past six months as the reference period. Because presenteeism has a relatively low base rate, this period was considered long enough to allow presenteeism to occur but not so long as to introduce recall bias.

Measures

Effort-Reward Imbalance. Siegrist and colleagues' (2004) measure of effort-reward imbalance and overcommitment was used. In this model, effort and reward are measured separately and then combined to create a ratio of effort to reward to determine imbalance.

Effort. Subjects were asked to evaluate the extent to which they usually felt distressed by a particular work experience. The response scale was: 1 = does not apply; 2 = does apply but subject does not consider himself or herself distressed; 3 = does apply and subject does consider himself or herself somewhat distressed; 4 = does apply and subject does consider himself or herself distressed; 5 = does apply and subject considers himself or herself very distressed. A sum score was constructed with the items resulting in a score ranging between 5 and 25. The higher the score, the more stressful are the perceived demands (Siegrist et al., 2004). An example item is "I have constant time pressure due to a heavy work load." The coefficient alpha for this scale was .85.

Reward. The reward measure contained 11 items reflecting the esteem, job promotion and job security subfactors. An example item from the esteem subscale is "I receive the respect I deserve from my superiors." An example item from the job promotion subscale is "My current occupational position adequately reflects my

education and training.” An example item from the job security subscale is “My job security is poor”, which was reverse scored.

The administration procedure was the same as for effort using the same scale. The score was also summed with a score of 11 indicating a perception of the lowest rewards and a score of 55 reflecting a very high level of reward (Siegrist et al., 2004). The coefficient alpha for this scale was .74.

Effort –reward imbalance. Effort-reward imbalance was calculated according to the ratio $e/(rxc)$, where “e” represents the sum score of the effort scale, “r” is the sum score of the reward scale and “c” is a correction factor for the different number of items in the numerator and the denominator. ERI values that equal 1 were considered balanced. Values close to zero indicate relatively low effort and relatively high reward, whereas values over 1.0 indicate high effort met with relatively low reward (Lehr, Koch, & Hillert, 2010; Siegrist, et al., 2004).

Overcommitment. The six-item measure of overcommitment reflects the inability to withdraw from work obligations (Siegrist et al. 2004). Responses range from 1 = never to 4= always. The scale was summed to create a total score. The higher the score, the more likely the employee was to experience overcommitment at work (Siegrist, et al., 2004). An example item was “People close to me say I sacrifice too much for my job.” The coefficient alpha for this scale is .82.

Group Attendance Norms. Group attendance norms were measured using the four-item absence culture salience measure developed by Xie and Johns (2000). The items were averaged together to form a mean score. An example item is “In my workgroup

there is a high degree of agreement about how much absenteeism would be considered “normal” or “average.” The coefficient alpha for this scale was .63, which was below the generally accepted cut-off of .70 (Nunnally, 1978). Consequently this variable was dropped from further analysis due to low evidence of reliability.

Health. Health was measured using the general health item from the Centers for Disease Control and Prevention’s Health-Related Quality of Life (HRQOL) instrument (Centers for Disease Control and Prevention, 2000; Hennessy, Moriarty, Zack, Scherr, & Brackbill, 1994). The HRQOL measures self-perceived health with the question: “Would you say that in general your health is poor, fair, good, very good or excellent?”

Presenteeism. Presenteeism was measured using the six item Stanford Presenteeism Scale (SPS-6) (Koopman, et al., 2002). The scale measures a worker’s ability to concentrate and be productive at work despite health problems. The items were averaged with a higher score reflecting higher levels of presenteeism. Participants responded on a 1 (strongly disagree) to 5 (strongly agree) scale. An example item is “The stresses of my job were much harder to handle because I was not feeling well.” The coefficient alpha for this scale was .76.

Absenteeism. An item from the Health Performance Questionnaire (HPQ) was used to capture absenteeism (Kessler, et al., 2004; Kessler, et al., 2003). Participants were asked how many full days of work over the past six months were missed due to problem with physical or mental health. Responses were skewed, ranging from 0 to 80 days absent. To reduce skewness, the responses were collapsed into five categories, with

0 = no absences, 1 = one absence, 2 = two absences, 3 = three absences, 4 = four absences and 5 = to five or more absences.

Recovery. Recovery was measured using Sonnentag and Fritz's (2007) Recovery Experience Questionnaire. Participants respond to each item on a 5 point scale ranging from I do not agree at all = 1 to fully agree = 5. An example item from the psychological detachment scale is "I forget about work;" for relaxation "I kick back and relax;" for mastery "I learn new things;" and for control "I feel like I can decide for myself what I do." Evidence of reliability for the subscales ranged from .89 to .94. Because the recovery subscales were so highly inter-correlated and did not differentially relate to health, they were combined and treated as a composite variable (see Table 1). The coefficient alpha of the composite scale was .91.

Table 1: Recovery Subscale and Health Means, Standard Deviations and Correlations

	Mean	SD	1	2	3	4	5
1. Psychological Detachment	3.22	1.05	(.89)				
2. Relaxation	3.82	.95	.57*	(.94)			
3. Mastery	3.62	.94	.13*	.31*	(.91)		
4. Control	3.98	.86	.39*	.62*	.44*	(.90)	
5. Health	3.42	.93	.18*	.16*	.18*	.19*	--

Notes: $N=408$. $p \leq .05$. Scale reliabilities are shown on the diagonal

Pharmaceutical treatment. As many chronic or recurrent conditions, such as migraine, asthma, and diabetes, intermittently affect work performance but are not completely debilitating, participants were asked “Do you currently take any medication to help you manage any chronic conditions you might have?” Responses were coded 1 for yes and 2 for no.

Adjustment latitude. Adjustment latitude was measured with an overall question “If you are tired, out of sorts, have a headache or are just not feeling well, are you able to adjust your work to how you are feeling?”(Hultin, et al., 2010). Participants responded from 1 (never) to 4 (often).

Replaceability. Replaceability was measured with two questions “If I am absent from work, someone else can fill in for me” and “If I am absent from work, the work just piles up until I get back” (reverse coded) (Aronsson & Gustafsson, 2005; Bockerman & Laukkanen, 2009). Responses for this scale ranged from 1 (strongly disagree) to 5 (strongly agree). The coefficient alpha for this scale was .73.

Demographic Measures. Participants indicated their sex by selecting male (1) or female (2). Income was measured 1 = under \$20,000, 2 = \$20,000 – \$39,999, 3 = \$40,000 – \$59,999, 4 = \$60,000 – \$79,999, 5 = \$80,000 – \$99,999, 6 = \$100,000 – \$119,999, 7 = \$120,000 – \$139,999, 8 = \$140,000 - \$159,999, 9 = \$160,000 - \$179,999, 10 = \$180,000 – \$199,999 and 11 = \$200,000 or more. Participants who indicated that they had children where then asked how many of the children under the age of 18 lived at home at least some part of the week. This was coded such that 1 = one child, 2 = two children, 3 = three children, 4 = four children, 5 = five children, 6 = six children and 7 = more than six children. Number of personal days and number of sick days were open ended variables which were then recoded into categories to reduce skewness. Number of personal days and number of sick days was recoded to 1= 0 days, 2 = 1 to 5 days, 3 = 6 to 10 days, 4 = 11 to 15 days, 5 = 16 to 20 days and 6 = more than 21 days. Participants were asked to indicate the year of their birth, which was used to calculate age.

Analysis

The proposed model was tested using AMOS 19.0. The path model was assessed with composite and observed variables after the evidence of reliability was established for each variable as appropriate. All variables were centered to reduce multi-collinearity in the assessment of the hypothesized interactions.

To assess overall model fit, the root mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR) were evaluated. The RMSEA and the SRMR are absolute fit indices that provide an indicator of how well the proposed model fits the data (Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999;

McDonald & Ho, 2002). The RMSEA indicates how well the hypothesized model, with unknown but optimal parameter values, fits the population covariance matrix, assuming it was available (Browne & Cudeck, 1993; Byrne, 2010). The RMSEA takes into consideration the complexity of the model with better fit for more parsimonious models (Hooper, et al., 2008).

The RMSEA was selected as an appropriate measure of model fit for this study because it is considered sensitive to model misspecification (Hu & Bentler, 1999). Further, the commonly used guidelines of .06 or less as an indicator of good fit appear to provide reasonable conclusions regarding model fit (Hu & Bentler, 1999). In addition, a confidence interval can be constructed around the RMSEA to provide precision in evaluating model fit (MacCallum, Browne, & Sugawara, 1996). A well-fitting model's confidence interval will have a lower limit close to 0 and an upper limit less than .08 (MacCallum, et al., 1996).

The SRMR is the square root of the difference between the residuals of the sample covariance matrix and the hypothesized covariance matrix (Hooper, et al., 2008). The SRMR value for a well-fitting model is less than .05 (Byrne, 1998) but values as high as .08 are considered acceptable (Hu & Bentler, 1999). The SRMR will be lower when a model contains a high number of parameters and for models with large sample sizes. The SRMR was selected as an indicator of model fit due to its sensitivity to models with misspecified factor covariances (Hu & Bentler, 1999).

A third index of model fit, the Comparative Fit Index (CFI), is an incremental fit index, comparing the hypothesized model to a null model which assumes all the variables

are uncorrelated (McDonald & Ho, 2002). The sample covariance matrix is compared with the null model. The value of this index is that it is relatively unaffected by sample size (Hooper, et al., 2008). A CFI value of greater than .95 is indicative of good fit (Hu & Bentler, 1999).

RESULTS

The participants were mostly female (60%) with a mean age of 43 years. More than half (52%) were married and 41% of the participants had children. Of those with children, 53% had at least one child under the age of 18 residing with them. Almost half (48%) of the participants had at least a college education with 77% making less than \$60,000. Of the 350 participants who responded to the question regarding personal days, 30% indicated that they had no personal days. Regarding the availability of sick leave, of the 150 participants who responded the question, 47% reported having no sick leave. Neither access to sick leave or personal days was significantly correlated with the attendance variables, thus neither variable was included in the full path model. About 30% of participants reported continuing to work even when they were home ill. About 26% of participants reported taking some medication to help them manage a chronic condition.

Means, scale sums for the effort, reward, ERI and overcommitment scales, standard deviations, zero-order correlations and coefficient alphas for all retained variables are shown in Table 2. As previously mentioned, group attendance norms was removed from further analysis due to the lack of evidence of reliability. Consequently the two hypotheses (H4_a and H4_b) relating to group attendance norms could not be evaluated. Pharmaceutical treatment was removed from the analysis because it was not

significantly related to presenteeism thus did not contribute to the model and was removed for parsimony. Income, sex, replaceability and adjustment latitude were entered at the beginning of the path model as control variables.

Just over one third (36%) of participants reported ERI scores in excess of 1, which indicates some level of imbalance. An independent samples t-test was conducted to assess mean differences in presenteeism and absenteeism between individuals with ERI scores at or below 1 and those with scores in excess of 1. There was a significant mean difference on absenteeism between those with lower ERI scores ($M=1.25$, $SD=1.48$) and those with ERI scores greater than 1 ($M=1.67$, $SD=1.78$; $t(406) = 2.56$, $p \leq .05$). There was no significant difference between the two groups on presenteeism.

Those who continue to work at home even while sick could be considered to be engaging in presenteeism, thus the correlations between continuing to work at home when sick and the study variables were examined. Working at home when sick was significantly positively related to overcommitment and ERI and significantly negatively related to recovery. Absenteeism and presenteeism were not significantly related to continuing to work when sick.

Table 2: Means, Standard Deviations and Correlations

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Income	2.79	1.65	--												
2. Sex	1.62	.51	-.09	--											
3. Work at home when sick	1.33	.47	.21*	-.06	--										
4. Pharmaceutical Treatment	1.75	.44	.06	-.16*	.06	--									
5. Adjustment Latitude	2.88	.93	.05	.003	-.03	.08	--								
6. Replaceability	2.80	1.20	-.18*	.04	-.18*	.03	.02	(.72)							
7. Effort ¹	13.31	4.96	.10*	-.03	.15*	-.07	-.21*	-.22*	(.85)						
8. Reward ¹	32.81	7.09	-.23*	.09	-.09	-.13*	-.04	.004	-.08	(.74)					
9. Effort Reward Imbalance ²	.96	.53	.17*	-.09	.11*	.01	-.16*	-.14*	.76*	-.60*	--				
10. Overcommitment ¹	11.88	3.89	.11*	-.002	.27*	-.10*	-.17*	-.34*	.53*	.11*	.30*	(.82)			
11. Presenteeism	2.79	.78	-.10*	.13*	-.05	-.08	-.10*	-.11*	.25*	.20*	.08	.31*	(.76)		
12. Absenteeism	1.40	1.60	-.05	.13*	-.04	-.21*	-.10*	.03	.15*	.02	.11*	.07	.31*	--	
13. Recovery	3.66	.70	-.11*	.006	-.19*	.17*	.11*	.14*	-.24*	-.15*	-.07	-.47*	-.19*	-.06	(.91)
14. General Health	3.42	.93	.16*	-.08	-.08	.35*	.12*	.01	-.10*	-.14*	.01	-.23*	-.23*	-.31*	.24*

Notes: $N=408$; ¹Effort, Reward and Overcommitment are summed scales with higher scores equaling higher levels of the variable. ²Effort-reward imbalance is calculated using the formula $e/(rxc)$, where “e” represents the sum score of the effort scale, “r” is the sum score of the reward scale and “c” is a correction factor for the different number of items in the numerator and the denominator. ERI values that equal 1 are considered balanced. * $p \leq .05$. Scale reliabilities are shown on the diagonal.

The RMSEA for the hypothesized model ($\chi^2=74.56$, $df=21$) was .08 with a 90% confidence interval of .06 to .10. This indicates that the model is a slightly less than adequate fit to the data. The SRMR for the hypothesized model was .05, which is an indicator of reasonable fit. The CFI for the hypothesized model was .88, which suggests less than ideal fit.

Because of the high correlation between overcommitment and recovery ($r=-.47$, $p\leq .05$), a path was added between these two variables. The coefficient was negative ($\gamma = -.09$, $p\leq .05$), indicating those that were high in overcommitment were less likely to engage in recovery activities to decompress from work. The addition of this path generally improved model fit, reducing the RMSEA to .07 (90% CI: .05 -.09), and the SRMR remained at .05. The CFI was not improved. Based on two of the three indices, the revised model fits the data slightly better than the hypothesized model. These results are presented in Table 3.

Table 3: Model Fit Indices

	df	χ^2	RMSEA (CI)	SRMR	CFI
Hypothesized Model	21	74.56	.08 (.06 -.10)	.05	.88
Revised model: Adding path from Overcommitment to Recovery	27	80.52	.07 (.05 -.09)	.05	.88

Path coefficients from the hypothesized model are shown in Table 4 and the path coefficients from the revised model are displayed in Table 5. The discussion will focus on the better-fitting revised model. Hypothesis 1, which stated that ERI and absenteeism were positively related, was supported. Overcommitment was significantly positively related to presenteeism, supporting Hypothesis 2. Overcommitment did not moderate the relationship between effort reward imbalance and absenteeism thus Hypothesis 3 was not supported.

There were mixed results regarding the hypotheses related to health. The path relating ERI and health was significant (Hypothesis 5) but not in the hypothesized negative direction. Further, in the zero-order correlations, ERI is not significantly related to general health. This suggested that multicollinearity was an issue; however, an examination of the tolerance and variance inflation factor indicated that this was not the case as both were within suggested limits (J. Cohen, Cohen, West, & Aiken, 2003). It is also interesting to note, as presented further on, that this relationship was moderated by overcommitment.

The path between overcommitment and general health (Hypothesis 6) was significant in the hypothesized negative direction. The relationship between effort-reward imbalance and health was moderated by overcommitment supporting Hypothesis 7 (see Figure 2 for a graph of the form of the interaction (Dawson & Richter, 2006)). The relationship between ERI and health was more negative for those higher in overcommitment.

Table 4: Path Coefficients from the Hypothesized Model

	ERI		Presenteeism		Absenteeism		Health	
R^2	.07		.10		.10		.19	
	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.
Control Variables								
Replaceability	-.05*	.02						
Adjustment Latitude	-.09*	.03						
Sex	-.08	.05						
Income	.05*	.02						
Exogenous Predictors								
Overcommitment			.06*	.01	-.02	.02	-.04*	.01
ERI x Overcommitment					.002	.03	.03*	.02
Recovery							.17*	.07
Presenteeism x Recovery							.05	.08
Endogenous Predictors								
ERI								
Presenteeism	-.02	.07						
Absenteeism	.31*	.14	.65*	.10				
Health	.19*	.08	-.10	.06	-.16*	.03		

* $N = 408; p \leq .05$

Table 5: Path Coefficients from the Revised Model

	ERI		Presenteeism		Absenteeism		Health		Recovery	
R^2	.07		.10		.10		.19		.23	
	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.
Control Variables										
Replaceability	-.05*	.02								
Adjustment	-.10*	.03								
Latitude										
Sex	-.08	.05								
Income	.05*	.02								
Exogenous Predictors										
Overcommitment			.06*	.01	-.02	.02	-.04*	.01	-.09*	.01
ERI x					.002	.03	.03*	.02		
Overcommitment										
Presenteeism x							.05	.08		
Recovery										
Endogenous Predictors										
ERI										
Presenteeism	-.02	.07								
Absenteeism	.31*	.14	.65*	.10						
Health	.19*	.08	-.10	.06	-.16*	.03				
Recovery							.17*	.07		

$N= 408; *p \leq .05$

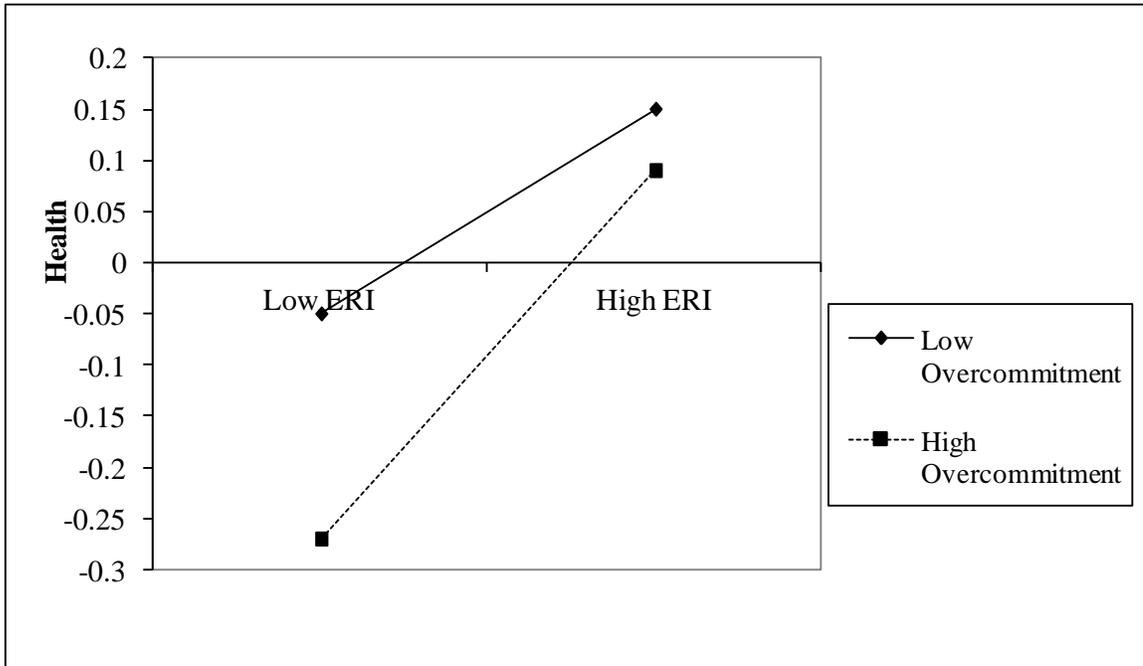


Figure 2: Effort-reward Imbalance and Health Moderated by Overcommitment

Presenteeism was hypothesized to be negatively related to health (Hypothesis 8) but the path was not significant. Absenteeism was hypothesized as relating positively to health (Hypothesis 9). This path was significant but not in the hypothesized direction.

The relationship between presenteeism and health was not moderated by recovery, thus Hypothesis 10 was not supported. There was, however, a significant direct positive effect of recovery on health. Finally, the path between presenteeism and absenteeism was significant in the hypothesized negative direction, supporting Hypothesis 11.

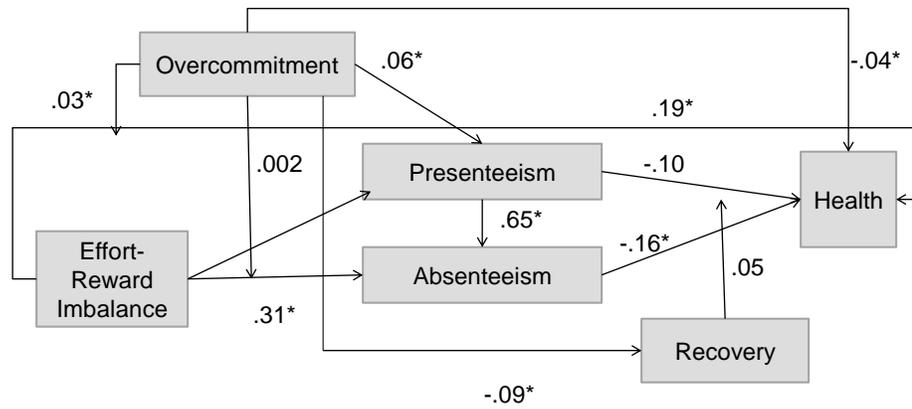


Figure 3: Revised Model Path Coefficients

DISCUSSION

This is one of the first studies to examine both presenteeism and absenteeism in the same study, providing the beginnings of a theoretical rationale for how certain factors influence an employee's decision to attend or not attend work when he or she is sick. Clearly, additional work is required to further develop the model, but there exists some support for using effort-reward imbalance as a starting framework.

More than one third of the participants reported ERI scores greater than one, which suggests these particular participants felt that their efforts were not adequately being rewarded to some degree. Individuals who reported higher levels of ERI were also more likely to be absent. This finding, coupled with the significant positive path linking effort-reward imbalance to absenteeism supports the idea that employees who feel that their efforts are not rewarded by their organizations are perhaps more likely to engage in withdrawal behaviors as a method of balancing inputs and outcomes (Godin & Kittel, 2004).

This was the first study to specifically look at overcommitment and presenteeism. Previous studies found that individuals high in overcommitment were less likely to take sick leave (Tsutsumi & Kawakami, 2004), but this is not quite the same as presenteeism as there is no evidence that individuals in those studies came to work while sick. Overcommitment was significantly related to presenteeism, suggesting that individuals

high on overcommitment are more likely to come to work when they are sick. A possible explanation for this is that these particular employees are so vested in their work that they have difficulty disengaging and thus they are more likely to continue to work even while sick. Further supporting this conceptualization was the strong negative relationship between overcommitment and recovery, which indicates that individuals high on overcommitment may be less likely to take a break from work responsibilities and engage in activities that promote recovery from workplace demands.

Overcommitment did not moderate the relations between ERI and absenteeism. While the exacerbating effects of overcommitment were not detected in this sample with only a third of participants reporting high levels of ERI, it is possible that overcommitment may play a bigger role in moderating the ERI-absenteeism relationship for individuals with higher levels of imbalance. There were not enough participants with high levels of ERI to permit that analysis for this study.

The positive relation between ERI and general health was a surprising finding. Previous studies have found that individuals with higher levels of ERI generally report lower health (Tsutsumi & Kawakami, 2004). The lack of finding in this study may be due to the fact that most participants did not report high levels of imbalance or that the negative effects of ERI have not as yet had time to accumulate as the participants are relatively young, with an average age of 43.

Overcommitment was negatively related to health, indicating that individuals higher in overcommitment had lower overall health. This stands to reason in light of the fact that individuals higher in overcommitment are also more likely to engage in

presenteeism, thus giving themselves less opportunity to recuperate from illnesses. Further, the relationship between ERI and health was moderated by overcommitment, indicating that the ERI-health relationship was more negative for those high in overcommitment.

The fact that presenteeism was not related to health may be once again due to the relatively youth of the participants as the chronic ill health that might elicit presenteeism has yet to develop. Absenteeism was hypothesized to relate positively to health. Instead a negative relationship was found. This hypothesis was predicated on the idea that individuals who take time off to recover from illness would likely be healthier than individuals who did not take sick leave, however the cross-sectional nature of the data did not allow for a time-related analysis of the variables. In retrospect and given that the positive effects of absenteeism accumulate over time which was not modeled in this study, it makes sense that individuals who are higher in absenteeism tend to have poorer health. Poor health is likely what requires them to take sick leave.

While recovery did not moderate the relations between presenteeism and health, there was a significant positive direct relationship of recovery on health. Those who indicated they participated in some activity to disengage from work reported better general health. This reiterates the importance of taking time away from work to recuperate from the demands of work. The moderating role of recovery may well emerge in a longitudinal study, when the detrimental effects of presenteeism are likely to be more easily ascertained.

Most studies of presenteeism focus on coming to work when one is ill. No previous study has considered what happens when someone takes sick leave but continues to work at home instead of taking respite from the demands of work. This could be conceptualized as a form of presenteeism. Exploratory analyses found significant positive relations with ERI and overcommitment and continuing to work when home sick. It is not clear why an individual would continue to work when they are already under rewarded. Perhaps by continuing to work through an illness, they hope to gain recognition and reward for their dedication. The positive correlation between overcommitment and continuing to work while at home sick is more understandable as individuals high in overcommitment tend to work excessively hard, often overestimate their coping resources and demonstrate a high need for approval from their co-workers (Preckel, et al., 2007; Siegrist, 1996). This may lead them to continue working at home when ill because they do not wish to be unproductive, do not need very much time to recuperate from an illness and do not want to add to their co-workers workload.

Recovery and continuing to work at home while sick were significantly negatively correlated, indicating that individuals who work from home while sick are less inclined to engage in recovery activities. Given that previous research has suggested that taking a break from work to engage in restorative activities relates to better health (Sonnentag, 2001; Sonnentag & Fritz, 2007), it is likely that these employees may eventually suffer from greatly reduced health.

Limitations

It can be concluded from the results of this study that some progress has been made in developing a theoretical model for employee attendance; however, there are important limitations to note. The cross-sectional design of the study provided only a snapshot in time. Since health evolves over time, it is important for future studies to evaluate the long term health effects of presenteeism by taking a longitudinal approach to data collection. This may also allow for the possible moderating effect of recovery to be detected.

The data were collected from self-report surveys, thus the results are subject to self-report and common method biases. This limitation is tempered by the fact that most of the variables measured were attitudinal and thus the availability of alternative measures is somewhat limited. Some of the variables might have been under or over-reports of the actual phenomenon as participants attempted to project a positive impression and the correlations among some of the variables were not particularly strong. To decrease the risk of these possible biases, future studies should considering use corporate records for absenteeism information. While corporate records are also not without flaws, using both self-report and other reports of absenteeism might provide greater accuracy in the assessment of employee attendance.

Using a relatively new technology like MTurk presents some legitimate concerns. One possible concern is the representativeness of the participants and whether those that choose to participate using a system like MTurk match the population of interest. Recent studies have found that this may not be as much of a limitation as might be expected.

Studies of MTurk demographic data have shown MTurk participants match the general population much more closely than college undergraduate samples and internet-recruited samples as a whole (Buhrmester, et al., 2011; Paolacci, et al., 2010). By using MTurk, the survey may, in fact, reach people that traditional methods, such as collecting data in one organization, may miss.

Given the small amount of compensation MTurk participants earn and that fact that unsupervised participants tend to be less attentive than participants with an experimenter present (Oppenheimer, Meyvis, & Davidenko, 2009), one might wonder whether the participants took the survey seriously. Further, completing surveys often requires a great deal of cognitive effort and some participants may choose the first, but not necessarily the best alternative. In some cases, participants may even respond randomly (Krosnick, 1991). These issues can reduce the reliability of the data.

To address this concern, an instructional manipulation check was inserted half way through the survey. An instructional manipulation check is thought to measure whether or not participants are reading the survey instructions and questions carefully (Oppenheimer, et al., 2009). The instructional manipulation check is similar in length and response format to the other questions in the survey but it asks participants to ignore the standard response format and respond with a specified response to confirm they are reading carefully (Oppenheimer, et al., 2009). The instructional manipulation check used in this study stated “I am still paying attention so I will select strongly agree for this statement.” As recent research has suggested that participants “failing” or neglecting to select the correct response on an instructional manipulation check are more likely to have

less reliable responses overall (Oppenheimer, et al., 2009), individuals who did not select “strongly agree” were removed from the data set, thus likely increasing the reliability of the data.

Future directions

The lack of reliability in the group attendance norms measure was unfortunate. Understanding organizational drivers of employee attendance is important to ensure healthy, productive employees. Future studies should focus on other aspects of group norms. Perhaps some departments have attendance norms associated with the reason for the absence, or absence legitimacy (Aronsson, et al., 2000; Bamberger & Biron, 2007; Harvey & Nicholson, 1999). Absence legitimacy suggests that how people view the seriousness of another person’s illness influences whether that person takes sick leave or comes to work when ill. Studies conducted within one organization, assessing group norms regarding absence legitimacy would be beneficial as they might provided a clearer picture of how groups form norms around when it is acceptable and even expected to work when ill and when it is not.

Implications

There are several key findings that can be used to inform current organizational practices. The fact that overcommitment and presenteeism are negatively related suggests that managers may need to particularly encourage employees high in overcommitment to use their sick leave and to discourage these employees from working when sick, either at the office or at home. Some supervisors stick to the mindset that some productivity is better than no productivity, but organizations need to take steps to

ensure that supervisors understand the potential negative outcomes associated with working while sick. It is not enough to offer sick leave. Organizations should attempt to implement interventions, such as training supervisors to recognize when employees are ill and encourage them to use their sick leave.

Many individuals tend to continue working after they go home, checking email and voicemail constantly during non-work hours. Based on the association between recovery and health found in this study, organizations should consider methods of helping employees disengage from work by engaging in other activities that allow depleted resources to build back up. Organizations can teach classes in meditation to improve relaxation. Supervisors can be trained to not expect responses on work-related issues outside of standard work hours to increase an employee's ability to psychologically detach from work. Flexible scheduling can be implemented to offer employees more opportunity for control. These interventions are relatively inexpensive to implement and offer the potential for long-term cost savings if employee health increases.

APPENDIX A: Dissertation Proposal Literature Review

Employee attendance is of primary importance to virtually every organization. Until recently, organizational researchers have confined the study of attendance dynamics to absenteeism. Absenteeism is an employee's failure to report to work as scheduled such that he or she is not physically present when there is a social expectation for him or her to be there (Johns, 2008; Martocchio & Harrison, 1993). This includes absenteeism related to health issues, or sickness absenteeism. More recently, researchers have begun to focus on the other side of the attendance equation, presenteeism. Presenteeism is going to work despite feeling ill (Aronsson, Gustafsson, & Dallner, 2000; Dew, Keefe, & Small, 2005; Johns, 2010) and could be considered the opposite of sickness absence. Essentially, an employee comes to work despite ill health and complaints that should prompt him or her to rest and take sick leave (Aronsson & Gustafsson, 2005). These health problems may be chronic, as in the case of allergy, asthma, depression, arthritis and migraine headaches or acute, such as when an employee has a cold, the "flu" or other contagious disease (Shamansky, 2002). An employee with a health problem could be considered as making a choice between engaging in sickness absence or presenteeism. To date, no one has examined both presenteeism and sickness absence in the same study, thus understanding the individual and organizational factors that relate to both presenteeism and sickness absence is the focus of this study.

Why Study Presenteeism?

Recent evidence indicates that the lost productivity due to presenteeism costs the United States economy roughly \$180 billion annually. This averages to about \$225 per employee per year, which exceeds the combined costs of absenteeism, medical and disability benefits (Collins, et al., 2005; Goetzel, et al., 2004). Cardiovascular disease; musculoskeletal disorders; ear, nose and throat conditions; hypertension; diabetes; and depression-related illnesses are among the most costly in terms of reduced productivity for organizations (Goetzel, Hawkins, Ozminkowski, & Wang, 2003)

Lost productivity is due to both employee and organizational dynamics. Individual performance decreases because sick employees can only perform as well as healthy co-workers by investing more time and effort, which they may not be able to do (Demerouti, Le Blanc, Bakker, Schaufeli, & Hox, 2009). Engaging in this extended time and effort may prolong illness. Group performance may suffer because sick colleagues may need extra help from their co-workers or may infect their co-workers (Demerouti, et al., 2009).

In general, employees who repeatedly postpone taking sick leave that would allow recovery from minor illness are at risk of developing more serious illnesses (Grinyer &

Singleton, 2000). If a more serious illness develops, an employee is likely to require a longer leave than that dictated by the original illness. Consequently, the costs to the organization are much higher.

While the relationship between contagious diseases and presenteeism are more obvious, presenteeism is an issue for individuals with chronic diseases as well. Some chronic diseases, like migraine, low back pain, allergies, asthma, and gastro-esophageal reflux, strike many people but are relatively easily managed the majority of the time (W. N. Burton, Pransky, Conti, Chen, & Edington, 2004). These diseases become more of an issue when they are improperly managed and symptoms return, impacting productivity (Shamansky, 2002).

Other chronic diseases, such as diabetes and cardiovascular disease, have lower rates of occurrence in the working population (Shamansky, 2002) and thus have less of an effect on productivity. However, the odds of developing a more severe chronic disease are increasing in Western and developing nations and that risk increases with age (Suhrcke, Nugent, Stuckler, & Rocco, 2006). As more employees are delaying retirement and continuing to work well into their later years (Munir, Jones, Leka, & Griffiths, 2005), these more severe types of chronic disease are likely to become an issue for older employees and their organizations. Chronic disease can also interact with infectious diseases. Over the long term, individuals with chronic diseases who repeatedly come to work when they are sick with infectious diseases have worse health outcomes than individuals with the same chronic diseases who stay home when ill (Kivimaki, et al., 2005).

Many organizations have developed programs to decrease absenteeism, and in fact the current literature implies that presenteeism is on the rise because employees are substituting sickness presence for sickness absences, the “substitution hypothesis” (Caverley, Cunningham, & MacGregor, 2007). Most absenteeism prevention programs focus on absenteeism by choice, or “avoidable” absenteeism that occurs when an employee might take a personal day for a variety of reasons but isn’t really ill (Wegge, Schmidt, Parkes, & van Dick, 2007). These programs may also constrain “unavoidable” absenteeism. Unavoidable absenteeism occurs when an individual is actually ill and uses sick leave (Harrison & Martocchio, 1998). So while these attendance programs may in fact meet the goal of reducing absenteeism, they may also encourage presenteeism (Biron, Brun, Ivers, & Cooper, 2006; Chatterji & Tilley, 2002; Grinyer & Singleton, 2000; Koopmanschap, et al., 2005; McKeivitt, Morgan, Dundas, & Holland, 1997).

Studies of absenteeism have identified several factors, including group cohesiveness, job satisfaction, and a flat job market that constrain absence from work, which could be considered factors that would in turn promote presenteeism (Dew, et al., 2005; Johns, 2010; Luz & Green, 1997). It is quite possible that presenteeism may occur when the option of missing work is not available or the cost of missing work is deemed too high (Johns, 2008), for example when an organization doesn’t offer sick leave benefits or places limitations regarding the amount of sick leave that is taken.

Certain occupations seem more prone to presenteeism. Presenteeism tends to occur in people that work with the sick, young children and the elderly (Aronsson, et al.,

2000). Thus higher levels of presenteeism have been found in teachers, nurses, doctors and child care providers (Aronsson, et al., 2000; McKeivitt, et al., 1997; Perkin, Higton, & Witcomb, 2003).

Although some organizations may consider presenteeism a positive employee behavior because of the reduced absenteeism costs, it is important for employers to consider the downside of presenteeism behavior and the long-term costs associated with it in terms of employee well-being (Demerouti, et al., 2009). In fact, presenteeism may be a precursor of absenteeism (Johns, 2009). Several studies have found that a greater frequency of presenteeism is associated with increased absenteeism (Aronsson, et al., 2000; Caverley, et al., 2007; Elstad & Vabo, 2008; Hansen & Andersen, 2008). Further, Grinyer and Singleton (2000) found that presenteeism related to increased risk of poor health and subsequent prolonged sick leave. Bergstrom and colleagues (Bergstrom, Bodin, Hagberg, Aronsson, & Malin, 2009) in a prospective cohort study, confirmed the relationship between presenteeism and absenteeism, finding that presenteeism was a significant risk factor for absenteeism. It is clear that studying sickness absence and presenteeism together provides a more robust picture of employee attendance, increasing our understanding of why people do or do not miss work and why they return to work, even if they are not fully recovered or ready (Johns, 2010).

As presenteeism is a relatively new concept, limited research has been conducted on why an individual might come to work when he or she is ill as opposed to taking sick leave (Biron, et al., 2006). Most studies of presenteeism appear in the medical, occupational health and epidemiology literature; very little work in this area has been done in the business or industrial/organizational psychology literatures (Johns, 2008), which tend to concentrate more on absenteeism. In addition, most presenteeism studies are atheoretical and generally overlook, for the most part, psychosocial contributors to presenteeism (Johns, 2008, 2010).

Given the current state of the literature, the purpose of this research is to better understand the relations between sickness absence and presenteeism by simultaneously examining their correlates. To focus this analysis, I provide a theoretical model of employee attendance encompassing both sickness absence and presenteeism using the Effort-Reward Imbalance (ERI) framework (Siegrist, 1996).

The Effort-Reward Imbalance Framework

The ERI model suggests that the interaction between a person's thoughts, emotions and behaviors and his or her social environment defines whether one's psychosocial work environment is health promoting or health adverse (Siegrist, et al., 2004). Rooted in social exchange theory and the notion of distributive justice, the ERI model assumes that effort at work is exerted as part of a contract based on the norm of social reciprocity. Efforts result from job demands and obligations imposed upon the employee (van Vegchel, de Jonge, Bosma, & Schaufeli, 2005). In exchange for meeting these demands and obligations, rewards are distributed by the employer, and to some extent, by society at large (Siegrist, 1996; van Vegchel, et al., 2005). Among the rewards considered within the ERI framework are money, esteem and recognition for

achievements, and job security/career opportunities (Jan de Jonge, van der Linden, Schaufeli, Peter, & Siegrist, 2008; Head, et al., 2007).

Issues arise for employees when the exchange of effort and rewards is not congruent (Siegrist, et al., 2004). When an individual experiences a lack of reciprocity, in terms of high costs and low gains, characterized by high efforts and low rewards, there is imbalance. This imbalance elicits emotional distress in employees. According to Siegrist and colleagues, feelings of not being appreciated or of being unfairly treated and subsequently disappointed by inappropriate rewards cause strain reactions in the autonomic nervous system. This constant experience of reward deficiency impairs an individual's ability to successfully self-regulate (Siegrist, 1996, 2000; Siegrist, et al., 2004). Over the long run, the imbalance between high effort and low reward increases illness susceptibility (Siegrist, 2000), resulting in negative physical and mental health outcomes for the employee (Jan de Jonge, et al., 2008; Kinnunen, Feldt, & Mäkikangas, 2008; Tsutsumi & Kawakami, 2004). Further, recurrent reward frustration can reduce commitment and motivation and increase withdrawal behavior (Godin & Kittel, 2004).

Effort-reward imbalance is frequently found in employees with limited choices in the job market and in those who are in highly competitive fields (Head, et al., 2007). Individuals in occupations that require a great deal of human interaction, for example health professionals, teachers, and workers in the hospitality industry, often report greater effort-reward imbalance (Bakker, Killmer, Siegrist, & Schaufeli, 2000; Calnan, Wainwright, & Almond, 2000; Tsutsumi, et al., 2002; van Vegchel, de Jonge, Meijer, & Hamers, 2001).

The ERI model assumes that there is also a personal component regarding how employees experience effort-reward imbalance (Jan de Jonge, et al., 2008), referred to as overcommitment. Overcommitment is a set of attitudes, behaviors and emotions that reflect excessive endeavor coupled with a high need for approval and esteem (Jan de Jonge, et al., 2008; Tsutsumi & Kawakami, 2004). The ERI model posits that excessive efforts are the result of an underestimation of challenges and the overestimation of coping resources, which may be caused by an underlying need to experience recurrent esteem and approval (Siegrist, 1996). Overcommitment appears to be relatively stable over time and is considered to be a risk factor for strain even when there is no effort-reward imbalance, likely because it appears to be a personal pattern of coping with job demands (Siegrist, 1996; Tsutsumi & Kawakami, 2004). The ERI model suggests that an individual is most adversely affected when job and personal conditions interact (Siegrist, et al., 2004), thus the negative effects of effort-reward imbalance are exacerbated for individuals who are overcommitted (Tsutsumi & Kawakami, 2004).

The ERI model is typically used to consider health outcomes stemming from an adverse psychosocial work environment (Godin & Kittel, 2004). When the model is used to assess outcomes other than health, research has mainly focused on job satisfaction and job exhaustion (Kinnunen, et al., 2008; van Vegchel, et al., 2005). A handful of studies have considered the ERI framework as it relates to absenteeism but it has yet to be applied to presenteeism. A general overview of previous presenteeism research suggests

that this model may be useful in understanding why an individual might engage in presenteeism versus sickness absence when he or she is ill.

Effort Reward Imbalance and Employee Attendance

The majority of absenteeism studies suggest that an employee's motivation to attend is the main influence on actual attendance, assuming the employee has the ability to attend (Brooke, 1986; Brooke & Price, 1989; J. P. Burton, Lee, & Holtom, 2002; Harrison & Martocchio, 1998; Steel, Rentsch, & Van Scotter, 2007; Steers & Rhodes, 1978). Attendance motivation is determined by a combination of the employee's affective responses to the job situation and internal and external pressures to attend (J. P. Burton, et al., 2002; Steel, et al., 2007; Steers & Rhodes, 1978). This conceptualization of attendance motivation directly corresponds to the basic tenants of the Effort-Reward Imbalance framework (Siegrist, 1996).

Effort

Efforts within the ERI framework basically result from job demands. Regarding job demands and absenteeism, a recent meta-analysis explored the relations among various job demands, including role overload and other job situation variables, illness and absenteeism, finding positive but small associations (Darr & Johns, 2008). To explain this finding, Johns (2009) suggested that it is far more likely that job demands compel attendance as opposed to compel absence as one might expect. Further, it is possible that absenteeism is more likely to occur in response to acute stressors, which tend to be discrete events, and that presenteeism is the more likely response to chronic stressors, which are long-term and continuous and that are usually assessed in work stress research (Johns, 2009; Wheaton, 1997).

Johns' (2009) contention is born out in several presenteeism studies that have found that individuals with high job demands such as role overload (Biron, et al., 2006); low replaceability (Aronsson, et al., 2000); time pressures (Aronsson & Gustafsson, 2005; Aronsson, et al., 2000; Biron, et al., 2006; Demerouti, et al., 2009; Hansen & Andersen, 2008; McKevitt, et al., 1997); and jobs that require the use of a variety of skills (Biron, et al., 2006) are more inclined to engage in presenteeism than are those employees who do not have these demands. Employees with heavier workloads, both psychologically (Biron, et al., 2006) and physically (Demerouti, et al., 2009), and insufficient resources (Aronsson & Gustafsson, 2005; Aronsson, et al., 2000) are also more likely to come to work when sick than are those without these demands.

Reward

Siegrist posited three aspects of rewards within the ERI model – esteem, job promotion and job security (Siegrist, et al., 2004). Esteem relates to receiving respect, support and fair treatment at work, reflecting both social support and organizational justice. Job promotion focuses on job prospects and whether one's current position is commensurate with the individual's training and education. Job security reflects whether an individual expects a negative change in his or her work situation.

Regarding the social support aspect of esteem, several studies found that a lack of coworker support is related to sickness absence (Melchior, Niedhammer, Bergman, &

Goldberg, 2003; Moreau, et al., 2004; Roelen, Weites, Koopmans, Van der Klink, & Groothoof, 2008) . Lack of supervisor support is also related to absenteeism (Caverley, et al., 2007; Nielsen, Rugulies, Christensen, Smith-Hansen, & Kristensen, 2006). Regarding presenteeism and social support, Hansen and Anderson (2008) found that relationships with colleagues were more important than personal attitudes when deciding whether to work while ill.

According to Siegrist, esteem also addresses the issue of distributive justice (Siegrist, 2001; Tsutsumi & Kawakami, 2004). In the longitudinal Whitehall II study, relational injustice and effort-reward imbalance were both assessed (Head, et al., 2007). Employees with higher levels of effort-reward imbalance and lower levels of relational justice were at increased risk of sickness absence, across the two time periods evaluated. Currently, as far as can be determined, there are no studies that consider fairness and presenteeism using the ERI model.

In general, low organizational justice is a solid predictor of absenteeism (Johns, 2008, 2009). Several studies have confirmed a negative relationship between both distributive justice, and to a somewhat lesser extent, procedural justice (Elovainio, Kivimäki, & Vahtera, 2002; Geurts, Schaufeli, & Rutte, 1999; Lam, Schaubroeck, & Aryee, 2002; van Dierendonck, Schaufeli, & Buunk, 1998; Van Yperen, Hagedoorn, & Geurts, 1996).

Based on Siegrist's model, the second aspect of reward is job promotion. To my knowledge, there are no studies that have considered the association between job promotion and employee attendance, either from an absenteeism or presenteeism perspective.

In recent years, restructuring, downsizing and offshoring have threatened employees' feelings of job security (Johns, 2009), Siegrist's third component of reward. Several studies found that absenteeism is negatively related to unemployment rates (Daniels, Tregaskis, & Seaton, 2007; Johns, 2009; Markham & McKee, 1991) and that attendance markedly improves when companies downsize (Markham & McKee, 1991). Job insecurity also has been found to be related to presenteeism (Biron, et al., 2006). The perceived threat of unemployment may encourage individuals to engage in presenteeism because they are afraid to miss work and possibly may feel the need to work longer hours in order to preserve their jobs despite being in ill health (Biron, et al., 2006; Caverley, et al., 2007).

Effort-reward imbalance

A few studies have used the interaction of effort and reward to predict employee attendance. Tsutsumi and colleagues (2003 as cited in Tsutsumi & Kawakami, 2004) found that employees with deteriorated effort-reward imbalance (high perceived effort coupled with low perceived reward) were less likely to use either long- or short-term sick leave, which these authors treated as indicative of presenteeism. Conversely, Peter and Siegrist (1997) found increased risks of both short-term and long-term absence and an increase in the number of absence episodes when effort-reward imbalance existed. Supporting this finding, Head and colleagues (2007) demonstrated that higher levels of effort-reward imbalance were predictive of both long-term and short-term sickness

absence. Further, in Godin and Kittel (2004), effort-reward imbalance was also associated with absences of more than one week and for longer absence spells. There is clear support for the relationship between effort-reward imbalance and absence; however, few if any, studies have considered presenteeism.

The ERI model is fundamentally rooted in social exchange theory with a strong emphasis on the norm of reciprocity. Based on this, employees who constantly perceive that their efforts are not rewarded by their organizations are likely to reduce their efforts. As noted by Godin and Kittel (2004), one way of reducing effort is by engaging in withdrawal behaviors. Thus employees who do not feel that their efforts are recognized by their organization will be more inclined to take sick leave when they are ill, as a way of balancing inputs and outcomes. Further, individuals who believe they are not recognized for their contributions may feel less committed to the organization (Godin & Kittel, 2004) and be less likely to “fight” through an illness and engage in presenteeism, therefore the following is posited:

H₁: Effort-reward imbalance is positively related to absenteeism.

Measurement issue of injustice versus imbalance

Organizational justice focuses on employees’ perceptions regarding the fairness of their work environment (Cropanzano, Goldman, & Benson, 2005). Organizational justice is composed of distributive justice, procedural justice and interactional justice. Many of the items used in the measurement of effort-reward imbalance, specifically items used to measure reward, parallel those used to assess organizational justice perceptions. This suggests the need to determine whether it is imbalance or injustice that is driving the relationship between effort and reward.

Distributive justice relates to an individual’s perception of the fairness of outcomes obtained in the work environment (Cropanzano & Wright, 2011). Based on Adams’ (1965) equity theory, people calculate equity based on a ratio of their inputs and outcomes, thus individuals should receive rewards consistent with the quantity and quality of the results they produce (Cropanzano, et al., 2005). Employees then compare their efforts and outcomes with efforts and outcomes of select co-workers. Inequity occurs when individuals perceive that they are not receiving as much as their comparison co-worker (Cropanzano & Wright, 2011). Procedural justice is defined as the perceived fairness of the processes used to determine outcomes (Cropanzano, Byrne, Bobocel, & Rupp, 2001; Cropanzano, et al., 2005). If employees feel that the procedures used to determine an unfavorable outcome were fair, they are likely to respond in a more favorable manner (Thibaut & Walker, 1978).

Interactional justice refers to the idea that employees also look at the interpersonal treatment received when rewards are decided and distributed (Bies & Moag, 1986; Cropanzano, Bowen, & Gilliland, 2007; Greenberg, 1990, 1993). There are two categories of interactional justice: interpersonal justice and informational justice. Interpersonal justice is the extent to which one is treated with politeness and esteem by those involved in implementing the procedures or determining the outcomes (Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Informational justice is concerned with the adequacy and completeness of information shared with employees regarding why certain

procedures were used or why outcomes were distributed in a particular manner (Colquitt, et al., 2001; Cropanzano, et al., 2005).

To determine if injustice and imbalance are different constructs or are redundant, all three types of justice perceptions will be measured.

RQ₁: Are organizational justice and effort-reward imbalance unique constructs?

Overcommitment and Employee Attendance

Several presenteeism studies asked participants why they engaged in presenteeism rather than taking sick leave. Some participants cited low replaceability, which is defined as the extent to which employees are responsible for performing work which is not done when they are absent. Employees must catch up with their work upon their return (Aronsson, et al., 2000), thus they are less inclined to take sick leave (Aronsson & Gustafsson, 2005; Aronsson, et al., 2000). Several studies found that individuals “worked through” illness because they had no back-ups, it was difficult to find replacements or the work simply could not be delegated and they did not want their colleagues carrying out additional work duties (Aronsson & Gustafsson, 2005; Aronsson, et al., 2000; Biron, et al., 2006; Caverley, et al., 2007; McKeivitt, et al., 1997).

These explanations for presenteeism seem in keeping with Siegrist’s and colleagues (Preckel, Meinel, Kudielka, Haug, & Fischer, 2007; Siegrist, 1996; Siegrist, et al., 2004) conceptualization of overcommitment. Overcommitment is an individual difference in the way employees experience effort-reward imbalance, reflecting excessive effort and a high need for approval and is basically defined as an exhaustive work-related coping style (Preckel, et al., 2007).

According to ERI theory, individuals who are overcommitted tend to expose themselves more often to increased demands at work, they may work excessively hard to meet those demands (Siegrist, 1996), often beyond what is formally needed (Siegrist, et al., 2004). Overcommitted employees seem to have difficulty in recognizing that there is a negative trade-off between high effort and low reward (Preckel, et al., 2007). Thus they often misjudge the effort required to cope with their job demands and may overestimate their own coping resources (Preckel, et al., 2007; Tsutsumi & Kawakami, 2004). As a result, they may be more at risk for strain from unbalanced exchanges and more susceptible to increased frustration arising from effort-reward imbalance (Siegrist, et al., 2004). Individuals who see themselves as irreplaceable, whose jobs cannot be delegated or who have no back-up may in fact be exerting excessive effort to keep up with their job demands. High need for approval may be shown by those individuals who do not want their co-workers burdened with additional tasks.

In the few studies that specifically focused on overcommitment, no association was found between overcommitment and absenteeism (Godin & Kittel, 2004). Further, Tsutsumi et al. (2003 as cited in Tsutsumi & Kawakami, 2004) found that employees high in overcommitment were less likely to take sick leave than were their counterparts, which these authors assumed was presenteeism. To my knowledge, there are no studies that evaluate the relations between overcommitment and presenteeism. The lack of relationship between overcommitment and absence suggests that these individuals are so highly committed to their jobs that they will continue to work while sick.

The ERI model indicates that overcommitment is relatively stable over time and is a personal pattern of coping with job demands independent of any anticipated rewards (Siegrist, 1996; Siegrist, et al., 2004; Tsutsumi & Kawakami, 2004). Overcommitment may override the lack of equity felt from effort-reward imbalance such that there is a direct relationship between overcommitment and employee attendance, thus

H₂: Overcommitment is positively related to presenteeism.

Effort-reward Imbalance/Overcommitment Interaction

The ERI model suggests that while both effort-reward imbalance and overcommitment independently contribute to poor health (Preckel, et al., 2007; Siegrist, 1996), the interaction between failed reciprocity (high effort, low reward) and high overcommitment leads to the highest risk of poor health and well-being (Kinnunen, et al., 2008; Preckel, et al., 2007; Tsutsumi & Kawakami, 2004). Overcommitted individuals often underestimate job demands and overestimate their own coping resources, thus they may contribute to the risk of prolonged exposures to a non-reciprocal exchange (Preckel, et al., 2007; Siegrist, 2005), increasing their risk of illness. Essentially, this means that individuals who give greater effort, receive fewer rewards and are higher in overcommitment may be more likely to become ill. They are unlikely to take sick leave when they are ill because these individuals are high in overcommitment, thus do not easily disengage from work (Preckel, et al., 2007). They are consequently less likely to take sick leave, are more likely to engage in presenteeism and do not permit themselves time to recover from an illness, thus possibly prolonging the illness. Overcommitment thus strengthens the adverse effects of ERI. To my knowledge, there are no studies that investigate the ERI/overcommitment interaction and employee attendance, however, it can be hypothesized that:

H₃: The relationship between effort-reward imbalance and absenteeism is moderated by overcommitment such that there is weaker relationship between effort-reward imbalance and absenteeism for individuals high in overcommitment.

Group Attendance Norms

A more recent trend in employee attendance has been to study the effects of an individual's work group on sickness absenteeism behavior (Gellatly & Luchak, 1998; Johns, 1997; Nicholson & Johns, 1985; Väänänen, et al., 2008). Essentially, the relationship between an individual's attitudes toward taking sick leave and whether sick leave is actually taken is affected by his or her work group's tolerance of absence behavior (Nicholson & Johns, 1985; Steers & Rhodes, 1978; Väänänen, et al., 2008; Xie & Johns, 2000).

Group norms are agreed upon guidelines for appropriate and inappropriate behavior that develop through group member interactions (Cialdini & Trost, 1998). Work groups are likely to vary in their tolerance of absence (Nicholson & Johns, 1985; Rentsch & Steel, 2003; Väänänen, et al., 2008) and what is acceptable is communicated through group absence norms. Individual level group absence norms refer to a person's perceptions of the level of sickness absence tolerance in that person's own work group (Väänänen, et al., 2008).

Several absenteeism studies have focused on group absence norms, considering how employees perceive their managers' and coworkers' reaction to their possible absence (Aronsson & Gustafsson, 2005; Grinyer & Singleton, 2000; Johns, 2009, 2010; McKevitt, et al., 1997; Saksvik, 1996). In general, these studies have found negative relationships between intolerant group absence norms or norms requiring stricter attendance and absence behaviors (Gellatly & Luchak, 1998; Harrison, 1995; Martocchio, 1994; Xie & Johns, 2000).

A few presenteeism studies have considered group norms as well. If employees deem that their absence is viewed negatively or that it may ultimately affect their employment, they tend to come to work even when they are sick (Grinyer & Singleton, 2000). Some employees indicated that they would feel guilty that they did not come to work because there were attendance norms regarding the number of acceptable sick absence days (Biron, et al., 2006).

It has been suggested that employees adapt their attendance patterns according to their supervisor's needs and expectations (Nicholson & Johns, 1985) and thus employees may feel the need to find socially acceptable reasons for absences (Harvey & Nicholson, 1999). Thus, there may also be group absence norms formed around the seriousness of an individual's health issue as some health complaints are more severe than others (Aronsson, et al., 2000; Harvey & Nicholson, 1999). It is possible that coworkers and supervisors' opinions of an individual's illness affects the individual's own perception of the illness and thus influences whether the employee will take sick leave or engage in presenteeism (Aronsson, et al., 2000; Bamberger & Biron, 2007; Harvey & Nicholson, 1999).

It appears that an individual's perception of group absence norms can exert a strong pressure to attend. Extending the effort-reward imbalance framework, group absence norms are likely to moderate the relationship between effort-reward imbalance and absenteeism and overcommitment and presenteeism depending on how the individual perceives the restrictiveness of the norms.

H₄: An individual's perception of group attendance norms moderates the relationship between effort-reward imbalance and attendance behavior such that the individual is more likely to engage in presenteeism when more restrictive attendance norms are perceived.

Health

Health refers to a range of states of physical, mental and social well-being, not just the absence or presence of disease. Health can be characterized by variations in healthful signs and lifestyles (Sarafino, 2004). The ERI model was initially developed to evaluate how stress at work influenced health and well-being (Siegrist, 1996; van Vegchel, et al., 2005). Both effort-reward imbalance and high levels of overcommitment directly increase the risk of poor health and decreased well being (Kinnunen, et al., 2008; Preckel, et al., 2007; Tsutsumi & Kawakami, 2004).

In their comprehensive review of the ERI literature, Tsutsumi and Kawakami (2004) noted a wide variety of negative health outcomes, both physical

and psychological. The direct health outcomes related to effort-reward imbalance include myocardial infarction, hypertension, high cholesterol, atherosclerosis, musculoskeletal symptoms, sleep disturbances, gastrointestinal disturbances, increased risk of common cold, depression, and general self-reported poor health. The direct negative health outcomes of overcommitment are mostly related to psychological well being, including emotional exhaustion, depersonalization, and decreased personal accomplishment (Bakker, et al., 2000; J. de Jonge, Bosma, Peter, & Siegrist, 2000); however, associations with myocardial infarction were also found (please see Tsutsumi and Kawakami (2004) for a comprehensive review).

The interaction of effort-reward imbalance and high levels of overcommitment heighten the risk of ill health (Kinnunen, et al., 2008; Preckel, et al., 2007; Tsutsumi & Kawakami, 2004). The interaction of ERI and overcommitment has been linked to decreased well-being, specifically emotional exhaustion and decreased personal accomplishment (Bakker, et al., 2000) Thus:

H₅: Effort-reward imbalance is negatively related to health.

H₆: Overcommitment is negatively related to health.

H₇: The relationship between effort-reward imbalance and health is moderated by overcommitment such that there is a stronger negative relationship between effort-reward imbalance and health for individuals high in overcommitment.

Across the health literature, significant relations have been found between presenteeism and allergies, arthritis, chronic pain, diabetes, gastro-intestinal conditions, depression, anxiety, migraine headache and musculoskeletal problems (Sanderson & Andrews, 2006; Schultz & Edington, 2007) indicating that individuals with those chronic conditions tended to engage in presenteeism and supporting the idea that health influences attendance behaviors. In addition, employees with multiple health conditions report greater presenteeism than those with few or no health conditions. Further, each additional chronic condition reported was associated with significantly higher odds of presenteeism (Lerner, Amick, Malspeis, & Rogers, 2000; Schultz & Edington, 2007), perhaps because those individuals so affected feel they have already taken too much time off and are obligated to work. It is also important to note that when employees received pharmaceutical treatment for chronic health conditions such as allergies, depression and migraine headache, worker productivity improved (W. N. Burton, Morrison, & Wertheimer, 2003) and presenteeism declined (Schultz & Edington, 2007) because employees were more able to manage their chronic conditions.

A recent meta-analysis found support for the role of illness as a mediator between work strain and absenteeism, however the amount of variance explained in absenteeism was less than 10%, prompting the authors to suggest that some employees were engaging in presenteeism rather than absenteeism (Darr & Johns, 2008). The authors posited that work strain and absence are indirectly connected via both psychological and physical illness. This finding meshes well with ERI theory as effort-reward imbalance is representative of work strain, which contributes to increased risk of illness (Kinnunen, et

al., 2008; Preckel, et al., 2007; Tsutsumi & Kawakami, 2004) which in turn potentially effects employee attendance.

H₈: Presenteeism is negatively related to health.

H₉: Absenteeism is positively related to health.

Recovery

Presenteeism is related to increased risk of ill health because it restricts opportunities for recuperation (Aronsson & Gustafsson, 2005). Recovery and unwinding processes are important predictors of individual health and well-being (Meijman & Maulder, 1998; Sonnentag, 2001). According to Meijman and Mulder (1998), expending effort at work leads to physiological, behavioral and subjective load responses, which under normal circumstances are reversible. When the individual is no longer stressed by work demands, the systems previously affected by the demands return to their normal pre-demand level, resulting in recovery (Meijman & Maulder, 1998; Sonnentag, 2001). Recovery allows for the reduction of the deleterious effects of a stressful work situation. If an individual is experiencing continuous work demands with no break, recovery cannot occur. The accumulation of load reactions can result in longer term negative health issues and impaired well being (Meijman & Maulder, 1998; Sonnentag, 2001).

Recovery is necessary to prevent decrements in performance and well-being and is positively related to work-related outcomes such as work engagement, personal initiative, and the pursuit of learning (Meijman & Maulder, 1998; Sluiter, Van der Beek, & Frings-Dresen, 1999; Sonnentag, 2003). Incomplete recovery from work is associated with long-term stress related to high work demands (Jansen, Kant, van Amelsvoort, Nijhuis, & van den Brandt, 2003; Kivimaki, et al., 2006; Sluiter, Frings-Dresen, van der Beek, & Meijman, 2001). Recent work has suggested four possible diversionary strategies that are likely to help recovery because they do not make demands on functional systems used during work: psychological detachment, relaxation, mastery experiences and control during leisure time (Sonnentag & Fritz, 2007).

Psychological detachment from work means that an individual is not only physically absent from work, he or she is also refraining from job-related tasks and is not thinking about job related issues or problems (Sonnentag & Bayer, 2005). Employees who are able to detach from their jobs during off-work hours and refrain from negative thoughts about their work experience less psychological (Fritz & Sonnentag, 2006; Sonnentag & Fritz, 2007) and physiological strain symptoms (Brosschott, Gerin, & Thayer, 2006). Continued preoccupation with work precludes recovery as strain processes continue to occur (Meijman & Maulder, 1998; Sonnentag, Binnewies, & Mojza, 2008).

Relaxation is a positive experience both physically and mentally, characterized by a reduction in sympathetic activation and resulting in a decrease in heart rate and muscle tension (Sonnentag, et al., 2008). Activities that provide positive experiences, for example, nature walks or listening to music, result in relaxation. Relaxation can also occur through meditation, progressive muscle relaxation and other techniques (Sonnentag, et al., 2008). Over the long term, relaxation techniques reduce tension and other symptoms of poor well-being (Van der Klink, Blonk, Schene, & Van Dijk, 2001).

Mastery experiences include activities that provide challenging experiences and learning opportunities in areas unrelated to an individual's job (Sonnentag & Fritz, 2007). Mastery experiences challenge the individual without overtaxing him or her and offer opportunities to experience competence and proficiency. These experiences are varied and can range from studying a new language to learning a new hobby to volunteer opportunities within a person's area of expertise (Fritz & Sonnentag, 2006; Ruderman, Ohlott, Panzer, & King, 2002). While mastery experiences do put demands on the individual, they are expected to result in recovery because they build new internal resources, including skills, competencies and self-efficacy (Bandura, 1997; Hobfoll, 1998). Research into the value of mastery experiences as a contributor to recovery is somewhat limited; however, preliminary evidence suggests that mastery experiences during vacation were negatively related to exhaustion after the vacation (Fritz & Sonnentag, 2006).

In general, individuals seek to control events in their lives (Kelley, 1971) thus control is defined as person's ability to choose an action from several options (Sonnentag & Fritz, 2007). Control is a positive experience as individual well-being is improved when a person feels in control of important life domains (Bandura, 1997). Conversely, perceived lack of control is associated with higher levels of psychological distress (Rosenfeld, 1989). Control within the recovery framework refers to the degree to which a person can decide which activity to pursue during leisure time, including when and how to pursue the activity (Sonnentag & Fritz, 2007). This may satisfy a person's desire for control, increasing self-efficacy and feelings of competence, which then promote well-being (Sonnentag & Fritz, 2007). Control acts as an external resource that enhances recovery from work. The ability to choose one's recreational activities is thought to be especially helpful for the recovery process and is associated with increased well-being (Sonnentag & Fritz, 2007).

Recent research has suggested the need for recovery following periods of not only stress but illness as well (Aronsson, Svensson, & Gustafsson, 2003; Biron, et al., 2006; Sonnentag, 2003). Sickness absence allows sick and stressed employees some recovery time whereas those employees who do not use sick leave may experience accumulated stress, a risk factor for many diseases from the common cold to cardiovascular disease (S. Cohen, Tyrrell, & Smith, 1991; Kivimaki, et al., 2005). To illustrate this point, the longitudinal Whitehall II study found that unhealthy individuals who took fewer sick days were twice as likely to experience a serious coronary event as unhealthy employees with a record of moderate levels of sickness absence (Kivimaki, et al., 2005).

While employees who attend work while they are sick miss the opportunity for recovery from their specific illnesses, it may be that some of these individuals are protected from the negative effects of presenteeism because they engage in other recovery experiences, aside from sick leave, that contribute to the maintenance of their health (Sonnentag, et al., 2008). Individuals who engage in presenteeism yet also have regular recovery experiences that help them unwind (Sonnentag & Fritz, 2007) may have better self-reported health and well-being than those who engage in presenteeism and do not take opportunities for recovery.

H₁₀: Recovery moderates the relations between presenteeism and health such that the relationship between presenteeism and health is more positive when recovery is high.

Performance

Presenteeism is costly to organizations because of reduced on-the-job performance due to the presence of health problems (Schultz & Edington, 2007). There is considerable evidence across the literature that presenteeism accounts for more productivity loss than absenteeism (Johns, 2010); but presenteeism is difficult to measure objectively (Mattke, Balakrishnan, Bergamo, & Newbery, 2007; Prasad, Wahlqvist, Shikiar, & Shih, 2004) and most absenteeism studies consider all types of absenteeism, not just sickness absenteeism (Viswesvaran, 2002). Quantifying productivity is challenging as simplistic output measures are often not a solid indicator of good performance (Prasad, et al., 2004). While quantity can be measured in some jobs, it is much more difficult to measure quality, particularly if an employee is a member of an interdependent work team (Prasad, et al., 2004). Comparative productivity, in which an employee's performance while ill is compared to his or her usual level of performance and to others in his or her work group (Kessler, et al., 2003; Mattke, et al., 2007) may be a useful in addressing the difficulty of measuring performance as it relates to employee attendance.

RQ₂: Presenteeism is negatively related to performance.

Control Variables

Pharmaceutical treatment. Many chronic or recurrent conditions, such as migraine, asthma, and diabetes, intermittently affect work performance but are not completely debilitating. These types of conditions can often be prevented or treated successfully by pharmaceuticals (W. N. Burton, et al., 2003). When pharmaceutical treatment is effective, employees are able to manage their chronic conditions (W. N. Burton, et al., 2003; Schultz & Edington, 2007). Thus an individual may have a condition that might lead to presenteeism but he or she is handling the condition using prescribed treatments. It is important to control for this variable when assessing the hypothesized relationships in the proposed model.

Adjustment latitude. Adjustment latitude refers to opportunities an employee has for reducing work output or for altering work procedures in response to being ill (Hultin, et al., 2010; Johansson & Lundberg, 2004; Johns, 2010). Examples of flexibility include changing work hours, choosing among work tasks, working at a slower pace or telecommuting (Hultin, et al., 2010; Johansson & Lundberg, 2004; Rousculp, et al., 2010). Employees who have some flexibility in how they accomplish their work when they are ill are less likely to come to work when they are sick.

Replaceability. Individuals who see themselves as irreplaceable, whose jobs cannot be delegated or who have no back-up tend to engage in presenteeism and in fact, these individuals may be exerting excessive effort to keep up with their job demands (Aronsson & Gustafsson, 2005; Aronsson, et al., 2000; Bockerman & Laukkanen, 2009; Johns, 2011). It is important to know which employees have substitutes available and which do not, as this may influence presenteeism behavior.

Demographic variables. Additional demographic variables of interest that may influence attendance behaviors include income, gender, age, caregiver role and access to sick leave. An individual's financial position may influence whether he or she takes sick leave or comes to work when ill, especially if that person does not have access to paid sick leave (Johansson & Lundberg, 2004). Some studies have shown higher sickness presenteeism in women than men and in middle aged workers compared to younger or older workers. In fact, many of the occupations that show a strong presenteeism tendency are female dominated (Aronsson, et al., 2000). Individuals with children at home show higher levels of presenteeism as well (Aronsson, et al., 2000) but this is not consistent across all studies (Aronsson & Gustafsson, 2005). Given these findings, it is important to control for these variables.

APPENDIX B: Survey Items

Effort (Siegrist et al., 2004). Responses are: 1 = does not apply; 2 = does apply but subject does not consider himself or herself distressed; 3 = does apply and subject does consider himself or herself somewhat distressed; 4 = does apply and subject does consider himself or herself distressed; 5 = does apply and subject considers himself or herself very distressed.

1. I have constant time pressure due to a heavy work load.
2. I have many interruptions and disturbances in my job.
3. I have a lot of responsibility in my job.
4. I am often pressured to work overtime.
5. Over the past few years, my job has become more and more demanding.

Reward (Siegrist et al., 2004) Responses are: 1 = does not apply; 2 = does apply but subject does not consider himself or herself distressed; 3 = does apply and subject does consider himself or herself somewhat distressed; 4 = does apply and subject does consider himself or herself distressed; 5 = does apply and subject considers himself or herself very distressed.

Component esteem

1. I receive the respect I deserve from my superiors.
2. I receive the respect I deserve from my colleagues.
3. I experience adequate support in difficult situations.
4. I am treated unfairly at work. (reverse)
5. Considering all my efforts and achievements, I receive the respect and prestige I deserve at work.

Component job promotion

1. My job promotion prospects are poor. (reverse)
2. My current occupational position adequately reflects my education and training.
3. Considering all my efforts and achievements, my work prospects are adequate.
4. Considering all my efforts and achievements, my salary/income is adequate.

Component job security.

1. I have experienced or I expect to experience an undesirable change in my work situation. (reverse)
2. My job security is poor (reverse)

Overcommitment (Siegrist et al., 2004)

4 point response scale ranging from 1=never to 4= always

1. I get easily overwhelmed by time pressures at work.
2. As soon as I get up in the morning I start thinking about work problems.
3. When I get home, I can easily relax and “switch off” work.
4. People close to me say I sacrifice too much for my job.
5. Work rarely lets me go; it is still on my mind when I go to bed.
6. If I postpone something I was supposed to do today, I’ll have trouble sleeping at night.

Group Attendance Norms (Absence Culture Salience) (Xie & Johns, 2000)

6-point response scale ranging from 1 = disagree strongly to 6 = agree strongly

1. In my workgroup, there is a high degree of agreement about how much absenteeism would be considered “normal” or “average”.
2. In my workgroup, we have a pretty good idea about who is absent and most and who is absent least.
3. In my workgroup, we tend to notice when an employee is absent.
4. In my workgroup, people’s absenteeism tends to be influenced by what others in the group think about the subject.

Absence related norms (Harvey & Nicholson, 1999) Which of the following would you think as justifiable for people to be off sick? I think that this reason justifies time off work: always, often, quite a lot, sometimes, rarely, never.

1. Cold
2. Severe cold
3. Stomach ache
4. Backache
5. Severe backache
6. Headache
7. Severe headache
8. Throat infection
9. Chest infection
10. Depression
11. Nausea
12. Viral illness
13. Neck strain
14. Migraine
15. Dizziness
16. Fainting
17. Diarrhea
18. Tonsillitis

Health Related Quality of Life (HRQOL) (Hennessy, et al., 1994)

1. Self-perceived health

Would you say that in general your health is:

1. Poor
2. Fair
3. Good
4. Very good
5. Excellent

2. Recent physical health

Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?

___ days.

3. Recent mental health

Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 was your mental health not good?

___ days.

4. Recent activity limitation

During the past 30 days for about how many days did poor physical or mental health keep you from doing your usual activities, such as work, recreation or self-care?

___ days.

Activity Limitations Module

1. Are you limited in any way in any activities because of any impairment or health problem?

Yes (Go to next question)

No (Go Q1 to Health Days Symptoms Module)

Don't know/not sure (Go Q1 to Health Days Symptoms Module)

Refused (Go Q1 to Health Days Symptoms Module)

2. What is the major impairment or health problem that limits your activities?

Arthritis/rheumatism

Back or neck problem

Fractures, bone/joint injury

Walking problem

Lung/breathing problem

Hearing problem

Eye/vision problem

Heart problem

Stroke problem

Hypertension/high blood pressure

Diabetes

Cancer

Depression/anxiety/emotional problem

Other impairment/problem

Don't know

Refused

3. For how long have your activities been limited because of your major impairment or health problem?

a. Days 1 __ b. Weeks 2 __ c. Months 3 __ d. Years 4 __

Healthy Days Symptoms Module

1. During the past 30 days, for about how many days did PAIN make it hard for you to do your usual activities, such as work or recreation?

a. _____ number of days b. none. c. don't know/not sure d. refused

2. During the past 30 days, for about how many days have you felt sad, blue, or depressed?

a. _____ number of days b. none. c. don't know/not sure d. refused

3. During the past 30 days, for about how many days have you felt worried, tense or anxious?

a. _____ number of days b. none. c. don't know/not sure d. refused

4. During the past 30 days, for about how many days have you felt you did NOT get enough rest or sleep?

a. _____ number of days b. none. c. don't know/not sure d. refused

5. During the past 30 days, for about how many days have you felt very healthy and full of energy?

a. _____ number of days b. none. c. don't know/not sure d. refused

Recovery Experience Questionnaire (Sonnentag & Fritz, 2007) 5-point scale from 1 (*I do not agree at all*) to 5 (*I fully agree*).

Psychological Detachment subscale

1. I forget about work.
2. I don't think about work at all.
3. I distance myself from my work
4. I get a break from the demands of work.

Relaxation subscale

1. I kick back and relax.
2. I do relaxing things.
3. I use the time to relax.
4. I take time for leisure.

Mastery subscale

1. I learn new things.
2. I seek out intellectual challenges.
3. I do things that challenge me.
4. I do something that broadens my horizons.

Control subscale

1. I feel like I can decide for myself what I do.
2. I decide my own schedule.
3. I determine for myself how I will spend my time.
4. I take care of things the way I want them done.

Presenteeism

1 item measure (Aronsson, et al., 2000). Response format is never, once, 2-5 times, over 5 times. Johns (2009) suggests leaving this open ended to see where intervals lie.

1. Has it happened over the previous 12 months that you have gone to work despite feeling that you really should have taken sick leave because of your state of health

Stanford Presenteeism Scale (Koopman et al., 2002). Responses range from strongly disagree to strongly agree.

1. I was able to finish hard tasks in my work, even though I was not feeling well.
2. At work, I was able to focus on achieving my goals despite not feeling well.
3. I felt energetic enough to complete all my work despite not feeling well.
4. The stresses of my job were much harder to handle because I was not feeling well.
5. Not feeling well distracted me from enjoying my work.
6. I felt hopeless about finishing certain work tasks due to not feeling well.

Absenteeism (Duration) (HPQ) (Kessler, et al., 2003)

1. About how many hours altogether did you work in the past 7 days? ____
2. How many hours does your employer expect you to work in a typical 7-day week? ____

Now please think of your work experience over the past 4 weeks (28 days). In the spaces provided below, write the number of days you spent in each of the following work situations. In the past 4 weeks (28 days), how many days did you...

3. Miss an entire work day because of problems with your physical or mental health? (Please include only days missed for your own health, not someone else's health) ____
4. Miss an entire work day for any other reason (including vacation)? ____
5. Miss part of a work day because of problems with your physical or mental health? (Please include only days missed for you own health, not someone else's health).

6. Miss part of a work day for any other reason (including vacation)? ____
7. Come in early, go home late, or work on your day off? ____

Absenteeism (Frequency)

1. How many days in the last six months have you been absent from work due to your own personal illness? _____

Performance (HPQ) (Kessler, et al., 2003) How would you compare your overall job performance on the days you worked during the past 6 months compared with the performance of most other workers who have a similar type job?

- You were a lot better than other workers
- You were somewhat better than other workers
- You were a little better than other workers
- You were about average
- You were a little worse than other workers
- You were somewhat worse than other workers
- You were a lot worse than other workers.

Procedural justice scale (Moorman, 1991)

7-point response scale ranging from 1= strongly disagree to 7=strongly agree

My organization:

1. Collects accurate information necessary for making decisions.
2. Provides opportunities to appeal or challenge decisions.
3. Has all sides affected by the decision represented.
4. Generates standards so that decisions are made with consistency.
5. Hears the concerns of all those affected by decisions.
6. Provides useful feedback regarding decisions and their implementation.
7. Allows for requests for clarification or additional information about the decision.

Distributive justice scale (Niehoff & Moorman, 1993)

7-point response scale ranging from 1= strongly disagree to 7=strongly agree

1. My work schedule is fair.
2. I think my level of pay is fair.
3. I consider my workload to be quite fair.
4. Overall, the rewards I receive here are quite fair.
5. I feel that my job responsibilities are fair.

Pharmaceutical treatment

1. Do you currently take any medication to help you manage any chronic conditions you might have?

___ yes ___ no

Adjustment Latitude (Hultin, et al., 2010; Johansson & Lundberg, 2004) Scale is never, seldom, sometimes, often

General adjustment latitude:

1. If you are tired, out of sorts or have a headache, are you able to adjust your work to how you are feeling?

Are you able to adjust your work-related responsibilities if you are not feeling well by:

2. Postponing work
3. Choosing among tasks
4. Getting help from colleagues
5. Working slower
6. Taking longer breaks
7. Shortening the work day
8. Going home and finishing later
9. Working undisturbed
10. Working from home

Replaceability adapted from (Aronsson & Gustafsson, 2005; Bockerman & Laukkanen, 2009). Responses are strongly disagree, disagree, neither agree nor disagree, agree, strongly agree.

1. If I am absent from work, someone else can fill in for me.
2. If I am absent from work, the work just piles up until I get back.

Demographics

1. About how many hours altogether did you work in the past 7 days (if more than 80, enter 80)
2. How many hours does your employer expect you to work in a typical 7 day week? (If it varies, estimate the average. If more than 80, enter 80)
3. In what year were you born?
4. Are you male or female?
5. What is your current marital status
 - Married or cohabitating
 - Separated
 - Divorced
 - Widowed
 - Never married
6. Do you have children?
7. What are the ages of your children?
8. How often do you use your sick leave to care for a child that is sick?
 - always
 - often
 - quite a lot
 - sometimes
 - rarely
 - never
9. What is the highest grade or level of school that you have completed?
 - High school graduate or GED
 - Some college or 2 year degree

- 4 year college graduate
 - Currently working on a master's degree
 - Master's degree
 - Currently working on a PhD
 - PhD
10. What is your annual income from your job, before taxes?
- Less than \$20,000
 - 20,000 – 39,999
 - 40,000 – 59,999
 - 60,000 – 79,999
 - 80,000 – 99,999
 - 100,000 – 119,999
 - 120,000 – 139,999
 - 140,000 – 159,999
 - 160,000 – 179,999
 - 180,000 – 199,999
 - More than 200,000

Attendance Policies

1. How much sick leave do you have?
2. How many days of sick leave have you used in the past 6 months
3. Regarding your sick leave and personal days, how concerned are you that you may not have enough leave to cover your needs? (responses range from I am not concerned at all to I am very concerned)
4. How many personal days do you have?
5. How many personal days have you used in the last 6 months?

APPENDIX C: Research Question Results

Two research questions were posed in the dissertation proposal. The questions and results are summarized here.

Measurement issue of injustice versus imbalance

Organizational justice focuses on employees' perceptions regarding the fairness of their work environment (Cropanzano, Goldman, & Benson, 2005). Organizational justice is composed of distributive justice, procedural justice and interactional justice. Many of the items used in the measurement of effort-reward imbalance, specifically items used to measure reward, parallel those used to assess organizational justice perceptions. This suggests the need to determine whether it is imbalance or injustice that is driving the relationship between effort and reward.

Distributive justice relates to an individual's perception of the fairness of outcomes obtained in the work environment (Cropanzano & Wright, 2011). Based on Adams' (1965) equity theory, people calculate equity based on a ratio of their inputs and outcomes, thus individuals should receive rewards consistent with the quantity and quality of the results they produce (Cropanzano, et al., 2005). Employees then compare their efforts and outcomes with efforts and outcomes of select co-workers. Inequity occurs when individuals perceive that they are not receiving as much as their comparison co-worker (Cropanzano & Wright, 2011). Procedural justice is defined as the perceived

fairness of the processes used to determine outcomes (Cropanzano, Byrne, Bobocel, & Rupp, 2001; Cropanzano, et al., 2005). If employees feel that the procedures used to determine an unfavorable outcome were fair, they are likely to respond in a more favorable manner (Thibaut & Walker, 1978).

Interactional justice refers to the idea that employees also look at the interpersonal treatment received when rewards are decided and distributed (Bies & Moag, 1986; Cropanzano, Bowen, & Gilliland, 2007; Greenberg, 1990, 1993). There are two categories of interactional justice: interpersonal justice and informational justice. Interpersonal justice is the extent to which one is treated with politeness and esteem by those involved in implementing the procedures or determining the outcomes (Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Informational justice is concerned with the adequacy and completeness of information shared with employees regarding why certain procedures were used or why outcomes were distributed in a particular manner (Colquitt, et al., 2001; Cropanzano, et al., 2005).

To determine if injustice and imbalance are different constructs or are redundant, all three types of justice perceptions will be measured.

RQ₁: Are organizational justice and effort-reward imbalance unique constructs?

Because of the conceptual similarity between distributive justice and effort-reward imbalance, the two variables were examined to determine if the constructs are unique or are redundant (Research Question1). ERI and distributive justice were negatively but not significantly correlated. Because they are not significantly correlated, it can be assumed that they are not redundant.

Performance

Presenteeism is costly to organizations because of reduced on-the-job performance due to the presence of health problems (Schultz & Edington, 2007). There is considerable evidence across the literature that presenteeism accounts for more productivity loss than absenteeism (Johns, 2010); but presenteeism is difficult to measure objectively (Mattke, Balakrishnan, Bergamo, & Newbery, 2007; Prasad, Wahlqvist, Shikiar, & Shih, 2004) and most absenteeism studies consider all types of absenteeism, not just sickness absenteeism (Viswesvaran, 2002). Quantifying productivity is challenging as simplistic output measures are often not a solid indicator of good performance (Prasad, et al., 2004). While quantity can be measured in some jobs, it is much more difficult to measure quality, particularly if an employee is a member of an interdependent work team (Prasad, et al., 2004). Comparative productivity, in which an employee's performance over a specified time period is compared to others in his or her work group (Kessler, et al., 2003; Mattke, et al., 2007) may be a useful in addressing the difficulty of measuring performance as it relates to employee attendance.

RQ₂: Presenteeism is negatively related to performance.

Performance was measured using the HPQ. The HPQ uses a comparison approach to evaluate performance (Kessler, et al., 2004; Kessler, et al., 2003; Mattke, et al., 2007). Participants were asked how they would compare their overall job performance on the days they worked during the past 6 months compared with the performance of most other workers who have a similar type job. The responses, on a scale from 1 to 7, ranged from "You were a lot worse than other workers" to "You were a lot better than other workers"

In the larger path analysis from the main dissertation study, the path between presenteeism and performance was significant, indicating that as presenteeism increases, performance decreases, supporting the hypothesized relation. Thus, individuals with higher levels of presenteeism reported lower levels of performance. This finding is of particular interest because individuals tend to overestimate their own contributions and underestimate their colleagues' contributions (Kruger & Savitsky, 2009). To find that individuals higher presenteeism recognize their performance suffers as compared to their colleagues supports previous research finding decrements in performance (Schultz & Edgington, 2007) and is perhaps a more objective measure to use when company performance reports are not available. Future studies should compare comparative performance reports to supervisor performance evaluations.

APPENDIX D: Measurement Invariance

As women often report higher levels of presenteeism compared to men and presenteeism and absenteeism were significantly correlated with sex, a MANCOVA was conducted to assess the difference in group means by sex for the main study variables – effort-reward imbalance, overcommitment, presenteeism, absenteeism and recovery, controlling for income which was significantly correlated with sex. A MANCOVA was selected because a multivariate test takes into account the correlation among the dependent variables and thus has more power to detect group differences (Field, 2005; Tabachnick & Fidell, 2001). Because the sample sizes differed (N for males = 168, N for females = 256), Box's M was examined at the $p \leq .001$ level (Field, 2005; Tabachnick & Fidell, 2001) to determine whether the covariances were equal across the two groups on the dependent variables. Box's M was significant, indicating that there may be some between group differences based on sex.

Based on the results of the MANCOVA, a multiple group analysis to assess measurement invariance across the two groups was conducted comparing men and women. The first step in the analysis is the test of configural invariance in which none of the parameters are constrained equal across groups (Byrne, 2010; Vandenberg & Lance, 2000). This model yielded a χ^2 value of 172.02 with 46 degrees of freedom ($p < .001$).

RMSEA was .08 (90% CI: .07 -.10), and the CFI was .75 which indicated relatively adequate fit however the SRMR was .07, which is indicative of a well-fitting model.

In the next step, all structural regression paths were constrained equal across groups, resulting in a χ^2 value of 196.16 with 63degrees of freedom ($p<.001$). The RMSEA was .07 (90% CI: .06 -.08), the CFI was .74, and the SRMR was .08, which provided evidence of reasonable model fit. Computation of $\Delta\chi^2$ between this model and the configural model is 23.98 with 17 degrees of freedom. This difference value is not statistically significant, suggesting that the groups are not different at the model level.

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CURRICULUM VITAE

Laura Wheeler Poms graduated from Fairfax High School in 1982, earning her Bachelor of Arts degree in Psychology from The College of William and Mary in 1986. In 1991 she obtained her Master of Arts in Public Communication from The American University and in 2003, her MA in Industrial/Organizational Psychology from George Mason University. She subsequently was awarded a Master in Public Health in Epidemiology from George Mason University in 2011 and her PhD in Industrial/Organizational Psychology in May 2012.

She is an occupational health psychologist primarily focusing on how an individual's work environment influences physical and mental health. Her research interests include employee attendance, work-family balance, and the influence of protective factors on health behaviors. She has presented her work at a number of international conferences and has published her findings in a variety of peer-reviewed journals. She currently serves as chairman of Fairfax County Public Schools' School Health Advisory Committee.

Selected Publications

Poms, L.W., Fleming, L.C. & Jacobsen, K.H. (2012). Parenting practices and tobacco use in middle school students in low and middle income countries. *Journal of School Health*.

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