

THE EFFECT OF SUBJECTIVE WELL-BEING ON EMPLOYEE PRESENTEEISM

By

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A Dissertation Submitted to the Faculty of the Graduate School at
Middle Tennessee State University
in Partial Fulfillment of the
Requirements for the Degree
Doctor of Philosophy

Murfreesboro, TN

August, 2010

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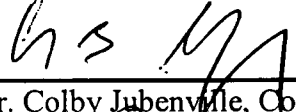
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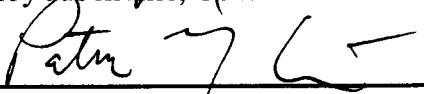
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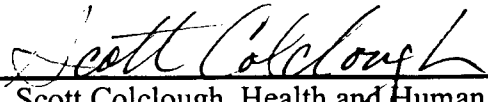
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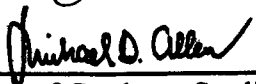
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DEDICATION

This dissertation is dedicated to my parents, Dennis and Alyson Bass. I am ever grateful for the utmost care they have taken in raising me to be the woman I am today. I have known nothing but unconditional love and unending support from them. I could never sufficiently articulate how thankful I am, how lucky I feel, and how happy I am to have been entrusted to these incredible people. Everything I do that is good is because of my parents. Thank you.

I would like to thank my family, Jim & Debbie Rudy, Cherie Watkins, Daniel, Leslie, Cayton & Davin Bass for “giving me up” for so many years while I worked on this degree.

Finally, I would like to acknowledge my friends who have been overwhelmingly supportive throughout this process. I have been blessed with the most extraordinary friends who were completely understanding during each stage of the process, who believe in me more than I believe in myself, and who celebrate this accomplishment with me as if it were their own. They have made me laugh, let me cry, brought me coffee, celebrated each milestone, asked about my work, at times did not ask about my work (by my request), made me lunch every day when that was the only meal I had time for and so many hundreds of other things. To experience friendship like this is to understand the true meaning of friendship. Laura, Bryan, Mickey, Tara, Rebecca, Abbey, Megan, Jamie, Patrick, Amy, Emily, Mesina, Nikki, Kelly. These are the people that contribute daily to my sanity and happiness, thank you.

ACKNOWLEDGEMENTS

I would like to acknowledge the guidance and participation of Dr. Norman Weatherby in this process. As a professor, he went to great lengths to ensure the information covered was understood and that it was meaningful and relevant to my field of study. As a dissertation chair, he was patient and provided direction and hands-on help when needed. He was available at late hours and on the weekends, clearly making my dissertation a priority. He treated me as a colleague, which was the basis for the rapport we developed that facilitated an easy relationship making the whole process rather enjoyable. I could not have asked for a better chair and owe him many, many thanks.

To my other committee members, Dr. Colby Jubenville and Dr. Patrick McCarthy, I would like to acknowledge the flexibility and promptness with which they acted in this process. They each provided meaningful and helpful feedback and made themselves available when needed, often on very short notice. Their participation in this process resulted in a better dissertation and for that I am thankful.

Thank you to my company, Onlife Health, for providing the data necessary to complete my analysis. I would like to acknowledge my boss, mentor and friend, Dr. Adam Long. He has been ever supportive throughout this process, giving advice, acting as a sounding board and allowing me much-needed flexibility with my schedule, which made completing this degree while working full-time easier.

BASS, CATHERINE E., Ph.D. The Effect of Subjective Well-Being on Employee Presenteeism. (2010)
Directed by Norman L. Weatherby, Ph.D. 80 pp.

This study provided an opportunity to examine the effect of subjective well-being on presenteeism in the framework of the satisfaction-performance relationship. The main research question is what effect does subjective well-being have on an employee's level of presenteeism? The main hypothesis states that when controlling for age, sex, race/ethnicity, education level and industry, the employee's level of subjective well-being is inversely related to his/her presenteeism.

In this study, presenteeism is the dependent variable. Subjective well-being, measured by indicators of mental/emotional well-being and physical well-being and life satisfaction are the independent variables. Demographic variables thought to influence presenteeism are also included as independent variables in the analysis. Those are age, sex, race/ethnicity, education level, and industry type.

The retrospective, cross-sectional, quantitative study design allows the data to be collected related to each major variable. Results from the univariate analysis of regression will address the hypothesis that the higher the level of subjective well-being among employees, the fewer problems they will experience with presenteeism.

The purpose of this investigation was to add to the body of literature examining predictors of presenteeism. The results of the study demonstrate that subjective well-being, as measured by indicators of life satisfaction, physical and mental/emotional well-being, and indicators of depression, has a significant effect on presenteeism.

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CHAPTER I

INTRODUCTION

Employers are the primary purchasers of healthcare, providing health insurance for more than half (59.3%) of the insured population in the US (DeNavas-Walt, Proctor, & Smith, 2008) and spending approximately \$13,000 per employee per year (Loeppke, Taitel, Haufle, Parry, Kessler, & Jinnett, 2009). Because of this, employers have become concerned with the costs of presenteeism, the costs of absenteeism, medical claims costs and pharmacy benefits.

Presenteeism refers to lost productivity of employees on-the-job. They may not be working to full capacity due to mental/emotional or physical ailments (Burton, Conti, Chen, Schultz, & Edington, 1999). That is to say, employees are present, but not fully productive. Cost of lost work productivity resulting from chronic conditions has been estimated at \$234 billion annually (Lerner, Amick, Rogers, Malspeis, Bungay, & Cynn, 2001). The phenomenon of presenteeism began to garner attention about a decade ago and has quickly become of great interest to employers due to the high costs associated with it.

Statement of the Problem

Health promotion programs are meant to intervene with the employee population in an effort to improve their health with the hope that improved health will lead to reduced medical claims costs, improved utilization of the healthcare system and pharmacy

benefits, reduced absenteeism, reduced presenteeism, and improved employee morale. This effort has been met with great success. Spending money on health promotion programs to save money on healthcare costs has evolved from a cutting edge, risky idea to a routinely offered benefit among many employers.

With more than 20% of absences attributed to work-related ill-health, Hiller, Fewell, Cann and Shephard (2005) acknowledge the importance of integrating wellness activities aimed at reducing or containing healthcare-related costs into the workplace. However, they also recognize that “greater gains may be experienced through the direct influence of positive employee health and well-being on individual or group productivity, improved quality of goods and services, greater creativity, and innovation, enhanced resilience, and increased intellectual capacity.” This commentary draws attention to the need for a shift in focus to include targeted efforts towards reducing presenteeism.

For many years, the costs associated with health risks were calculated based solely on direct costs (e.g., medical and pharmacy claims, hospital admittance, emergency room visits). Of equal or greater importance are the indirect costs (e.g., absenteeism, presenteeism) that employers face. Presenteeism is the concept of lost productive time at work due to mental/emotional or physical ailments (Burton et al., 1999). It represents a significant portion of indirect costs to employers (Burton, Chen, Conti, Schultz, Pransky, & Edington, 2005). Studies examining the costs associated with presenteeism have been less frequent and deserve continued attention.

Work in the field of occupational medicine suggests that the costs associated with presenteeism overshadow the costs associated with medical and pharmacy claims.

Studies have estimated the cost to employers due to lost productivity to be \$1,392 to \$2,800 per employee per year (Ozminkowski, Goetzel, Chang & Long, 2004; Burton et al., 2005). Research indicates that 63% to 83% of employees have gone to work at least once during the previous year when ill (Bergstrom, Bodin, Hagberg, Aronsson, & Josephson, 2009).

Researchers have documented some of the reasons why people experience presenteeism. One's culture at work may have a significant impact on the decision to attend work despite illness because of the spoken or unspoken pressure to attend work (Aronsson & Gustafsson, 2005). The type of work that one performs has been linked to the level of presenteeism one experiences. Caregivers, such as teachers, nurses, and child care workers experience the highest level of presenteeism (Schultz, Chen, & Edington, 2009). Financial concerns can influence one's decision to attend work while ill, particularly for non-salaried employees (Aronsson & Gustafsson, 2005). Issues such as these are important to acknowledge but are less relevant to this study.

Of particular importance to this study are the conditions people experience that most would not consider a reason to miss work, but have a proven impact on one's ability to be fully productive. Depression, stress, anxiety, high blood pressure, allergies, arthritis and asthma are examples of conditions that fall into this category (Burton, Pransky, Conti, Chen, & Edington, 2004). These are problematic because they typically do not have obvious symptoms, are not contagious, and often are not of a severe enough nature to trigger a decision making process of whether or not to attend work. Conditions such as

these have a significant impact on productivity and so provide an opportunity for improvement.

These results suggest that reducing presenteeism should be at the forefront of interventions designed to save employers money and improve productivity. However, the best way to approach this problem is unclear. It is imperative to understand the predictors of presenteeism and the relative dynamics of these interactions.

It is appropriate to think of the concept of presenteeism in the framework of the satisfaction-performance relationship. Stemming from the seminal Hawthorne studies, the satisfaction-performance relationship posits that a happy worker is a more productive worker. Many studies have aimed to confirm this common wisdom hypothesis (Petty, McGee, & Cavender, 1984; Iaffaldano & Muchinsky, 1985; Cropanzano & Wright, 2001; Judge, Thoresen, Bono, & Patton, 2001; Bowling, 2007; Ricketta, 2008). However, studies in this area have done little to demonstrate a strong association between the extent to which workers are happy and the extent to which workers are productive.

In response to counterintuitive results, much speculation has been offered as to why results from satisfaction-performance relationship studies produce such low associations. One widely accepted supposition is that researchers have yet to properly define and measure the variables of this relationship (Zelenski, Murphy, & Jenkins, 2008). After much work, better measures have emerged in the literature that have proved helpful, resulting in stronger associations (Judge et al., 2001). However, while associations are stronger when using well chosen, well defined variables, the results are a

long way from explaining a significant portion of the relationship. There is still work to be done.

To date, a study has not been executed using a combination of the best measures. This may be due, in part, to the disparate nature of the disciplines investigating the satisfaction-performance relationship. A preponderance of the work has, understandably, been in the field of Industrial and Organizational (I/O) psychology. Other disciplines include human resources and administration, organizational development, applied management, behavioral sciences and, sparingly, in the discipline of occupational health. Differing interests and areas of expertise in these disciplines contribute to redundant efforts and work that is not reflective of the progress that has been made in the study of this relationship.

The lack of cohesion in the literature can be illustrated by this example. One of the better measures of satisfaction is well-being. Well-being is a broad construct comprising satisfaction with life/non-work factors, satisfaction with work, and health. Because there are many factors that could contribute to one's happiness and one's satisfaction with their job, it is only logical that the measure of satisfaction be equally comprehensive. However, only one study has included health as a core construct in defining well-being (Hillier et al., 2005). Furthermore, a study using a combination of the best measures of satisfaction and of performance in addition to considering the role health plays in the relationship has yet to be performed.

The happy productive worker thesis has received much attention from the I/O psychology field (Cropanzano & Wright, 2001). However, research on the happy

productive worker thesis, as it relates to health, has only recently made its mark in the corporate wellness arena. That is not to say that this topic has not been pondered or discussed, but empirical research has only been published with any regularity in the last decade.

Much work has been done to identify the effects of health status on an employee's productivity as well as their absenteeism rates and claims costs. The results of these studies have been far more significant and consistent with other area research, lending even more credibility to the findings. Overall, the work accomplished in the last decade has done much for establishing clear definition around the deleterious effects of an unhealthy status.

Need for the Study

Much research has been done on the efficacy of health promotion programs, particularly as they relate to the reduction of health risks, decreased absenteeism, and their financial benefit (i.e., return on investment). There has been a significant increase in the literature surrounding the relationship between presenteeism and health status. However, there is little research focusing on the potential effect health promotion programs could have on presenteeism.

Purpose of the Study

The purpose of this research is to examine the relationship between subjective well-being and presenteeism. Studying this relationship can lead to a clearer understanding of how to focus efforts specifically on reducing presenteeism.

Research Question

The main research question is what effect does subjective well-being (SWB) have on an employee's level of presenteeism? Demographic variables that may affect subjective well-being and/or presenteeism are controlled.

Hypothesis

The main hypothesis states that when controlling for age, sex, race/ethnicity, education level and industry, the employee's level of subjective well-being is inversely related to his/her presenteeism. The concepts illustrated in Figure 1 are discussed in chapter 2 and the associated methods are discussed in chapter 3.

Significance of the Study

This study addresses an area of great concern for employers, who bear much of the burden of healthcare costs in the United States. Studies show that one's subjective well-being is responsive to therapeutic interventions (Seligman, 2002). If individuals with higher subjective well-being have reduced presenteeism, health promotion programs can target subjective well-being in the same way that they target risky behaviors.

From a national perspective, this study addresses the Occupational Safety and Health focus area of Healthy People 2010 (retrieved from <http://www.health.gov/healthypeople>). In order to meet the objectives outlined in the Occupational Safety and Health focus area, the National Institute for Occupational Safety and Health (NIOSH) developed the National Occupational Research Agenda (NORA). "One of the 21 specific priority areas identified by the NORA process is intervention effectiveness research, a type of research aimed at finding out which prevention strategies

effectively protect worker safety and health.” (retrieved from <http://www.health.gov/healthypeople>). This research aims to study the relationship between subjective well-being and presenteeism and to identify possible areas for intervention, which is in line with the objectives of NORA.

Individuals with high subjective well-being, on average, have desirable qualities. Diener (2000) points out that happy people participate in more community organizations, are more liked by others, are less likely to get divorced, perform better at work and tend to live slightly longer. On average, happy people seem to be more productive and sociable.

Harter, Schmidt, & Keyes (2002) talk about the importance of employee well-being for communities and employers:

The well-being of employees is in the best interest of communities and organizations. The workplace is a significant part of an individual's life that affects his or her life and the well-being of the community. The average adult spends much of his or her life working, as much as a quarter or perhaps a third of his waking life in work...The well-being of employees is also in the best interests of employers who spend substantial resources hiring employees and trying to generate products, profits, and maintain loyal customers (p. 2).

With the continual rise of healthcare costs and the difficult economy, a shift in focus from care of the sick to prevention of illness is gaining momentum. In light of this and the lack of studies with strong results, this study is timely and relevant, adding to the existing body of literature.

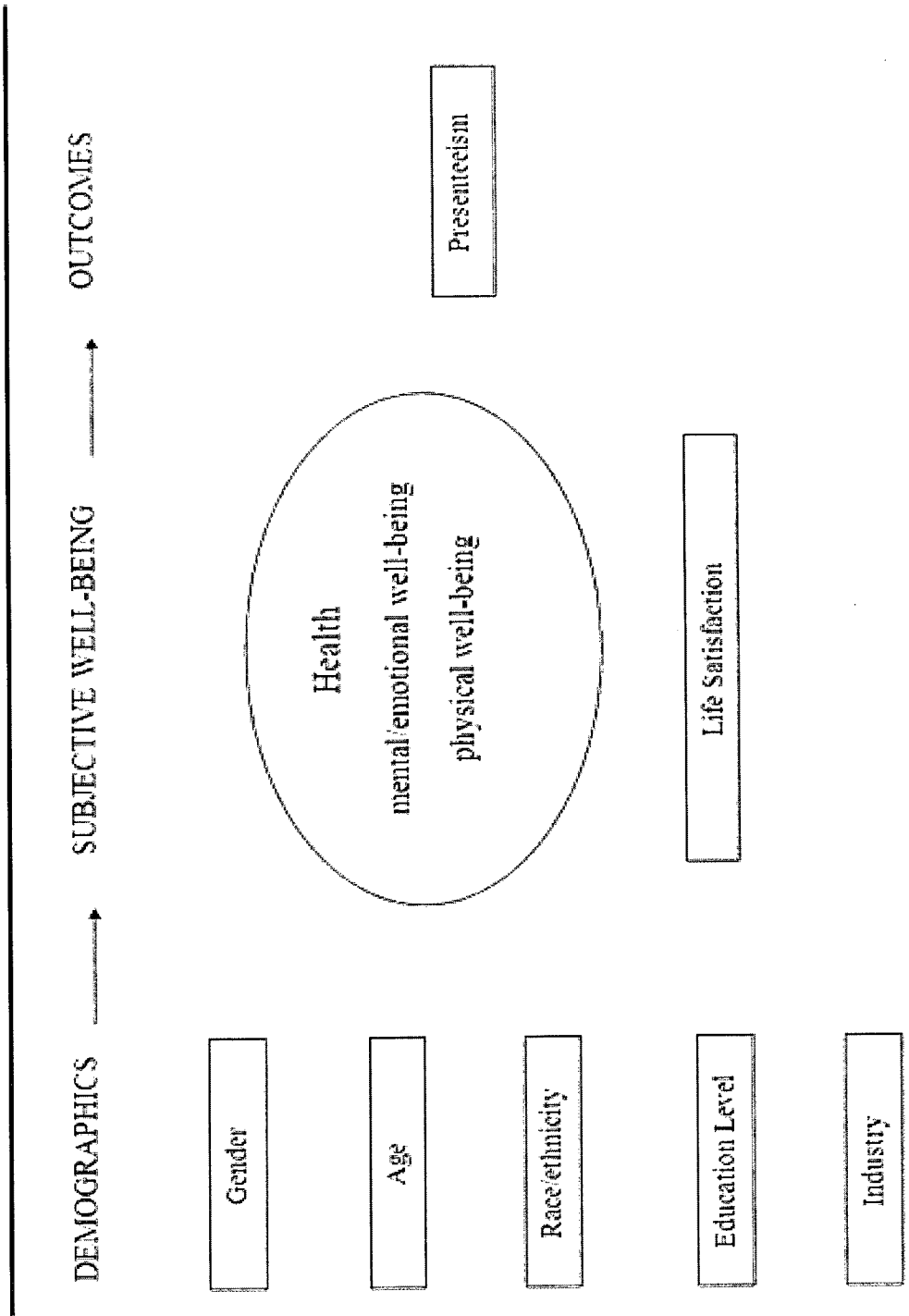


Figure 1. Path diagram illustrating the variables that influence presenteeism.

Limitations

This study is limited by the data collected in the corporation's health assessment. Although it would be ideal to measure occupational classification, the data are limited to industry classification.

Delimitations

Results from this study can most confidently be generalized to employee groups using the corporation's health assessment and to those participating in insurance-provider sponsored health promotion programs.

Assumptions

All data collected are self-reported. The researcher assumes that the participants will answer all questions accurately and honestly.

Definition of Terms

Subjective Well-Being – the terms psychological well-being and subjective well-being are used interchangeably and equivalently in the literature. Subjective well-being represents a person's belief about their overall well-being, mental and physical. It is one's feelings about their level of happiness and health. Because the effect of well-being is a result of one's *belief* about their level of well-being, objective measures of health and happiness are of less interest. Additionally, the data collected for this study, the self-rating of one's health and the self-rating of one's satisfaction with life, are subjective in nature. For these reasons, the term subjective well-being is used for the purpose of this study.

Health – generally encompasses both physiological and psychological symptomology within a more medical context. The term health should be used when specific physiological or psychological indicators are of interest (Danna & Griffin, 1999).

Presenteeism – refers to lost productivity time of employees on-the-job, but not working to full capacity due to mental/emotional or physical ailments (Burton et al., 1999).

Health Assessment – an instrument used to collect and assess data about a person or population's health.

Summary

Presenteeism is of great concern to employers because of the high costs associated with employees being present at work but not fully productive. Research has demonstrated that costs associated with lost productive time are greater than those associated with medical care, pharmacy benefits, and absenteeism. There is sufficient evidence in the literature to support the notion of being able to reduce the level of presenteeism that employees experience by improving employee's subjective well-being. These results suggest that reducing presenteeism should be a primary focus of employer efforts to reduce costs.

CHAPTER II

LITERATURE REVIEW

Introduction

Indirect health-related costs include those that result in lost labor resources due to employee illness, e.g., presenteeism, absenteeism, short-term disability, long-term disability, and family/medical leave (Johnston, Westerfield, Momin, Phillipi, & Naidoo, 2009). Because indirect costs represent a significant portion of healthcare related costs (Lerner et al., 2001), they are of particular concern to employers. Presenteeism, specifically, represents a significant portion of indirect health-related costs to employers (Burton et al., 2005) and will be the focus of this dissertation.

The concept of presenteeism can be thought of in the framework of the satisfaction-performance relationship. This relationship stems from the happy-productive worker thesis, which posits that happier people are more productive (Staw, Sutton, & Pelled, 1994; Wright, Cropanzano & Moline, 2002; Judge et al., 2001). In this study, satisfaction will be operationalized as subjective well-being and performance operationalized as the inverse of presenteeism. The measures of subjective well-being and presenteeism will be discussed in this chapter. Figure 2 illustrates components of the happy-productive worker thesis. The purpose of this literature review is to summarize the literature related to presenteeism, to summarize the literature related to subjective well-

being, to examine studies that evaluated the satisfaction performance relationship and to provide a theoretical basis for this study.

Purpose of the Study

The purpose of this research is to examine the effect of subjective well-being on presenteeism. Presenteeism is measured by the percent of productivity lost by individuals with mental and/or physical health risks as compared with individuals without mental and/or physical health risks. Subjective well-being is measured by indicators of life satisfaction, self-reported health status and depression.

Presenteeism

This section will focus on the literature related to presenteeism. The term presenteeism derives from the phenomenon of employees being present at work but not fully productive. Presenteeism is a result of employees not working to full capacity due to mental/emotional or physical ailments (Burton et al., 1999). Employers have a great interest in presenteeism because of the high costs associated with it.

Studies have estimated the cost to employers due to lost productivity to be \$1,392 to \$2,800 per employee per year (Ozminkowski et al., 2004; Burton et al., 2005). Other research indicates that, on average, for every dollar employers spend on medical and pharmacy costs, they lose two to four dollars on lost productivity (Schultz et al., 2009). While it is difficult to quantify the cost of presenteeism, these results provide a framework by which one can begin to understand the costliness of presenteeism. Schultz et al. (2009) reviewed the literature to assess the impact of presenteeism costs of selected health conditions compared to total costs. Depending on the health condition

assessed and method used to measure presenteeism, the percentage of the total indirect costs of health conditions attributable to presenteeism ranged from 14% to 89%.

In each of the studies reviewed, the percentage of costs attributable to presenteeism exceeded the percentage of costs of medical care, pharmacy costs, and absenteeism.

While the percentages of indirect costs vary widely across health conditions, the estimates by health condition across studies are more closely aligned. For example, percentage of presenteeism costs estimated for “allergies” ranged from 74% to 82%, while those for “migraine” ranged from 72% to 89%, and percentages for “depression/anxiety” ranged from 70% to 81%, and those estimated for “asthma” were 72% to 73% across three studies (Goetzel et al., 2004; Collins, Baase, Sharda, Ozminkowski, Nicholson, Billotti, Turpin, Olson, & Berger, 2005; Loeppke, Taitel, Richling, Perry, Kessler, Hymel, Konicki, 2007). Consistency across studies lends credibility to the findings.

Pelletier, Boles, and Lynch (2004) and Burton et al. (2005) demonstrated a direct relationship between the number of risk factors a person has and the level of presenteeism they experience. The more risk factors a person has the more productivity loss they experience. Furthermore, results indicate that the effects of risk factors have an additive effect. Burton et al. (2005) found a stepwise progression in productivity loss for each additional risk factor a person has greater than one. Importantly, results showed that employees who improve their health risk status (i.e., decreased the number of risk factors they had) experience a measurable improvement in productivity (Pelletier et al., 2004).

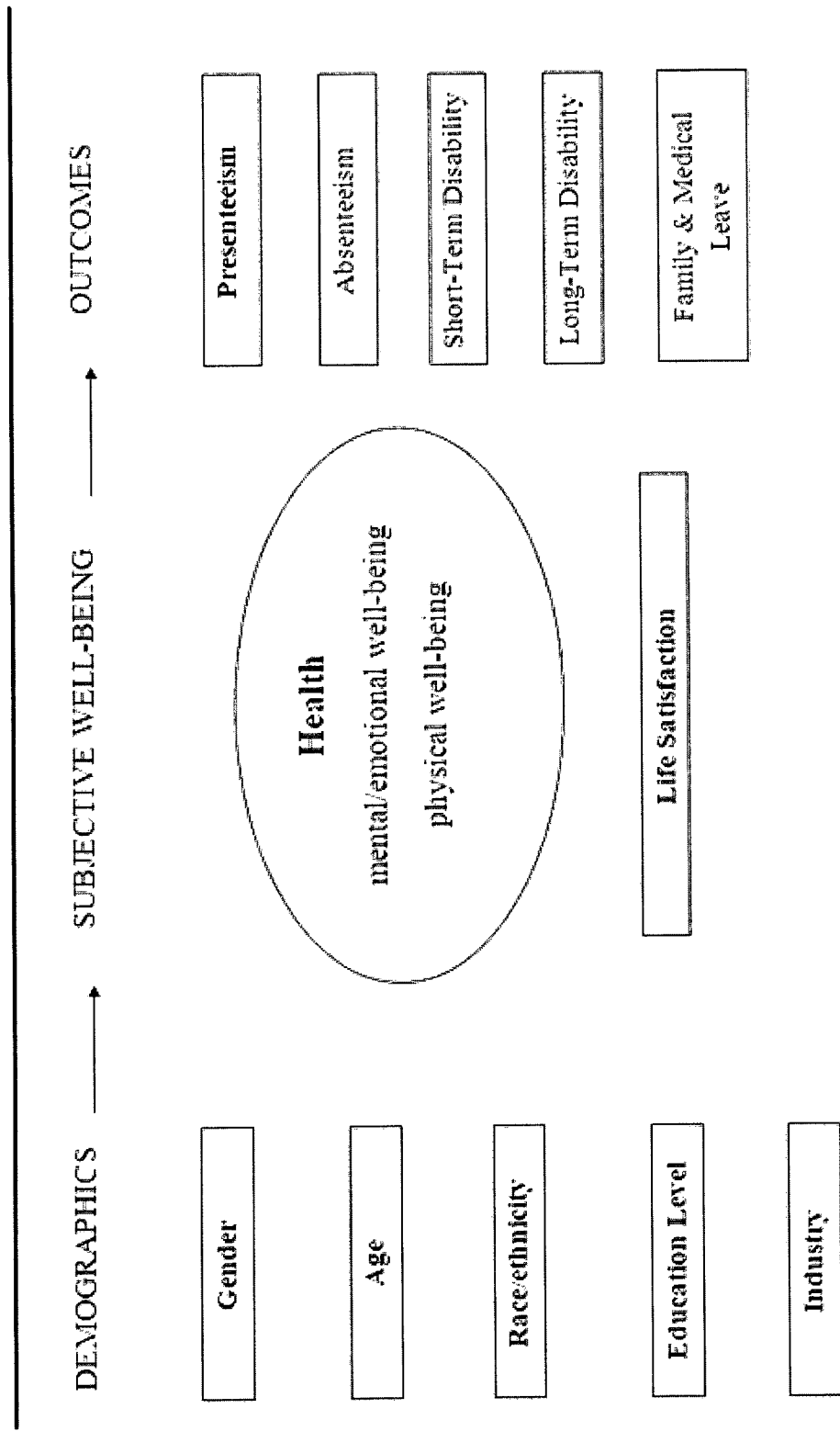


Figure 2. Path diagram illustrating the components of the happy-productive worker thesis that influence the satisfaction-performance relationship. This dissertation focuses on the concepts in bold.

It is important to emphasize the direct relationship between the number of health risks people have and the level of presenteeism people experience. This direct relationship provides a framework for understanding how health status plays a role in the satisfaction-performance relationship. Parker, Wilson, Vandenberg, DeJoy, & Orpinas (2009) found that health status significantly predicts levels of employee productivity. One's ability to be fully productive, as measured by their level of presenteeism, is directly related to one's health status (Burton et al., 2005; Kessler, Greenberg, Mickelson, Meneades, & Wang, 2001; Pelletier et al., 2004).

Research indicates that psychological variables are equally, if not more, associated with presenteeism than physiological risk factors (Burton et al., 2005). This was demonstrated by Parker et al. (2009) whose research found that those with mental health symptoms experienced more presenteeism than those with physical health conditions. Additionally, those who were considered comorbid, that is, those who had both mental health symptoms and physical health conditions, experienced the most presenteeism.

The magnitude of the impact of psychological variables can be expressed in terms of costliness. Considering direct and indirect costs, individuals with depression, anxiety, and emotional disorders cost employers, on average, \$1,646 per year. A little over half (53%) of the cost is attributable to indirect costs, e.g., absenteeism, presenteeism, short- and long-term disability and family /medical leave. Of all the disease categories examined, depression, anxiety, and emotional disorders were the costliest (Johnston et al., 2009).

Depression, specifically, has been identified as a major contributor to presenteeism. Burton et al. (2004) examined selected medical conditions to identify those most associated with presenteeism. The Work Limitations Questionnaire (WLQ) measures lost productivity by four dimensions: limitations handling time, physical, mental/interpersonal, and output demands (Lerner et al., 2001). Using the WLQ to measure presenteeism, they determined that depression is highly associated with each of the work limitations dimensions.

Danna and Griffin (1999) point out that a person's work and personal lives are not separate entities. Stress in one area can have a carryover effect into the other area. Work stress combined with life stress can have detrimental effects on health due to the excess demands placed on the body and mind. Research by Burton et al. (1999) found a significant association between stress and failure to meet production standards. In fact, the costliest individuals in terms of failure to maintain a productivity standard are those with high General Distress. Of particular interest is that the stress index used measured perceived life stress and health functioning rather than occupational stress alone. These findings were instrumental in highlighting the effects of mental health on presenteeism.

Presenteeism is a major concern for employers as it represents a significant portion of indirect costs. The previous section summarizes the literature related to presenteeism. Researchers have demonstrated that there is a direct relationship between the number of risk factors a person has and the level of presenteeism they experience, the positive effects of reducing health risks on presenteeism, and the potential savings that

may be realized by reducing presenteeism through improved health status (Burton, Chen, Conti, Schultz, & Edington, 2006; Burton et al., 2005).

Some demographic variables may have an effect on presenteeism, specifically occupational category. Other variables have less significant associations. They are gender, age, education level and job type, i.e., management versus blue collar. These effects are discussed in chapter three.

Subjective Well-Being

This section will focus on summarizing the literature related to subjective well-being, how it is defined, and important findings. There are two components of subjective well-being: life satisfaction and health, which is comprised of mental/emotional well-being and physical well-being. Each of the components has an effect on presenteeism. These effects, along with relevant demographic findings, will be discussed in the following section.

High subjective well-being is related to positive outcomes in many areas of life. Specifically, those with high subjective well-being have stronger social relationships, are more likely to be married and have marital satisfaction (Pavot & Diener, 2004), and cope more effectively with stressful situations and experience better outcomes (Frederickson & Losada, 2005). Happy people appear to be more successful in work and in relationships as well as have better health (Lyubomirsky, King, & Diener, 2005).

Cropanzano and Wright (1999) provide further support finding that those with high subjective well-being are more likely to graduate from college, secure jobs with autonomy, meaning and variety, handle managerial positions better, show superior

performance and productivity, and are evaluated more positively by supervisors. Overall, “people with high levels of subjective well-being are more successful in relationships, more successful on the job, and are better equipped to successfully cope with stress” (Pavot and Diener, 2004, p. 116).

Life Satisfaction. The terms happiness and life satisfaction are often equated and used interchangeably in the literature. Zelenski et al. (2008) state that using the term happiness is helpful when discussing the happy-productive worker literature because of its historical and commonsense value. For that reason, the following section will focus on relevant findings associated with life satisfaction, happiness, positive affect, and “good feelings.”

Wright, Cropanzano, & Bonett (2007) demonstrate the link between subjective well-being and happiness by detailing three widely accepted characteristics of happiness. First, happiness is a subjective experience. There is no one set of criteria that can define happiness. Rather, happiness is defined by one’s belief that they are happy. Second, happiness is relative to the presence of positive emotions and the absence of negative emotions. One cannot experience happiness if there is a gross imbalance of negative emotions relative to positive emotions. Lastly, happiness is a general term, referring to one’s life as a whole. It is important to judge happiness based on one’s relative satisfaction with all components of life, rather than one particular domain (e.g., work, marriage).

Happy individuals are those who experience more positive emotions than negative emotions. They tend to have an abundance of positive characteristics. Lyubomirsky et

al. (2005) identified the following as being associated with positive affect: confident, high levels of self-efficacy, positive view of others, sufficient immune function, optimistic, possess effective coping skills, energetic, have a sense of sociability and have prosocial behaviors. Zelenski et al. (2008) provide a succinct summary of the research that has demonstrated that these characteristics are important in the workplace as they tend to be associated with positive employee behavior.

Bolger and Schilling (1991) found that unhappy employees were more likely to display contentious behavior leading to negative reactions from co-workers. According to Cropanzano and Wright (2001), less happy employees feel more threatened, are more defensive and more pessimistic. Conversely, happier employees are helpful, more confident and more aware of opportunities. Truly miserable employees, including those who are depressed, accomplish little due to their lack of energy and motivation.

Mental/Emotional Well-Being. Happy people have fewer instances of psychopathology, such as hypochondriasis, depression, social phobias, and anxiety (Lyubomirsky et al., 2005). Frederickson and Losada (2005) found that individuals who have frequent good feelings have resilience to adversity, increased happiness and experience psychological growth. Additionally, those that experience prolonged positivity have greater behavioral flexibility (i.e., the ability to make better decisions about how to behave), more social resources, and optimal functioning. Conversely, those that experience extensive negativity lose behavioral flexibility and the ability to question, and they become self-absorbed (Frederickson & Losada, 2005). In addition, Cropanzano

and Wright (2001) found that individuals with high subjective well-being display organizational citizenship behaviors.

Physical Well-Being. Several studies have demonstrated that happiness predicts healthy physical outcomes. Some of the relevant associations are between happiness and increased immune function, lower levels of cortisol, reduced inflammatory responses to stress, resistance to the rhinovirus, and decreased stroke. Happy people report having better health and fewer unpleasant physical symptoms (Lyubomirsky et al., 2005), having lower rates of stroke, lower rates of rehospitalization for coronary problems, and fewer injuries (Cohen, Doyle, Turner, Alper & Skoner, 2003). Additionally, Frederickson and Losada (2005) have demonstrated a clear link between frequent feelings of happiness and longevity.

The association between happy people having better health may be two-fold. One consideration is that better health is a result of the behaviors happy people are likely to exhibit. Happy people are relatively more energetic, exercise more, have improved sleep quality and better health practices (Watson, 1988; Cohen et al., 2003). The second explanation is that happiness has a direct effect on one's health. For example, those who routinely used humor as a coping mechanism experienced enhanced immune function (Dillon, Minchoff, & Baker, 1985; Dillon & Totten, 1989). Cohen et al. (2003) demonstrated that people with high levels of positive affect were less likely to develop a cold when exposed to a virus. This is supported by research that shows an association between positive affect and increased immune function (Frederickson & Losada, 2005). Furthermore, high levels of positive emotions have been shown to negate the effect

negative emotions have on cardiovascular function (Frederickson & Levenson, 1998; Frederickson, Mancuso, Branigan & Tugade, 2000).

Lyubomirsky et al. (2005) state that happiness “likely plays a role in health through its effects on social relationships, healthy behaviors, stress, accident and suicide rates, and coping, as well as possible effects on immune function”. Ryff and Singer’s (1998) model of positive health derives from a perspective of positivity. Three principles underlie the formulation of positive health:

- 1) Positive health is not a medical question, but rather is fundamentally a philosophical issue that requires articulation of the meaning of the good life (i.e., subjective well-being is highly dependent on one’s belief that they are living the good life, which is a different set of criteria person to person).
- 2) Human wellness is about the mind and the body and their connectedness. A comprehensive assessment of positive health must include both mental and physical components and the way they influence each other.
- 3) Positive health is best construed as a multidimensional dynamic process rather than a discrete end state. It is ultimately a function of engagement in living.

These principles are representative of the seemingly reciprocal relationship between mind and body. Physical health is associated with happiness. Happiness perpetuates the conditions that contribute to health. Frederickson (2001) posits that “positive emotions are the vehicles for individual growth and social connections,” which substantiates the positive health model and Ryff and Singer’s belief that physical health is dependent on having quality social ties.

Finally, positive emotions seem to foster productivity. Zelenski et al. (2008) theorizes this is because individuals who are happy behave in ways that increase productivity. This notion is supported by Frederickson's Broaden-and-Build theory, which states that positive emotions share the ability to broaden people's thought-action repertoire and build their enduring personal resources, whether they be physical, intellectual, social or psychological (Frederickson, 2001).

Research by Hillier et al. (2005) further support the concept that happier people are more productive, finding that an individual's ability to learn and think deeply and creatively is directly affected by our emotional state. Better problem-solving skills and creative thinking are traits found to be exemplified by individuals who demonstrated organizational citizenship behaviors. Going above and beyond, and having strong interpersonal skills and thinking outside the box, are linked to better performance at work (Cropanzano & Wright, 1999). Taken as a whole, these results suggest that happier people will be more productive.

Satisfaction-Performance Relationship

The satisfaction-performance relationship hypothesizes that a happy worker is a more productive worker. Studies of the relationship over the years have resulted in counterintuitive results and often failed to establish strong associations between the extent to which workers are happy and the extent to which workers are productive. Researchers continue to seek out confirmation of this common wisdom hypothesis, providing greater understanding of the relationship. Perhaps due to improved operational definitions and well-designed studies, recent research provides greater support for the

association between satisfaction and performance. The following section will focus on summarizing these results and making relevant connections to this study.

Due to the context in which the satisfaction-performance relationship is housed, satisfaction has most often been defined as satisfaction with one's job (Zelenski et al., 2008). Meta-analytic reviews of the satisfaction-performance literature report weak ($r = .14$; $r = .17$) to moderate ($r = .23$; $r = .30$) correlations between job satisfaction and job performance (Vroom, 1964; Petty et al., 1985; Judge et al., 2001). However, a meta-analysis performed by Harter et al. (2003) revealed positive relationships between job satisfaction and performance, particularly when satisfaction represented aspects of satisfaction with one's supervisor and with one's work. These results indicate that broadening the definition of satisfaction results in stronger associations with performance.

Building on previous research indicating that there is a positive, but very weak, relationship between job satisfaction and job performance, Jones (2006) examined the relationship between life satisfaction and job performance. Jones' (2006) work demonstrated that life satisfaction is a predictor of employee performance on the job.

Wright and Cropanzano (2000) state that work performance may be more strongly predicted by well-being than job satisfaction. In fact, studies using a measure of well-being, satisfaction with life, and happiness as measures of satisfaction demonstrated stronger associations between satisfaction and performance. Wright, Cropanzano, Denney, and Moline (2002) identified a significant association between well-being and job performance.

Employees who experience more positive emotions than negative emotions (i.e., are happy) receive higher performance ratings from their supervisors (Wright & Bonett, 1997; Wright & Staw, 1999; Cropanzano & Wright, 1999). Tsai, Chen and Liu (2000) found that positive moods predicted employee's displays of helping behaviors towards co-workers and customers. These organizational citizenship behaviors are strongly associated with performance (Cropanzano & Wright, 1999). Chronic happiness predicts job satisfaction. Job satisfaction predicts organizational citizenship behaviors. Hence, employees that are happy are more likely to have organizational citizenship behaviors (Lyubomirsky et al., 2005).

Stress can have a significant impact on productivity. Studies examining the effects of stress on human behavior illustrated a decline in cognitive thought processes, diminished problem-solving ability, a compromised ability to learn and "a shift in thought processes to a superficial, unoriginal style of thinking" (Hillier et al., 2005). This has implications for organizations in that stress can lessen the ability of employees to exhibit organizational citizenship behaviors, which Cropanzano and Wright (1999) identified as characteristics of individuals with less presenteeism.

Overall, there is a general consensus within the satisfaction-performance literature that there is a positive relationship between happy workers and productivity (Zelenski et al., 2008). However, there is still work to be done to properly demonstrate this relationship, particularly as it relates to presenteeism.

CHAPTER III

METHODOLOGY

Introduction

This study examines the effect of subjective well-being on presenteeism. The participants in this study are identified by completion of a health assessment as part of insurance-provider sponsored health promotion programs. The health promotion programs are administered by a corporate wellness company that is a wholly-owned subsidiary of a major insurance company.

Purpose of the Study

The purpose of this research is to examine the effect of subjective well-being on presenteeism. Subjective well-being is measured by indicators of life satisfaction, self-reported health status and depression. This study can provide insight into how to focus efforts on reducing presenteeism.

Research Question

The main research question is what effect does subjective well-being (SWB) have on an employee's presenteeism? Demographic variables that may affect subjective well-being and/or presenteeism are controlled.

Hypothesis

The main hypothesis states that when controlling for age, sex, race/ethnicity, education level and industry, the employee's level of subjective well-being is inversely related to his/her presenteeism.

This chapter will provide a description of the methods that will be used to address the research questions and hypothesis. Included in this chapter are descriptions of the proposed research design, sample and population, instrument and instrument validity and reliability information, data collection and data analysis.

Study Design

This investigation is a retrospective, cross-sectional, quantitative study examining the relationship between an individual's subjective well-being and their level of presenteeism. Health assessment data were collected prospectively by a corporate wellness company from individuals participating in insurance-provider sponsored wellness programs during a 31-month period from October 1, 2007 to May 31, 2010. The health assessment gathers data on the individual's life satisfaction, depression, and overall health rating. Also included are questions from the Work Limitations Questionnaire (WLQ), which measures "the on-the-job impact of chronic health problems and/or treatment" (Learner et al., 2001). These data are used to determine an individual's subjective well-being and level of presenteeism.

Participants

Participants for this study come from a group of employees across the United States receiving insurance through their employer, government entity, or health plan. Various industries (professional, manufacturing, administrative, healthcare) and education levels (compulsory school, high school, professional/graduate level degrees), races and genders are represented.

Inclusion and Exclusion Criteria. Eligible participants for the cohort include all employees who completed a health assessment between October 1st, 2007 and May 31st, 2010. Participants must answer all the relevant questions related to the variables “subjective well-being” and “presenteeism”. Some participants will have completed multiple health assessments during this time period. The first instance of a health assessment that contains answers to the relevant questions is used in the study.

Instrumentation

Health Assessment. The corporation’s health assessment collects data on personal and family health history, personal health habits, readiness-to-change, self-efficacy and presenteeism. Health assessments can be completed online or by paper. Both versions contain identical questions and answer sets. The data are self-reported. The following items represent the components of subjective well-being.

Life Satisfaction

In general, how satisfied are you with your life?

- Mostly satisfied
- Partly satisfied
- Not satisfied

Physical Well-Being

Considering your age, how would you describe your overall physical health?

- Excellent
- Good
- Fair
- Poor

Mental/Emotional Well-Being

In the past year, have you had two weeks or more during which you felt sad, blue, or depressed; or when you lost all interest or pleasure in things that you usually cared about or enjoyed?

- Yes
- No
- Not sure

Have you had 2 years or more in your life when you felt depressed or sad most days, even if you felt okay sometimes?

- Yes
- No
- Not sure

Have you felt depressed or sad much of the time in the past year?

- Yes
- No
- Not sure

In the past year, how much effect has stress had on your life?

- A lot
- Some
- Barely any or none
- Not sure

Work Limitations Questionnaire. The Work Limitations Questionnaire was developed by Lerner et al. (2001) to measure employee presenteeism. It collects data on the amount of work time lost due to physical health or emotional problems. The short-form of the WLQ contains eight questions referring to the amount of time the employee can stay still, perform repetitive motions, concentrate on work, handle their workload and their capacity to begin and finish work on time. These eight questions have been

appended to the corporation's health assessment. The following items represent presenteeism.

In the past two weeks, how much of the time did your physical health or emotional problems make it **difficult** for you to do the following?

- a. Get going easily at the beginning of the workday
 - Difficult** all of the time (100%)
 - Difficult** most of the time
 - Difficult** some of the time (50%)
 - Difficult** a slight bit of the time
 - Difficult** none of the time (0%)
 - Does not apply to my job

- b. Start on your job as soon as you arrive at work
 - Difficult** all of the time (100%)
 - Difficult** most of the time
 - Difficult** some of the time (50%)
 - Difficult** a slight bit of the time
 - Difficult** none of the time (0%)
 - Does not apply to my job

In the past 2 weeks, how much of the time were you **able** to sit, stand, or stay in one position for longer than 15 minutes while working, without difficulty caused by physical health or emotional problems?

- Able all of the time (100%)
- Able most of the time
- Able some of the time (50%)
- Able a slight bit of the time
- Able none of the time (0%)
- Does not apply to my job

In the past 2 weeks, how much of the time were you **able** to repeat the same motions over and over again while working, without difficulty caused by physical health or emotional problems?

- Able all of the time (100%)
- Able most of the time
- Able some of the time (50%)
- Able a slight bit of the time
- Able none of the time (0%)
- Does not apply to my job

In the past 2 weeks, how much of the time did your physical health or emotional problems make it **difficult** for you to concentrate on your work?

- Difficult all of the time (100%)
- Difficult most of the time
- Difficult some of the time (50%)
- Difficult a slight bit of the time
- Difficult none of the time (0%)
- Does not apply to my job

In the past 2 weeks, how much of the time did your physical health or emotional problems make it **difficult** for you to speak with people in person, in meetings, or on the phone?

- Difficult all of the time (100%)
- Difficult most of the time
- Difficult some of the time (50%)
- Difficult a slight bit of the time
- Difficult none of the time (0%)
- Does not apply to my job

In the past 2 weeks, how much of the time did your physical health or emotional problems make it **difficult** for you to do the following?

- a. Handle the workload
 - Difficult** all of the time (100%)
 - Difficult** most of the time
 - Difficult** some of the time (50%)
 - Difficult** a slight bit of the time
 - Difficult** none of the time (0%)
 - Does not apply to my job
- b. Finish work on time
 - Difficult** all of the time (100%)
 - Difficult** most of the time
 - Difficult** some of the time (50%)
 - Difficult** a slight bit of the time
 - Difficult** none of the time (0%)
 - Does not apply to my job

Validity and Reliability. The developer of the health assessment was the key developer of the Healthier People Health Risk Appraisal for the Carter Center, Centers for Disease Control and Prevention (CDC). The health assessment algorithms are based

on both the CDC algorithms and the corporation's own refined algorithms. There is confidence that the health assessment meets high standards of validity for health risk assessments (Onlife, 2010).

The validity and reliability of the WLQ are well documented. Lerner et al. (2001) demonstrated the WLQ's validity and reliability for use among various job types and chronic conditions with item-to-total scale correlation coefficients greater than 0.40 and Cronbach's alpha greater than 0.90. The WLQ's validity and reliability was further demonstrated by Lerner, Amick, Lee, Rooney, Rogers, Change and Berndt (2003) demonstrating high construct validity and high internal consistency reliability (Cronbach's alpha greater than 0.93). Later research demonstrated that the WLQ offers greater sensitivity to depression measures as related to presenteeism as compared to the Stanford Presenteeism Scale (Sanderson, Tilse, Nicholson, Oldenburg, & Graves, 2007), making the WLQ particularly appropriate for this study.

Responses to the WLQ items are combined into four work limitation scales, time management, physical demands, mental-interpersonal demands, and output demands. The four domains capture the multi-dimensionality of job roles as well as reflect the characteristics of many health problems which may affect some jobs but not others. Presenteeism is calculated by computing the four WLQ scale scores for each respondent, then calculating the WLQ Index and finally referring to the *Conversion Table for Determining Estimated Productivity Impact of Health-Related Work Limitations Based on the WLQ Index Score* for the corresponding estimation of percent decrease in productivity, i.e., presenteeism (Lerner, Rogers, & Chang, 2005).

Data

Data Collection Procedures. Health assessments were offered as part of insurance-provider sponsored wellness programs. Employees receive communication packets, postcards and emails encouraging their participation in the wellness program. Employees can complete the health assessment online or by paper, typically during a specified period of time, associated with open enrollment for health benefits. All data entered are stored in the health assessment database and managed by the corporate wellness program, maintaining confidentiality.

Informed Consent. Health assessment participants are prompted to read and accept the terms of a consent form, which describes the voluntary nature of the program and the security and confidentiality of their data. The consent form allows the corporate wellness program to use the data for analysis and research purposes. Those completing the paper version of the health assessment must also indicate acceptance of the consent form by signing the front page of their health assessment. Paper health assessments are manually received and entered into the health assessment database via scantron technology. A copy of the consent form is included in Appendix B.

Data Entry Procedures. There are electronic and paper versions of the health assessment. Data from the electronic version of the health assessment are entered by the participant using proprietary software that provides computerized data entry screens that simulate the hard-copy data forms. The software prohibits entry of data that are inconsistent with related responses. For example, questions related to smoking habits are not offered to those who indicated that they do not currently smoke. Likewise, gender-

specific questions are offered based on the participant's answer to the gender question. Additionally, values that are clearly out of the acceptable response range are not allowed to be entered. These efforts contribute to the integrity of the data.

Data collected on the paper version of the health assessment are loaded into the health assessment database via scantron technology. After data entry, quality checks are performed to ensure internal consistency of related variables. For example, values entered out of an acceptable range or answers provided that are in conflict with other answers are either verified or thrown out. Once the data are relatively clean, they are exported to SPSS for analysis.

Confidentiality of Data. The corporate wellness company does not release individual level health assessment data to employers. Aggregate level reporting is provided according to their established confidentiality and privacy guidelines. The corporation is compliant with HIPAA standards, is URAC and NCQA certified and follows rigorous security policies due to the sensitive nature of the health assessment data. The corporation accepts full responsibility for the confidentiality of the participant's health assessment data. The corporation's privacy and security statements are provided in Appendix C.

Key Variable Identification

Subjective Well-Being. Subjective well-being is measured by indicators of life satisfaction, depression and self-reported health status. The following section will focus on summarizing the literature supporting the proposed measurement as well as demographic differences related to the major variables.

Wright et al. (2002) found that individuals who had high well-being experienced more positive emotions (i.e., were happy). Likewise, when people experience more pleasure than pain and have satisfaction with their lives, they have abundant subjective well-being (Diener, 2000). Diener (1984) also states that subjective well-being is a reflection of a person's self-described happiness relative to their overall experience in life. Hence, satisfaction with life is commonly used to operationally define subjective well-being. However, considering the encompassing nature of subjective well-being, life satisfaction alone is not a sufficient indicator.

Subjective well-being has been described by Wright et al. (2007) as a spectrum, with one end representing positive emotions while the opposite end represents negative emotions. Thus, for one to have a high level of subjective well-being they must experience positive emotions while not experiencing negative emotions. This highlights the importance of using indicators of both life satisfaction and depression as a measure for subjective well-being. Jones (2006) supports this by stating that a measure of depression in combination with a measure of life satisfaction gives a complete measure of satisfaction. In fact, when attempting to predict employee performance, the model was better able to predict performance when a measure of life satisfaction was added to the model.

Subjective well-being is a representation of one's life as a whole. Therefore, it is important to consider emotional and physical health in the measurement of subjective well-being. Lyubomirsky et al. (2005) found that happiness is positively correlated with indicators of mental and physical health. They go on to suggest that happiness may be a

mediator for health, which lends support to including an indicator for health in the measurement of subjective well-being. Additionally, thinking of happiness as a mediator for health provides a framework by which the relationship between subjective well-being and presenteeism can be explained.

Cropanzano and Wright (1999) provide evidence for using an indicator of life satisfaction for subjective well-being rather than job satisfaction by demonstrating that psychological well-being is more strongly associated with performance ratings than job satisfaction. It is important to understand this association because of the interest in the satisfaction-performance relationship in this study. It is also important to note that measures of job satisfaction tend to correlate with measures of life satisfaction in the range of .50 to .60 (Harter et al., 2003). This correlation is of interest as it provides some understanding of how life satisfaction is a better measure of employee happiness. There is empirical support for the idea that if one measures overall life satisfaction (i.e., happiness or overall subjective well-being), rather than job satisfaction, there is likely to be a stronger relationship with performance (Jones, 2006).

Burton et al. (2004) found that depression is a significant contributor to presenteeism, which provides support for using depression as an indicator of subjective well-being, particularly as it relates to the satisfaction-performance relationship.

Subjective well-being cannot be measured based on happiness alone. The literature clearly outlines the role health plays in one's overall subjective well-being and there is a clear relationship between health status and presenteeism. Additionally, Burton et al. (2006) identified life dissatisfaction, job dissatisfaction, perceived health status, and

stress as the risk factors most associated with presenteeism. For these reasons, using a comprehensive measure of satisfaction that includes indicators of life satisfaction, depression, and self-rated health status, is a better measure of overall subjective well-being and produces a stronger relationship with performance.

Humans have an adaptive nature, allowing them to adjust to conditions very quickly (Diener, 2000). One study found that the effects of major life events on subjective well-being, whether the event is positive or negative, diminish in less than three months (Suh, Diener, & Fujita, 1996). Adjusting one's expectations to fit the circumstance mitigates the positive or negative feelings associated with the circumstance. This adaptive nature may explain the relatively few differences found among the key demographic variables in this study.

The indicators of subjective well-being will be entered into the analysis as blocks of variables rather than as an index. Life satisfaction is measured by one item. Health is composed of two concepts, mental/emotional well-being and physical well-being. Mental/emotional well-being is measured by three items and physical well-being is measured by one item. The questions associated with each indicator are included in Appendix A.

Subjective Well-Being Demographics. The first major review of sex differences in regards to subjective well-being, reported no differences between males and females; the happy individual was of either sex (Lucas & Gohm, 2003). In a review of more recent literature, Pavot and Diener (2004) confirm these early findings, reporting that a

number of studies found either very small or no differences in subjective well-being between men and women.

There is some evidence that differences are apparent when gender is taken into account with other predictor variables, such as race/ethnicity. Woody and Green (2001) report that African American males have lower subjective well-being as compared to white males. Overall, there is no conclusive evidence of gender differences in regards to subjective well-being (Lucas & Gohm, 2003).

In the subjective well-being literature, there are two theories in regards to age effects. One is that subjective well-being is influenced by income, social support and health. Subscribing to this theory would suggest a potential decline in older individuals. The second theory is that subjective well-being is influenced by the ability to regulate emotions. Thus, subscribing to this theory, suggests subjective well-being improves with age (Lucas & Gohm, 2003).

Research has not been able to substantiate either of these theories. In studies where age differences were noted, the effect sizes were small and tended to shift directions across studies (Pavot & Diener, 2004). In a variety of studies, researchers found that older, middle-aged and young adults reported very similar levels of life satisfaction (Lucas & Gohm, 2003).

Research shows that race/ethnicity does have an effect on quality of life, life satisfaction and happiness (Hughes & Thomas, 1998). Thomas and Hughes (1986) demonstrated that blacks have significantly lower levels of subjective well-being as compared with whites. In later research, Hughes and Thomas (1998) substantiated

previous findings and further concluded that blacks have consistently lower levels of subjective well-being than whites and there does not seem to be any evidence of the trend changing. Woody and Green (2001) corroborated this research with their conclusions that race/ethnicity is associated with well-being, finding that black males have lower levels of well-being and white females show the highest levels of well-being. Taken as a whole, the literature is clear that race/ethnicity is a significant predictor of one's subjective well-being.

Presenteeism. Presenteeism is measured by the Work Limitations Questionnaire and is typically represented as the percent of productivity lost. The following section will focus on summarizing the literature related to presenteeism and the demographic differences related to the major variables.

Using a two-week recall, the Work Limitations Questionnaire (WLQ) measures the impact of chronic conditions as they relate to four work-impairment domains: time demands, physical demands, mental-interpersonal demands, and output demands. Lerner et al. (2001) found the WLQ to be reliable and valid for use among different job groups as well as several different chronic conditions. A distinguishing characteristic of the WLQ is its ability to identify the type of impact (time, physical, mental/interpersonal, output) as well as the magnitude of impact that health problems have on employee productivity (Lerner et al., 2001).

Sanderson et al. (2007) found the WLQ to be the optimal instrument for measuring the impact of depression on productivity. In examination of the WLQ and other presenteeism measures, the WLQ was the only instrument to consistently show

differences in the expected direction. That is to say, the WLQ showed significant worsening in productivity as depression increased and significant improvement in productivity as depression decreased (Sanderson et al., 2007). This is important for this study as depression is a key indicator of subjective well-being and is a significant contributor to presenteeism.

Presenteeism Demographics. Prevalence differences in presenteeism are most notable within occupational categories. Individuals with greater presenteeism fall into stressful job categories such as protective service workers (Koopman, Pelletier, Murray, Sharda, Berger, Turpin, Hackleman, Gibson, Holmes & Bendel, 2002), government personnel such as municipal and county employees, and senior white collar and blue collar employees (Aronsson, Gustafsson, & Dallner, 2000; Aronsson & Gustafsson, 2005). Employees of privately owned companies, seasonal employees, junior white collar employees and those in jobs classified as office/administrator/professional had less presenteeism (Aronsson et al., 2000; Aronsson & Gustafsson, 2005; Koopman et al., 2002).

Research by Aronsson et al. (2000) demonstrated that the effect of gender on presenteeism is weak. Greater presenteeism among women is a function of their occupation choices rather than a gender-specific effect. In fact, women in other occupational groups experience less presenteeism.

Other relationships proved to be of lesser or no significance, such as relationships between presenteeism and sex, age, education and job type (as opposed to occupational category). Research by Aronsson and Gustafsson (2005) has shown that women report

somewhat greater presenteeism than men and that presenteeism is found primarily in middle-aged workers. Persons of middle/medium age have more presenteeism (Aronsson et al., 2000; Aronsson & Gustafsson, 2005; Koopman et al., 2002). To date, there is no clear relationship between presenteeism and education level or full- versus part-time employees. Small differences were noted between groups with different job types, white collar versus blue collar, but these differences were insignificant.

Statistical Analysis

This is a retrospective, cross-sectional, quantitative study in which the data were collected prospectively. The statistical analysis used an alpha of 0.05. Other variables thought to influence subjective well-being and presenteeism will be included in the model, such as age, gender, race/ethnicity, educational level, and industry. The data were analyzed using SPSS Statistics 18.0 to perform a univariate analysis of variance of the effect of subjective well-being on presenteeism.

Summary

The purpose of this study is to examine the relationship between subjective well-being and presenteeism. The retrospective, cross-sectional, quantitative study design allows the data to be collected related to each major variable. Results from the univariate analysis of variance will address the hypothesis that the higher the level of subjective well-being among employees, the fewer problems they will have with presenteeism.

CHAPTER IV

RESULTS

Introduction

This study provided an opportunity to examine the effect of subjective well-being on presenteeism. Subjective well-being is measured by indicators of life satisfaction, self-reported health status and depression. Presenteeism is measured by the percent of productivity lost by individuals with mental and/or physical health risks as compared with individuals without mental and/or physical health risks.

This chapter presents the statistical results of the study. In this study, presenteeism is the dependent variable. Subjective well-being, measured by indicators of mental/emotional well-being and physical well-being and life satisfaction are the independent variables. Demographic variables thought to influence presenteeism are also included as independent variables in the analysis. Those are age, sex, race/ethnicity, education level, and industry type. A description of the sample and measurement of key variables are described.

Description of the Sample

Data were obtained from a total sample of 53,764 employees who participated in an employer-sponsored wellness program including the completion of a health assessment from a period of October 1, 2007 through May 31, 2010. Records were

removed from the sample if there were clearly erroneous data points, multiple instances of a health assessment within the specified time frame and if the individual was determined to be a spouse or retiree. After the specified data cleaning, there were 52,860 unique individuals identified for use in the analysis.

Description of Participants. The population age ranged from a minimum of 18 to the maximum of 79. The mean age was 43.25 with a standard deviation of 11.36. The age histogram appears to have a normal distribution. Women comprised over half (65.6%) of the sample population. Whites make up the majority of the population (81.7%) with blacks representing the second largest percentage (12.6). College graduates comprise the largest percentage (35.7%) of the study population, while those with post-graduate or professional degrees (19.2%) and persons with some college education (24.0%) make up the next largest percentage of the population. Regarding industry, the majority of the participants fall into public administration (46.6%). The healthcare (15.1%) and retail trade (11.7%) industries make up the second and third largest percentages of the population. See Table 1 for more details on the participants.

Analysis

Univariate analyses of variance were conducted on the data. Table 2 shows the results from the main effects model. The main effects model was tested with all two-way interactions of the independent variables to determine the most significant interactions. The interaction model did not increase the variance explained so the results discussed are from the main effects model.

Table 1

Participant Characteristics, (N = 52,860)

Characteristic	<i>M</i>	<i>SD</i>	<i>Mdn</i>
Presenteeism	2.43	3.60	0.90
Age	43.25	11.36	44
	<i>n</i>	<i>%</i>	
Sex			
Men	18,182	34.40	
Women	34,678	65.60	
Race			
Black	6,647	12.58	
Hispanic	1,159	2.19	
Asian	1,097	2.08	
Other	632	1.20	
White	43,325	81.95	
Education Level			
Grade school or less	147	0.28	
Some high school	1,061	2.01	
Some college	12,702	24.03	
College graduate	18,867	35.69	
Post graduate or professional degree	10,166	19.23	
High school graduate	9,917	18.76	
Industry			
Construction	146	0.28	
Manufacturing	2,588	4.90	
Wholesale Trade	3,289	6.22	
Retail Trade	6,182	11.70	
Transportation & Warehousing	462	0.87	
Finance & Insurance	2,474	4.68	
Professional, Scientific & Technical Services	1,283	2.43	
Educational Services	3,809	7.21	
Healthcare and Social Assistance	7,999	15.13	
Public Administration	24,628	46.58	

The main effects model investigated the effects that age, sex, race/ethnicity, education level, and industry, life satisfaction, overall health rating, feeling blue, feeling sad, depression and stress level have on the level of presenteeism individuals experience at work. The sample included 52,860 respondents, 18,182 men and 34,678 women, with a mean age of 43.25 years.

The main effects model was significant, $F(33, 52826) = 677.16, p < .001$. The amount of variation in presenteeism that is explained is 27.2%. An interaction model was also tested based on the interaction hypothesis that the effect of depression on presenteeism depends on sex and race. Specifically, depression's effect on presenteeism is different for white men and black men. This model did not significantly increase the percent of variation in presenteeism that was explained, so the main effects model is used for the remainder of the results.

Subjective Well-Being

The overall hypothesis was that persons with higher levels of subjective well-being would experience less presenteeism than persons with lower levels of subjective well-being. Subjective well being is represented by two concepts, health and life satisfaction. Health was measured by an indicator of physical well-being (self-rated health status) and by indicators of mental/emotional well-being. These are feeling blue, feeling sad, an overall measure of depression, and stress level. In addition, life satisfaction was a component of subjective well-being.

Table 2

Univariate Analysis of Variance: The effect of subjective well-being on employee presenteeism (N = 52,860)

	<i>B</i>	<i>EMM</i>	S.E.	df	F	p
Main Effects Model*				33	677.16	<.001
Intercept	0.62		0.08	1	3568.85	<.001
Age	-0.003		0.001	1	5.32	0.021
Sex				1	4.59	0.032
Men	-0.06	5.13	0.08			0.032
Women	reference	5.20	0.08			reference
Race				4	25.52	<.001
Black	0.40	5.27	0.08			<.001
Hispanic	0.36	5.24	0.11			<.001
Asian	0.41	5.29	0.11			<.001
Other	0.28	5.15	0.14			0.023
White	reference	4.88	0.07			reference
Education Level				5	6.21	<.001
Grade school or less	0.44	5.57	0.26			0.085
Some high school	0.21	5.34	0.11			0.034
Some college	-0.13	5.00	0.07			0.001
College graduate	-0.15	4.99	0.07			<.001
Post graduate or Professional degree	-0.16	4.97	0.07			<.001
High school graduate	reference	5.13	0.07			reference
Industry				9	14.31	<.001
Construction	-0.19	5.10	0.26			0.442
Manufacturing	-0.14	5.16	0.09			0.031
Wholesale Trade	-0.24	5.05	0.09			<.001
Retail Trade	-0.13	5.16	0.08			0.004
Transportation and Warehousing	-0.29	5.00	0.16			0.041
Finance and Insurance	-0.13	5.17	0.09			0.050
Professional, Scientific, and Technical Services	-0.44	4.85	0.11			<.001
Educational Services	0.01	5.31	0.09			0.826
Healthcare and Social Assistance	0.28	5.58	0.08			<.001
Public Administration	reference	5.29	0.07			reference

Table 2 (continued)

	<i>B</i>	<i>EMM</i>	S.E.	df	F	p
Life Satisfaction				2	431.92	<.001
Not Satisfied	2.24	6.39	0.11			<.001
Partly Satisfied	0.81	4.96	0.07			<.001
Mostly Satisfied	reference	4.15	0.07			reference
Overall Health				3	262.56	<.001
Poor health	2.22	6.46	0.12			<.001
Fair health	1.09	5.33	0.08			<.001
Good health	0.40	4.64	0.07			<.001
Excellent health	reference	4.24	0.08			reference
Feeling Blue				2	325.51	<.001
Blue	1.15	5.69	0.08			<.001
Not sure if feeling blue	0.72	5.27	0.09			<.001
Not feeling blue	reference	4.54	0.08			reference
Feeling Sad				2	289.32	<.001
Sad	1.08	5.64	0.08			<.001
Not sure if feeling sad	0.73	5.30	0.10			<.001
Not feeling sad	reference	4.56	0.08			reference
Depression				2	217.56	<.001
Depressed	1.14	5.72	0.08			<.001
Not sure if depressed	0.60	5.19	0.10			<.001
Not depressed	reference	4.59	0.08			reference
Stress Level				2	812.78	<.001
A lot of stress	1.77	6.18	0.08			<.001
Some stress	0.51	4.92	0.08			<.001
Barely any or no stress	reference	4.41	0.08			reference
Within-group error				52826	(9.12)	

Note: Values enclosed in parentheses represent mean square errors.

Presenteeism and age are continuous.

The interaction model is not shown. In this model, $\eta^2 = .298$, $F(73, 52786) = 307.273$, $p < .001$

*Main effects model:

$\eta^2 = .297$ ($p < .001$)

Levene's Test: $F(10188, 42671) = 2.790$, $p < .001$

When controlling for the other indicators of subjective well-being and the demographic variables, the effect of overall health rating on problems with presenteeism was examined. The analysis was significant, $F(3, 52826) = 262.56, p < .001$. Persons who have an overall health rating of poor have an estimated marginal mean of 6.46 and persons who have an overall health rating of excellent have an estimated marginal mean of 4.24. Compared to those with an overall health rating of excellent, persons with an overall health rating of poor, fair and good experience significantly more presenteeism.

The univariate analysis of variance calculated for the effect of stress level on problems with presenteeism was significant, $F(2, 52,826) = 812.78, p < .001$. Results from the model for the effect of stress level on problems with presenteeism when controlling for the other indicators of subjective well-being and the demographic variables are as follows. Persons who have a lot of stress have an estimated marginal mean of 6.18 and persons who very little stress have an estimated marginal mean of 4.41. Persons with a lot of stress or some stress experience significantly more presenteeism than persons with barely any or no stress.

Life satisfaction's effect on problems with presenteeism was examined. The analysis was significant, $F(2, 52,826) = 431.92, p < .001$. When controlling for the other indicators of subjective well-being and the demographic variables, results indicate that persons who are not satisfied with life have an estimated marginal mean of 6.39 and persons who are mostly satisfied have an estimated marginal mean of 4.15. Persons who are not satisfied with life or are partly satisfied with life experience significantly more presenteeism than those who are mostly satisfied with life.

Feeling blue, an indicator of mental/emotional well-being, has a significant effect on problems with presenteeism, $F(2, 52,826) = 325.51, p < .001$. Persons who feel blue have an estimated marginal mean of 5.69 and persons who do not feel blue have an estimated marginal mean of 4.54. As compared to persons who do not feel blue, persons who feel blue or are not sure about feeling blue experience significantly more presenteeism.

Another indicator of mental/emotional well-being is feeling sad. The effect of feeling sad on problems with presenteeism was examined controlling for other indicators of subjective well-being and the other demographic variables. The analysis was significant, $F(2, 52,826) = 289.32, p < .001$. Persons who are sad have an estimated marginal mean of 5.64 and persons who are not sad have an estimated marginal mean of 4.56. Persons who are sad or are not sure about being sad experience significantly more presenteeism than persons who are not sad.

When controlling for the other indicators of subjective well-being and the other demographic variables, the effect of depression on problems with presenteeism was examined. The analysis was significant, $F(2, 52,826) = 217.56, p < .001$. Persons who are depressed have an estimated marginal mean of 5.72 and persons who are not depressed have an estimated marginal mean of 4.59. Persons who are depressed or are not sure about being depressed experience significantly more presenteeism than those who are not depressed.

Demographics

Examination of the demographic variables showed that they have small but significant effects on presenteeism. A univariate analysis of variance was calculated on the effect of gender on problems with presenteeism. When controlling for the other demographic variables and the indicators of subjective well-being, the results were significant, $F(1, 52,826) = 4.59, p < .032$. Men have an estimated marginal mean of 5.13 and women have an estimated marginal mean of 5.20. Men experience significantly less presenteeism than women, but the difference is small.

When controlling for the other demographic variables and the indicators of subjective well-being, results indicate that race/ethnicity has an effect on presenteeism. The analysis was significant, $F(4, 52,826) = 25.52, p < .001$. Persons who are Asian have an estimated marginal mean of 5.29 and persons who are white have an estimated marginal mean of 4.88. Persons who are Black, Hispanic, Asian and other race/ethnicities experience significantly more presenteeism than whites.

The analysis of the effect of education level on problems with presenteeism was significant, $F(5, 52,826) = 6.21, p < .001$, when controlling for the other demographic variables and the indicators of subjective well-being. Persons who have a grade school or less education have an estimated marginal mean of 5.57 and persons who have a high school degree have an estimated marginal mean of 5.13. The more education a person has the lower is his/her level of presenteeism. As compared to high school graduates, persons with some high school education experience significantly more presenteeism and persons with grade school or less education did not experience significantly different

levels of presenteeism. Persons with some college, college graduates and post-graduate or professional degrees experience significantly less presenteeism than persons with high school diplomas.

An analysis was performed to examine the effect of industry type on problems with presenteeism. When controlling for the other demographic variables and the indicators of subjective well-being, the analysis was significant, $F(9, 52,826) = 14.32, p < .001$. Persons who work in healthcare and social assistance have an estimated marginal mean of 5.58 and persons who work in public administration have an estimated marginal mean of 5.29. Persons working in construction and educational services industries did not experience significantly different levels of presenteeism as compared to those working in public administration. Compared to persons working in public administration, persons working in healthcare and social assistance experienced significantly more presenteeism. Employees in manufacturing, wholesale trade, retail trade, transportation and warehousing, finance and insurance, and professional, scientific and technical sciences experienced significantly less presenteeism than those in public administration.

Assumptions of the General Linear Model

An assumption of the general linear model (GLM) is a normal distribution of the residuals from the analysis. The K-S test for presenteeism was significant, $F = 39.47, p < .001$, indicating that the residuals are not normally distributed. However, Figure 3 shows that the residuals do approximate a kurtotic, bell-shaped curve similar to a normal distribution. Levene's Test for the main effects model is significant for presenteeism ($p <$

.001). This indicates that there is not equality of variance in the model. There was heterogeneity of residual variance across categories of all independent variables.

Another assumption of GLM is that the residuals have equality of variance across categories of each of the independent variables, and across the linear combination of all independent variables. Equality of variance was not observed in this analysis. Attempts to correct this violation of the assumption using weighted least squares did not resolve the problem. The values of the residuals and the variation in the residuals increased as the levels of observed presenteeism increased. No transformations of the categorical independent variables were available to improve the prediction of presenteeism, especially for participants with higher scores on the dependent variable.

In summary, the univariate analysis of variance answered the question revealing that subjective well-being does have an effect on presenteeism. Thus the research hypothesis was supported. In the sample, women experienced more presenteeism than men. White people experienced fewer problems with presenteeism than other races. The more education a person has the fewer problems with presenteeism they experience. Persons working in professional, scientific, and technical services experience the least amount of presenteeism of the industries examined. Compared to persons working in public administration, those working in healthcare and social assistance experience the most presenteeism. Those with an overall health rating of excellent experience the least amount of presenteeism as compared with those who have an overall health rating of poor, fair or good health.

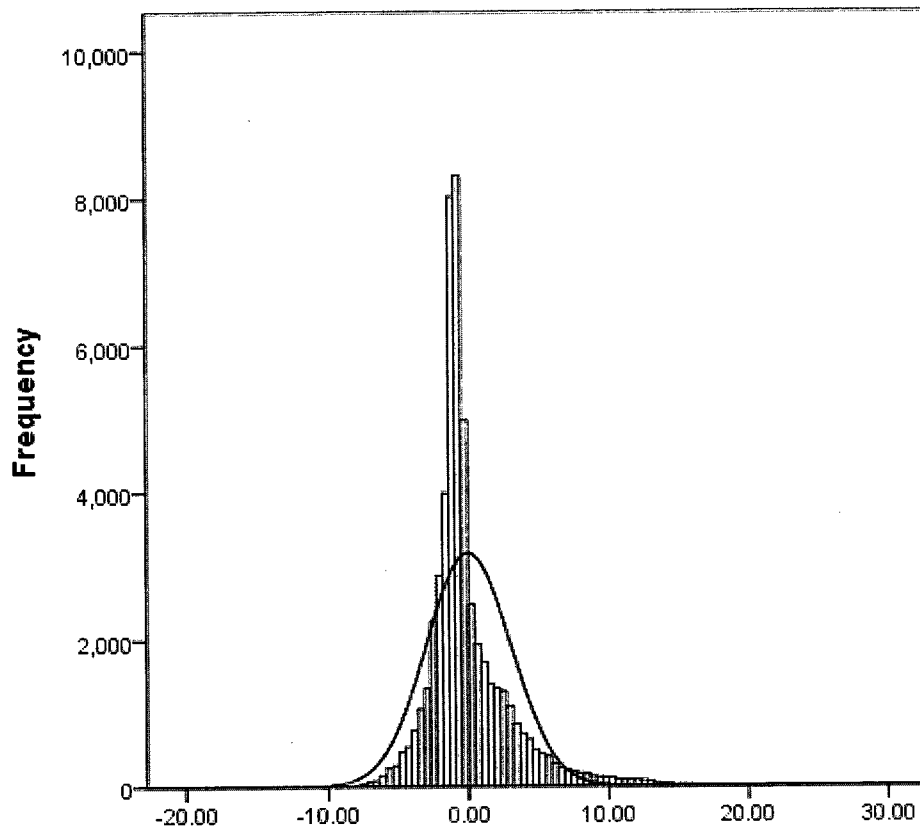


Figure 3. Graph of residuals for presenteeism.

Persons who are mostly satisfied with their life experience have fewer problems with presenteeism than those who are partly or not satisfied with their life. Those who feel sad, blue or depressed experience more presenteeism than those who do not feel sad, blue or depressed. Stress level had the greatest effect on how much presenteeism a person experiences. The lower a person's stress level the less presenteeism a person experiences.

CHAPTER V

DISCUSSION

Introduction

This study provided an opportunity to examine the effect of subjective well-being on presenteeism in the framework of the satisfaction-performance relationship. This is the first study to operationalize satisfaction as subjective well-being and performance as the inverse of presenteeism. Subjective well-being is measured by indicators of life satisfaction, self-reported health status and depression. Presenteeism is measured by the percent of productivity lost by individuals with mental and/or physical health risks as compared with individuals without mental and/or physical health risks. This chapter will review the summary of the statistical analyses conducted for the variables in the research question, implications of the results and conclusions.

Summary of the Research Question

This study examined the following research question: what effect does subjective well-being (SWB) have on an employee's presenteeism? Presenteeism was significantly affected by subjective well-being and the demographic variables. The interactions among the independent variables and subjective well-being were also studied, but did not increase the percent of variance explained in the main effects model.

Presenteeism is of great interest to employers because of the high health-related costs associated with it. Employers lose billions of dollars annually due to employees being at work but not fully productive. Identifying predictors of presenteeism is helpful and necessary in order to design interventions designed to reduce presenteeism.

Hypothesis

The hypothesis states that when controlling for age, sex, race/ethnicity, education level and industry, the employee's level of subjective well-being is inversely related to his/her presenteeism. The demographic variables had significant, yet small, effects on an individual's presenteeism. This is consistent with findings from previous studies stating that demographic variables have either little or no effect on subjective well-being and presenteeism. The only substantiated difference was that the effect of depression on presenteeism was different for white and black men. Black men are more likely to be depressed than are white men (Thomas & Hughes, 1986; Woody & Green, 2001) and therefore black men may have higher levels of presenteeism due to depression. Analysis of the data in this study revealed an interaction between race and depression when examining presenteeism. However, the interaction model did not significantly increase the percent of variation in presenteeism that was explained, so the results from the main effects model are used for this study.

Subjective well being is represented by two concepts, health and life satisfaction. Health was measured by an indicator of physical well-being (self-rated health status) and by indicators of mental/emotional well-being. These are feeling blue, feeling sad, an

overall measure of depression, and stress level. In addition, life satisfaction was as component of subjective well-being.

As hypothesized, self-rated health status, feeling blue, feeling sad, the overall measure of depression, stress level and life satisfaction had significant and large affects on one's presenteeism. As discussed in chapter two, persons who are happy have better physical well-being (Lyubomirsky et al., 2005; Cohen et al., 2003; Frederickson & Losada, 2005). This is confirmed by the results of this study. Those who are satisfied with their health have significantly less presenteeism than those who rate their health as fair or poor. Additionally, Burton et al. (2004) and Burton et al. (2005) demonstrate direct relationships between the number of health risks one has and the level of presenteeism they experience.

Feeling blue, sad and/or depressed increases the presenteeism one experiences. Work by Frederickson (2001) and Zelenski et al. (2008) provide reasons for this. Persons who are happy and experience an abundance of positive emotions behave in ways that increase productivity. Results of the analysis reveal that those who do not feel sad, do not feel blue or who are not depressed report less presenteeism than those who do feel sad, blue or are depressed, respectively.

The level of stress one feels had the greatest effect on one's presenteeism. This is consistent with the literature, which states that psychological variables have important effects on presenteeism (Parker et al., 2009). Burton et al. (2005) demonstrated that persons experiencing stress, anxiety or depression were costlier in terms of the level of presenteeism they reported as compared with persons who were not suffering from stress,

anxiety or depression. The results of this study provide further confirmation of these findings. Individuals with barely any or no stress reported significantly less presenteeism than those who had some or very high stress.

Finally, one's satisfaction with life was significantly related to the level of presenteeism they experienced. Researchers have found that individuals who are positive and happy tend to have a variety of positive outcomes in life such as marital satisfaction, strong interpersonal relationships, and success at work (Pavot & Diener, 2004; Frederickson & Losada, 2005; Cropanzano & Wright, 2005; Lyubomirsky, et al, 2005). This association is demonstrated in the results of this study. Those who were mostly satisfied experienced significantly less presenteeism than persons who were only partly satisfied or who were not satisfied with their life.

Limitations

Limitations of this study include issues related to the distribution of the variables, available data and point in time bias.

Distribution of the Residuals. This study violated the assumptions of the general linear model because the residuals of the dependent variable were not normally distributed. Additionally, there was not equality of variance across the categories of the independent variables. Attempts to correct these issues were attempted, but not successful. Consideration should be given to this in future studies.

Industry Classification. Participants were categorized into industries based on the overall industry classification of their employer. It would be ideal to have data on the participant's specific job role in order to better understand the effects of job classification

on presenteeism. However, that level of detail was not available in the data. This is an area for future research to explore.

Subjective Bias. Data collected on health assessments is of a subjective nature. The way a participant responds may be influenced by events and feelings occurring at the particular moment when they complete the health assessment. While this may be problematic for some studies, it is less so for this study because of the particular interest in one's subjective feelings. The nature of presenteeism is such that it could also be experienced at different times of the day depending on one's feelings. Thus, the issue is mitigated to some extent because many people experience at least a moderate level of presenteeism at any point during the day.

Future Directions

Based upon the results of this study the following are recommendations for further study. The effect of specific job responsibilities on presenteeism warrants further research. The literature points to differences in the level of presenteeism experienced based on occupation. Occupation, or job type, data were not available for this study. A broader classification, industry, was investigated in lieu of this data, which proved to have a small, but significant effect on presenteeism. Based on these effects and findings from other studies, the amount of presenteeism one experiences based on their specific job should be further investigated.

Many of the variables found to be significant in this study could be highly influenced by the culture of one's work environment, either positively or negatively. Investigation of the effect of work culture on presenteeism could be important.

Identifying modifiable predictors of presenteeism provides the information necessary to reduce the amount of presenteeism employee's experience and therefore, reduce the health-related costs associated with presenteeism.

Seligman (2000) found that one's subjective well-being is responsive to therapeutic interventions. Based on results from this study, persons with high subjective well-being experience less presenteeism. This provides an opportunity for intervention. Health promotion programs can target subjective well-being in the same way that they target risky behaviors. An intervention-based study could be helpful in identifying effective ways to improve one's subjective well-being thereby reducing the amount of presenteeism experienced.

Positive emotions have the ability to down-regulate the negative physiological effects of negative emotions. Because of this, intervention strategies that cultivate positive emotions are particularly suited to preventing and treating problems rooted in negative emotions: anxiety, depression, aggression, and stress-related health problems (Frederickson, 2000). This is of particular interest to this study because of the known deleterious effects of negative emotions that are tied to the costliest culprits of indirect and direct costs. "Prolonged negative emotions are mediators of poor physical health: stress-related disorders, suppressed immune systems and functioning, heart disease, cancers, and loss of productivity" (Frederickson, 2000). This knowledge provides a practical application for employers.

Implications

Researchers have demonstrated that presenteeism is a costly and prevalent problem for employers. Results from this study are consistent with previous findings demonstrating that nearly a third of employees experience at least a moderate level of presenteeism. Even a moderate level of presenteeism can be extremely costly for businesses.

Presenteeism is affected by physical and mental/emotional well-being as well as life satisfaction. Many employers offer worksite wellness and/or health promotion programs. While some of these programs address stress management, they are traditionally focused on improving physical health. Employers need to shift their focus to include improvements in mental/emotional well-being in addition to physical well-being. This may be accomplished through worksite wellness programs.

Additionally, efforts can be focused on organizational changes that may improve one's satisfaction with their job. Ensuring that staff are in appropriate positions, have challenging, yet attainable responsibilities, and have respectful work units may contribute to improved job satisfaction. Job satisfaction and life satisfaction have a moderate correlation, thus, improving job satisfaction can improve life satisfaction. As stated earlier, those who are more satisfied with life experience less presenteeism.

Conclusion

In summary, the purpose of this investigation was to add to the body of literature examining predictors of presenteeism. The results of the study demonstrate that subjective well-being, as measured by indicators of life satisfaction, physical and

mental/emotional well-being, and indicators of depression has a significant effect on presenteeism.

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APPENDICES

APPENDIX A

HEALTH ASSESSMENT QUESTIONS

The following questions are taken from the corporation's health assessment, which gathers data on the key variables and concepts in this dissertation.

DEMOGRAPHICS

Age

Date of Birth

- Month
- Day
- Year

Sex

Gender

- Male
- Female

Race/Ethnicity

Which of the following best describe your race or ethnic group? Mark all that apply.

- American Indian or Alaskan Native
- Asian
- Black or African American
- Native Hawaiian or Pacific Islander
- White/Caucasian
- Hispanic
- Other

Education Level

What was the highest level you completed in school? Mark one best answer.

- Grade school or less
- Some high school
- High school graduate
- Some college
- College graduate
- Post graduate or professional degree

SUBJECTIVE WELL-BEING

Life Satisfaction

In general, how satisfied are you with your life?

- Mostly satisfied
- Partly satisfied
- Not satisfied

Physical Well-Being

Considering your age, how would you describe your overall physical health?

- Excellent
- Good
- Fair
- Poor

Mental/Emotional Well-Being

In the past year, have you had two weeks or more during which you felt sad, blue, or depressed; or when you lost all interest or pleasure in things that you usually cared about or enjoyed?

- Yes
- No
- Not sure

Have you had 2 years or more in your life when you felt depressed or sad most days, even if you felt okay sometimes?

- Yes
- No
- Not sure

Have you felt depressed or sad much of the time in the past year?

- Yes
- No
- Not sure

In the past year, how much effect has stress had on your life?

- A lot
- Some
- Barely any or none
- Not sure

PRESENTEEISM

In the past two weeks, how much of the time did your physical health or emotional problems make it **difficult** for you to do the following?

- c. Get going easily at the beginning of the workday
 - Difficult** all of the time (100%)
 - Difficult** most of the time
 - Difficult** some of the time (50%)
 - Difficult** a slight bit of the time
 - Difficult** none of the time (0%)
 - Does not apply to my job

- d. Start on your job as soon as you arrive at work
 - Difficult** all of the time (100%)
 - Difficult** most of the time
 - Difficult** some of the time (50%)
 - Difficult** a slight bit of the time
 - Difficult** none of the time (0%)
 - Does not apply to my job

In the past 2 weeks, how much of the time were you **able** to sit, stand, or stay in one position for longer than 15 minutes while working, without difficulty caused by physical health or emotional problems?

- Able all of the time (100%)
- Able most of the time
- Able some of the time (50%)
- Able a slight bit of the time
- Able none of the time (0%)
- Does not apply to my job

In the past 2 weeks, how much of the time were you **able** to repeat the same motions over and over again while working, without difficulty caused by physical health or emotional problems?

- Able all of the time (100%)
- Able most of the time
- Able some of the time (50%)
- Able a slight bit of the time
- Able none of the time (0%)
- Does not apply to my job

In the past 2 weeks, how much of the time did your physical health or emotional problems make it **difficult** for you to concentrate on your work?

- Difficult all of the time (100%)
- Difficult most of the time
- Difficult some of the time (50%)
- Difficult a slight bit of the time
- Difficult none of the time (0%)
- Does not apply to my job

In the past 2 weeks, how much of the time did your physical health or emotional problems make it **difficult** for you to speak with people in person, in meetings, or on the phone?

- Difficult all of the time (100%)
- Difficult most of the time
- Difficult some of the time (50%)
- Difficult a slight bit of the time
- Difficult none of the time (0%)
- Does not apply to my job

In the past 2 weeks, how much of the time did your physical health or emotional problems make it **difficult** for you to do the following?

c. Handle the workload

- Difficult** all of the time (100%)
- Difficult** most of the time
- Difficult** some of the time (50%)
- Difficult** a slight bit of the time
- Difficult** none of the time (0%)
- Does not apply to my job

d. Finish work on time

- Difficult** all of the time (100%)
- Difficult** most of the time
- Difficult** some of the time (50%)
- Difficult** a slight bit of the time
- Difficult** none of the time (0%)
- Does not apply to my job

APPENDIX B
INFORMED CONSENT

Please note that the word *Corporation* was used in place of the name of the actual provider of the data to maintain confidentiality.

Participation Information & Consent Form

I signify that I have read and understand the literature provided to me in my information packet and I understand the Program. I am aware that additional information is available to me by calling the *Corporation* at 1.888.888.8888.

I elect to participate in the *Health Management Program*, which may require that I complete a confidential *Health Assessment* questionnaire and sign a Participation Information and Consent form. I agree to provide timely, accurate, and honest information to the *Corporation* with regard to current lifestyle habits and lifestyle changes. Further, I understand that my health status may be subject to confirmation at future dates in order to maintain participation in the program.

I understand that the *Corporation* agrees to make its best efforts to maintain and protect as confidential any individually identifiable health risk information about me or information that I may provide in connection with the *Health Management Program*. I understand that this information will be kept confidential in compliance with all applicable state and federal laws, rules, and regulations and will not be intentionally disclosed unless the *Corporation* has been specifically authorized by me to do so or

unless the *Corporation* is required by law. I understand that the *Corporation* may use aggregate (group) health risk and medical claims data for the purposes of scientific research and will treat my data as a personal medical file. I understand that my employer may receive aggregate (group) risk data for the purpose of determining the overall risk of the group. I understand that the *Corporation* may share information with a third party for the purposes of aggregate reporting and/or the administering of the *Health Management Program* (if my employer is a health plan, my employer may have access to my personal data in accordance with all applicable state and federal laws, rules, and regulations).

APPENDIX C

Please note that the word *Corporation* was used in place of the name of the actual provider of the data to maintain confidentiality.

PRIVACY AND SECURITY STATEMENTS

Privacy Statement – A standard part of both the online and offline products. Online users must accept the terms of the agreement before being able to access and complete the health assessment. Offline users are given a copy of the terms of agreement. As part of the consent process, they must sign that they received the privacy notification. The privacy statement is as follows:

“*Client* has chosen the *Corporation* as your corporate wellness provider. By law, the *Corporation*, cannot and does not release any of your personal health information without your written consent. Your privacy is highly guarded. Your individual health status will never be seen by your employer.”

Security Statement – A statement indicating how the *Corporation* manages and secures the information collected by the end user (e.g., data storage, corporate procedures for ensuring privacy, and security of data).

HIPAA *Corporation's* HIPAA Compliance Statement: *Corporation* will abide by the applicable patient privacy and confidential information regulations promulgated by the US Department of The Treasury, US Internal Revenue Service 26 CFR Part 54, the Department of Health and Human Services, US Health Care Financing Administration Privacy Act of 1974 and Health Insurance Portability and Accountability Act of 1996

(HIPAA), 45 CFR 142, 45 CFR 160 and 162, the Gramm-Leach-Bliley Act Title V and under Employee Retirement Income Security Act of 1974, as amended (ERISA).

Any individually identifiable health or health related information such as medical claims information, health history information, health risk information, or biomedical information is accessed by the *Corporation* as an agent for the customer, which is the health plan administrator, as that term is defined by the Employee Retirement Income Security Act of 1974, as amended (ERISA).

It is the policy and procedure of the *Corporation* to treat individually identifiable health information in full compliance with all applicable laws as follows:

The *Corporation* will:

Use the health information only for the purposes of providing aggregate medical claims analysis, personal health analysis or personal health counseling for individuals. Maintain the health information at a specific location under the control of the *Corporation* and take reasonable steps to safeguard the health information and to prevent unauthorized disclosure of it to third parties, including its employees not directly involved in providing medical claims analysis or personal health counseling or any person in the employ of the customer.

Advise the *Corporation* employees who receive the health information of the existence of these policies and procedures and the applicable laws and penalties provided under those laws and of the obligations of confidentiality contained in any contractual relationship that the *Corporation* may have with an employer, managed care organization, health insurer or third party medical claims administrator.

Unless a specific written and signed HIPAA compliant personal health information release form is obtained from an individual, the *Corporation* and its employees will refrain from releasing that individual's health information to anyone except in an aggregate form, which does not allow direct or indirect identification of any individual.

In receiving, storing, processing or otherwise dealing with any individually identifiable health information, the *Corporation* will abide by the US Department of The Treasury, US Internal Revenue Service 26 CFR Part 54, the Department of Health and Human Services, US Health Care Financing Administration Privacy Act of 1974 and Health Insurance Portability and Accountability Act of 1996 (HIPAA), 45 CFR 142, 45 CFR 160 and 162, the Gramm-Leach-Bliley Act Title V and under Employee Retirement Income Security Act of 1974, as amended (ERISA).

The *Corporation* will resist in judicial proceedings any effort to obtain access to any individually identifiable health information, except as permitted under the US Department of The Treasury, US Internal Revenue Service 26 CFR Part 54, the Department of Health and Human Services, US Health Care Financing Administration Privacy Act of 1974 and Health Insurance Portability and Accountability Act of 1996 (HIPAA), 45 CFR 142, 45 CFR 160 and 162, the Gramm-Leach-Bliley Act Title V and under Employee Retirement Income Security Act of 1974, as amended (ERISA).