Summer 8-2010

The Relationship and Effects of Mindfulness on Comfort, Work Satisfaction, and Burnout Among Nurses Who Provide Direct Patient Care

Pamela Lichtenberg Heard
University of Southern Mississippi

ABSTRACT

THE RELATIONSHIP AND EFFECTS OF MINDFULNESS ON COMFORT, WORK SATISFACTION, AND BURNOUT AMONG NURSES WHO PROVIDE DIRECT PATIENT CARE

by

Pamela Lichtenberg Heard

Abstract of a Dissertation
Submitted to the Graduate Studies Office
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

August 2010

ABSTRACT

THE RELATIONSHIP AND EFFECTS OF MINDFULNESS ON COMFORT, WORK SATISFACTION, AND BURNOUT AMONG NURSES WHO PROVIDE DIRECT PATIENT CARE

by Pamela Lichtenberg Heard

August 2010

This study proposed to examine the problem of burnout in the nursing profession and ways to ameliorate burnout. Many burnout studies in the past focused on the problem and possible solutions that managers and/or hospital administrators could incorporate into their organization. The focus of this study is to evaluate ways that nurses can decrease their own propensity to burnout through the use of mindfulness. Therefore, this study examined burnout in a non-traditional manner. It is not assumed that others must assist nurses with decreasing their levels of burnout. Mindfulness is a means by which nurses can empower themselves to combat various stressors and provide a means of comforting themselves through mindfulness meditation. The purpose of this study was to determine the relationship between mindfulness, comfort, work satisfaction, and burnout in nurses. Specifically, the study was designed to test a proposed model for mindfulness to determine if the variable mindfulness has any effect on comfort, work satisfaction, and burnout. It was anticipated that this study will add to existing literature addressing enhanced comfort of nurses resulting in higher work satisfaction, decreased burnout and subsequent decrease in nurse turnover. The sample for this study was a convenience sample of registered nurses in four South Mississippi hospitals. A total of 1 186 nurses completed a survey packet that contained a demographic information form,

the Mindfulness Attention Awareness Scale, the Langer Mindfulness scale, the Mindfulness-Based Self Efficacy Scale, the Maslach Burnout Inventory, the Index of Work Satisfaction, and the Nurse Comfort Questionnaire. Based on the statistical analysis, the proposed model is not an accurate depiction of the path of mindfulness and its effect on the other variables in the study. On average, nurses in this study had moderate levels of mindfulness, average propensity to burnout, and average levels of nurse comfort and work satisfaction. Correlations of the variables revealed results that were expected with the exception of correlations with nurse comfort. Possible explanations for these unexpected results are discussed as well as recommendations for further research to test a model for mindfulness among practicing nurses.

The University of Southern Mississippi

THE RELATIONSHIP AND EFFECTS OF MINDFULNESS ON COMFORT, WORK SATISFACTION, AND BURNOUT AMONG NURSES WHO PROVIDE DIRECT PATIENT CARE

by

Pamela Lichtenberg Heard

A Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

Approved:

Dr. Patsy Anderson
Director

Dr. Sherry Hartman

Dr. Janie Butts

Dr. Stephen Bushardt

Dr. Chet Rakocinski

Dr. Susan A. Siltanen
Dean of the Graduate School

August 2010

ACKNOWLEDGMENTS

I wish to express my appreciation to my committee members for their assistance and patience during the prolonged pursuit of my degree. Drs. Patsy Anderson, Sherry Hartman, Janie Butts, Stephen Bushardt, and Chet Rakocinski. I also wish to thank Dr Katherine Nugent, Chair of the USM Department of Nursing, for her help and encouragement in the initial phases of my doctoral research. I am especially grateful to Dr. Sherry Hartman for sharing her expertise in mindfulness and its application to the profession of nursing and for her enthusiastic encouragement throughout the course of my research. Special thanks go to my other committee members, Drs. Bushardt, Rakocinski, and Butts, for their thoughtful and constructive comments and suggestions on the dissertation. Further, Dr. Ron Burr, provided constructive criticism and insightful discussions on epistemological aspects of the mindfulness concept. I thank Ms. Catherine Schloss, Gunter Library, USM Gulf Coast Research Laboratory Campus, for procuring important research papers through interlibrary loan. Financial support for my degree was provided by grants to the State of Mississippi through the IHL in Jackson, MS in the form of a nurse scholarship and nursing instructor stipend. Ms. Susan Echols was most helpful in facilitating and managing my funding support. Much love and appreciation go to my husband, Richard, and my daughter, Sarah Beth, for their support and for countless hours entertaining themselves while I was working on my research. Finally, I wish to express my profound gratitude to my parents, Ralph and Josephine Lichtenberg, for their unfaltering love and support throughout my entire academic career; with much appreciation and love this dissertation is dedicated to them.

TABLE OF CONTENTS

LIST OF TABLES

Table

LIST OF ILLUSTRATIONS

Figure

LIST OF ABBREVIATIONS

AACN……American Association of Colleges of Nursing

ACT……Acceptance and Commitment Therapy

CBT……Cognitive Behavioral Therapy

DHHS…….....Health and Human Services (department of)

ES……Engagement Scale

EPP……..Eight Point Program

FS……Flexibility Scale

HSB……Health Seeking Behaviors

IWS……..Index of Work Satisfaction

LMS……Langer Mindfulness Scale

MAAS……..Mindfulness Attention Awareness Scale

MBCT……..Mindfulness Based Cogitive Therapy

MBI……..Maslach Burnout Inventory

EE…….....Emotional Exhaustion

Dp…….....Depersonalization

PA……Personal Accomplishments

MBSR……...Mindfulness Based Stress Reduction

MBM……Mindfulness Based Meditation

MMS……Mindfulness Management of Stress

MSES……Mindfulness-Based Self Efficacy Scale

NCQ…….....Nurse Comfort Questionnaire

NP…….....Novelty Producing

NS……...Novelty Seeking

SEM……Structural equation mobility

CHAPTER I

INTRODUCTION

Burnout, a term coined by Freudenberger (1974), is a phenomenon that is defined as physical and emotional exhaustion and involves a negative attitude toward one's job and/or profession. Research on burnout has been conducted extensively over the past three decades and studies have explored burnout in health care professionals (Aiken, et al., 2001; Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Epeland, 2006; Freudenberger, 1974, 1983, 1989; Maslach, 1982; Maslach, 2001; Maslach, 2003;). Burnout is characterized by low self-esteem, apathy, alienation, becoming callous or cynical, mental exhaustion, psychosomatic complaints, anxiety, inability to concentrate, depression, job dissatisfaction, and depersonalization of clients (Freudenberger, 1974, 1983; Maslach, 1982; Maslach, 2001; Maslach, Jackson, & Leiter, 1996). Burnout is an insidious process and overtime can cause mental fatigue, feelings of frustration, decreased productivity, and emotional exhaustion (Maslach, 1982). It has also been linked to increased propensity to illnesses, both physiological and psychological, as well as to lack of motivation and poor health behaviors (Oman, Shapiro, Thoresen, Plante, & Flinders, 2008; Selye, 1978).

Aiken and colleague's (2001) research documented that nurses are more susceptible to burnout than are other health care professionals. Specifically, they found in a study using the Maslach burnout inventory (MBI) (Maslach, Jackson, and Leiter, 1996) that nurses had higher burnout scores than did other healthcare professionals in the study. Further, burnout in nurse managers and nurse administrators manifested in negative behavior, creating an unhealthy work environment that could eventually lead to burnout and job dissatisfaction in staff nurses (Aiken et al., 2001). Job satisfaction was

much lower among hospital nurses compared to the average for the entire United States job market (Aiken et al., 2001).

As suggested in the literature, burnout in nursing has been a prominent concern for the profession. Today's complex and chaotic health care environment has a potential for increasing stress in the work place environment, resulting in burnout and job dissatisfaction. Because of the complexities of today's healthcare environment, from patient care to documentation and clerical duties, including digital storage systems and digital documentation, the work responsibilities of a nurse are challenging and technically complex and the daily work load is often very demanding (Yung, Fung, Chan, & Lau, 2004). These responsibilities require a multidisciplinary approach to treatment with an extended knowledge base in mental health, pharmacology, pathophysiology, pulmonary function, and infectious diseases, as well as spiritual and social skills necessary to render the most comprehensive and state-of-the-art care. Working under these conditions day after day with increased responsibility and often with fewer nurses will increase stress and job dissatisfaction and potential burnout. These conditions contribute to turnover and/or sub-optimal performance that can result in a costly and detrimental situation for the healthcare provider institution.

This complex and often chaotic work environment could possibly be one explanation for the increase in graduate nurse turnover after only one year of employment. Nurses rated quality of nursing care on their units as inadequate because of a larger patient workload with a higher acuity (Aiken et al., 2001). In fact, the median turnover rate for these first year graduate nurses is 35%. Also, it has been estimated that 25% of all new graduate registered nurses will change jobs 2-3 different times within the

first 6-8 months of employment after graduation. Further, the average length of stay at any one place of employment is two years (Aiken et al., 2001).

Job dissatisfaction has been noted in nurses who have less than one year nursing experience as well as with experienced nurses. Kovner et al. (2007) found that 13% of new registered nurses had changed primary jobs within one year of hire. Of the new nurses who were still in their primary nursing positions, 37% indicated that they were ready for a job change. Job satisfaction has been directly related to decreased productivity (Mueller & McCloskey, 1990) and to absenteeism, tardiness, and turnover (Khurshid, Merchant, & Hirani, 2005; Parsons, Simmons, Penn, & Furlough, 2003).

High nurse turnover coupled with the loss of nurses from the profession due to retirement creates a loss of highly qualified and skilled nurses. Organizations are often forced to hire less experienced nurses making it difficult to provide the same quality of care to patients that more experienced nurses provide. Nurses who suffer from burnout are also less trusting and sympathetic toward patients (Roach, 1994). This lack of empathy could result in a decrease in patient satisfaction and a subsequent loss of competitive edge in the health care arena (Epeland, 2006).

Dedicated professionals must be in an environment that nurtures and fosters their well being. The absence of these conditions can result in employees who have a lack of engagement with their work and a sense of disconnection with their organization (Maslach, 2003). This disconnection can lead to dissatisfaction, increased stress, burnout, and eventual turnover and instability of the organization. Poor morale, increased stress, and burnout in some employees will eventually affect the entire organization leading to decreased organizational effectiveness (Maslach, 2003).

Historically, the primary focus of nursing has been meeting the needs of the patient by provided care or comfort to the patient (McIlveen & Morse, 1995). Comfort is a term that has been equated to care. Morse (1983) believed that comfort was the major aspect of patient care and that a nurse's job was to optimize the patient's comfort.

Reference to comfort is evident in nursing literature as early as Nightingale's *Notes on Nursing* (1860). The specific instructions in Nightingale's book were directed to the nurse to assist the patient in achieving optimal health through improving or enhancing the patient's physical and mental comfort. There was no mention of ways to ensure or to enhance nurse comfort. As such, the needs and support or comfort of the nurse were often overlooked.

Nurses deserve the same comfort and care that they provide to the patient. They also deserve the comfort of a professional environment in which to work (Kolcaba, 2003). Traditionally, nurses have looked to their administrators for the comfort of a good working environment with appropriate compensation, professional development opportunities, and autonomy. Although desirable, nurses must find ways to nurture themselves even in undesirable conditions if they are going to fully combat the negative consequences of burnout (Suzuki, Itomine, Kanoya, Katsuki, Sayaka, & Chifumi, 2006).

The concept of comfort has been explored in relation to physical comfort as well as to mental comfort (Kolcaba & Kolcaba, 1991). Various policies and procedures and nursing standards of care relate to the extent to which patient comfort is achieved. Patient comfort has been examined, however as of yet, the comfort of nurses has not been similarly addressed.

Having recognized the importance of nurse comfort for the outcome of patient comfort, Kolcaba (2003) focused on nurse comfort, in addition to patient comfort and

developed the nurse comfort questionnaire. Identifying and learning ways to increase nurse comfort at work is one method of helping nurses to stop the negative cycle of increased burnout with possible increased turnover among nurses. As such, comfort is a major aspect of the care of the nurse and accordingly, it should be accomplished before patient care can be envisioned.

One means of increasing nurse comfort that is not other centered is for nurses to gain control of their negative thoughts and to learn techniques to prevent stress overload. One such way is to change negative thinking into positive thinking. This requires that one learns how to change his/her thought processes from destructive thoughts to constructive thoughts. "I can not and will not do that" can be changed to "This is difficult, but I will do my best to get it done". Other suggestions are to avoid getting involved with negative talk or gossip about fellow co-workers; forgive self and forgive others; become involved in physical exercise; mental exercise in the form of meditation; foster a positive relationship with peers; and become forward thinking, do not focus too much on the past, but rather stay focused on the present (Carmack, 1997; Cohen-Katz, Wiley, Capuano, Baker, & Shapiro, 2005; Forsyth, & Cannady, 1981).

Research on interventions for burnout has been limited (Maslach, 2001). However, the antecedents to burnout are well-known. Burnout is a condition in which people suffer from emotional exhaustion, experience a lack of personal accomplishment, and tend to depersonalize others (Freudenberger, 1974). Some psychological and behavioral attributes of burnout are low self-esteem, apathy, alienation, callousness, psychosomatic complaints, anxiety, inability to concentrate, and depression (Freudenberger, 1974, 1983; Maslach, 1982; Maslach, 2001; Maslach, Jackson, & Leiter, 1996). A personality trait, locus of control (Rotter, 1966) has also been shown to affect

personal and work stress. Developed by Rotter, locus of control refers to the distinction between people who believe they are in control of the course of their lives and those who believe that external, uncontrollable factors have the greatest influence on their lives. The majority of the research on burnout focuses on the latter, external factors in one's life. Limited research has focused on self-initiated and self-regulating means of preventing burnout. However, initial work done by Cohen-Katz et al. (2005) found that mindfulness decreased burnout and increased staff job satisfaction. Similarly, Suzuki (2006) attempted to demonstrate the effectiveness of internal mind-states on burnout. Her study revealed degree of assertiveness was related to burnout with non-assertive nurses having higher burnout scores than assertive nurses. Mind states and self-initiated solutions related to mind states are possibly a way to help ameliorate burnout. In this present study, the presence and degree of mindfulness in nurses will be the focus of exploration. There is sufficient reason to believe this is a promising means of prevention that nurses can take on their on behalf to decrease burnout.

Mindfulness

The practice of mindfulness has its origin in Buddhism. From this perspective; it means to be aware of being aware (Kabat-Zinn, 1990). It is viewed as a meditation, a way to free the mind of things past and things in the future. To fully participate in what one is doing at any given moment is mindfulness. It means keeping ones' consciousness alive, being completely conscious of the here and now. Mindfulness is the ability to pay attention in a particular way to an experience from moment to moment without judgment (Kabat-Zinn, 1994). It is a skill that involves focusing on the present and is developed through meditation. Mindfulness is the state of being attentive to, and aware of, what is

taking place in the present (Kabat-Zinn, 2003). Mindfulness has been shown to promote psychological well being and decrease various maladies (Kabat-Zinn, 1990).

To focus on activities other than in what one is presently participating is not truly living. Proponents of mindfulness believe that one should truly live each moment. To do this, one must be fully immersed in the here and now. Mindfulness also requires being opened minded. Thich Nhat Hanh (1999) describes this as the continued creation of categories. This is referred to as deautomatization or the breakdown of old categories and/or old stereotypes. One is not limited by strict categorization of his/her life or points of view. A mindful person is open to and considers all points of view. This, he says helps keep one's consciousness alive. If we are not mindful, we do not realize the miracle of the moment. Accordingly, a mindful person is relaxed; he/she is fully immersed in the here and now. This person has no regrets about the past or worries about the future (Hanh, 1999).

Although mindfulness practice has origins in Buddhist/Asian contexts, Western conceptualization in psychology has also emerged. Ellen Langer (1989) in part, has studied mindfulness and stated that her conceptualization of mindfulness is not based on, but rather has similarities with Buddhist/Asian contexts. According to Langer, being active and interested in life is an indication of mindfulness. Complete engagement in each activity enables openness to opportunities (Langer, 2005). As such, when one is not focused or does not have a focused activity and/or responsibility, one is closed or mindless. Further, Langer states that mindlessness is reliance on old categories or labels and differentiating these as either good or bad. Mindfulness involves an increased awareness of multiple perspectives in life. To be mindful, one must create new categories, become open to new information, and aware of more than one perspective

(Langer, 1989). This creation of new categories is very similar to the de-automatization in Asian approaches to mindfulness. Mindless people are preoccupied with outcome, whereas people who are mindful focused on the process. This process is the here and now that is similar to the description of mindfulness from the Buddhist perspective.

Langer also discusses mindfulness at work. She suggests that burnout is the result of being hindered by old categories and/or old mindsets (Langer, 2000). This affinity to old mindsets, being comfortable with "the way we always did it" is what Langer believes contributes to staff job dissatisfaction and burnout. This can be combated by creating diversity of job tasks. This increases employee flexibility and contributes to mindfulness at work. Mindful employees are oriented to the present. They do not worry about having less than someone else, nor do they worry about change. Change is viewed as an opportunity that generates creativity and new energy (Langer, 2005). Mindfulness is an ongoing process that involves engagement in one's work and/or in the tasks involved in one's work (Langer, 2000).

Problem Statement

The problem identified for this study is burnout and what factors contribute to the alleviation of burnout. Numerous studies have examined burnout among nurses or other health care providers. Most of the research on burnout has identified the antecedents to burnout, the personality attributes that make one more prone to burnout and the various institutional or organizational attributes that contribute to burnout. The body of research has generally been descriptive in nature with concluding suggestions for decreasing burnout among the various groups identified. These suggestions are frequently external or rather other centered as opposed to suggestions for change in the individual

experiencing burnout or consequences of burnout. This study purports to identify factors that may decrease nurse burnout.

Purpose of the Study

The purpose of this study was to purpose a model that includes four concepts, mindfulness, comfort, work satisfaction, and burnout and to determine the relationships among the concepts. Specifically, the study was designed to determine if the variable, mindfulness had any effect on comfort, work satisfaction, and burnout. It was anticipated that this study would add to existing literature addressing enhanced comfort of nurses resulting in higher work satisfaction, and decreased burnout. This study also served as a pilot study for the use of the nurse comfort questionnaire and served to provide valuable information for future research in the area of nurse comfort (Kolcaba, Tilton, & Drouin, 2006; personal communication with Katherine Kolcaba, November, 2006; personal communication with Katherine Kolcaba, July 2007).

Recommendations based on the statistical results of this study will assist nurses in developing internal ways to combat burnout. This empowerment will result in decreased consequences of burnout, including nurse turnover. Similarly, this study may provide valuable information to nurse mangers and hospital administrators (Cohen-Katz & Mansfield, 1997; Cohen-Katz, Capuano, Baker, Deitrick, et al., 2005; Cohen-Katz, Wiley, Capuano, Baker, & Shapiro, 2004; Cohen-Katz et al., 2005; Kolcaba, Tilton, & Drouin, 2006).

The premise of this study was that if nurses were more mindful, they would be better equipped to handle stress in the workplace. According to Jerome Front (2008), mindfulness has gained momentum in the past 15 years through interest in the practice of mindfulness and in the empirical research of mindfulness. He stated that we can not be

of real help to anyone unless we are first aware of ourselves through mindfulness (Front, 2008). The implication is that if nurses are more mindful, patients will benefit and will possibly have greater levels of satisfaction.

Research Model

Based on the literature reviewed for this study, the model presented below and in Figures 1 and 2 was synthesized in steps as described by Walker and Avant (2005). These steps of theory synthesis based on empirical evidence include indentifying focal concepts, literature review to identify relevant factors and relationships, and construct an integrated representation. The purpose of the resultant model was to visually describe or identify supported and unexplored relationships among the four variables, mindfulness, comfort, work satisfaction and burnout (Figure 1) and to propose causal relationships between and among the variables (Figure 2).

The solid lines in Figure 1 depict relationships supported by previous research whereas the dotted lines depict unexplored relationships. These were posited based on literature in mindfulness, comfort, work satisfaction, and burnout research. Accordingly, the concept mindfulness has been shown to affect work satisfaction and burnout (Cohen-Katz, et al, 2004, 2005). As of this writing there are no published studies indicating a relationship between mindfulness and nurse comfort, nor is there evidence of a relationship between nurse comfort and burnout. A relationship between patient comfort and patient satisfaction has been documented (Kolcaba, 1991, 2001; Kolcaba & DiMarco, 2005; Kolcaba & Fox, 1999). However, a relationship between nurse comfort and nurse satisfaction has yet to be established. The proposed relationships between the four concepts are presented in Figure 2.

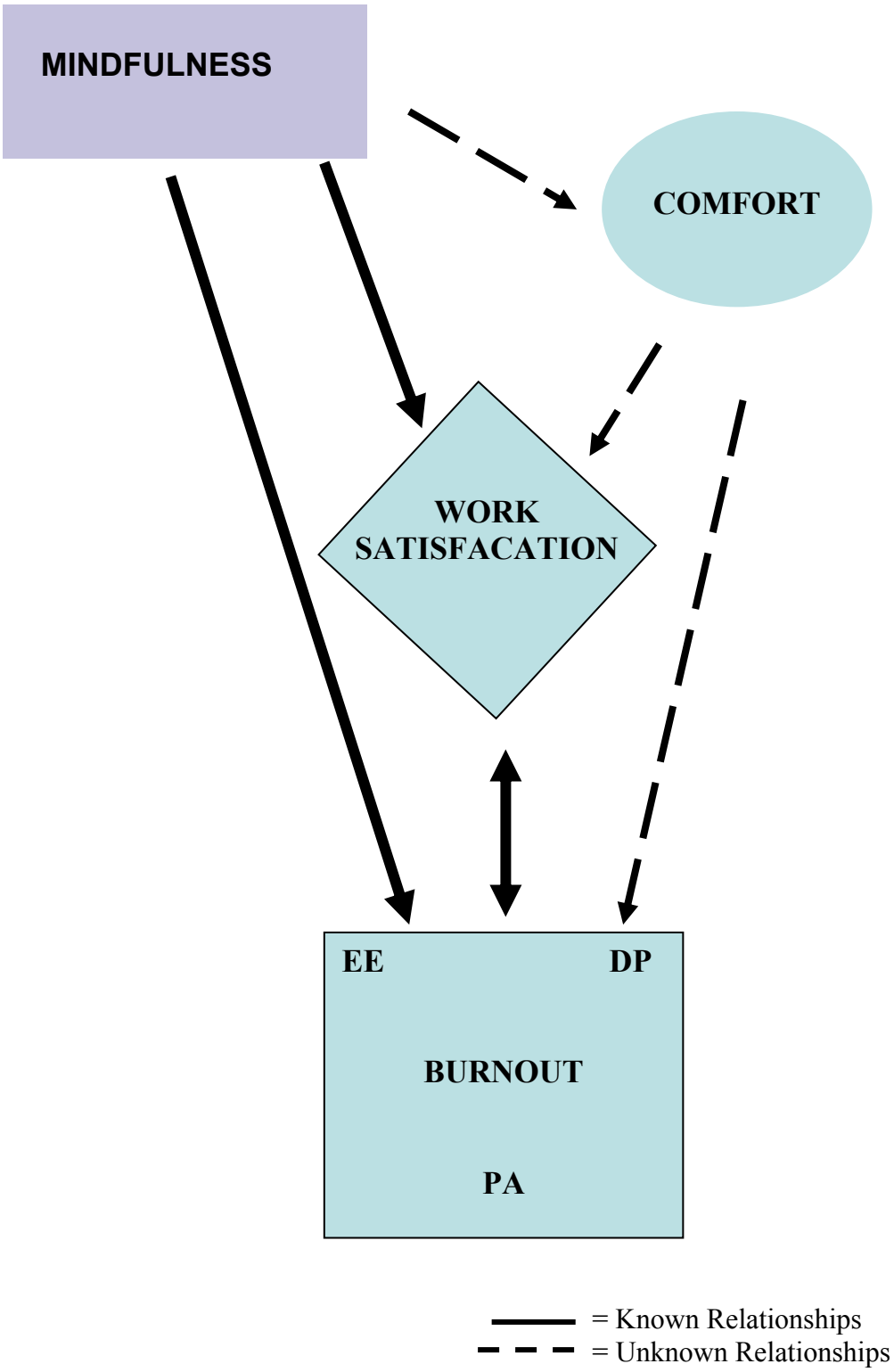

Figure 1. Model representing supported and unexplored relationships between mindfulness, comfort, work satisfaction and burnout.

Path analysis (Blalock, 1964) was used to test the proposed model (see Figure 2). Path analysis is a method for inferring time order relationships from non-experimental data (Shoemaker, Tankard, & Lasorsa, 2004). As a result of path analysis, a researcher is able to determine causal relationships between variables. The use of path analysis for the present study will enable the researcher to determine causation between mindfulness, comfort, work satisfaction, and burnout. Path analysis is also a useful tool for theory construction (Shoemaker et al., 2004). As synthesized, the proposed path begins with mindfulness. Mindfulness was proposed to be predictive of comfort. A more mindful person would have greater comfort. Comfort in turn would predict work satisfaction. Individuals who have greater comfort would also have greater work satisfaction. Finally, the known relationship between work satisfaction and burnout is presented. Work satisfaction predicts burnout; as work satisfaction increases, the propensity for burnout decreases. Following the work of Maslach (1982), burnout is depicted in the model with three aspects. Conceptually, the three aspects of burnout are distinct aspects and were analyzed separately. The burnout aspects include emotional exhaustion (EE), depersonalization (Dp), and personal accomplishment (PA). Mindfulness, comfort, and work satisfaction are proposed to have inverse relationships with EE and Dp, but proportional relationships with personal accomplishment (PA) (see Figure 2).

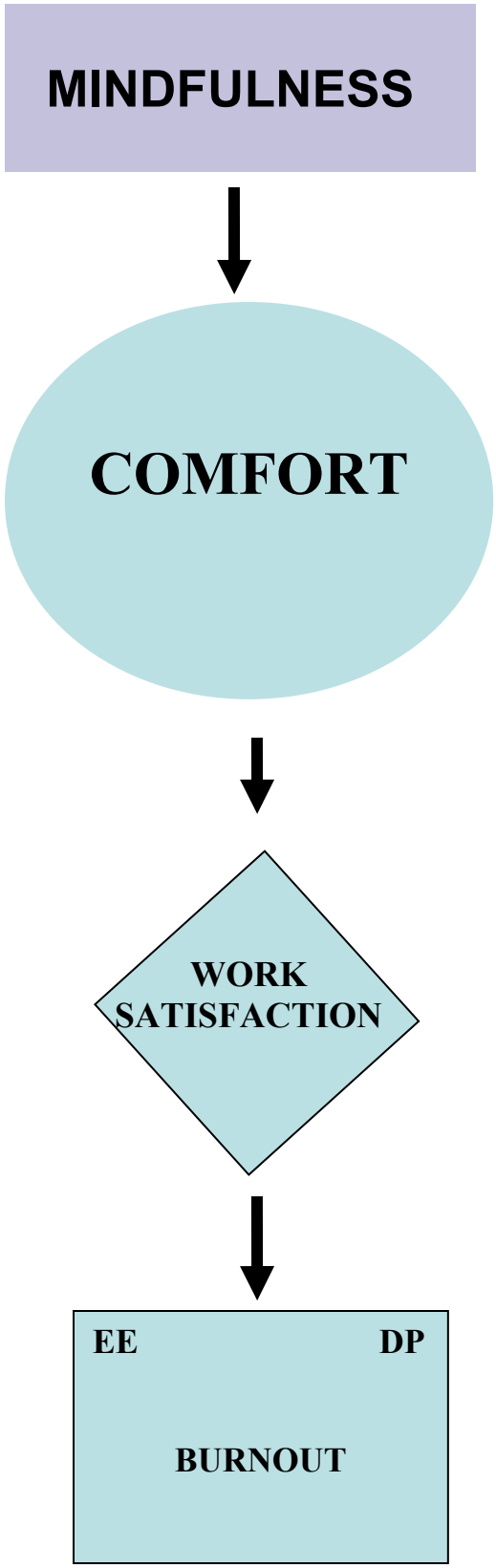

Figure 2. Model depicting proposed linear relationships between mindfulness, comfort, work satisfaction and burnout.

Research Questions/Hypotheses

The research questions developed for this study were as follows:

1. Is there a statistically significant relationship between mindfulness and comfort?
2. Is there a statistically significant relationship between mindfulness and work satisfaction?
3. Is there a statistically significant relationship between mindfulness and burnout?
4. Is there a statistically significant relationship between nurse comfort and burnout?

The hypotheses for this study are as follows:

1. Mindfulness scores will be directly proportional to comfort scores.
2. Mindfulness scores will be directly proportional to work satisfaction scores.
3. Mindfulness scores will be inversely proportional to scores on the Emotional Exhaustion (EE) and the Depersonalization (Dp) subscales of the Maslach Burnout Inventory (MBI).
4. Mindfulness scores will be directly proportional to scores on the Personal Accomplishment (PA) subscale of the MBI.
5. Comfort scores will be inversely proportional to scores on the EE and Dp subscales of the MBI.
6. Comfort scores will be directly proportional to scores on the PA subscale of the MBI.

Conceptual Framework

Kolcaba's theory of comfort (2001) provides the theoretical framework for this study. The theory of comfort is a midrange theory that focuses on patient care and patient comfort. The basic premise of the theory is meeting the needs of the patient; however, Kolcaba has recently utilized the concepts of the comfort theory to investigate nurse comfort. There is no revision of the comfort theory to include nurse comfort at this time. Therefore, the comfort theory will be presented here as it was originally presented. The In stressful health care situations, unmet patient needs are met by the

nurse. Nurse responsibilities should address enhancing patient comfort, thus increasing patient likelihood of engaging in health-seeking behaviors (HSB). Patients who engage in HSB are more prone to experience enhanced comfort and report greater satisfaction with health care (Kolcaba, 2001). This satisfaction is operationalized as patient satisfaction.

The concepts of the theory of comfort are health care needs, comfort measures, intervening variables, comfort, health seeking behaviors (HSB), and institutional integrity. Each concept is defined as follows. Healthcare needs are defined as physical, spiritual, social, or emotional needs for comfort that develop in response to a situation. A comfort measure is any nursing intervention that is designed to address the comfort needs of a patient. An intervening variable is any factor that influences an individual's perception of total comfort such as past experiences, age, gender, attitude, and environment. Kolcaba describes three types of comfort: Relief is the state of having a specific comfort need met; Ease is a state of calm or contentment; and transcendence is the state in which one can rise above problems or pain (Kolcaba, 2003, Watson, 1999). Comfort is the experience of having these three particular needs met.

The comfort theory proposes that when patients are in a state of comfort they engage in health-seeking behaviors (HSB) that can be internal, external, or a peaceful death. Kolcaba (2003) defines institutional integrity as any organization that has qualities of completeness, wholeness, or soundness and is honest and sincere.

The following are the assumptions or underpinnings of the theory of comfort:

1. Human beings have holistic responses to complex stimuli.
2. Comfort is a desirable holistic outcome that is germane to the discipline of nursing.
3. Human beings strive to meet, or to have met, their basic comfort needs; it is an active endeavor.

4. Institutional integrity has a normative and descriptive component that is based on a patient-oriented value system.

Although the theory of comfort was originally developed as a patient comfort theory, Kolcaba has begun research on nurse comfort. She began this process by doing an extensive literature review related to nurses' concerns and desires in their workplaces and also interviewed nurses in various settings within the hospital (Kolcaba, 2001). She discovered that nurses' wants and desires fall into the same life areas as do patient comfort needs, i.e. physical, psychospiritual, sociocultural, and environmental needs, or organizational structure. Examples of the particular nurse comfort needs in each life aspect are as follows:

1. Physical comfort includes a clean safe environment, clean nurses lounge, restful breaks, good coffee. Flexible schedules, good salaries and benefits, increase routinization, available day care, pleasant noise free atmosphere, and enough room to work.
2. Psychospiritual comfort involves an includes support from management, a job that matches the nurse's values, opportunities for advancement, control over practice, feedback on job performance given in a timely manner, positive feedback given, role clarity, opportunities for growth and development, trust in management, and empowerment.
3. Sociocultural comfort includes a supportive environment, open communication between administration and employees, mentorship, nurse-physician collaboration, strong leaders and advocates of the staff, good organizational fit, and continuing education provided.
4. Environmental comfort refers to the organizational culture and includes a strong nursing department, a flat organizational structure, specialty units, decreased paperwork, visionary leaders, and respect for professional goals, as well as openness to new ideas (Kolcaba, 2006).

Psychological concepts are useful at this point in providing a framework for the present study. The present study purports to contribute to comfort theory by testing a model that explores concepts and relationships most closely resembling the nurse comfort concept of psychospiritual comfort. Kolcaba defines this context of comfort as "an internal awareness of self" (2006, p. 539). Mindfulness has been explored in psychological literature as a form of emotional regulation useful in stress management. According to Hofmann and Asmundson (2008) mindfulness based therapy seeks to change not psychological events themselves, but "to change the function of those events and the individual's relationship to them" (p. 12). Thus, the individual level constructs found in the psychological literature enrich Kolcaba's enumeration above of those things included in psychospiritual comfort of nurses. Her own descriptions are of externally focused sources of comfort. The present study will explore internally derived sources of nurse comfort guided by the psychological well-being literature (Herndon, 2008).

The comfort theory purports that when nurses are more comfortable with their situation, they will have greater satisfaction at work and will also perform their work with greater effectiveness. Kolcaba (2003) believes that the comfort of nurses is important in nurse retention absenteeism, morale, and recruitment. From her research, Kolcaba has discovered that nurses feel some level of comfort if they have respect at work. Further, Kolcaba (2003) believes that nursing managerial lack of attention to these issues at work is the root of the nursing shortage and that nurse comfort is essential for improved patient care. The present study adds to Kolcaba's current work by exploring whether a source of comfort that derives not from external conditions or events but from a state of attention the regulates internal emotional response to such conditions.

Nurses, as are patients in the original general comfort theory are more likely to engage in health seeking behaviors if their comfort level is increased. Therefore, the use of the Theory of Comfort is appropriate for this study. If nurses increase their own comfort levels they are less likely to experience dissatisfaction with resultant burnout.

Application of the Theory of Comfort and self-regulation concepts in the work place hold promise for better understanding of the enhancement of individual comfort level.

Theoretical and Operational Definitions

The following theoretical and operational definitions guided the implementation of this study.

Theoretical Definition of Mindfulness

Kabat-Zinn (1994) defined mindfulness as a way of paying attention on purpose in the present moment without judgment. Mindfulness as defined by Langer (1989) is an increased awareness of multiple perspectives in life. A mindful person no longer relies on old categories, such as "good" or "bad". To be mindful, one must create new categories and become open to new information. For this study mindfulness will be defined as an open and intentional focus on the present moment without judgment.

Operational Definition of Mindfulness

For this study, mindfulness was measured based on scores on the Mindfulness-based Self-Efficacy Scale (MSES) by Cayoun and Freestun (2004), the Mindfulness Attention Awareness Scale (MAAS) by Brown and Ryan (2003), and the Langer Mindfulness Scale (LMS) by Langer (1989). The MSES is a 35-item questionnaire comprising seven subscales of self-efficacy as follows: behavior, cognition, interoception, affect, interpersonal, avoidance, and mindfulness. Individuals rate statements on a 5- point Likert scale to the extent that they agree or disagree with the statement. The MAAS is a 15 item self-report inventory that measures mindfulness during everyday activities. The LMS has 21-items that assess four domains associated with mindful thinking; novelty-seeking, engagement, novelty producing, and flexibility.

Theoretical Definition of Comfort

The theoretical definition for comfort as described by Kolcaba (2001) is "the

state of being strengthened when needs for relief, ease, and transcendence are met in four contexts of experience: physical, psychospiritual, sociocultural, and environmental", p. 87.

Operational Definition of Comfort

For this study, comfort was measured by scores on the Nurse Comfort Questionnaire developed by Kolcaba (personal communication with Katherine Kolcaba November, 2006). This is a 48 item Likert scale in which individuals rate statements on a continuum from 1, "strongly disagree" to 6, "strongly agree".

Theoretical Definition of Work Satisfaction

Locke (1976) defined work satisfaction as a "pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences". (p. 1299).

Operational Definition of Work Satisfaction

For this study, scores on part B of the Index of Work Satisfaction second edition by Stamps (1997) was used to measure nursing work satisfaction. Part B of the scale consists of forty-four statements that are related to nurse work satisfaction. A seven point Likert scale records the extent to which one agrees or disagrees with each statement.

Theoretical Definition of Burnout

Burnout is defined as physical and emotional exhaustion that involves a negative attitude toward one's job and/or profession (Freudenberger, 1983).

Operational Definition of Burnout

For this study, burnout was measured by score on the Maslach Burnout Inventory (MBI) by Maslach, Jackson, and Leiter (1996) . The MBI is a 22-item questionnaire that measures the three aspects of burnout. These three are emotional exhaustion (EE), depersonalization (Dp), and personal accomplishment (PA).

Assumptions

This study was based on the following assumptions:

1. Anyone can have mindfulness
2. Nurses want to achieve a level of comfort, greater work satisfaction, and are interested in way to alleviate burnout.
3. Independent variables of mindfulness, nurse comfort, and work satisfaction may not be only effect on dependent variable, burnout.
4. Respondents will answer survey honestly.
5. Respondents can accurately report their subjective responses.
6. The instruments chosen accurately represent the concepts examined.
7. Variables are linearly related and their effects are additive.

Limitations

The factors limiting the study include the following:

1. The research subjects were obtained via convenience sampling consisting of nurses in south Mississippi hospitals thus limiting representations and generalizations.
2. The sample consisted of volunteers and self-reports, which can have response bias.
3. The Nurse Comfort Questionnaire developed by Kolcaba is a new questionnaire that has never been tested.

Significance of the Study

Because of the complexities of today's healthcare environment, from patient care to documentation and clerical duties, including digital storage systems and digital documentation, the work responsibilities of a nurse are challenging and technically complex. The daily work load of the nurse is very demanding. There are also often many changes throughout the day with admissions, discharges, surgical transfers, and direct physician admits. The nurses working in these unstable patient care environments

are required to be able to adjust to the often chaotic nature of the unit while providing care for high acuity patients using more technology than in the past. Stress and burnout are common conditions in health care. This has become increasingly worse as employees attempt to cope with sicker patients and increased complexity in the healthcare system (DiGiacomo & Adamson, 2001). Working under these conditions day after day with increased responsibility and often with fewer nurses could eventually lead to job dissatisfaction with resultant increased nurse turnover and burnout (DiGiacomo & Adamson, 2001).

Finding ways to decrease turnover has become even more important to health care organizations due to the current national nursing shortage. Replacing nurses who leave has become increasingly difficult. It has been estimated that the nursing force will have a 20% deficit by the year 2020 (Nelson, 2002) and more recently, Auerbach, Buerhaus, & Staiger (2007) reported that the shortage of registered nurses will be 340,000 by the year 2020. Still other reports are grimmer with one estimated shortage of 500,000 by 2025 (Buerhaus, Staiger, & Auerbach, 2008) and another estimate of a shortage of one million nurses by the year 2020. A report released by the American Hospital Association in July 2007 indicated that hospitals in the United States currently need approximately 116, 000 to fill current vacant positions for registered nurses (American Hospital Association, www.ahapolicyforum.org/ahapolicyforum/reports, 2007). Not only is there a national shortage of people in the nursing field, but also the current nursing population is aging, further contributing to the future deficit of nursing professionals. Approximately one-third of the nursing population is 50 years of age or older, this includes hospital staff nurses, administrators, and nurse educators. It has been predicted that by the year 2010, 40% of the individuals in the nursing profession will be 50 years of age or older and that 55% of nurses plan to retire between the years 2011 and 2020. Further, the percentage of nurses who are age 30 or less dropped from 9% in 2000 to 8% in 2004 (Buerhaus, Staiger, & Auerbach, 2000; Bernard Hodes Group, 2006; HRSA, 2007).

In the past, nursing shortages have been addressed by increasing enrollment in nursing programs. However, the shortage is already directly affecting entrance into nursing programs due to an insufficient number of nursing faculty. According to American Association of Colleges of Nursing (AACN) report, nursing schools in the United States turned away 42,866 qualified applicants in 2006 and more than 30,000 in 2007 due to insufficient faculty to teach the students (AACN, 2007, 2008). Although there is a reported increase in students entering nursing programs, the number is not sufficient to meet the growing and projected demands for nurses (AACN, 2007). This insufficient supply of nurses coupled with an aging nursing work force will potentially create a nursing shortage of a catastrophic proportion. Therefore, it is imperative that nursing administrators develop ways to recruit and to retain their existing nursing staff.

The department of Health and Human Services reported a deficit of greater than 700 nursing faculty positions in 344 nursing schools that participated in a survey on vacant faculty positions (DHHS, 2008). The DHHS developed the Nurse Faculty Loan Program as an incentive for nurses to complete their graduate degree and enter into nursing education. Thus far, funding for this program has totaled 27,104,000, with another 9, 319,000 projected for fiscal year 2009 (DHHS, 2008). The projected funding for 2009 will support approximately 750 students, which along with students from 2004-2008, will significantly reduce the nursing faculty deficit (DHHS, 2008). The increase in nursing faculty will result in a larger number of nursing students entering and graduating from nursing programs, which DHHS believes will significantly reduce the nursing shortage (DHHS, 2008).

Aside from increasing the production of qualified nurses, the nursing profession still has to deal with the problem of retaining qualified nurses in order to combat the

nursing shortage. It is therefore essential that nursing administrators develop ways to recruit and to retain their existing nursing staff.

Due to the detrimental effect of turnover to nurses, patients, and to the health care organization, nurse administrators must not only become familiar with factors that may lead to burnout, but also be able to initiate remedies for or prevention of burnout. Turnover not only increases costs to the organization, but to the nursing profession as well. In 2005, the results of a poll of 138 health care recruiters found that the average registered nurse turnover rate was 13.9% and that the average cost per hire for registered nurses was $2,821 (Bernard Hodes Group, 2006). In this same report, the group found that 75% of the registered nurses believed that the nursing shortage was creating a direct adverse affect on quality of work life, and subsequently the quality of patient care suffered. Ninety-eight percent of the nurses reported that the nursing shortage resulted in increased nurse stress and increased nurse turnover (93%) (Buerhaus, Donelan, Ulrich, Norman, & Dittus, 2005). Aiken et al. (2002) found that nurses reported higher levels of emotional exhaustion and dissatisfaction with their job when they were given a patient load that was too high for them to provide sufficient care to their patients. This increased patient work load was also found to adversely affect patient care outcomes (DHHS, 2008).

The often chaotic health care environment of today requires expert nurses. It is therefore important to recruit and to retain highly skilled nurses. For this reason, turnover can be very costly to an organization. Not only does turnover cost the organization in replacement costs for orientation of a new employee, there are also non-monetary costs due to the loss of knowledgeable, competent nurses. Due to the current national nursing shortage, an affected organization may suffer greatly from lack of nursing personnel to

satisfy patient demands. This situation could result in nurse burnout, loss of employees, and patient dissatisfaction, all of which will result in financial burden for the organization.

If health care organizations are to be productive, the administration must have implemented ways to prevent and/or alleviate burnout. This can and should begin by transformation of the health care environment to create a workplace that is conducive to nurse and patient comfort. One way to accomplish this is by encouraging employees to seek ways to increase their comfort level while at work. This study proposes mindfulness will have a positive effect on comfort. It is believed that increased comfort will affect work satisfaction and subsequently decrease burnout.

If mindfulness is found to influence comfort, work satisfaction, and burnout, it is plausible to consider that nurses who practice mindfulness meditation will feel more fulfilled in their positions and would not want to leave their jobs. Additionally Praissman (2007) stated that nurse practitioners and other healthcare providers benefit from mindfulness-based meditation as it enhances interactions with patients as well as being an effective stress reducer.

Nurses who have high comfort levels, high work satisfaction, and low burnout would naturally be happier employees. People who are happy with their lives are usually happy with their jobs (Judge & Locke, 1993). Therefore, if mindfulness increases life happiness then it seems plausible that it will increase work satisfaction as well. This would possibly result in a reduction in nurse turnover rates, improved patient satisfaction, and may contribute to overall organizational stability.

This study will also provide valuable information for future research studies involving mindfulness and nurse comfort. First, this study served as a pilot study for the

validation of the as yet un-researched nurse comfort scale. Secondly, although there are well-known problems with other studies utilizing mindfulness due to the lack of validated measures, this study incorporated three mindfulness scales which contributed to the richness of the findings (Mackillop & Anderson, 2007).

Summary

Burnout is identified as a problem in the nursing profession that increases healthcare costs through turnover and may affect the quality of care. The purpose of this study was to determine the relationship between mindfulness, comfort, work satisfaction, and burnout. Specifically, the study was to determine the effects of mindfulness on comfort, work satisfaction, and burnout.

This chapter included a description of the problem, the definition of terms, hypotheses, and research questions. The purpose of the study and the conceptual framework were also presented. Chapter II includes the review of literature, the method of obtaining the literature, and cites literature related to each individual concept in the study to support the hypotheses.

CHAPTER II

REVIEW OF THE LITERATURE

The review of literature was conducted to explore the key variables included in the research: mindfulness, comfort, work satisfaction, and burnout. The review was based on literature cited in the Academic Premier, MEDLINE, and CINAHL computer databases. The following keywords were used for each search: burnout and nurses, work satisfaction and nursing, work satisfaction, work satisfaction surveys, work satisfaction and burnout, work burnout, burnout and mindfulness, burnout surveys, mindfulness and nurses, nursing and work stress, mindfulness, mindfulness based stress reduction, mindfulness surveys, nurse comfort, comfort theory, and comfort survey.

Mindfulness

Mindfulness has gained momentum in the past ten years as an accepted and empirically proven method of stress reduction and overall general increase in well-being within psychological, educational, medical, and scientific communities. In fact, one author reports there is an "explosion of interest in learning about the implications of mindfulness in clinical work" (Front, 2008, p. 30). Over 7,000 people in psychotherapy and health care have participated in mindfulness training and numerous articles and/or research studies have been published, the majority over the past ten years. Mindfulness does not appear to be a fad, but has demonstrated to be a clinically proven way to decrease stress and induce positive effects (Front, 2008).

As previously discussed, mindfulness has many dimensions and as such has been described in many different ways. Primarily attached to psychological research, mindfulness is defined in relation to well-being, self-interest, positive out looks, calmness, and serenity; essentially physical, emotional, social, and spiritual health. It is a balance between internal and external awareness (Herndon, 2008). In mindfulness training, one must learn to focus on the internal voice of their body, mind, and spirit without judgment and without distraction.

Dimidjian & Linehan (2003) believe that mindfulness is multifaceted and therefore identified four mindfulness skills that can be practiced within mindfulness training. These are as follows: Mindful observation, acting with awareness, accepting without judgment, and mindful description, all which form the essence of Kabat-Zinn's definition, to observe without judgment.

Being mindful means to observe what is being passed through the consciousness without forming attachments and judgments to the visual images and the thought processes. A mindful person genuinely listens to others in a non-judgmental manner, with attention to the spoken word of the other. Images of past experiences and/or future adventures do not cloud the thoughts of a mindful individual. Therefore, the individual is present, in the moment.

The practice of mindfulness is found in religious, as well as, secular practices and it is also prescribed in cognitive/ behavioral therapy (Hirst, 2003). Mindfulness meditation is the practice of being mindful. It is a conscious individual discipline of intentional self regulation and is also known as *vipassana* or insight meditation (Ott, 2004). It is a way of being that is to be practiced formally or informally on a daily basis and a holistic, self regulatory approach to health. Gazella (2005) describes mindfulness-based meditation as a process of training the mind to function non-judgmentally, minute-to-minute. In mindfulness-based meditation (MBM), the mind is considered separate from the brain. The brain can be measured, visualized, and touched. The mind is formless and has no boundaries as does the brain (Gyatso, 2001). The mind often wanders and worries. If someone is worried about a future event, the person may have anxious thoughts. With MBM the mind lets the anxious thought pass but does not judge the thought as negative or positive. After the thought has past, the mind again focuses on the present because it realizes that it is not the future. It is the present and therefore, it does not have to worry (Gazella, 2005).

Mindfulness meditation as taught by Kabat-Zinn, is called Mindfulness-Based Stress Reduction (MBSR). MBSR was developed by Kabat-Zinn in 1979 and is comprised of an eight to ten week course on mindfulness training for a group of no more than 30 participants. The group is instructed to meet weekly for two to two and half hours to learn meditation techniques and mindfulness skills. A trained practitioner guides the group in the weekly meditation exercises which include sitting meditation, body scanning, and hatha yoga. The later part of the group session is reserved for reflection and/or introspection. Members are free to discuss various stressors during the week as well as progress on homework assignments. Group members are expected to practice mindfulness meditation, with the help of a relaxation tape or CD, for at least 45 minutes per day when not in class. The group is also asked to keep a journal to record process or regression. At or about the sixth week of training, the group participates in a day-long seminar with intensive meditation training (Kabat-Zinn, 2003).

Research in the area of mindfulness originally dealt with physical ailments. The initial use of mindfulness in the physical realm was to decrease or prevent chronic pain (Baer, 2003). It has also been used for treatment of many other physical and/or emotional maladies. In fact, mindfulness has been linked to increased satisfaction with life, decreased stress levels, relief of or decrease in chronic pain, anxiety, depression, substance abuse, and relief of pain from cancer. Specifically studies have shown that mindfulness often serves as an adjunct to traditional care (Kabat-Zinn et al.., 1992; Leigh, Bowen, & Marlatt, 2005, Kabat-Zinn, 1990; Roemer & Oesillo, 2002; Segal, et al. 2002, Witkiewitz, et al., 2005). Based on the evidence from the studies cited above, the practice of mindfulness may also prove beneficial to nurses who are suffering from burnout.

The literature review revealed a resurgence of studies exploring burnout. Subsequently, there has been an increased interest in various interventions to ameliorate burnout, one being mindfulness meditation and practice. Although there have been

studies examining burnout and mindfulness among nursing students, nursing faculty, as well as others employed in "helping professions", there has only been one such study involving practicing nurses.

Cohen-Katz (2004) discussed the benefits of mindfulness along with a review of some of the findings in the area of mindfulness research. She stated that mindfulness-based stress reduction is similar to the core values of family systems medicine or any systems-centered health care, with the ultimate goal of "teaching patients skills that they can apply proactively in their lives".

According to Cohen-Katz, one of the major problems with mindfulness research is that the studies rarely utilize randomized controlled designs. Also, the lack of a homogeneous population for each study has possibly impaired the research findings. Further, she recommended that studies utilize an underlying theoretical model to help determine the effectiveness of the mindfulness-based stress reduction intervention.

Cohen-Katz, et al. (2004, 2005) conducted the first known study including practicing nurses and the effects of mindfulness-based stress reduction on the nurses' stress and level of burnout. The study was presented for scholarly publication in three parts. Part I introduced the problem of nurse stress and burnout and provided a review of the literature on mindfulness and burnout. Part II included a description of the instruments used in the study, the sample population, and the quantitative results of the study. The study was conducted in Allentown, PA with nurses and other healthcare professionals from a local hospital. The sample consisted of 27 individuals who volunteered to participate in the program. All participants were female, 96% Caucasian and 90% of them were nurses, with the remaining 10% from departments such as social services, respiratory therapy, and pastoral care. The volunteers were randomly assigned to a wait-list control group (n= 13) and a treatment group (n = 14). The intervention consisted of the mindfulness based stress reduction (MBSR) program patterned after Kabat-Zinn's program, which is an 8 weeklong MBSR group. All participants were

measured on burnout, psychological distress, and mindful awareness prior to intervention, immediately after intervention, and 3-months following intervention of the treatment group.

Results of the study showed no significant differences in the wait-list control group and the treatment group in pre-intervention mindful awareness; however, there were significant within group differences both pre and post receiving the intervention. Similarly, there were no pre-intervention differences between groups on the burnout inventory, but significant differences were found in the emotional exhaustion and personal accomplishment scales of the burnout inventory post-intervention. The authors stated that the depersonalization scores indicated a trend toward significance between the groups after intervention. The final measure was the brief symptom inventory, which measures psychological distress. There was a non-significant decrease in distress levels following intervention in the treatment group.

The researchers also supplied participants with evaluation forms and conducted interviews. They reported that overall, the participants were very pleased with the program and found the program to be beneficial to them in their practice and in their personal lives. The authors indicated that since this study was a pilot study with a very small sample size, more studies should be conducted to determine if MBSR does positively affect nurses in practice. Suggestions for further study included investigating whether nurses undergoing MBSR results in greater patient satisfaction, improved patient outcomes, increased staff satisfaction, and improved family relationships.

An article in the Harvard Women's Health Watch (Schatz, 2004) was devoted to a discussion of the benefits of mindfulness. The following is the definition of mindfulness given in the above mentioned issue:

> The ability to pay attention to what you're experiencing from moment to moment without drifting into thoughts of the past or concerns about the future, or getting caught up in opinions about what is going on. (p. 2).

Schatz discussed the growing interest in mindfulness that is emerging in medical as well as non-medical settings and several research studies on mindfulness were reviewed. One such study, conducted at the University of Wisconsin, examined the long-term effects of mindfulness on brains and immune function. Brain wave recordings after mindfulness training showed a greater pattern of activity in the left prefrontal cortex than in the right; indicating increased happiness and optimism. Mindfulness has also been shown to be beneficial in controlling psychiatric symptoms or syndromes. For example, binge eating, obsessive-compulsive disorders, and depression have been ameliorated after mindfulness training (Schatz, 2004).

Mindfulness involves attention to the present without judgment about whether the present is positive or negative and a "mindful" person is one who pays attention without judging. Because this ability to remain in the moment has proven to increase individual satisfaction, it would therefore seem plausible that one who practices mindfulness would also be one who has learned to be comfortable in any situation. Consequently, this mindful individual has possibly developed a certain amount of "comfort" in his/her life.

Mindfulness is the ability to pay attention in a particular way without judgment to an experience from moment to moment (Kabat-Zinn, 1994). Kabat-Zinn, 1990, has also described it as being a process of bringing a certain quality of attention to moment-by-moment experience. Bishop et al. (2004) reviewed the literature to date on mindfulness and mindfulness based stress reduction with the expectation of developing a testable operational definition of mindfulness as well as the development of an instrument to measure mindfulness. The authors proposed that mindfulness has two components. The first component is based on the self-regulation of attention. This attention is maintained on the present and present experiences. The second component is becoming more open and curious. Thus, mindfulness is similar to a skill that one learns and improves with practice (Bishop et al., 2004).

With an interest in self regulation theories, Shapiro and Schwartz (2000) explored intentional systemic mindfulness, which is a model that introduces intention into self regulation, theory, and practice. Based on their research, Shapiro and Schwartz identified twelve qualities of mindfulness as follows: nonstriving, nonjudging, acceptance, patience, trust, openness, letting go, gratitude, gentleness, generosity, empathy, and loving kindness. Suggestions for research in this area included a comparison of the measurement of psychological and physiological effects of diaphragmatic breathing taught in an intentional systemic mindfulness framework with those effects taught using traditional diaphragmatic breathing techniques.

Chang et al. (2004) examined the effects of MBSR on stress, mindfulness self-efficacy, and positive states of mind. The participants in the study (n = 28) were recruited from a continuing education course at a private university in the San Francisco Bay area. The mean age was 46.52 with a range from 21-74 years of age. The majority of the sample, 93%, was Caucasian.

Participants in the study attended eight weekly 150-minute group sessions as well as a day retreat in which meditation, mindful movement exercises, yoga and group discussion was conducted. Participants were also given an audiotape to facilitate at home practice and were instructed to practice for 45 minutes, six days a week. Participants were pre and post-tested on a pain rating scale, the positive states of mind scale, the perceived stress scale, and a mindfulness self-efficacy scale. The researchers reported that following intervention, the participants showed a significant reduction in perceived stress scores, $F(1,27) = 7.29$, $p = 0.012$; meditation self-efficacy scores, $F(1,25) = 14.32$, $p = 0.001$; and positive states of mind scores, $F(1,27) = 17.98$, $p = 0.001$. There were no significant differences in levels of pain. The authors pointed out that this was contradictory to previous studies related to the effects of MBSR on pain.

The researchers stated that the findings of the study should be considered preliminary only. They pointed out limitations; one being that there was no control group

and therefore, no way of knowing if the changes were actually as a result of the intervention or a result of some other occurrence. Another limitation was that due to the small sample size, generalizability cannot be accomplished. However, the study does indicate that practicing mindful meditation seems to improve overall well-being and decreases stress.

In a four year qualitative study, Schure, Christopher, & Christopher (2008) evaluated the influence of teaching hatha yoga, meditation, and qigong to students in a graduate counseling program. The course of instruction over fifteen weeks involved a mindfulness-based stress reduction program. The results indicated that the course appeared to have a positive effect on the spiritual, emotional, mental, and interpersonal health of the students and on enhancing their counseling skills and therapeutic techniques. As a result, most of the students indicated that they were going to integrate mindfulness practices into their professional careers.

Blackledge (2007) conducted research on rational frame theory (RFT) and Acceptance and commitment therapy (ACT). He examined and discussed the various aspects of RFT and ACT based various mindfulness psychotherapeutic regimens. The characteristics of defusion and its effects in relation to promoting more focused empirical exploration are discussed.

A study conducted by Dekeyser, Raes, Leijssen, Leysen, & Dewulf (2008) dealt with the multi-dimensional nature of mindfulness with regard to interpersonal feelings and performance. The participants were Dutch speaking psychology students (n= 113) and parents (n = 246). Each participant received a self-report measure of mindfulness, the Kentucky Inventory of Mindfulness Skills (KIMS) by Baer, Smith, Hopkins, Krietemeyer, & Toney (2006). This inventory includes four factors believed to be associated with mindfulness. These factors are Observe, Describe, and Act with Awareness. All four elements of mindfulness were positively associated with expressing oneself in various social situations. Mindfulness observation was associated with more

engagement in empathy. Whereas mindful description, acing with awareness, and non-judgment acceptance were associated with better identification and description of feeling, more body satisfaction, less social anxiety , and less distress.

Mindfulness has also been postulated to have an effect on cardiovascular symptoms. In a study of women with documented histories of heart disease, McComb, Tacon, Randolph, & Caldera (2004) looked at the effects of mindfulness on stress hormones, physical functioning, and sub maximal exercise responses. The eighteen women in this study were divided into two groups, a control group (n = 9) and a treatment group, (n = 9). The average age of the women was 60 years of age. The participants were asked to refrain from smoking and caffeine prior to the initial meeting. Resting heart rate and blood pressure were obtained from all participants during the meeting. They were also asked to schedule pre and post intervention lab work and to refrain from smoking, caffeine, and food at least 12 hours prior to their lab work.

Participants in the treatment group attended 2 hour-long meetings once per week for eight weeks. Due to time and schedule restraints, the daylong retreat, commonly included in MBSR was not a part of this study. The researchers found that participants in the treatment group had a decrease in the resting levels of cortisol, but this decrease was not a significant change compared to the control group. There were also no significant differences in sub maximal exercise responses. The researchers reported significant differences between groups for breathing frequency, $F(2,32) = 10.42$, $p < .01$, $f = 0.9$. The authors pointed out that since this study was the first published study using Kabat-Zinn's Mindfulness-Based Stress Reduction Program for females with heart disease, further research should be conducted in this area to determine significance of the intervention for this group of individuals.

Robinson, Matthews, & Witek-Janusek (2003) investigated the effects of MBSR on stress, mood, health, endocrine function, and immunity in individuals with HIV. The sample was a non-randomized sample of individuals who volunteered for the study. The

intervention group had a total of 24 participants and the control had 10 participants. The majority of the sample was Caucasian males. The mean age was 43 years of age for the intervention group and 36 years of age for the control group.

The researchers reported that natural killer cell activity increased significantly in the intervention group compared to the control group post-intervention. No other significant changes were noted, however, there was a non-significant decrease in mood disturbance as well as a non-significant decrease in cortical in the intervention group compared to the control group. The researchers noted that although the indication that MBSR positively affects the immune response in HIV patients is promising, further studies are needed with larger randomized samples to determine the validity of the findings. The need for a larger sample size was further corroborated by Shannahoff-Khalsa (2003).

Lazar et al. (2005) examined the use of meditation and its effect on cortical thickness. The hypothesis tested was that between group differences would be found in brain regions associated with attention and sensory processing, indicating evidence of cortical plasticity. They recruited individuals who practiced meditation and those with no experience to participate in the study. A total of 35 individuals participated in the study. Twenty individuals, who practiced meditation, were in the treatment group and 15 individuals with no meditation experience were in the control group.

The researchers used magnetic resonance imaging to assess cortical thickness. They reported that meditation was associated with increased thickness. Between group pre-frontal cortical differences were greater in older subjects than younger. This possibly indicates that meditation slows age-related thinning of the frontal cortex. The authors concluded that meditation may be associated with structural changes in the brain and that it may also affect age-related deficits in brain functioning.

Beddoe and Murphy (2004) investigated mindfulness and its effect on stress and empathy in nursing students. The participants were a convenience sample of 16 students

in a baccalaureate nursing program. All the participants were women between the ages of 20 and 39. The average age was 25 years of age. The majority were Caucasian (26%), followed by Filipino, Asian, and Hispanic (all 13%), and American Indian (4%). All completed a pre-test and after attending and participating in an eight-week mindfulness based stress reduction (MBSR) program, completed a post-test. In addition to the MBSR program, the participants in this study were asked to complete a demographic questionnaire, the Interpersonal Reactivity Index, Derogatis Stress Profile, and were asked to continue meditation throughout the week at home as well as journaling and answering various questions regarding the program's effectiveness.

The authors reported that the results indicated that participation in the program significantly reduced anxiety, increased self-confidence, decreased stress, and decreased the propensity to be affected by others' negative emotions. Suggestions for further research included integrating a mindfulness program into the nursing curricula and practicing mindfulness throughout matriculation. The authors also reported that assessing and measuring students' stress and empathy levels upon graduation from the nursing program would provide valuable longitudinal data about the role of mindfulness in stress resilience, examination-taking habits, and job retention.

Because meditation has been used to help individuals relax, Kabat-Zinn et al. (1992) designed a study to investigate the effectiveness of mindfulness on a group of patients who were suffering from anxiety disorders. Subjects for the study were obtained from patients who were referred to a stress reduction and relaxation program. Each potential participant was asked to complete an instrument pertaining to symptoms of anxiety. Those who scored in the 70^{th} percentile and above and reported more than 10 anxiety-related symptoms out of a possible 37 symptoms selected for the final screening process. The final screening consisted of interviews and evaluations by psychologists. Individuals who had a primary diagnosis other than anxiety were excluded from the study. Other exclusions included any disorder with psychotic symptoms, endocrine

disorders, or current alcohol or drug abuse. After the screening process, a total of 22 individuals were selected to participate in the study. Ten of these individuals had panic disorders with agoraphobia, four had panic disorders without agoraphobia, eight had a primary diagnosis of generalized anxiety disorder, seventeen had more than one psychiatric diagnosis, fourteen had other anxiety disorders, and eight had diagnoses of major depressive episode at the time. The average age of the subjects was 38 years of age and the sample majority were women (17) and married (18).

The subjects participated in the eight week mindfulness based stress reduction program, including the day long retreat and agreed to complete questionnaires related to anxiety, depression, and phobias. The intervention also included formal sessions with a therapist to ascertain anxiety and depression levels.

The authors reported that analyses revealed significant decrease in anxiety and depression for 20 of the subjects and remained at a three-month follow-up evaluation. Although not statistically significant, the number of individuals experiencing panic symptoms was reduced as a result of the intervention. Also, a three year follow up of the participants indicated that the intervention had remained effective, as evidenced by similar findings of participant's anxiety and depression levels.

Tacon, McComb, Caldera, & Randolph (2003) investigated the effectiveness of MBSR on decreasing anxiety in women with heart disease. Their sample was drawn from medical settings in a southwestern community. The authors did not report the means of sampling but did report that sampling criteria included documented cardiovascular disease as well as approval by each participant's cardiologist to participate in the study. The participants were then placed in either the control group or the treatment group, yielding an even 10/10 ratio. One participant from each group dropped out prior to the beginning of the intervention which resulted in a final number of 9/9 participants per group. The majority of the participants were upper class Caucasian with a mean age of 60.5, 60% of whom held a BS degree or higher. Individuals in the

treatment group agree to participate in MBSR for two hours each week for a total of eight weeks. The MBSR included the body scan, sitting meditation, and Hatha Yoga. Post-test results revealed a significant improvement in anxiety scores and in expressing negative emotions. The researchers reported no significant differences in health locus of control; however, they indicated that the results substantiate the use of MBSR as a complementary therapy to traditional health care.

Viewed as a "process of regulating attention" and as a "process of gaining insight into the nature of one's mind" (Safran & Segal, 1990), mindfulness could be beneficial in behavioral therapy. To substantiate this idea, Lau & McMain (2005) and Cayoun (2004) reviewed the integration of mindfulness in psychological treatment. Two modalities, in particular, mindfulness-based cognitive therapy (Cayoun, 2004), and dialectical behavior therapy were examined. For the purposes of this research, only the former will be discussed at this juncture.

Mindfulness based cognitive therapy (MBCT) assumes that by increasing one's awareness of negative emotions and thoughts, one can decrease the negative feelings and ruminations often associated with these thoughts. Therefore the emphasis is on changing the awareness of thoughts as opposed to changing the thought itself. Traditional therapy often requires that individuals recognize the irrationality of their thoughts in order to become "well". Contrary to traditional therapy, MBCT does not label the thought good or bad. The thought is left as is and the individual is asked to concentrate on the thought itself (Cayoun, 2004; Lau & McMain, 2005).

The integration of the eastern meditation and western therapy begins with on instructor teaching MBCT skills 2-3 weekly for 8 weeks. Participants are guided through various meditation techniques during each session and are also asked to participate in daily at home mediation to augment the weekly sessions. The instructors also demonstrate mindfulness by being present in the sessions by paying attention to what is occurring with each group member during each group session. The authors stated that

most MBCT instructors meditate themselves to help prepare them for each weekly session. The authors also pointed out that there is empirical support for the efficacy of integrating mindfulness meditation with cognitive therapy to assist in reducing the risk of depressive relapse and/or recurrence of depression (Lau & McMain, 2005).

Mindfulness practice has also been postulated to have a positive effect on immune and brain function. Davidson et al. (2003) tested this idea by measuring brain activity before and after an eight-week long mindfulness program and at a four-week follow-up as well as measuring antibodies present after administering the influenza vaccine. Forty-eight right-handed individuals who worked in biotechnology in Madison, Wisconsin were recruited for the study. A total of 41 individuals agreed to participate. Prior to randomization into groups, the authors measured and recorded each subject's brain activity by an EEG and EOG. This was repeated immediately after the intervention and four months after the intervention. Also, each person was given the influenza vaccine. Blood was obtained from each subject at 3 to 5 weeks post vaccination and again at 8 to 9 weeks post vaccination to measure the response to the vaccination via antibody titers. The subjects were also administered an anxiety inventory pre- and post-intervention. Individuals were randomly assigned to either the wait-list control group or the treatment group. The wait-list control group received the intervention after the initial phase of the study was completed. Twenty-five were in the treatment group and sixteen were in the wait-list control group.

Upon completion of the MBSR program, both groups were assessed for brain changes and changes in blood work. The researchers reported that those participants in the treatment group had increased antibody titers after the flu vaccine when compared with the control group. The treatment group also had greater brain scan changes than those of the control group. These changes were greater activity in left sided anterior activation and positive affect. Therefore, the authors concluded that the findings support

the use of MBSR for the reduction of stress and for positive changes in brain and immune function.

Twenty-one individuals with chronic pain were examined in a longitudinal study conducted by Majumdar, Grossman, Dietyz-Waschkowski, Kersig, & Walach (2002) to determine if an eight week long MBST program would have any effect on symptoms of pain in a German sample. The individuals who participated in the study were obtained by referrals from physicians and through local advertisements for the program. The sample consisted of seventeen women and four men all of whom were between the ages of twenty-two and sixty-two. The participants were asked to complete the eight-week MBSR course as well as participate in personal interviews with the researchers and complete a series of questionnaires. The questionnaires assessed changes in overall psychological distress, emotional well being, general physical complaints, a sense of coherence, and life satisfaction.

Participants in both groups completed these questionnaires prior to the MBSR intervention, just after the MBSR, and at a three month follow up after completion of the intervention.

Majumdar et al. (2002) reported that there was an overall reduction of psychological distress and symptoms of pain in the treatment sample following intervention and at the three month follow up. Quality of life and general well-being increased after the intervention and remained consistent at the three month follow up. The authors concluded that mindfulness is a cost-effective way to decrease stress and increase well being and quality of life in a German sample.

Another study examining stress, physical symptoms from stress, and well being was conducted by Williams, Kolar, Reger, & Pearson (2001). The researchers for this study were examining individuals from a West Virginia town. The participants were recruited via advertisement on television, the newspaper, and radio asking for volunteers from the study. Exclusion from the study was those individuals with a known medical or

psychiatric illness. A total of 103 individuals participated in the study. Forty-four were in the treatment group and 31 were in the control group. Participants were asked to attend the MBSR program for eight weeks as well as agree to daily meditation practice on the days in between their weekly session. Other measures were the daily stress inventory, which assesses daily hassles; the revised Hopkins symptom checklist, which measures medical symptoms; and a follow-up questionnaire that measured adherence to the program. Participants were also given a pre-test and post-test as well as a test after three months post intervention. The authors reported no significant differences among groups in the baseline (pretest) measures; however, there was a significant reduction of daily hassles, psychological distress, and medical symptoms. These results were also maintained at the three month follow-up. The authors concluded that self-selected individuals in a community in West Virginia can improve their mental and physical well-being by use of a MBSR program and by daily adherence to meditation.

Baer (2003) conducted an extensive review of the literature related to mindfulness research. She stated that the studies reviewed indicated that mindfulness did significantly improvement various dependent variables; specifically studies indicated significant improvements in chronic pain. However, she stated that the studies were not without flaws. Some cited were small sample size, no control group, and lack of evaluation of the procedures and the therapists who delivered the mindfulness treatments. She suggested that further mindfulness research should include control groups with sample sizes of at least 33 individuals per sample.

Grossman, Niemann, Schmidt, & Walach (2004) conducted a meta-analysis of MBSR studies to determine if evidence of improved health is present in the studies. Studies included in their analysis were those obtained before December, 2001 and studies published before December, 2002. Other requirements for inclusion were an abstract in English, an operational definition of mindfulness as “moment to moment awareness cultivated with a nonjudgmental attitude”, the use of formal meditation techniques taught

to participants, the use of the MBSR program as outlined by Kabat-Zinn (1990), daily meditation practice on the part of the participants, and a quantitative outcome measure.

The authors identified 64 studies on MBSR during the time frame indicated, but only 20 of them met the inclusion criteria. Ten of the 20 studies included were controlled studies and five of these involved studies with patients. The authors further noted that only three of the ten controlled studies were peer-reviewed published papers. The meta-analysis by the authors revealed empirical evidence that MBSR may help individuals with clinical and with non-clinical problems.

Coelho, Canter, & Ernst (2007) conducted a review of the literature on mindfulness-based cognitive therapy (MBCT). Specifically they were interested in the effects of MBCT on recurrent depression. Of the relevant studies they reviewed, they found that MBCT had an additive effect to the usual treatment regimen for the patients. Similarly, Hayes (2002) reported that mindfulness decreases the incidence of negative thought and worry.

Hofmann and Asmundson (2008) examined two techniques, cognitive behavioral therarpy (CBT) and acceptance and commitment therapy (ACT) to determine the differences between the two approaches and to highlight some perceived misconceptions. The authors stated that mindfulness approaches are very similar to ACT, but are also based on the CBT model. Because of those similarities, for the purpose of their research, they examined ACT (to include mindfulness) and CBT only. One difference that was known to them was that CBT has well-defined steps whereas ACT is more ambiguous without exact steps. After reviewing studies, they determined that there is evidence to suggest that ACT and CBT are compatible but that several researchers would argue that ACT (including mindfulness based therapy) is part of a new or "third wave" of behavior therapy. They suggested that further research be conducted to determine if the behavioral therapies work through similar or different mechanisms.

Tan (2007) presented the results of studies on the use of prayer in cognitive behavioral therapy (CBT) as well as a literature review related to mindfulness and CBT. He states that CBT now includes mindfulness-based cognitive therapy (MBCT) and that mindfulness and acceptance based cognitive behavioral therapy are very similar, if fact they are often written as one behavioral therapy. Based on his research, Tan concluded that prayer and scripture do augment CBT and can be ethically and effectively used in CBT.

Roth & Stanley (2002) conducted a study to determine if completion of a MBSR program would result in an increase in healthcare utilization in an inner city in Connecticut. Participants for the study were obtained by chart review of patients who attended the community health center. The chart review included healthcare utilization patterns for a total of 73 patients. Fifty-four individuals completed the program in Spanish and the remaining 19, in English. All individuals completed the eight week long MBSR program. Outcome measures were comparing the number of clinic visits prior to intervention with the amount of clinic visits post-intervention. The diagnoses pre and post intervention were also compared. The authors reported that there was a significant decrease in the number of chronic care complaints and visits from pre intervention to post intervention. They concluded that a MBSR program may be beneficial in containing healthcare costs, in decreasing the number of patient visits, and in decreasing the severity of complaints presented at the community health center in Connecticut.

Chang et al. (2004) examined the effects of a MBSR program on pain, stress, positive states of mind, and self-efficacy in a group of participants from the San Francisco Bay area who were enrolled in a continuing education course at a private university. The definition of mindfulness used for their study was that of Brown and Ryan (2003), “The state of being attentive to and aware of what is taking place in the present” (Chang et al., 2004, p. 143). Pain measures were obtained using a Likert-type pain rating scale. The variable, positive states of mind, was measured by use of the

PSOM inventory which is a six item Likert-type questionnaire design to assess states of mind during the week prior to taking the inventory. Self-efficacy was measured by use of the Mindfulness Self-Efficacy (MSE) measure, which is a 15-item assessment used to determine if an individual can maintain a non-judgmental awareness in differing situations. There were a total of forty-three participants, 28 of whom completed the post-intervention assessments. The mean age of the participants was 46 years of age and 93% were Caucasian. All participants were tested prior to the MBSR intervention, which was the typical 8-week weekly sessions, a full-day retreat, and daily at home mindfulness practice.

The researchers reported that post intervention scores revealed a significant decrease in stress, ($F(1,27) = 7.29$, $p = 0.012$; a significant increase in meditation self-efficacy scores ($F(1, 25) = 14.32$, $p = 0.001$), and a significant increase in positive states of mind ($F(1,27) = 17.98$, $p = 0.001$). They reported no significant changes in pain level and suffering between, before, or after the intervention. Further, there was a non-significant increase in levels of pain post-intervention.

The authors concluded that unlike previous work related to pain control and MBSR; this study did not indicate a reduction in pain and suffering after the intervention. They stated that a possible reason for this discrepancy was the lack of a control group in their study and they recommended further research to this end. However, they also stated that the results do indicate that MBSR may have helped some individuals reduce stress and have more positive states of mind.

McComb et al. (2004) conducted a pilot study utilizing the mindfulness-based stress reduction program for 2 hours a week for 8 weeks to determine the effects of mindfulness on stress hormones, physical function, and exercise responses. Eligible participants for the study were women with a documented history of heart disease. The individuals were randomly selected to participate in either the treatment or the control group. The total sample size was 18, with 9 individuals in each group. Each participant

was tested on state of anxiety prior to the intervention and immediately following the intervention. Pre and post test hormonal measures were also obtained. Sub maximal exercise responses were obtained in a laboratory setting, after the eight-week intervention.

The authors reported no significant differences between groups in resting levels of stress hormones or in physical functioning. However, there was a non-significant decrease in resting levels of cortisol in the intervention group. The control group had no change in cortisol, post-intervention. There were significant differences between groups in ventilation ($F(2,32) = 7.65$, $p < .01$, $f = 0.8$) and for breathing frequency ($F(2,32) = 10.42$, $p < .01$, $f = 0.9$). According to the authors, the results indicate a trend toward change in the intervention group. Further studies with a larger sample size were recommended to test these differences.

Baer et al. (2006) examined and correlated five self report questionnaires testing for mindfulness. They recruited undergraduate psychology students to complete questionnaires for course credit. A total of 613 students participated in the study. The majority were female (70%) and Caucasian (90%). Participants completed five mindfulness scales; the Mindfulness Attention Scale (MAAS), the Freiburg Mindfulness Inventory (FMI), the Kentucky Inventory of Mindfulness Skills (KIMS), the Cognitive and Affective Mindfulness Scale (CAMS), and the Mindfulness Questionnaire (MQ). They also completed several instruments designed to measure various mood states. The authors found that the mindfulness questionnaires were assessing five distinct facets of mindfulness and that conceptualization of mindfulness as multifaceted will be helpful to understand its relationship with other variables.

Shapiro, Brown, & Biegel (2007) conducted a study to determine the effects of mindfulness on therapists. The participants were recruited from students enrolled in master's level counseling psychology in a private Jesuit university. Students did not receive credit for participation nor did they receive financial remuneration. Participation

was strictly voluntary. There were a total of 22 students in the intervention group and 54 students in two control groups. The intervention group completed a course in mindfulness based stress reduction. All participants were measured on mindfulness, rumination, stress, self compassion, and state/trait anxiety. Results of the study indicated that subjects in the intervention group had significantly less stress, rumination, negative affect, and state/trait anxiety as well as increased positive affect, mindfulness, and self compassion.

Herndon (2007) recruited two groups of students from an introductory psychology class at California State University, East Bay to participate in mindfulness studies. Study one was a correlational study looking at the three variables mindfulness, internal/external encoding and social desirability. Participants (N = 110) completed four scales, the Mindfulness Attention Awareness Scale (MAAS), the internal and external encoding (I/E) scale, the social desirability scale, and a self report memory measure on a computer in random order. High scores on the MAAS correlated positively with external encoding and with social desirability ($r = 0.36$, $p < 0.001$, $r = 0.19$, $p < 0.05$). External encoding also correlated positively with social desirability ($r = 0.18$, $p < 0.05$). The author also reported that when social desirability was controlled, there was still a strong positive relationship between mindfulness and external encoding. Cronbach's alpha was 0.79. In the second study, the participants (N = 32) completed four scales, the MAAS, the I/E encoding scale, the social desirability scale and the Cognitive Failures Questionnaire (CFQ) instead of the author's scale from study 1. The procedure was identical to study 1 with the exception of the changes in the two scales. The results were similar to study one with strong correlations between mindfulness and external encoding and social desirability. Mindfulness also correlated positively with CFQ. Mindfulness had a stronger correlation to CFQ than did I/E encoding.

The author reported that the results indicate that people who self-report such things as "hasty" encoding (internal encoders) score lower in mindfulness than do those

identified as external encoders. Also mindfulness and external encoding were both correlated with less stress and fewer cognitive errors. The author concluded that the study did support the notion that the more one focuses on self (internal encoding), the greater difficulty one has with well-being and with cognitive failures (Herndon, 2007).

To determine the effects of mindfulness on stress, Oman, Shapiro, Thoresen, Plante, & Flinters (2008) recruited college students to participate in a study employing two different mindfulness based stress reduction techniques. The subjects (N= 44) participated in either an adaptation of mindfulness-based stress reduction (MBSR) by Kabat-Zinn or an adaptation of eight-point program (EPP) by Easwaran. The researchers specifically wanted to ascertain if the two techniques would have similar effects on students' stress and well-being outcomes. The authors hypothesized that there would be no differences in the two mindfulness management of stress (MMS) interventions.

Upon obtaining consent for inclusion in the study, all participants were given a series of questionnaires for pretest data. These were the Perceived Stress Scale, the Rumination and Reflection Questionnaire, the Heartland Forgiveness Scale, the Adult Dispositional Hope Scale, and a demographic form that included questions related to previous mediation experience and spiritual beliefs. After pretests were completed, participants were grouped according to MMS intervention, MBSR (n = 15), EPP (n = 14) and a wait list control group (n = 15). The two MMS intervention groups received mindfulness training MBSR or EPP, for one 90-minute session per week for 8 weeks. Wait list participants received the intervention following the end of the study. Immediately following the eight week training, investigators administered posttests to all participants. Participants were also tested at eight weeks following the interventions. The authors reported no post test differences between the two MMS groups ($p > .10$). Both treatment group scores indicated improvement from pretest scores and as compared to the control group scores. The authors concluded that mindfulness management of

stress (MMS) reduces stress and enhances forgiveness in college students (Oman et al., 2008).

Mackenzie, Poulin, & Seidman-Carlson (2006) conducted a pilot study to examine the effects of mindfulness-based stress reduction on stress in nurses and nurse aides. Nurses and nurse aides working in non-direct patient care areas in Canada were recruited for their study. A total of 30 individuals agreed to participate in the study and were randomly assigned to either a wait-list control group (n = 14) or to the intervention group (n = 16). Prior to the intervention, all participants were tested for burnout and job and life stress. The pretest evaluation tools were the Maslach Burnout Inventory, the Smith Relaxation Dispositions Inventory, the Intrinsic Job Satisfaction subscale from the Job Satisfaction Scale, the Satisfaction with Life Scale, and the Orientation to Life Questionnaire. Participants in the intervention or treatment group received a modified version of Kabat-Zinn's (1990) mindfulness-based stress reduction MBSR consisting of four weeks of mindfulness intervention training as opposed to the typical eight week training as developed by Kabat-Zinn (1990). Post-test results revealed that the intervention group had significantly lower burnout scores and higher life satisfaction and relaxation scores when compared with those of the wait-list control group. The authors contend that mindfulness and nursing theory are a good fit and that the results of their study indicate that mindfulness training has the potential to serve nursing well by actually aiding in the alleviation of stress.

Comfort

Comfort, as defined by Kolcaba (2001), is "the state of having met basic human needs for ease, relief, and transcendence" (p. 87) and has a strong association with nursing. It is both physical and mental and means to soothe, console, reassure, ease, placate, and

relieve. It also means to have peacefulness, contentment, relief from discomfort, and pleasure. It is an enduring state of ease and peaceful environment, renewal, being strengthened and invigorated, and cessation of pain. Nurses provide and facilitate comfort with families and or with patients. Nurses do this via means called comfort measures. When families and/or patients are strengthened by the comfort measures of nurses, they are more equipped to engage in health seeking behaviors.

The state of comfort is strengthened by having physical, psycho spiritual, social, and environmental needs met (Kolcaba, 1991). Kolcaba identifies three types of comfort; relief, ease, and transcendence and are defined as follows:

Relief comfort – The state of an individual who has had a specific need met.

Ease comfort – The state of calm.

Transcendence – The state in which one rises above pain.

Comfort occurs when the three comfort needs are met in the physical, psycho-spiritual, sociocultural, and environmental contexts. Physical comfort involves all the physiological aspects of an individual. Psycho-spiritual comfort involves self-esteem, identity, sexuality, and the relationship or lack of relationship with a higher being. Social comfort is derived from family, societal and interpersonal relationships and from family traditions, rituals, and religious practices. Environmental comfort involves the external aspect of experiences, such as room color, light, sound, and odor (Kolcaba et al., 2006).

Originally adapted as a means to measure and to study patient comfort, Kolcaba eventually altered the comfort theory evaluation tool to measure nurse comfort. Kolcaba et al. (2006) used the comfort theory to develop the nurse comfort questionnaire. Kolcaba purports that if nurses are satisfied and “comforted”, they will perform better and be more committed to their customers and to the institution in which they work.

Also, greater commitment would further help to increase patient satisfaction. Kolcaba believes that enhanced nurse satisfaction has a direct positive relationship on patient satisfaction. Kolcaba lists seven other advantages to using comfort theory in practice as follows:

1. The theory has a universal language and can be understood by anyone.
2. The theory articulates what is already being done in healthcare.
3. It provides direction for quality improvement by including the following in practice: a. Comfort rounds with patients, b. employee performance reviews, c. improvement of work environments, d. outcomes research, e. and comfort interventions – implementation and evaluation of comfort interventions.
4. Comfort theory has guided clinical practice guidelines.
5. The theory addresses the comfort of nurses, nurse managers, executives, and executives.
6. Explicit is the holistic outcome of comfort for patients, families, and staff.
7. It has protocols to assess nurses' comfort.
8. It has a direct correlation with the initiatives of the association for critical care nurses and the Joint Commission on Accreditation for Healthcare Organizations.
9. A continuing education course is available online for nurses.

Koehn (2000) reviewed the use of alternative therapies in nursing, specifically the Theory of Comfort (Kolcaba, 2003), in the nursing care of women experiencing the pain of childbirth. The author suggested that since nursing has been considered a holistic practice, any alternative therapy, in particular, the Theory of Comfort can guide the practice of nursing when dealing with patient discomfort, as in labor and delivery.

The author pointed out that the Theory of Comfort has all the qualities of the common beliefs underlying alternative therapies as listed in the Nurse's Handbook of Alternative and Complementary Therapies (in Koehn, 2000). As such, the Theory of Comfort provides a framework for the enhancement of the positive outcomes of the experience of childbirth. In conclusion, she writes that theories such as the Theory of Comfort provide more than just comfort from physical pain, but also address spiritual, emotional, and psychological, and social experiences such as childbirth and as such, the Theory of Comfort is an appropriate guide for nursing care of women in pain from childbirth.

Kolcaba and DiMarco (2005) examined the Theory of Comfort and its application to pediatric nursing. The authors detailed the utilization of comfort theory for relief from discomfort of pediatric patients. They write that nursing often focuses on the absence of discomfort or pain rather than a more positive focus on increasing comfort.

Comfort theory was used to map out various feelings and reactions to pain in the pediatric patient. As mentioned earlier, comfort as used in nursing refers to "holistic comfort". According to Kolcaba (2003), holistic comfort for nursing is defined as follows:

> The immediate state of being strengthened through having the human needs for relief, ease, and transcendence addressed in four contexts of experience (physical, psycho-spiritual, sociocultural, and environmental). (p. 251)

Using these four contexts along with the three types of comfort, relief, ease, and transcendence; nurse researchers can create a grid with which to plot a patient's degree of comfort or lack of comfort. Kolcaba and Dimarco applied comfort theory to pediatric nursing using the aforementioned grid. A case study utilizing this is presented in this research article along with an example patient comfort scale. In pediatric care, the pictorial comfort scale is also utilized to help the child have a better understanding of what is feeling "good" or feeling "bad". The authors also point out that this is

advantageous when working with a child who is not very verbal. The authors report that further research in pediatric comfort would include research related to interventions that might improve or increase a child's holistic comfort level.

Kolcaba and Fox (1999) investigated the effects, if any, of guided imagery on patients undergoing radiation therapy. Potential participants were women who had early stage breast cancer. Participants were between the ages of 37 and 81 with the mean of 58 years of age. The majority, 80% were women of European descent and 91% had either a high school diploma (45%) or a college degree (46%). Most of the women in the sample were married (66%). Participants were asked to complete the radiation therapy comfort questionnaire prior to the intervention and prior to radiation, three weeks after the intervention and three weeks after completion of radiation therapy. They also completed the state anxiety inventory prior to the intervention and radiation. The intervention consisted of listening to a guided imagery tape once a day during the entire course of the study. Sample participants were also asked to keep a diary of their progress and thoughts related to the relaxation tapes during the study and all received a phone call from the researcher once weekly.

Participants were randomly assigned to the treatment and to the control group. Pre-intervention anxiety scores among the two groups were not significantly different and therefore had no adverse effect on the results of the study. The authors reported a significant increase in comfort level in the treatment sample as compared to the control group. They also reported a positive relationship between anxiety and comfort, purporting that this was possibly due to women who were more anxious reaching out to others for support and therefore having a greater level of comfort. There was also a positive relationship between comfort and age.

The reported limitations of the study were convenience sampling and restrictions of the sample, i.e. for inclusion, participants had to be those who were in the early stages of breast cancer and who were also going through radiation therapy. Therefore,

generalization of the study is limited. The study does provide some basis for the assumption in the present study that mindfulness could be learned effectively to produce positive results for participants merely by listening to mindfulness meditation tapes or to mindfulness meditation compact discs.

The following study on serenity is presented in this section due to the similarity of the two concepts. Serenity can be defined as "calmness" and one definition of comfort is "calm". Roberts and Whall (1996) conducted a concept analysis of serenity to learn more about the link between emotions and health. Serenity implies a state of harmony of body and spirit and being serene has been linked to decreased stress (Roberts & Whall, 2007). Nurses who have participated in surveys related to patient health indicate that 90% of them think that serenity is important patient health (Kim, 1994; Messenger & Roberts, 1994). Based on the information they obtained through investigating research on serenity and the results of their concept analysis, they developed a serenity scale and concluded that serenity does act to decrease stress and is useful in healthcare.

Work Satisfaction

Locke (1976) defined job satisfaction as a "pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences". Satisfaction with one's job has been linked to improved sense of well-being and decreased levels of burnout and nurse turnover (Coomber & Barriball, 2007; Krogstad, Hofoss, Veenstra, & Hjortdahl, 2006; Langer, 1989). Work satisfaction can be viewed in the following three ways: As a function of the actual job characteristics, through the opinions of fellow employees, and by the personality type and of the individual and its relation to the job. Work Satisfaction has also been shown to directly affect patient satisfaction. Similarly, because comfort is related to a nurturing activity (Kolcaba, 2001), it would seem that work satisfaction, decreased burnout, and increased well-being would have a positive effect on comfort levels. Organizations where stress levels are high have greater absenteeism, frequent call-ins related to somatic complaints, decreased staff morale, increased job turnover, and

increased burnout. This negative atmosphere further contributes to staff dissatisfaction. Nurses who have a negative view of their work and work environment have decreased work satisfaction (Foley, Lee, Wilson, Young Cureton, & Canham, 2004). It would seem, therefore, that with repeated exposure to a destructive work environment or the absence of a nurturing environment, decreased levels of nurse comfort and increased stress with burnout, and subsequent nurse turnover would naturally follow with potential resultant poor patient satisfaction. Thus, exploring ways to increase work satisfaction, thereby decreasing nurse burnout and increasing patient satisfaction is imperative for the health and vitality of the healthcare provider organization

Based on the cognitive theory of depression that the way people think is a source of depression, Judge and Locke (1993) investigated the correlation between job and life satisfaction and subjective well-being. Under the precept that dysfunctional thought processes can decrease work satisfaction and cause employee withdrawal, absenteeism, turnover, and tardiness, Judge and Locke recruited clerical workers from a Northeastern university to test their hypotheses. A random sample was drawn from the available sample of approximately 2,000 clerical workers, yielding 479 participants. Surveys were sent out to all 479 participants and 231 usable surveys were returned, yielding a response rate of 51%. The following surveys were completed by each of the 231 participants: dysfunctional thought processes survey, job dysfunctional thought processes, and job and work avoidance. The authors reported that the results of their study indicated that dysfunctional thought processes influenced subjective well being. Further, subjective well being significantly influenced job satisfaction, (people who were happy with their lives were more likely to be satisfied with their jobs) and people who think dysfunctionally with their jobs were less likely to report being satisfied with their jobs.

Farrell and Dares (1999) investigated the job satisfaction of nurses working in an acute in-patient mental health unit. The authors were interested in the level of job satisfaction and the willingness to perform the job. They believed that nurses who were

more satisfied with their jobs would be more likely to perform well in their job positions. Conversely, those nurses who were not satisfied with their jobs would be less productive in their job positions. The investigators used a combination of surveys and individual interviews to obtain the necessary data for acceptance or rejection of their hypotheses.

All nurses employed on the in-patient acute mental health unit were ineligible for inclusion in the study. Of the 23 full-time employees on the unit, 22 participated in the study. The mean number of years working in the mental health field was 10.94 years and the mean number of years on the current mental health unit was 5.35 years.

To assess job characteristics, the participants were first given 15 cards with individual job characteristics and were asked to rank these 15 in order of importance. They then completed a questionnaire with the same 15 items and were asked to rate each item on a six point Likert scale according to how satisfied they were with that particular item. The third method used to gather data were individual interviews, specifically to ascertain the reasons for the participant's rating of satisfaction and if the participant wanted to add anything to the discovery process.

The highest ranked "job characteristic" items were interesting work, having responsibility and independence, and good interpersonal relationships. The authors reported that overall, the employees were mildly dissatisfied with their work. They also reported that the interviews with participants revealed that lack of teamwork, lack of opportunity to develop professionally, and feeling disempowered were cited as the top reasons for the lack of job satisfaction. The authors suggested that further research to investigate staff satisfaction should include the effects of various management styles on employee relationships and satisfaction.

Stacciarini and Troccoli (2004) examined occupational stress and job satisfaction from the perspective of problems with the employee, not with the environment. The design was a correlational study with a stress inventory, constructive thinking inventory, an occupational stress indictor and a researcher-designed questionnaire. The population

under study was nurses in Brazil, recruited by a convenience sample of nurses working in different health care areas. The sample size was 461, with the majority of nurses (n = 351) employed in a hospital or health center setting. The majority of the participants were female (90%) between the ages of 31 and 48 years-of-age (74%). Constructive thinking had a strong inverse relationship with psychological ill-health ($r = -0.67$, $p = 0.001$). The strongest relationship with job satisfaction was psychological ill-health ($r = -0.39$, $p = 0.05$). The authors concluded that the nurses in their study were relatively satisfied in their profession, but the significant relationship between constructive thinking and psychological ill health indicates a need to examine individual coping styles in the work environment.

Foley et al. (2004) investigated job satisfaction among nurses employed in school. The research participants were derived from a convenience sample of California school nurses. The nurses recruited were those who were attending a conference by the California School Nurses Organization. The researchers distributed 448 questionnaire packets containing parts A and B of the Index of Work Satisfaction (Stamps, 1997). This index measures six variables believed to influence work satisfaction; autonomy, pay, professional status, organizational policies, and interaction. Of those distributed, 299 were returned for statistical analysis. The school nurses rated autonomy and interaction as the most important variables in job satisfaction. The authors reported that the results were similar to practicing hospital/clinic nurses who also ranked autonomy as the most important aspect in job satisfaction (Foleyet al., 2004).

Based on information she obtained from a keyword search on job satisfaction, 6,247 papers or dissertations on the subject were found in 1991 and 18, 602 papers or dissertations were cited in 2004 (Curtis, 2007). Curtis cites increasing job satisfaction to increase productivity and profitability as the reason for the growing interest in job satisfaction. To ascertain job satisfaction Curtis conducted a survey of job satisfaction among nurses in the republic of Ireland. A questionnaire booklet containing three

instruments were used for the study, however, the author only reported two of the instruments, the Index of Work Satisfaction (IWS) and a demographic data sheet. The researcher used part A and part B of the IWS by Stamps (1997). A total of 2,000 questionnaires were sent out to nurses who were selected by the Irish Nursing Board to participate in the study. A total of 610 were returned yielding a 30.5% response rate.

The majority of the participants were female (90.7%), worked in the public healthcare sector (81.6%), and completed the registered general nurse (RGN) training (81.6%). Subjects reported that professional status was more important than organizational policies in determining job satisfaction and autonomy was more important than pay. Of the six components of the IWS, interaction was reported as most important with a IWS score of 48.22. The second most important factor in determining job satisfaction was professional status (36.47) followed by autonomy (35.98). Pay (19.20) was reported as the least important factor in job satisfaction. These findings were similar to those of Stamps (1997).

Burnout

Burnout is a term coined by Freudenberger (1983) based on work he did in the 1960s. It is characterized by low self-esteem, apathy, alienation, becoming callous or cynical, mental exhaustion, psychosomatic complaints, anxiety, inability to concentrate, depression, job dissatisfaction, and depersonalization of others (Freudenberger, 1983; Maslach, 1982). Individuals who suffer from burnout are less trusting and sympathetic toward others and appear to have lost idealism (Freudenberger, 1983).

Maslach (1982, 2001) identified three conditions believed to be aspects of the burnout syndrome. These conditions are emotional exhaustion, depersonalization, and lack of personal accomplishment, or more recently referred to as exhaustion, cynicism, and sense of inefficacy (Maslach, 2003). Historically, it is believed that human service workers are more prone to emotional rather than rational responses to life situations and, therefore, are more prone to burnout (Freudenberger, 1983).

To test this idea, Garden (1989) compared human service workers to individuals in the field of management. The subjects in the study were 81 occupational health nurses (OHN) and 194 individuals attending a Master of Business Administration (MBA) educational program. Both occupation groups were divided into thinking and feeling types based on scores from the Myers-Briggs Type Inventory. They were also given the Energy Depletion Index to measure burnout. Two factors in the Energy Depletion Index are emotional demands and mental demands. After nine months, they were given the Stress Questionnaire which was developed by the author. From the Stress Questionnaire, individuals were divided into groups categorized as nurturing orientation or ambitiousness. The MBA sample subjects were predominately thinking types (76%) as opposed to feeling types (24%). The occupational health nurse sample subjects were predominately feeling types (70%). The MBA sample was reported to have a higher mean level of emotional demands, ($\underline{t} = 2.66$, $\underline{p} = 0.008$) and mental demands ($\underline{t} = 7.15$, $\underline{p} = 0.000$) than the nurse group. The researcher suggested that this was probably due to the intensity of the MBA program.

For the MBA sample, emotional demands predicted energy depletion only for the feeling types (beta = .42, $\underline{t} = 3.2$, $\underline{p} = <0.001$) and not for the thinking types (beta = 0.16, $\underline{t} = 1.9$, $\underline{p} = <0.05$). Emotional demands was not a predictor of energy depletion for either the thinking types (beta = 0.00, $\underline{t} = -0.01$, $\underline{p} = < 0.05$), or the feeling types (beta = 0.24, $\underline{t} = 1.7$, $\underline{p} = 0.09$) in the occupational health nurse sample. Mental demands predicted energy depletion for the thinking types, but not the feeling types, in both samples: (a) MBA thinking types (beta = .41, $\underline{t} = 5.3$, $\underline{p} = <0.001$), (b) MBA feeling types (beta = .18, $\underline{t} = 1.2$, $\underline{p} = < 0.05$), (c) OHN thinking types (beta = .54, $\underline{t} = 3.1$, $\underline{p} = < 0.01$), and (d) OHN feeling types (beta = 0.10, $\underline{t} = 0.7$, $\underline{p} = < 0.05$).

There was a negative correlation between energy depletion and nurturing orientation in the feeling types of both the MBA sample ($\underline{r} = - 0.28$, $\underline{p} = 0.06$) and the OHN sample ($\underline{r} = - 0.27$, $\underline{p} = 0.04$); and a positive correlation between energy depletion

and nurturing orientation in the thinking types of both the MBA sample ($r = 0.16$, $p = 0.03$) and the OHN sample ($r = 0.30$, $p = 0.05$). A strong negative correlation was reported between ambitiousness and energy depletion for the thinking types of both the MBA sample ($r = -0.23$, $p = 0.01$) and the OHN sample ($r = -0.53$, $p = 0.006$). There was no significant relationship between ambitiousness and energy depletion for the feeling types of either the MBA sample or the OHN sample.

Garden (1989) concluded that these data do not support the notion that burnout is exclusively a health service phenomenon. Divided into thinking and feeling types, the thinking types in both samples were less likely to experience burnout than the feeling types. Emotional demands did not act as a predictor of energy depletion in either type. Demands other than emotional were linked to energy depletion and those that were unsuitable to type tended to increase stress. For example, thinking types were more stressed by emotional demands than were feeling types. The investigators noted an interesting finding in that thinking types showed higher levels of concern for others and had higher levels of depletion of energy than feeling types. The author pointed out that the Maslach Burnout Inventory presumes a low level of concern for others as a component of depersonalization and suggested that this inventory may not be measuring burnout in a thinking type in a comparable way as measuring burnout in a feeling type. Nevertheless, the finding that personality types play an important role in the susceptibility to burnout, with *thinking types* being less likely to experience burnout than *feeling types* is note worthy.

Van Servellen, Topf, & Leake (1994) examined the effects of work stress and emotional exhaustion as predictors of health problems. In relation to burnout, they hypothesized that with increased hardiness, individuals are less likely to experience work related stress, emotional exhaustion, and have fewer health problems. Van Servellen et al., examined a sample of 237 nurses from 18 units in 7 hospitals on the variables of hardiness, tension, emotional exhaustion, and somatic complaints. The instruments used

were the Hardiness Scale, the Tension Index, the Emotional Exhaustion subscale of the Maslach Burnout Inventory, and the Brief Symptom Index. Total hardiness scores were found to be negatively correlated with work related stress ($r = .25, p < .001$), and emotional exhaustion ($r = -.29$ $p < .001$), indicating that the more hardy individuals are, the less likely they are to experience work related stress and emotional exhaustion. Work related stress was positively correlated with both emotional exhaustion ($r = .46$, $p < .001$) and depression ($r = .34$ $p < .001$). According to the investigators, this finding indicated that an increase in work-related stress was associated with an increase in emotional exhaustion and depression. There was a strong positive relationship between emotional exhaustion and depression ($r = .39$ $p < .001$), indicating that individuals who suffer from emotional exhaustion also experience more depression.

Burnout has been related to work or organizational culture by several researchers and theorists. Culture, as defined by Leininger (1991) encompasses learned values and beliefs that become the normative basis for all decision making and actions. It is a set of learned customs that guides the behaviors of the members of the culture. Therefore, organizational culture is a set of beliefs and norms that are learned by members of the organization and taught to those entering the organization. Culture has been found to have an important influence on an individual's quality of work life and is therefore an important variable in the development of burnout (Raiger, 2005).

The culture of the organization should be developed as a result of the mission or values of the organization, but often the values and mission do no coincide with the culture. Incongruence between culture and organizational goals and mission statements can result in the development of burnout in nurses (Raiger, 2005).

Freudenberger (1989) discussed the culture of organizations in relation to burnout. If the values of the individual do not coincide with the values of the organization, the individual is more likely to experience burnout. This burnout can result in cynicism, troubled working relationships, and organizational burnout. Mergers and

takeovers by other organizations are two examples of organizational burnout. If the individual does not like the culture of an organization, he or she should leave since it is highly unlikely that one individual can change the culture of an organization. Withdrawal is often seen in the health care profession. Nurses traditionally leave when confronted with organizational cultural conflicts. Burnout would therefore tend to occur when nurses remain in a conflicting situation.

Maslach (2001), co-author of the Maslach Burnout Inventory (1996), discussed the importance of maintaining a good fit between environment and individual as an essential aspect of quality of work life and reduction of burnout. Incongruence between the organization and the individual can result in increased dissatisfaction and burnout. Further, this misfit between work and individual can cause fatigue and loss of idealism resulting in a lack of passion in one's work (Maslach, 2003).

Maslach (2003) discussed the history of research in the area of job burnout, having established that burnout is a problem in the workplace and will remain a problem unless specific interventions can be developed and tested to ameliorate burnout. Burnout is often addressed as an individual's problem coping with work life. Maslach purports that perhaps it is an individual's lack of engagement in work that increases one's propensity to burnout.

Hiscott and Connop (1996) explored the reasons hospital staff members terminate employment. The study was conducted using a sample of employees from a Canadian psychiatric hospital. They interviewed 30 former employees and 123 current employees to compare reasons for remaining employed versus reasons for terminating employment. They found that employees who voluntarily left the hospital were younger than those who remained employed. In fact, 56.7% were under 35 years of age. Also of interest was that 66.7% did not have children and 60% worked 12 hour shifts. Personal reasons, which included health problems and other employment opportunities, accounted for 60%

of the responses. The most cited job-related reasons for leaving their jobs were: (a) relations with superiors, (b) morale problems, and (c) demands on the job.

Greenglass, Burke, & Fiksenbaum (2001) investigated the relationships between workload, somatization, and burnout in nurses. Research participants consisted of 1363 nurses who were employed in hospitals that were currently involved with restructuring. Burnout was measured by administration of the General Burnout Questionnaire. This survey measures emotional exhaustion, cynicism, and professional efficacy. Somatization was measured using the Hopkins Symptom Checklist. The authors reported an inverse relationship between workload and professional efficacy ($r = -0.08$, $p = 0.01$). A stronger relationship was between workload and emotional exhaustion ($r = 0.46$, $p = 0.001$). Also reported were positive relationships between emotional exhaustion and cynicism as well as somatization. The most significant relationship was between emotional exhaustion and cynicism ($r = 0.58$, $p = 0.001$). The authors suggested interventions to decrease nurse workload to prevent an increase in cynicism which in turn was shown to increase burnout.

Lack of innovation can increase the probability of burnout among employees (Langer, 1989). Organizational interest is one way to decrease burnout among employees. Administrators can enhance employee interest by placing value on the professional development of their staff and by providing open lines of communication with the staff. Havens (2001) explored ways to increase organizational interest, thereby increasing satisfaction and retention among employees. One method of increasing organizational interest discussed is through obtaining Magnet status.

Havens pointed out that the organizational environments of Magnet facilities are those that empower nurses and often result in increased job satisfaction, lower burnout rates, improved retention, higher perceived quality of care, and increased perception of productivity. The additive benefits are to patients and include shorter lengths of stay, and increased satisfaction (Havens, 2001). The above-described organizational environment

not only retains currently employed nurses but also attracts quality nurses for employment. The administrations in these environments have been described as supportive, with open lines of communication and ones that value professional development of the staff (Raiger, 2005). Schmidt (2004) discussed the role of the nurse in the creation of an optimal healing environment (OHE) and ways to improve the environment for the patient. This is also applicable for nurses and nurse colleagues.

Koivula, Paunonen, & Laippala (2000) examined burnout among the nursing staff of two hospitals in Finland. They specifically wanted to investigate burnout and factors affecting burnout in nursing by the utilization of a new burnout survey developed by one of the authors. The results indicated that burnout increases with age. Also, nurses with limited work experience had lower levels of burnout.

Gueritault-Chalvin et al. (2000) looked at stress and coping associated with AIDS care. The sample used in this study consisted of 499 nurses who were members of the Association of Nurses in AIDS care. The participants were asked to complete the Ways of Coping Inventory. This instrument consists of open-ended questions related to what each individual considered to be the most stressful situation and the degree to which they used thirty-three different coping strategies. The investigators found that participants had no clear pattern of coping with death. The most stressful situation identified by the majority of the sample was patient care, followed by workplace issues.

Hayter (1999) investigated burnout among AIDS community nurse specialists. The participants in this study were 30 clinical nurse specialists located North of England. Participants were asked to complete the Maslach Burnout Inventory (MBI) and the AIDS Impact Scale. Sixty-six per cent of the participants scored moderate high to high on the Emotional Exhaustion and Personal Accomplishment subscales of the MBI. The scores on the Emotional Exhaustion subscale indicate a slight propensity to burnout; however, the high scores on the Personal Accomplishment subscales would seem to contradict this

finding. High scores on the Personal Accomplishment subscales of the MBI indicate low propensity to burnout.

Prompted by the impending nursing shortage of epidemic proportion, Aiken et al. (2002) investigated nurse burnout and job satisfaction and patient mortality in surgery and general hospitals in Pennsylvania. Data from over 10,000 nurses was analyzed as well as from thousands of patients who were in the hospital during April 1, 1998 to November 30, 1999.

The stress response is hypothesized to have begun as a result of people being in constant threat of physical harm. This is an inborn response known as the fight-or-flight response. When invoked, blood pressure, heart rate, and breathing increases. These responses prepare us for conflict or escape. Although very useful when people needed to escape physical harm, it can be detrimental and may lead to serious health problems, when the response is repeatedly elicited (Benson, 1975).

The stress response also causes an increase in the production of cortisol. The release of cortisol is helpful for the fight-or flight response; however, continual release of cortisol in response to daily stressors can inhibit the immune system and slow down tissue repair (Goleman, 1993). (Perhaps this could be one factor in reports of increased health problems from nurses who are suffering from work burnout.) Studies have indicated that increases in cortisol also have a significant negative effect on brain function. An example is difficulty concentrating when exposed to numerous stressors. With rest, brain function returns to normal. However, prolonged periods of stress can have a profound effect on normal brain function (Goleman, 1993).

There is speculation that too much cortisol is a major contributing factor to Alzheimer's Disease (Singh Khalsa, 1997). Cortisol is found at a higher than normal level in victims of Alzheimer's Disease. Alzheimer’s Disease is an extreme example; however, nurses who experience prolonged periods of stress, as in burnout, are possibly impaired due to the effects of increased cortisol production in response to stress.

Judgment could be impaired and the patient could ultimately be in danger due to poor decision making by the nurse who is suffering from burnout.

Experimental evidence shows that elevated cortisol concentrations may damage the brain. The hippocampus, which is implicated in certain forms of memory, is affected by changes in levels of cortisol (Singh Khalsa, 1997). Selye (1978) believed that increases in cortisol were associated with all types of stressors and stated that this could explain why any stress could be associated with illnesses. Sapse (1997) believed that cortisol is a severe immunodepressant, playing a role in the development of AIDS, cancer, and other diseases.

Singh Khalsa (1997) has done extensive research on stress and its effect on memory, particularly Alzheimer's disease. Prolonged exposure to stress can lead to loss of neurons, particularly in the hippocampus, which is the memory center of the brain. There are three ways that stress destroys functioning of the brain and blocks out memory: (a) cortisol inhibits the utilization of glucose by the cells of the hippocampus, (b) cortisol interferes with the function of the brain's neurotransmitters, and (c) cortisol injures and kills brain cells. Singh Khalsa suggested the use of transcendental meditation to help decrease stress and its deleterious effects on the body.

Duquette, Kerouac, Sandhu, and Beaudet (1994) did an extensive review of the literature related to burnout in order to gain an understanding of factors relating to burnout in nurses. In their search, they identified three main factors that seem to be related to nursing burnout. These are organizational, personal, and buffering factors. Hardiness, coping, and social support were seen as buffering factors. The authors found that in most cases, hardiness and social support were negatively related to burnout. Social support, from one's peers, rather than from supervisors, was seen as playing a very important role in the prevention of burnout. Coping was identified as negatively correlated with burnout; however, there was no clear indication of which coping strategy was more effective in preventing burnout identified.

Lees and Ellis (1990) conducted a study to determine individual stress management among nurses and nursing students. Fifty-three individuals participated in the study. Investigators first interviewed each participant using open ended questions re: work experience and stress management. Then they administered a personality questionnaire, an assertion inventory, the ways of coping questionnaire, and the culture-free esteem inventory to each participant. Results of the study were presented in several separate sections, and some will be presented here. Nurses indicated they leave their jobs because of stress related to conflict with nurses, and over work. Of the nurses who left their jobs, the majority (69%) left during the first 12 months of employment and indicated that they could never see themselves in nursing again. The major stressor cited by the participants was understaffing. The top five stressors were understaffing, dealing with death and dying, conflict with nurses, overwork, and conflict with doctors. The authors indicated that the number one relaxation strategy used by participants was consumption of alcohol (94%), although other techniques were also mentioned, including relaxation techniques. The study was exploratory in nature and served as a guide to help develop meaningful interventions for nurses in order to help increase nurse work satisfaction and decrease nurse attrition.

Langer (1989) conducted a study to examine ways to decrease burnout among health care providers in a long care institution. They introduced the staff to uncertainty in relation to various work-related tasks which had become mundane or boring. Initially the staff became confused as the old way of doing things was disrupted. However, once the staff realized there was an alternative, they became more energetic and more interested in their work.

Wu, Wang, Wang, & Lan (2007) investigated burnout rates and stress in nurses in China and possible mediating factors. They recruited nurses (556) from three different hospitals in China by sending out questionnaire packets. A total of 495 nurses returned the questionnaires and agreed to participate in the study. The investigators used the

Maslach Burnout Inventory (MBI) General Survey to determine burnout and the Occupational Stress Inventory to measure stress. Also included was a demographic data sheet assessing age, professional experience, marital status, educational status, occupational stress and personal resources. The MBI consists of three subscales, emotional exhaustion, personal accomplishment, and cynicism. Stress factors from the Occupational Stress Inventory are role overload, role insufficiency, role boundary, responsibility, physical environment, reaction, self-care, social support, and rational/cognitive. The authors reported that the greatest predictors of emotional exhaustion were role overload, responsibility, role insufficiency and self-care. Role insufficiency, role boundary, responsibility and self-care account for the majority of the variance in the cynicism subscale of the MBI. The greatest predictors of personal accomplishment were dimension, role insufficiency, social support and ration/cognitive coping. The authors also reported that younger nurses had the highest burnout scores and surgical nurses reported higher levels of burnout than did medical nurses. Educational level was associated with lower levels of personal accomplishment. The results supported their hypothesis that increase in work stress is predictive of increasing levels of burnout.

Summary

The literature on mindfulness, comfort, work satisfaction, and burnout was presented as it relates to the nursing environment. Relevant information obtained from the literature dealing with these four concepts was used to interpret data sets from testing nurses. Data resulting from testing on mindfulness, comfort, work satisfaction, and burnout was interpreted and performance profiles will be formulated based in part on the theoretical and applied information gleaned from the literature in conjunction with the new information resulting from this study.

In Chapter III, an overview of the current study will be presented, specifically a description of the sample, and the instrumentation that was be used for this study.

Chapter III also includes the procedure for the protection of human subjects, and attention to scientific and procedural rigor.

CHAPTER III

METHODOLOGY

This chapter includes a description of the research design and approach, the sample under investigation, instrumentation, and procedures used for data collection and for data analysis. The purpose of this study was to determine the relationship between mindfulness, comfort, work satisfaction, and burnout. The study was specifically designed to determine if mindfulness had any effect on comfort, work satisfaction, and burnout.

Research Design

The research methodology for this study is a unidirectional path analysis correlation design which is appropriate for inferring time-order relationships from non-experimental data (Brink & Wood, 1998; Shoemaker et al., 2004). The four variables for this study are mindfulness, comfort, job satisfaction, and burnout. For the purposes of this study, mindfulness is the independent variable and comfort, job satisfaction and burnout are the dependent variables.

Setting and Sample

The sample was a convenience sample of registered nurses employed full-time in South Mississippi hospitals. I spoke with the education department directors of each of the participating hospitals about the possibility of conducting this study with their nurses. I then met with the nursing directors of each hospital. I explained the research study I was working on and asked permission to obtain respondents for my study from their respective hospitals. I received permission from four of five hospitals I approached. Out of these four, three hospital directors permitted me to approach their nursing staff personally. The remaining hospital director wanted to pass out the surveys herself. She gave the surveys to her nurse managers and they in turn passed out survey packets during their unit staff meetings. I approached the nurses in the other four hospitals via hospital health fairs and by going to individual nursing units. I explained to potential participants

that a study was being conducted to investigate stress among practicing nurses. A sample size of a minimum of 100 subjects was needed to increase the strength of the relationships among variables to improve the degree of probability. Inclusion criteria for the study included any individual who was a registered nurse or nurse practitioner who provided direct patient care, and who was employed in any South Mississippi hospital.

Instrumentation

Mindfulness, comfort, work satisfaction, and burnout are the four variables in this study. The instruments used to measure these variables are discussed in this section. A demographic form for the purposes of collecting descriptive data was also implemented (see Appendix B).

Mindfulness

Mindfulness was measured based on scores on the Mindfulness Attention Awareness Scale (MAAS) (see Appendix C), the Langer Mindfulness Scale (LMS) (see Appendix D), and the Mindfulness-Based Self-Efficacy Scale (MSES) (see Appendix E).

Mindfulness Attention Awareness Scale. The Mindfulness Attention Awareness Scale (MAAS) (see Appendix C) developed by Brown and Ryan (2003) is a 15 item self-report inventory that measures mindfulness during everyday activities. Specifically, the instrument results indicate the presence or absence of attention to and awareness of that which is occurring in the present (MacKillop & Anderson, 2007). The instrument is a self-report survey that consists of 15 statements that are related to daily activities. Statements are ranked on a Likert scale ranging from one, almost always, to six, almost never, indicating the frequency that each activity is encountered. All 15 items are added and a mean is obtained, thus possible scores range from 15-90. Higher scores indicate higher levels of dispositional mindfulness (Brown & Ryan, 2003). Internal consistency was reported as Chronbach's alpha of .84 (Brown & Ryan, 2003) and .853 (Johnson, 2006). The scale reportedly demonstrates incremental validity by differentiating between

individuals who meditate and those who do not or have never practiced meditation and by prediction of depressive and anxious symptoms. Also, changes on the MAAS were associated with changes in self-reported well-being (Brown & Ryan, 2003; MacKillop & Anderson, 2007). Matchim & Armer, (2007), for their instrumentation study first conducted a review of the literature on the development of the MAAS. The authors reported that four of the studies to test the MAAS were conducted using healthy individuals including college students and those who currently practiced Zen Buddhism. However, one study was conducted with thirty-two patients with cancer to determine if changes on the MAAS resulted in changes in well-being. Scores on the Symptoms of Stress Intervention scale (SOSI) by Leckie & Thompson (1979) reportedly dropped significantly during an intervention period, but there was no significant change in overall MAAS scores (Matchim & Armer, 2007).

MacKillop and Anderson (2007) conducted a study to further validate the MAAS. A sample size of 727 students attending the State University of New York at Binghamton participated in the study. Participants completed the MAAS and a researcher developed questionnaire concerning meditation. The researchers reported factor loading consistent with the validation study by Brown, Ryan, Creswell (2007). Also, there were no significant differences among gender which was also consistent with the former study. However, the researchers found no significant differences between people who practiced meditation and those who did not meditate. They speculated that these conflicting results were due to the fact that the individuals in the Brown and Ryan study were practicing Zen Buddhist and that these individuals would most likely be more committed to the practice of mindfulness than would the students represented in their study (MacKillop & Anderson, 2007). The authors concluded that the MAAS is valid instrument for the measurement of mindfulness.

Langer mindfulness scale. The Langer Mindfulness Scale (LMS) (see Appendix D) by Ellen Langer (1989) consists of 21-items, with a possible range of 21-147, that

assess four domains associated with mindful thinking; novelty-seeking, engagement, novelty producing, and flexibility. People who seek novelty perceive every situation as an opportunity. The novelty seeking subscale consists of items 2, 4,9,10, 13, and 15. A high score in engagement indicates that the person notices more details about his/her environment. The engagement subscale consists of items 5, 16, 18, 20, and 21. A novelty producing person will generate new information in an effort to learn more about his/her current situation. The novelty producing subscale consists of items 1, 7, 8, 11, 12, and 19. Flexible people embrace changes rather than resisting them. The flexible subscale includes items 3, 6, 14, and 17. Items are scored on a 7 point Likert scale with 1 meaning strongly agree and 7 meaning strongly disagree. Items 1, 5, 10, 13, 16, 17, 19, and 21 are scored in reverse whereas 7 means strongly agree and 1 means strongly disagree. The instrument takes approximately three minutes to complete. Chronbach's alpha coefficient of internal consistency was .87 and .83 (Langer, 2004). The LMS was administered to two separate samples consisting of 111 college students and 68 college students and both were retested after four weeks. Langer (2004) reported test-retest reliability as adequate (r= .82 and r= .74 respectively) for both groups.

Mindfulness-based Self-Efficacy scale. The Mindfulness-Based Self-Efficacy Scale (MSES) (see Appendix E) is a 35-item questionnaire developed by Cayoun and Freestun (2004). It is comprised of seven subscales of self-efficacy as follows: behavior, cognition, interoception, affect, interpersonal, avoidance, and mindfulness. Respondents rate statements on a 5-point Likert scale, for a possible range of 0-140, to the extent that they agree or disagree with the statement. Responses are tallied for each of the seven subscales. The sum of all the subscales yields a total self-efficacy score. Based on these scores, individuals are ranked from poor sense of self-efficacy to good sense of self-

efficacy. The degree of self-efficacy is directly related to the degree of mindfulness. The MSES was designed to be an indirect measure of mindfulness before, during, and after a mindfulness training intervention. However, the instrument can be administered as a one time indicator of mindfulness (Cayoun & Freestun, 2004).

The following is a breakdown of the scores for the MSES:

0-34	Poor sense of self-efficacy
35-69	Weak sense of self-efficacy
70-104	Moderate sense of self-efficacy
105-140	Good sense of self-efficacy

Although the MSES has been piloted in many studies and has been used in recent mindfulness based research, validity and reliability has yet to be established. According to Cayoun and Freestun (2004) data is currently being collected and analyzed to confirm the validity and reliability of the instrument.

Nurse Comfort

Originally, comfort theory was developed as a patient/family theory to be used in nursing practice (Kolcaba, 1994). The theory now pertains to nurse comfort as well as to patient comfort. This occurred when Kolcaba was asked by a hospital seeking magnet status to focus on the application of her theory to the comfort of nurses (Kolcaba, Tilton, & Drouin, 2006). The researchers worked with a non-profit hospital in the New England area to assist in the enhancement of patient care through application of comfort theory. Kolcaba (2006) maintained that comfort theory proposed that when the comfort of nurses is enhanced, nurses are more satisfied, more committed to the institution, and able to work more effectively. Based upon a review of the literature, Kolcaba concluded that a desirable workplace environment contained the same comfort factors (physical, psycho-

spiritual, sociocultural, and environmental) as identified in comfort theory. These factors were used to develop the Nurse Comfort Questionnaire (see Appendix F). The Nurse Comfort Questionnaire, as such has not been tested; however, it is derived from the General Comfort Questionnaire, of which there is established reliability and validity. For this reason, the following is a description of the General Comfort Questionnaire. Comfort has been defined as the "state of having met basic human needs for ease, relief, and transcendence" (Kolcaba, 2001, p 87). The General Comfort Questionnaire was developed to measure these three human needs. The questionnaire is a 48-item Likert scale questionnaire ranging from strongly agree to strongly disagree. Twenty-four items are positive statements and twenty-four are negative statements. Higher scores on the scale indicate a higher level of comfort or a lower level of discomfort. Reliability of the original tool was established at a Cronbach's alpha .88 (Kolcaba, 2001). Face validity of the questionnaire was established based upon patient agreement that items were all relevant to their health care comfort experiences. The Nurse Comfort Questionnaire, which was derived from the General Comfort Questionnaire, is also a 48 item Likert scale in which nurses rate statements on a continuum according to the extent to which they agree with the statement or disagree with the statement with 1 being "strongly disagree" and 6 being "strongly agree". Based on the results from this study, the Chronbach alpha for the Nurse Comfort Questionnaire is .382. This indicates that indicators of patient comfort do not readily translate into measures for nurse comfort and if the concept of nurse comfort exists, it has yet to be adequately measured. This has a negative effect on the results of the study. Following completion of data analysis for the present study, post-hoc analyses was carried out to further examine the nurse comfort questionnaire. Factor analysis revealed a 14-item factor with a Chronbach's alpha of .89.

Thus, future further refinement of the instrument and reevaluation of the current study findings is warranted.

Work Satisfaction

The Index of Work Satisfaction (IWS) (see Appendix G) second edition (Stamps, 1997) is a two part scale designed to measure job satisfaction of nurses working in hospital and/or clinic settings. The index measures variables that Stamps believes influence staff satisfaction. The six variables as described by Stamps (1997) are autonomy, interactions, organizational policies, pay, professional status, and task requirements. Autonomy refers to the degree of job related independence employees feel. Interactions refer to the personal and professional exchanges during work. Organizational policies refer to any administrative policy or procedure that affects employees work activities. Pay is the salary plus the fringe benefits an employee receives. Professional status refers to the feeling of significance of the employee's work. Task requirements refer to the routine activities that must be performed daily at work. Each part of the IWS addresses these six satisfaction variables. Part B is being used for the current study.

Part B of the scale consists of forty-four statements related to nurse work satisfaction. Statements regarding attitude toward work are rated on a seven point Likert scale addressing the extent to which one agrees or disagrees with the statement. For example statement one is, "My present salary is satisfactory". If one strongly agrees with this statement, they choose 1 or numbers closer to 1. If one disagrees they choose numbers closer to 7 or 7. The scale is scored by summing the numbers chosen for a possible range from 44 to 308. The scale has been used extensively in nursing job satisfaction research since 1986. It has proven to be valid and reliable (Chronbach's

alphas from .70 to .80). The subscales of the Index of Work Satisfaction were all compared to the overall scale for a measure of construct validly. All subscales were significantly related to the overall scale at the <.0001 level of significance (Stamps, 1997). Curtis (2007) reported Chronbach's alpha per subscale as follows: pay, 0.82; autonomy, 0.74; task requirements, 0.72; organizational policies, 0.73; professional status, 0.59; and interaction, 0.78.

Burnout

The Maslach Burnout Inventory (MBI) (see Appendix H) is an instrument originally developed by Maslach and Jackson (1981) and revised by Maslach, Jackson, & Leiter in 1996 and consists of 22 questions with a Likert scale from 0-6. The MBI is comprised of three sub-scales that assess three antecedents of burnout: emotional exhaustion, depersonalization, and lack of personal accomplishment. The items are written in the form of statements about personal feelings and are answered in terms of frequency with which the respondent experiences these feelings. Scores on the MBI are not used to compute a total burnout score, but rather, each subscale is scored separately. The degree of burnout is based on a combination of scores from the subscales (Maslach, Jackson, & Leiter, 1996).

Emotional exhaustion refers to the development of increased feelings of emotional exhaustion and fatigue concerning work. Depersonalization is the tendency to develop negative and cynical attitudes toward others, or toward one's clients. Lack of personal accomplishment refers to negative self-evaluation and lack of satisfaction with one's achievements. Each antecedent to burnout is analyzed as a separate subtest: (a) emotional exhaustion (EE), (b) depersonalization (Dp), and (c) personal accomplishment (PA).

High scores on the emotional exhaustion and depersonalization subtests correspond to higher levels of burnout. The personal accomplishment subtest is scored in the opposite direction. Low scores on this subtest correspond with higher levels of burnout. An explanation of scoring is as follows:

High Burnout - High scores on EE and Dp subtests and low scores on the PA subtest.

Average Burnout - Averages scores on all three subtests.

Low Burnout - Low scores on EE and Dp subtests and high scores on the PA subtest.

A score is considered high if it is within the upper third of the normal distribution, average if it is in the middle third and low if it falls within the lower third (Maslach, Jackson, & Leiter, 1996). A study by Maslach, Jackson, and Leiter provided data norms on physician and nurse groups that will be used in this study. The norms of physician and nurse groups for each subscale are as follows:

EE -	Low (< 18)	Average (19-26)	High (> 27)	Range (0-56)
DP -	Low (< 5)	Average (6-9)	High (> 10)	Range (0-30)
PA -	Low (> 40)	Average (39-34)	High (< 33)	Range (0-48)

The MBI has been widely used and has been shown to be a reliable and valid instrument for the measurement of burnout. Internal consistency reliability was reported at .90 for EE, .79 for Dp, and .71 for PA. Test-retest reliability coefficients for a sample of graduate students in a health agency were .82 for EE, .60 for Dp, and .80 for PA. The highest reported level of criterion validity was .68 (Maslach et. al., 1996). Pierce and Molloy (1989) tested the construct validity of the MBI by distributing 1018 questionnaires to teachers in 16 schools in Melbourne, Australia. A total of 750

questionnaires were returned, which was a 74% response rate. The authors reported the following reliability coefficients: Emotional Exhaustion frequency - 0.89, intensity - 0.86; Depersonalization frequency - 0.71, intensity - 0.72; and Personal accomplishment frequency - 0.81, intensity - 0.81. They found that the reliability scores were equal to those reported by Maslach and Jackson (1981), using teachers from the United States.

Procedures

Before any data was collected, protocols for permission to conduct the study was submitted and subsequent permission was obtained from the University of Southern Mississippi Institutional Review Board (IRB) (see Appendix A). In accord with the intent to protect subjects, the procedures adhered to the ethical principle of beneficence, which is to do good and prevent harm (Beauchamp & Childress, 2001). Specific measures are described below.

Potential research participants for this study were recruited by personal communication with nurses and/or nurse manager on patient care units, as well as recruitment during bi-annual skills fairs within four South Mississippi hospitals. Inclusion criteria for the study were individuals who were registered nurses or nurse practitioners who provided direct patient care and who were employed in any of the four South Mississippi hospital at the time of the study. No individual meeting the inclusion criteria was excluded from the study. The only means of exclusion was a choice by the nurse to decline to participate in the study. All potential participants were informed that participation or no participation in the study would have no harmful effect on them.

Once a participant agreed to participate they were given a packet containing the questionnaires to measure the four variables in the study: the Langer mindfulness inventory, the mindfulness attention awareness scale, the mindfulness Self-Efficacy

survey, the Maslach burnout inventory, the nurse comfort questionnaire and the index of work satisfaction. Additionally a demographic form constructed to collect descriptive data was included in the packet (see Appendix B). To decrease the chances of common method variances, instruments were randomly placed into each packet. This served to help decrease the chances of guiding participant responses based on the order in which the instruments were placed in the packets (Podsakoff, MacKenzie, Podsakoff, & Lee, 2003).

Data Analysis

Descriptive analysis was used for data from the demographic form. Data from questionnaires was be analyzed by the software program, SPSS.12 for Windows, and AMOS for path analysis. The purpose of this study was to determine if there were any significant relationships between mindfulness, comfort, job satisfaction, and burnout.

For the purposes of this study, mindfulness is the independent variable. Multiple regressions were used to test relationships between the independent variable mindfulness and each of the dependent variables and to determine relationships between the three mindfulness surveys. Each dependent variable was tested at a 0.5 level of significance.

Based on previous studies, there are supported relationships between mindfulness and burnout, mindfulness and job satisfaction, and burnout and job satisfaction. The relationships between mindfulness and comfort, comfort and job satisfaction, and comfort and burnout are as yet unexplored. Figure 1 depicts these preceding supported and unexplored relationships. For this study it was proposed that mindfulness would have a significant relationship with comfort. This variable will in turn be significantly related to job satisfaction, which will be significantly related to burnout (see Figure 2). Unidirectional path analysis and structural equation mobility (SEM) was utilized to test

the model. Data from questionnaire packets will be kept in a locked cabinet during analysis. After completion of analysis of this study, the data will be destroyed.

Measures Taken for Protection of Human Subjects

Each research participant was instructed not to record his/her name or any other identifying data on the research packet. Completion of the questionnaire packet served as consent for participation in this research study. Participants were informed that there were no anticipated risks for inclusion in the study and that they could drop out of the study at any time. Potential benefits for participation in this study included the opportunity to be part of a research study that may prove beneficial to themselves and to other individuals in the nursing profession. Additionally, participants will be in a position for the acquisition of knowledge that may help to increase comfort and job satisfaction and subsequently ameliorate burnout.

Anonymity and confidentiality were protected by blank packets that were numbered after their completion upon return to the researcher. The research packets contain no identifying information on them. Only aggregate data are reported for the study.

Summary

This chapter provided a detailed description of the procedure for conducting the research study and the target population that is to be researched. Also provided is a description of each instrument that will be used in the study, including validity and reliability. Finally, the intended means for data analysis and protection of human subjects were also presented.

In the following Chapter IV, the analysis of data from this study will be presented. Recurrent patterns will be analyzed and discussed.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

In this chapter the research questions and hypotheses are addressed and findings reported for each. The overall data analysis is presented as well as tables and figures pertaining to the data. Methods for recruiting participants and instruments used to collect data are also presented.

Description of the Sample

A total of 186 surveys were completed for this study. This sample is diverse across all demographic variables included in the survey and is believed to be representative of the nursing population in coastal Mississippi. Table 1 displays the response rates. Specifically, demographic information was collected regarding each nurse's gender, educational experience, age, and work experience.

Demographics

Location. Nurses from four different hospitals throughout coastal Mississippi were surveyed for this study. These hospitals are identified as Hospital 1 (H1) to Hospital 4 (H4). Hospital 1 (H1) is a 435 bed county hospital. Hospital 2 (H2) is a 136 bed county hospital. Hospital 3 (H3) is a 130-bed acute care facility with all private rooms. Hospital 4 (H4) is a 198-bed facility with all private rooms. Hospitals represented in this study are all accredited by the Joint Commission on Accreditation of Healthcare Organizations. Table 1 shows the percentage of nurses that returned surveys for this study for each of the aforementioned groups.

Gender. Approximately 86 percent of all the nurses surveyed were female. This figure is slightly lower than the national data collected by the US Department of Health and Human Services, which reports that 94 percent of all registered nurses are female.

Highest degree. Of the 186 nurses surveyed, 45.2% had an Associate's Degree, 40.9% hold a Bachelor's Degree, and 14% have completed a Master's Degree.

Highest nursing degree. The majority (50.8%) of the nurses surveyed only hold an Associate's Degree in Nursing, 38.6% have completed a Bachelor's Degree in Nursing, and 12.4 % have earned a Master's Degree in Nursing.

Age. All the nurses who participated in this study were 21 years of age or older. Twenty-two percent were 21-30 years of age, 31.2% were 31-40, 24.2% were 41-50, and 16.7% were 51-60 years of age. Overall, 77.4% of the respondents were 21-50 years of age.

Time in current position. A little more than over 40% of the nurses surveyed have worked in their current positions for more than one year, but less than 5 years. Nearly 30% of participants have worked in their current position for more than five years, but less than 10 years.

Worked at time of Katrina. Sixty-eight percent of the nurses surveyed indicated they were employed in hospitals on the Mississippi Gulf Coast during late August 2005. This was the month and year when Hurricane Katrina made its landfall.

Nursing experience. There was a wide range of length of experience in nursing indicated by the nurses surveyed for this study. Respondents had a range of as little as 0.08 years and as much as 44 years of nursing experience. On average, respondents had slightly over 13 years of experience in nursing. The data are skewed to the left, indicating the majority of nurses surveyed in this study were less experienced than the average respondent.

Burnout Scores

On average, the participants scored in the average range for Personal Accomplishment, PA (*M* = 37.63, Range 0-48), Depersonalization, Dp (*M* = 6.88, Range 0-30), and Emotional Exhaustion, EE (*M* = 20.13, Range 0-56) when compared to the previously noted data norms for physicians and nurses established by Maslach and Jackson (1981) for scoring the Maslach Burnout Inventory (MBI). This indicates that the nurses in this study had average levels of burnout. Table 2 presents the means for the subscales of the MBI for each hospital represented in the study. From this information, it appears that H2 had the lowest levels of burnout with average scores on all three subscales of the MBI (PA (*M* = 38.43), Dp *(M* = 6.38), and EE (*M* = 19.14). These results suggest that employees of H2 have lower levels of EE, which indicates that these employees are not suffering from emotional exhaustion. Also, it must be noted that there was a larger sample representation in H2 with 84 respondents of the total of 186 who completed the MBI.

Table 1

Demographic Variables

1. Location	
H1	33.9%
H2	39.2%
H3	15.1%
H4	11.8%
2. Nurse Gender	
Female	85.9%
Male	14.1%
3. Highest Degree Obtained	
AD	45.1%
BS	40.9%
MS	14.0%
4. Highest Nursing Degree Obtained	
ADN	50.8%
BSN	36.8%
MSN	12.4%
5. Age	
21-20 years	22%
31-40 Years	31.2%
41-50 years	24.2%
51-60 years	16.7%
60 + years	5.9%
6. Length of Time in Current Position	
3 months	5.9%
1 year	40.5%
5 years	29.7%
10 years	11.4%
15 years	12.4%
7. Worked on Coast during Hurricane Katrina	
Yes	68.1%
No	31.9%
8. Nursing Experience (years)	
Minimum	.08
Mean	13.21
Maximum	44.00

Table 2

Means of Burnout Scores

Hospital		PA (Range 0-48)	EE (Range 0-56)	Dp (Range 0-30)
1. H1	Mean	35.71	21.23	7.73
	N	52	52	52
	Std. Deviation	7.198	10.446	6.347
2. H2	Mean	38.43	19.14	6.38
	N	84	84	84
	Std. Deviation	6.601	10.623	5.941
3. H3	Mean	37.61	20.50	6.79
	N	28	28	28
	Std. Deviation	4.725	10.112	5.750
4. H4	Mean	39.14	20.86	6.91
	N	22	22	22
	Std. Deviation	5.213	12.025	5.415
Total	Mean	37.63	20.13	6.88
	N	186	186	186
	Std. Deviation	6.463	10.626	5.951

Mindfulness Scores

Mindfulness Based Self-Efficacy Scale (MSES). The means of the three mindfulness surveys are presented in the following three tables. The results presented in Table 3 indicate that two hospitals (H1 and H4) scored in the moderate range of Self-Efficacy and the remaining two (H2 and H3) scored in the "good" range. H1 (N = 50) had the lowest Self-Efficacy score of 97.52, however, this scores is in the upper range of

the moderate mindfulness range for the MSES of scores from 70-104, from a possible range of 0-140.

Table 3

Means of Mindfulness Self-Efficacy Scores
(Possible range: 0-140)

Hospital	Mean	N	Std. Deviation
1. H1	97.52	50	16.103
2. H2	111.26	82	111.011
3. H3	137.92	24	208.037
4. H4	102.95	21	15.256
Total	110.01	177	107.626

Mindfulness Attention Awareness Scale (MAAS). Possible scores on the MAAS range from 1-6, with higher scores indicating higher levels of dispositional mindfulness. On average, respondents scored in the upper 60 percentile for the MAAS, with scores ranging from 4.31 to 4.49. These results indicate that all participants have moderate to moderately high levels of mindfulness (see Table 4).

Table 4

Means of Mindfulness Attention Awareness Scale

(Possible range: 1-6)

Hospital	Mean	N	Std. Deviation
1. H1	4.3165	51	.82780
2. H2	4.3295	81	.94388
3. H3	4.4919	26	.79260
4. H4	4.4736	22	.65781
Total	4.3669	180	.85622

Langer Mindfulness Scale (LMS). Table 5 presents the results of the LMS as well as the individual scores on the subscales. The overall mean score was 109.72 (N = 182), from a possible range of 21-147 . H4 (N = 22) had the highest total LMS scores (*M* = 112.64). H2 (N = 82) scored the lowest on the LMS (*M* = 108.54). These highest score results remained true throughout the subscales with the exception of the Novelty Producing (NP) scores, with H1 (N = 51) scoring the highest (M = 30.33). The lowest scores were from H2 (N = 82) for Novelty Producing (M = 28.90) and for Engagement (ES) (M = 24.57), however, the lowest scores for Novelty Seeking (NS) (M = 34.78) and Flexibility (FS) (M = 20.11) were from H3 (N = 27).

Table 5

Means of Langer Mindfulness Scale
(Range 21-147)

Hospital	LMS	NP	NS	ES	FS
1. H1 Mean	110.61	30.33	34.88	24.67	20.73
2. H2 Mean	108.54	28.90	34.94	24.57	20.12
3. H3 Mean	109.26	29.44	34.78	24.93	20.11
4. H4 Mean	112.64	29.59	36.09	26.09	20.86
Total Mean	109.72	29.47	35.04	24.84	20.38

Nurse Comfort

Table 6 shows the means of the scores on the Nurse Comfort Scale. This scale has a possible range of 48-288. According to the results, H3 (N = 25) had the highest

level of nurse comfort (*M* = 176.48), conversely, H4 (N = 22) had the lowest level of nurse comfort (*M* = 173.05). Hospitals 1 and 2 had scores at the average level of 175.27.

Table 6

Means of Nurse Comfort Scores
(Possible Range: 48-288)

Hospital	Mean	N	Std. Deviation
1. H1	175.25	52	13.720
2. H2	175.51	83	12.447
3. H3	176.48	25	8.554
4. H4	173.05	22	10.768
Total	175.27	182	12.133

Work Satisfaction Scores

According to the results presented in Table 7, H3 (N = 26) also had the highest level of work satisfaction (*M* = 168.96), with an overall mean of 166.88, from a possible range of 44-308. H1 (N = 52) and H4 (N = 22) had the lowest levels of work satisfaction, (*M* = 165.71) and (*M* = 165.77) respectively.

Table 7

Means of Work Satisfaction Scores
(Possible Range: 44-308)

Hospital	Mean	N	Std. Deviation
1. H1	165.71	52	18.896
2. H2	167.27	82	12.813
3. H3	168.96	26	15.098
4. H4	165.77	22	13.866
Total	166.88	182	15.136

Statistical Analysis

Correlations

Linear bivariate correlations were performed using the PASW grad pack statistical package for each of the three mindfulness scales and the other major variables of this study, nurse comfort, work satisfaction, and burnout. Correlations were performed using the three subscales of the MBI: emotional exhaustion, depersonalization, and personal accomplishment (see Table 8). The following section presents the correlation results.

Hypotheses

Hypothesis One

Mindfulness scores will be directly proportional to comfort scores.

According to the multiple correlation matrix (Table 8), mindfulness scores on all three of the measures of mindfulness are inversely proportional to nurse comfort scores.

Although a very small coefficient, mindfulness as measured by the MAAS in this study had the strongest inverse correlation (r = - .121) followed by the LMS (r = -.044) and the MSES (r = -.044). With the exception of Novelty Producing, all subscales of the LMS exhibited similar inverse correlations, Novelty Seeking (r = -.043), Engagement (r = -.124), and Flexibility (r = -.087). Novelty Producing was directly proportional to nurse comfort (r = .093). It is important to note, however, that all r values are small and insignificant (see Table 8). Hypothesis 1 is therefore not supported by the data as only the Novelty Producing subscale of the LMS is directly proportional to Nurse Comfort scores.

Hypothesis Two

Mindfulness scores will be directly proportional to work satisfaction scores.

Table 8 indicates that all correlations between mindfulness scores across all mindfulness scales and work satisfaction scores were insignificant, with the exception of one subscale of the LMS, Novelty Seeking (r = .171, p = .05). Mindfulness scores are directly proportional to work satisfaction scores with two mindfulness scales, the MAAS (r = .084) and the LMS (r = .090). Scores on the MSES are inversely proportional to IWS scores (r = - .020).

Hypothesis Three

Mindfulness scores will be inversely proportional to scores on the Emotional Exhaustion (EE) and the Depersonalization (Dp) subscales of the Maslach Burnout Inventory (MBI).

Table 8

Correlation Matrix of Mindfulness, Comfort, Work Satisfaction, and Burnout

(N = 179-182)

	NC	IWS	PA	EE	Dp
Mindfulness Attention Awareness Scale	-.121	.084	.336**	-.430**	-.461**
Langer Mindfulness Scale	-.044	.090	.317**	-.209**	-.174*
Novelty Producing	.093	-.025	.168*	-.138	-.066
Novelty Seeking	-.043	.171*	.289**	-.176*	-.212**
Engagement Scale	-.124	.007	.296**	-.124	-.069
Flexibility Scale	-.087	.105	.196**	-.181*	-.162*
Mindfulness-Based Self Efficacy	-.044	-.020	.064	-.145	-.007

Note. NC = Nurse Comfort; IWS = Index of Work Satisfaction; PA = Personal Accomplishment; Dp = Depersonalization.

* Correlation is significant at .05 level ** Correlation is significant at 0.01 level

Table 8 indicates that mindfulness scores on all the mindfulness scales are inversely proportional to emotional exhaustion (EE) and depersonalization (Dp) scores. Scores on the MAAS in this study are relatively high and significant, MAAS and EE scores ($r = -.430^{**}$, $p = .01$) and MAAS and Dp scores ($r = -.461^{**}$, $p = .01$). This

indicates that as MAAS scores go up, emotional exhaustion and depersonalization scores go down. In other words, as one becomes more mindful, he/she is less likely to experience EE and Dp, which can both lead to burnout. Mindfulness scores on the LMS are also significantly correlated to EE scores (r = -.209**, p = .01) and Dp scores (r = -.174*, p = .05). The Novelty Seeking and Flexibility subscales of the LMS have greater influence on the scale than do the Novelty Producing and Engagement scales, as the correlations with EE and Dp are all significant for the Novelty Seeking (EE- r = -.176,*, P = .05; Dp- r = -.212**, p = .01) and the Flexibility (EE – r = -.181*, p = .05; Dp- r = -.162*, p = .05) subscales.

The results of the correlation with MSES are low and not significant, however they are in the expected direction EE (r = -.145) and Dp (r = -.007). Based on these results, of the three mindfulness scales used for this study, the MAAS seems to have more influence on the emotional exhaustion and depersonalization subscales of the MBI followed by the LMS. Mindfulness as measured by MSES in this study has essentially no influence on the emotional exhaustion and depersonalization subscales of the MBI. Therefore, using the MAAS or the LMS as the mindfulness measure, Hypothesis 3 is fully supported.

Hypothesis Four

Mindfulness scores will be directly proportional to scores on the Personal Accomplishment (PA) subscale of the MBI.

The results presented in Table 8 indicate that Hypothesis 4 is supported. Mindfulness scores are directly proportional to Personal Accomplishment scores and statistically significant when using the MAAS (r = .336**, p = .01) as well as the LMS (r = .317**, p = .01) for measuring mindfulness. Mindfulness scores using the MSES for

measuring mindfulness are also directly proportional to PA, but are not significant (r = .064).

Hypothesis Five

Comfort scores will be inversely proportional to scores on the EE and Dp subscales of the MBI.

Hypothesis 5 was not supported by the data. Nurse comfort scores were directly proportional to EE (r = .070) and to Dp (r = .011). Neither r value was significant. (see Table 9).

Hypothesis Six

Comfort scores will be directly proportional to scores on the PA subscale of the MBI.

Table 9 indicates that Hypothesis 6 was supported by the data. Nurse comfort scores were directly proportional to PA scores but were insignificant (r = .129).

Table 9

Correlation matrix of nurse comfort scores and burnout subscales

(N = 182)

Burnout Subscales	Nurse Comfort
Emotional Exhaustion	.070
Depersonalization	.011
Personal Accomplishment	.129

Table 10

Correlation matrix of mindfulness scales

Mindfulness Scales	1	2	3
1. Langer Mindfulness Scale	___	.118	.164*
2. Mindfulness Attention Awareness Scale		___	.-034
3. Mindfulness-Based Self-Efficacy			___

* Correlation is significant at .05 level

Structural Equation Modeling

Three different instruments were used for obtaining quantitative data on mindfulness. Data from each survey instrument was used independently to determine the relationship of mindfulness on the variables of comfort, work satisfaction, and burnout. The architecture and results for these specific structural equation models are presented below. It is important to note that all of these models are recursive. That is, in the path diagram of the model, it is not possible to start at any variable and, by following a path of single-headed arrows, return to the same variable. The research questions presented within the research proposal are also answered.

Langer Mindfulness Scale

This model includes a sample size of 186, with observations labeled as 999 (missing data) removed or dropped from any particular variable during the analysis. Dropped observations are estimated using means and intercepts.

The Chi-square for this model is 80.397 with 3 degrees of freedom. The probability level is .000, meaning that if a particular variable has a probability level of .05 or less, the departure of the data from the model is significant at the .05 level. The regression weights for each of the variables are presented in the table below.

Table 11 presents the results that indicate that the path from LMS to EE is statistically significant at the .003 level, therefore, when LMS goes up by 1, EE goes down by -.199. The path from LMS to PA is statistically significant at the .000 level. When LMS goes up by 1% PA goes up by .188. The path from LMS to Dp is significant at the 2% level whereas when LMS goes up by 1 DP goes down by -.089. The estimated coefficients for these variables are also presented in the figure below.

Given the fact that all of the burnout variables are highly significant, it is easy to interpret that, in this case, increased mindfulness reduces burnout in nurses.

The model fit for this data is low. The comparative fit index (CFI) index is .266. Values of .95 indicate excellent fit. The Root Mean Square Error of Approximation (RMSEA) is .373. Values less than .06 indicate excellent fit.

Table 11

Structural Equation Model - Langer Mindfulness Scale (LMS)

D.V.		I.V.	Estimate	S.E.	P
1. NC	<---	LMS	-.047	.080	.554
2. IWS	<---	NC	-.176	.092	.056
3. IWS	<---	LMS	.115	.098	.240
4. PA	<---	IWS	-.034	.030	.254
5. Dp	<---	IWS	-.025	.029	.388
6. PA	<---	NC	.071	.037	.059
7. Dp	<---	NC	-.002	.036	.952
8. Dp	<---	LMS	-.089	.038	.021
9. EE	<---	IWS	.044	.052	.391
10. PA	<---	LMS	.188	.040	***
11. EE	<---	NC	.062	.064	.337
12. EE	<---	LMS	-.199	.068	.003

Note. D.V. = dependent variable; I. V. = independent variable; LMS = Langer Mindfulness Scale; NC = Nurse Comfort; IWS = Index of Work Satisfaction; PA = Personal Accomplishment; Dp = Depersonalization; EE = Emotional Exhaustion

***p < .001

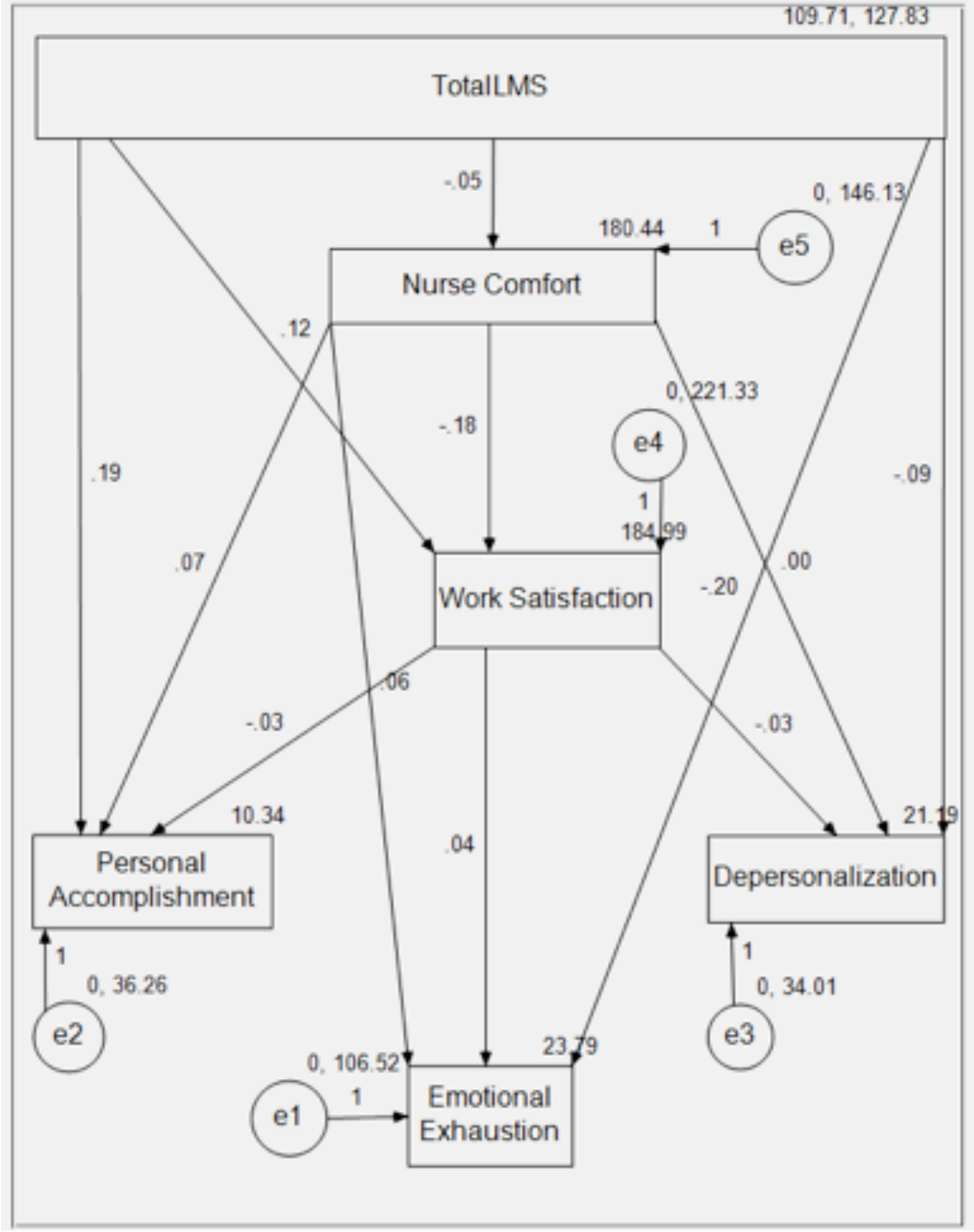

Figure 3. Langer Mindfulness Scale Model

Mindfulness-Based Self-Efficacy (MSES)

This model includes a sample size of 186, with observations labeled as 999 removed or dropped from any particular variable during the analysis. Dropped observations are estimated using means and intercepts.

The Chi-square for this model is 92.747 with 3 degrees of freedom. The probability level is .000, meaning that if a particular variable has a probability level of .05 or less, the departure of the data from the model is significant at the .05 level. The regression weights for each of the variable are presented in the table below. I.V. represents the independent variable, while D.V. represents the dependant variable.

The results in Table 12 indicate that the path from MSES to EE is statistically significant at the 5 percent level. When mindfulness as measured by the MSES increases by 1, EE goes down by -.015. It therefore appears that given the results for this model, increased mindfulness has a significant influence on burnout as it relates to emotional exhaustion in nurses. The path from NC to IWS is also significant at the 5 % level. As NC increases by 1, work satisfaction decreases by -.182. Perhaps as nurses become too comfortable and bored at work, the satisfaction the nurses feel declines. The estimated coefficients for these variables are also presented in the *Figure 4.*

Based on the following, the model fit for this data is poor. The comparative fit index (CFI) index is .000. Values of .95 indicate excellent fit. The Root Mean Square Error of Approximation (RMSEA) is .406. Values less than .06 indicate excellent fit.

Table 12

Structural Equation Model - Mindfulness-Based Self-Efficacy Scale Model (MSES)

D.V.		I.V.	Estimate	S.E.	P
NC	<---	MSES	-.006	.009	.493
IWS	<---	NC	-.182	.092	.047
IWS	<---	MSES	-.005	.011	.660
PA	<---	IWS	-.021	.032	.514
Dp	<---	IWS	-.031	.029	.289
PA	<---	NC	.067	.040	.090
Dp	<---	NC	.000	.037	.998
Dp	<---	MSES	-.001	.004	.869
EE	<---	IWS	.028	.052	.597
PA	<---	MSES	.004	.004	.346
EE	<---	NC	.060	.065	.356
EE	<---	MSES	-.015	.007	.048

Note. D.V. = dependent variable; I. V. = independent variable; NC = Nurse Comfort; MSES = Mindfulness-Based Self-Efficacy; IWS = Index of Work Satisfaction; PA = Personal Accomplishment; Dp = Depersonalization; EE = Emotional Exhaustion

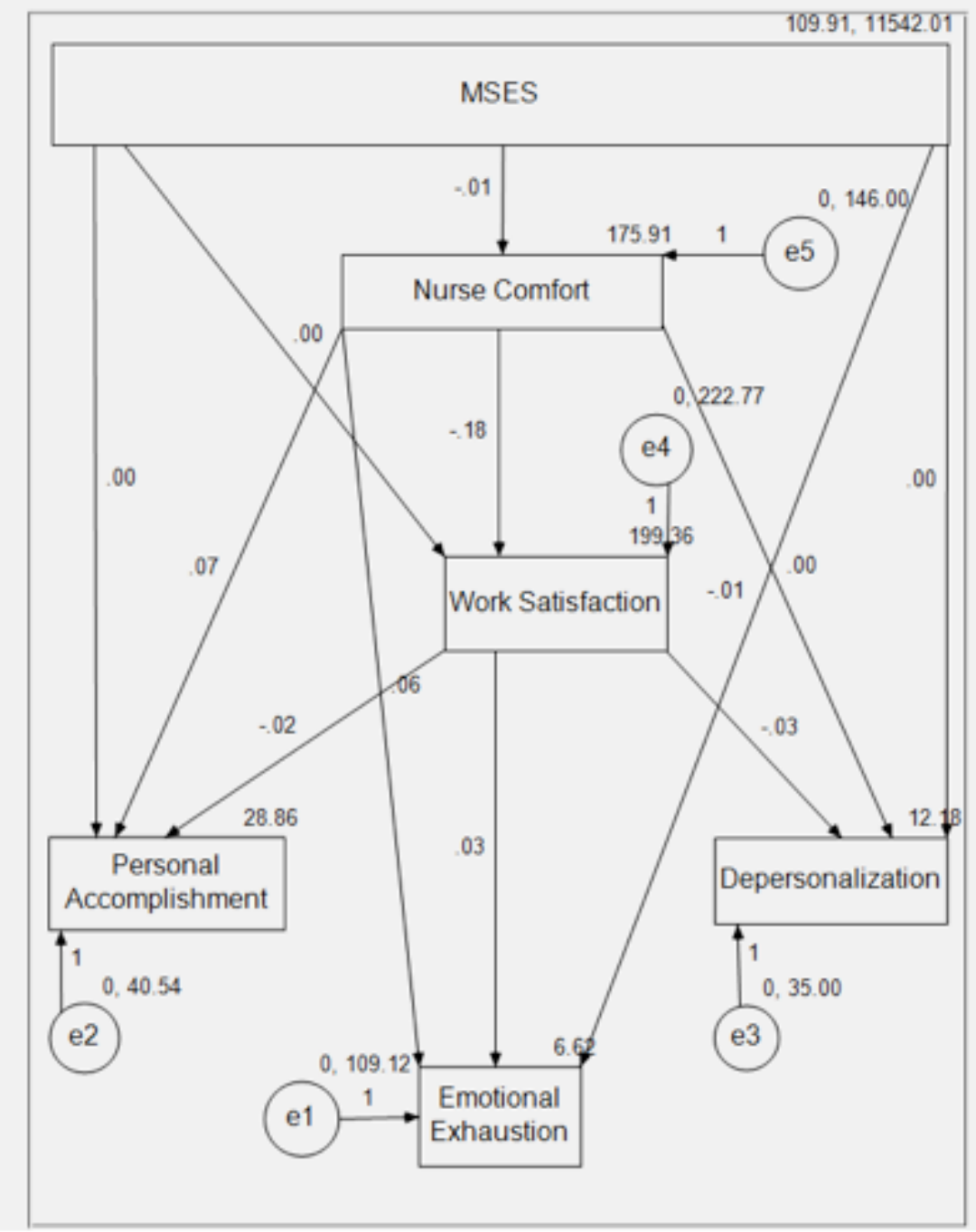

Figure 4. Mindfulness-Based Self-Efficacy Scale Model

Mindfulness Attention Awareness Scale (MAAS)

This model includes a sample size of 186, with observations labeled as 999 removed or dropped from any particular variable during the analysis. Dropped observations are estimated using means and intercepts.

The Chi-square for this model is 48.595 with 3 degrees of freedom. The probability level is .000, meaning that if a particular variable has a probability level of .05 or less, the departure of the data from the model is significant at the .05 level. The regression weights for each of the variables are presented in Table 13. I.V. represents the independent variable, while D.V. represents the dependant variable.

The results in the Table 13 indicate that the path from NC to PA, MAAS to Dp, MAAS to PA, and MAAS to EE are statistically significant at the 5 percent level. The paths from MAAS to DP, MAAS to PA, and MAAS to EE are highly significant at the .001 level. When NC goes up by 1, PA goes up by 0.088. When MAAS goes up by 1, Dp goes down by 3.224. When MAAS goes up by 1, PA goes up by 2.741. When MAAS goes up by 1, EE goes down by 5.413. The paths MAAS to NC, and NC to IWS are both statistically significant at the 10 level. When MAAS goes up by 1, NC goes down by 1.812. When NC goes up by 1, IWS goes down by 0.171. It is hard to put a lot of faith in these coefficients as they are only significant at the 10 level and the coefficients are small. The signs are also not what we expect. The estimated coefficients for these variables are also presented in Figure *5*.

The MAAS model statistically appears to explain a lot more about the influence that mindfulness has on burnout, as well as the influence that nurse comfort has on burnout. Given the fact that mindfulness is highly significant for each burnout index, and

the combining attribute that the coefficients are more robust for this model, it appears that mindfulness does play a role in decreasing burnout in this case.

The model fit for this data is also much improved from the LMS and the MSES models. The comparative fit index (CFI) index is .689. Values of .95 indicate excellent fit. The Root Mean Square Error of Approximation (RMSEA) is .287. Values less than .06 indicate excellent fit. While both the CFI and the RMSEA values are not ideal, they are stronger than those indicated in the LMS and the MSES models.

Table 13

Structural Equation Model - Mindfulness Attention Awareness Scale Model (MAAS)

D.V.		I.V	Estimate	S.E.	P
NC	<---	MAAS	-1.812	1.049	.084
IWS	<---	NC	-.171	.093	.065
IWS	<---	MAAS	1.041	1.312	.427
PA	<---	IWS	-.031	.030	.297
Dp	<---	IWS	-.020	.026	.438
PA	<---	NC	.088	.037	.018
Dp	<---	NC	-.027	.033	.416
Dp	<---	MAAS	-3.224	.461	***
EE	<---	IWS	.049	.047	.301
PA	<---	MAAS	2.741	.522	***
EE	<---	NC	.022	.060	.710
EE	<---	MAAS	-5.413	.835	***

Note. D.V. = dependent variable; I. V. = independent variable; NC = Nurse Comfort; MAAS = Mindfulness Attention Awareness Scale; IWS = Index of Work Satisfaction; PA = Personal Accomplishment; Dp = Depersonalization; EE = Emotional Exhaustion

***p < .001

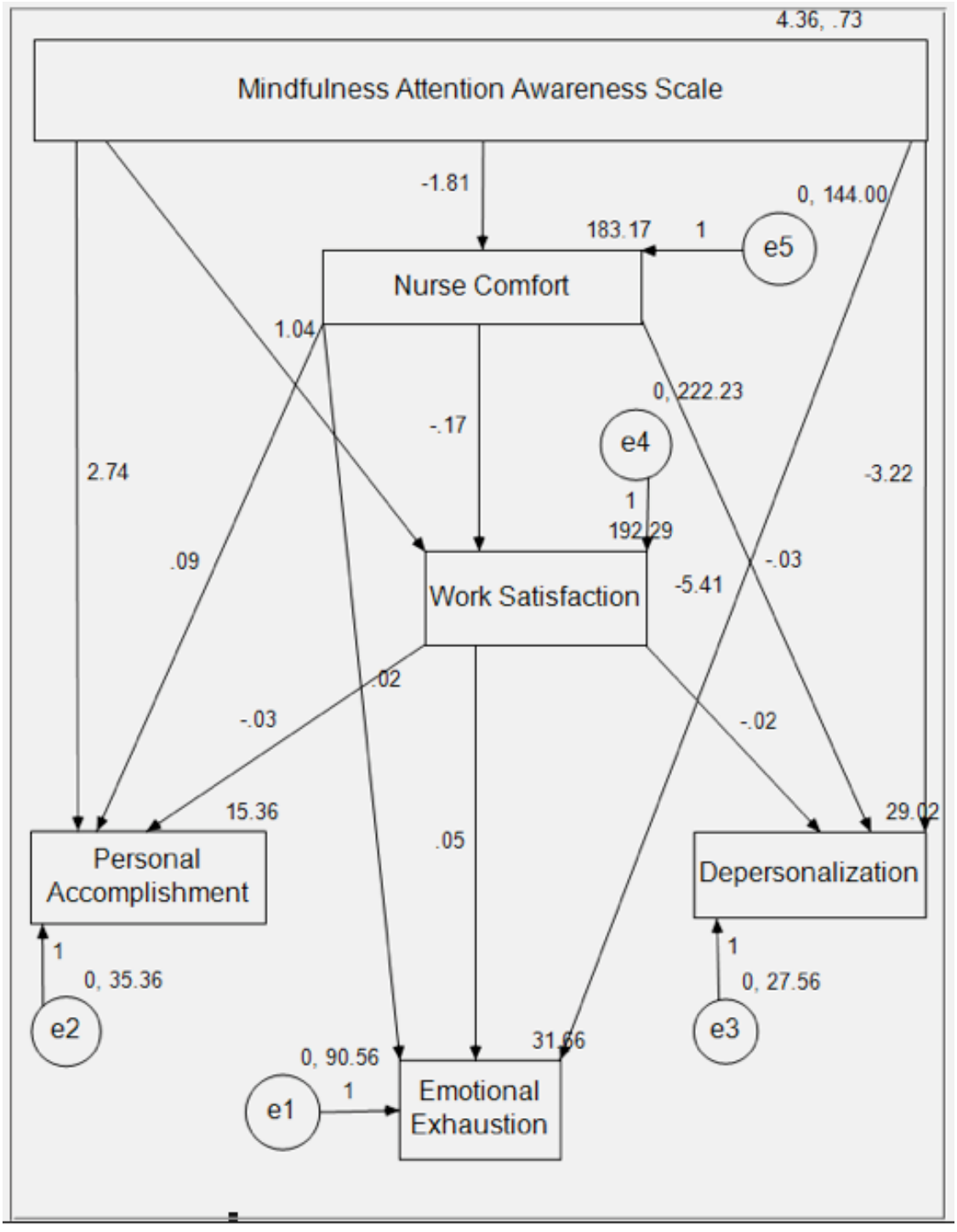

Figure 5 Mindfulness Attention Awareness Scale Model

Research Questions

Structural equation modeling (SEM) using Amos (Tables 11, 12, and 13) and SPSS bivariate correlations (Tables 8, 9, and 10) were used to answer the research questions. The following is a discussion of the research questions presented in this study and an explanation of each based on the research findings.

Research Question One

Is there a statistically significant relationship between mindfulness and comfort?

It appears that given the three different mindfulness survey instruments used for this study there is not a statistically significant relationship between mindfulness and comfort at the 5% level (Tables 11, 12, &13). The correlations presented in Table 8 further validate these findings. Increased mindfulness in nurses on the Mississippi Gulf Coast does not appear to increase their level of comfort.

Research Question Two

Is there a statistically significant relationship between mindfulness and work satisfaction?

It appears that given the three different mindfulness survey instruments used for this study there is not a statistically significant relationship between mindfulness and work satisfaction at the 5% level. The correlations presented in Table 8 further validate these findings. Therefore increasing mindfulness in nurses does not increase the work satisfaction of nurses on the Mississippi Gulf Coast.

Research Question Three

Is there a statistically significant relationship between mindfulness and burnout?

There is a highly significant relationship between mindfulness and burnout across all three mindfulness scales (Tables 11, 12, &13). Using the LMS (Table 11), the path

from LMS to EE is statistically significant at the .003 level, therefore, when LMS goes up by 1, EE goes down by -.199. The path from LMS to PA is statistically significant at the .001 level. When LMS goes up by 1, PA goes up by .188. The path from LMS to Dp is significant at the 2% level. When LMS goes up by 1 Dp goes down by -.089. Using the MSES (Table 12), the path from MSES to EE is statistically significant at the 5 percent level. When MSES goes up by 1, EE goes down by .015.

Using the MAAS (Table 13), the paths from MAAS to Dp, MAAS to PA, and MAAS to EE are highly significant at the .001 level. When MAAS goes up by 1, Dp goes down by 3.224. When MAAS goes up by 1, PA goes up by 2.741. When MAAS goes up by 1, EE goes down by -5.413.

Table 8 also indicates that there is a statistically significant relationship between mindfulness and burnout, based on the following correlations: MAAS and EE scores ($r = -.430^{**}$ p = .01), MAAS and Dp scores ($r = -.461^{**}$, p = .01), LMS and EE scores (r = -.209**, p = .01), LMS and Dp scores (r = -.174*, p = .05), MAAS and PA (r = .336**, p = .01), and LMS and PA (r = .317**, p = .01).

These preceding models and correlations presented tells us a lot about the influence that mindfulness has on burnout. Given the fact that mindfulness is highly significant throughout many of the variables investigate; it appears that mindfulness does play a role in decreasing burnout. These are perhaps the most significant results of this study. Mindfulness in the nursing field on the Mississippi Gulf Coast has a significant impact on the burnout rate of nurses.

Research Question Four

Is there a statistically significant relationship between nurse comfort and burnout?

Using the MAAS mindfulness survey instrument (Table 13), there appears to be a statistically significant relationship at the .018 level between nurse comfort and the personal accomplishment component of the burnout index. When NC goes up by 1, PA goes up 0.88. It is important to note, however, that this is a small coefficient. According to the results in Tables 11-13, no other path from nurse comfort to burnout is statistically significant. The correlations presented in Table 9 further validate these results as there are no statistically significant relationships between nurse comfort and burnout. Nurse comfort in the nursing field on the Mississippi Gulf Coast has minimal impact (0.88 change) on the personal accomplishment subscale of the MBI.

Incidental Findings Related to Demographics

Even though it was not the focus of the study it is possible that personal variables could be related to mindfulness therefore, I looked at the relationship of personal characteristics and mindfulness. I analyzed the data by using each of the three mindfulness surveys as the dependent variables with the demographic variables gender, highest nursing degree, age, length of current position, and work on the coast during Katrina, and length of time as a nurse, as the independent variables. The demographic variable "highest degree obtained" was not used for this analysis. There were some interesting findings from this analysis and the following presents these findings.

Demographics and Mindfulness

Mindfulness Attention Awareness Scale. Table 14 shows the results of the regression analysis model summary using the Mindfulness Attention Awareness Scale as the dependent variable. A total of 35 cases were dropped for this analysis due to a missing response along one or more of the variables used in the model. This yielded a regression with 151 observations (N).

Table 14

Model Summary for Regression Analysis Using Mindfulness Attention Awareness Scale as Dependent Variable

Model	N	R Square	Adjusted R Square	Std. Error of the Estimate
1	151	.089	.051	.82972

The R^2 value of 0.089 indicates that 8.9 percent of the variation in the Mindfulness Attention Awareness Scale can be explained by the demographic variables used in the analysis.

Table 15

Analysis of Variance for Mindfulness Attention Awareness Scale as Dependent Variable

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	9.662	6	1.610	2.339	.035
	Residual	99.135	144	.688		

Table 16

Regression Analysis Using Mindfulness Attention Awareness Scale as Dependent Variable

Model		B	SE	Beta	t	Sig.
1	(Constant)	4.328	.390		11.085	.000
	Gender	.174	.208	.068	.839	.403
	Highest Nursing Degree	-.175	.100	-.146	-1.747	.083
	Age	.094	.089	.131	1.064	.289
	Length of Current Position	-.172	.074	-.227	-2.338	.021
	Work on Coast During Katrina	.289	.163	.157	1.778	.078
	Length as Nurse (years)	.006	.010	.077	.577	.565

The results above demonstrate that Length in Current Position is statistically significant at the 5 % level, and Highest Nursing Degree and Work on Coast during Katrina are statistically significant at the 10 % level. The remaining independent variables included in the regression are not statistically different than zero, and thus do not help explain any of the variation in the dependent variable, the Mindfulness Attention Awareness Scale

The coefficient on Highest Nursing Degree is less than zero (-0.175), which indicates that nurses who hold more advanced nursing degrees have lower levels of

dispositional mindfulness. Similarly, the negative beta estimate for Length of Current Position (-0.172) reveals that nurses who have held their current position for longer tenures have a lower awareness of mindfulness. On the other hand, the positive coefficient on Work on Coast during Katrina (0.289) indicates that nurses who worked on the Gulf Coast during Hurricane Katrina are more likely to be aware of their mindfulness than those who did not. Table 15 demonstrates that as a whole, the model is highly statistically significant at the 5 % level (F= 0.035).

Langer Mindfulness Scale. Table 17 represents the model summary for the regression analysis using the Langer Mindfulness Scale as the dependent variable and the demographic variables gender, highest nursing degree, age, length of current position, work on coast during Katrina, and length as a nurse as the independent variables. This regression includes 153 observations (N). A total of 33 cases were dropped from this analysis due to a missing response along one or more of the variables used in the model.

Table 17

Model Summary for Regression Analysis Using Langer Mindfulness Scale as Dependent Variable

Model	N	R Square	Adjusted R Square	Std. Error of the Estimate
2	153	.086	.048	11.279

The R^2 value of 0.086 indicates that 8.6 percent of the variation in the Langer Mindfulness Scale can be explained by the demographic variables used in the analysis.

Table 18

Analysis of Variance for Langer Mindfulness Scale as Dependent Variable

Model 2	Sum of Squares	df	Mean Square	F	Sig
Regression	1738.008	6	289.668	2.277	.039
Residual	18574.162	146	127.220		
Total	20312.170	152			

Table 19

Regression Analysis Using Langer Mindfulness Scale as Dependent Variable

Model		B	Std. Error	Beta	t	Sig.
2	(Constant)	109.438	5.265		20.784	.000
	Gender	3.132	2.768	.092	1.132	.260
	Highest Nursing Degree	1.516	1.359	.093	1.116	.266
	Age	.577	1.201	.059	.481	.631
	Length of Current Position	-3.000	1.014	-.287	-2.958	.004
	Work on Coast During Katrina	-912	2.187	-.037	-.417	.677
	Length as Nurse (years)	.130	.140	.124	.928	.355

Table 19 demonstrates that Length in Current Position is statistically significant at the 1 % level. The remaining independent variables included in the regression are not statistically different than zero, and thus do not help explain any of the variation in the

dependent variable, the Langer Mindfulness Scale. The coefficient on Length of Current Position is less than zero (-3.000), which indicates that nurses who have held their current position for longer tenures have a lower level of mindful thinking. This finding is consistent with the results in Model #1 regarding the Length of Current Position variable. As a whole, the model is highly statistically significant at the 5 % level, because its F-statistic (0.039) is less than 0.05 (see Table 18).

Novelty Producing Subscale of Langer Mindfulness Scale. Table 20 represents the results of regression analysis (N= 153) using Novelty Producing as the dependent variable and the demographic variables gender, highest nursing degree, age, length of current position, work on coast during Katrina, and length as a nurse as the independent variables. A total of 33 cases were dropped from this analysis due to a missing response along one or more of the variables used in the model

Table 20

Model Summary for Regression Analysis using Novelty Producing Subscale of Langer Mindfulness Scale as Dependent Variable

Model	N	R Square	Adjusted R Square	Std. Error of the Estimate
3	153	.036	-.003	3.468

The R^2 value of 0.036 indicates that 3.6 percent of the variation in the Novelty Producing Index can be explained by the demographic variables used in the analysis.

Table 21

Analysis of Variance for Novelty Producing Subscale of Langer Mindfulness Scale as Dependent Variable

Model 3	Sum of Squares	df	Mean Square	F	Sig.
Regression	66.188	6	11.031	.917	.484
Residual	1755.929	146	12.027		
Total	1822.118	152			

Table 22

Regression Analysis using Novelty Producing Subscale of Langer Mindfulness Scale as Dependent Variable

Model 3	B	Std. Error	Beta	t	Sig
(Constant)	29.293	1.619		18.093	.000
Gender	.045	.851	.004	.053	.958
Highest Nursing Degree	-.561	.418	-.114	-1.343	.181
Age	-.272	.369	-.093	-.737	.462
Length of Current Position	-.547	.312	-.175	-1.753	.082
Work on Coast During Katrina	.604	.672	.081	.899	.370
Length as Nurse (years)	.034	.043	.109	.793	.429

The results above demonstrate that Length in Current Position is statistically significant at the 10 % level. The remaining independent variables included in the regression are not statistically different than zero, and thus do not help explain any of the variation in the dependent variable, the Novelty Producing Index, which is a sub-scale of the Langer Mindfulness Scale. The negative beta estimate for Length of Current Position (-0.547) reveals that nurses who have held their current position for longer tenures are less novelty producing or less likely to generate new information to learn about a situation at hand. As a whole, the model is not statistically significant at the 10 % level, because its F-statistic (0.484) is greater than 0.10 (see Table 21).

Novelty Seeking Subscale of LMS. Novelty Seeking as the dependent variable and the demographic variables gender, highest nursing degree, age, length of current position, work on coast during Katrina, and length as a nurse as the independent variables is depicted in Table 23.

Table 23

Model Summary for Regression Analysis using Novelty Seeking of Langer Mindfulness Scale as Dependent Variable

Model	N	R Square	Adjusted R Square	Std. Error of the Estimate
4	153	.035	-.005	3.201

This regression includes 153 observations (N). A total of 33 cases were dropped from this analysis due to a missing response along one or more of the variables used in the

model. The R^2 value of 0.035 indicates that 3.5 percent of the variation in the Novelty Seeking Index can be explained by the demographic variables used in the analysis.

Table 24

Analysis of Variance for Novelty Seeking Subscale of Langer Mindfulness Scale as Dependent Variable

Model 4	Sum of Squares	df	Mean Square	F	Sig.
Regression	54.467	6	9.078	.886	.507
Residual	1496.003	146	10.247		
Total	1550.471	152			

Table 25

Regression Analysis using Novelty Seeking of Langer Mindfulness Scale as Dependent Variable

Model 4	B	SE	Beta	t	Sig.
(Constant)	29.172	1.494		19.522	.000
Gender	.167	.785	.018	.213	.832
Highest Nursing Degree	-.282	.386	-.062	-.732	.465
Age	.355	.341	.132	1.043	.299
Length of Current Position	-.543	.288	-.188	-1.888	.061
Work on Coast During Katrina	.014	.621	.002	.023	.981
Length as Nurse (years)	.007	.040	.026	.188	.851

Table 25 demonstrates that Length in Current Position is statistically significant at the 10 % level. The remaining independent variables included in the regression are not statistically different than zero, and thus do not help explain any of the variation in the dependent variable, the Novelty Seeking Index, which is a sub-scale of the Langer Mindfulness Scale.

The negative beta estimate for Length of Current Position (-0.543) reveals that nurses who have held their current position for longer tenures are less novelty seeking or less likely to perceive situation at hand as an opportunity. As a whole, the model is not statistically significant at the 10 % level, because its F-statistic (0.507) is greater than 0.10 (see Table 24).

Engagement Subscale of the LMS. Table 26 depicts the regression analysis using the Engagement Scale as the dependent variable and gender, highest nursing degree, age, length of current position, work on coast during Katrina, and length as a nurse as the independent variables. A total of 33 cases were dropped from the response along one or more of the variables and were not used in the final analysis.

Table 26

Model Summary for Regression Analysis Using Engagement Scale of Langer Mindfulness Scale as Dependent Variable

Model	N	R Square	Adjusted R Square	Std. Error of the Estimate
5	153	.043	.004	2.781

The R^2 value of 0.043 indicates that 4.3 percent of the variation in the Engagement Scale can be explained by the demographic variables used in the analysis.

Table 27

Analysis of Variance for Engagement Subscale of Langer Mindfulness Scale as Dependent Variable

Model 5	Sum of Squares	df	Mean Square	F	Sig.
Regression	51.083	6	8.514	1.101	.365
Residual	1128.891	146	7.732		
Total	1179.974	152			

Table 28

Regression Analysis Using Engagement Scale of Langer Mindfulness Scale as Dependent Variable

Model 5	B	SE	Beta	t	Sig.
(Constant)	20.995	1.298		16.174	.000
Gender	-1.510	.682	-.183	-2.213	.028
Highest Nursing Degree	-.396	.335	-.100	-1.182	.239
Age	-.019	.296	-.008	-.065	.948
Length of Current Position	-.134	.250	-.053	-.536	.593
Work on Coast During Katrina	-.025	.539	-.004	-.047	.963
Length as Nurse (years)	.032	.035	.127	.926	.356

The results above demonstrate that Gender is statistically significant at the 5 % level. The remaining independent variables included in the regression are not statistically different than zero, and thus do not help explain any of the variation in the dependent variable, Engagement Scale, which is a sub-scale of the Langer Mindfulness Scale.

The coefficient on Gender is less than zero (-1.510), which indicates that female nurses notice less details about their environment than do male nurses. As a whole, the model is not statistically significant at the 10 % level, because its F-statistic (0.365) is greater than 0.10 (see Table 27).

Flexibility Subscale of LMS. Table 29 depicts the regression analysis (N = 153) of the dependent variable Flexibility and the independent variables gender, highest nursing degree, age, length of current position, work on coast during Katrina, and length as a nurse. A total of 33 cases were dropped from this analysis due to a missing response along one or more of the variables used in the model.

Table 29

Model Summary for Regression Analysis Using; Flexibility Scale of Langer Mindfulness Scale as Dependent Variable

Model	N	R Square	Adjusted RSquare	Std. Error of the Estimate
6	153	.042	.003	2.824

The R^2 value of 0.042 indicates that 4.2 % of the variation in the Flexibility Scale can be explained by the demographic variables used in the analysis.

Table 30

Analysis of Variance for Flexibility Subscale of Langer Mindfulness Scale as Dependent Variable

Model 6	Sum of Squares	df	Mean Square	F	Sig.
Regression	51.487	6	8.581	1.076	.380
Residual	1164.396	146	7.975		

Table 31

Regression Analysis Using; Flexibility Scale of Langer Mindfulness Scale as Dependent Variable

Model 6	B	SE	Beta	t	Sig.
(Constant)	9.987	2.667		3.744	.000
Gender	-3.916	1.406	-.218	-2.786	.006
Highest Nursing Degree	.585	.688	.068	.850	.397
Age	-.966	.610	-.189	-1.584	.115
Length of Current Position	1.001	.505	.185	1.984	.049
Work on Coast During Katrina	1.421	1.106	.110	1.285	.201
Length as Nurse (years)	-.071	.071	-.130	-1.005	.317

Table 31 demonstrates that Gender is statistically significant at the 1 % level and Length in Current Position is statistically significant at the 5 % level. The remaining independent variables included in the regression are not statistically different than zero, and thus do not help explain any of the variation in the dependent variable, the Engagement Flexibility, which is a sub-scale of the Langer Mindfulness Scale. The coefficient on Length of Current Position is greater than zero (1.001), which indicates that nurses who have held their current position for longer tenures tend to be more flexible or embrace change more than those with shorter tenures. On the other hand, the negative coefficient on Gender (-3.916) indicates that female nurses are less flexible or resistant to change than male nurses.

As a whole, the model is not statistically significant at the 10 percent level, because its F-statistic (0.380) is greater than 0.10 (see Table 30).

Mindfulness Based Self-Efficacy. This regression includes 149 observations (N). A total of 37 cases were dropped from this analysis due to a missing response along one or more of the variables used in the model.

Table 32

Model Summary for Regression Analysis Using Mindfulness-Based Self-Efficacy Scale as Dependent Variable

Model	N	R Square	Adjusted R Square	Std. Error of the Estimate
7	149	.036	-.005	117.330

The R^2 value of 0.036 indicates that 3.6 % of the variation in the Mindfulness-Based Self-Efficacy Index can be explained by the demographic variables used in the analysis. (see Table 32).

Table 33

Analysis of Variance for Mindfulness-Based Self-Efficacy Scale as Dependent Variable

Model 7	Sum of Squares	df	Mean Square	F	Sig.
Regression	72174.086	6	12029.014	.874	.516
Residual	1954817.713	142	13766.322		
Total	2026991.799	148			

Table 34

Regression Analysis Using Mindfulness-Based Self-Efficacy Scale as Dependent Variable

Model 7	B	SE	Beta	t	Sig.
(Constant)	196.773	55.685		3.534	.001
Gender	9.197	28.797	.027	.319	.750
Highest Nursing Degree	-14.061	14.369	-.085	-.979	.329
Age	-14.571	12.523	-.146	-1.163	.247
Length of Current Position	-17.139	10.872	-.160	-1.576	.117
Work on Coast During Katrina	-.6.616	22.959	-.026	-.288	.774
Length as Nurse (years)	2.606	1.499	.241	1.739	.084

The results above demonstrate that Length as Nurse is statistically significant at the 10 % level. The remaining independent variables included in the regression are not statistically different than zero, and thus do not help explain any of the variation in the dependent variable, the Mindfulness-Based Self-Efficacy Index.

The coefficient on Length as Nurse is greater than zero (2.606), which indicates that nurses who have more nursing experience tend to have a better sense of self-efficiency. As a whole, the model is not statistically significant at the 10 % level, because its F-statistic (0.516) is greater than 0.10 (see Table 33).

Demographics and Nurse Comfort

Table 35 includes 153 observations. A total of 33 cases were dropped from this analysis due to a missing response along one or more of the variables used in the model.

Table 35

Model Summary for Regression Analysis using Nurse Comfort as Dependent Variable

Model	N	R Square	Adjusted R Square	Std. Error of the Estimate
8	153	.028	-.012	11.925

The R^2 value of 0.028 indicates that 2.8 % of the variation in the Nurse Comfort Index can be explained by the demographic variables used in the analysis.

Table 36

Analysis of Variance for Nurse Comfort as Dependent Variable

Model 8	Sum of Squares	df	Mean Square	F	Sig
Regression	591.471	6	98.578	.693	.655
Residual	20761.758	146	142.204		
Total	21353.229	152			

Table 37

Regression Analysis using Nurse Comfort as Dependent Variable

Model 8	B	SE	Beta	t	Sig.
(Constant)	169.584	5.575		30.417	.000
Gender	-.871	2.925	-.025	-.298	.766
Highest Nursing Degree	.591	1.434	.035	.412	.681
Age	1.999	1.270	.200	1.574	.118
Length of Current Position	-.526	1.062	-.050	-.495	.621
Work on Coast During Katrina	1.053	2.335	.041	.451	.653
Length as Nurse (years)	-.056	.150	-.052	-.373	.710

The results in Table 37 indicate that all independent variables included in the regression are not statistically different than zero, and thus do not help explain any of the variation in the dependent variable, the Nurse Comfort Index. As a whole, the model is not statistically significant at the 10 % level, because its F-statistic (0.655) is greater than 0.10 (see Table 36).

Demographics and Work Satisfaction

The following table includes 153 observations (N). A total of 33 cases were dropped from this analysis due to a missing response along one or more of the variables used in the model.

Table 38

Model Summary for Regression Analysis using Index of Work Satisfaction as Dependent Variable

Model	N	R Square	Adjusted R Square	Std. Error of the Estimate
9	153	.070	.031	14.456

The R^2 value of 0.070 indicates that 7.0 % of the variation in the Index of Work Satisfaction can be explained by the demographic variables used in the analysis.

Table 39

Analysis of Variance for Index of Work Satisfaction as Dependent Variable

Model		Sum of Squares	df	Mean Square	F	Sig.
9	Regression	2283.498	6	380.583	1.821	.099
	Residual	30511.443	146	208.982		
	Total	32794.941	152			

Table 40

Regression Analysis using Index of Work Satisfaction as Dependent Variable

Model		B	SE	Beta	t	Sig
9	(Constant)	172.321	6.772		25.448	.000
	Gender	4.706	3.549	.108	1.326	.187
	Highest Nursing Degree	-.355	1.742	-.017	-.204	.839
	Age	-1.691	1.542	-.136	-1.097	.274
	Length of Current Position	-1.539	1.283	-.117	-1.199	.232
	Work on Coast During Katrina	-5.551	2.814	-.175	-1.972	.050
	Length as Nurse (years)	.343	.180	.257	1.909	.058

The results in Table 40 demonstrate that Work on Coast during Katrina is statistically significant at the 5 % level, and Length as Nurse is statistically significant at

the 10 % level. The remaining independent variables included in the regression are not statistically different than zero, and thus do not help explain any of the variation in the dependent variable, the Index of Work Satisfaction. The coefficient on Work on Coast during Katrina is less than zero (-5.551), which indicates that nurses who worked on the Gulf Coast during Hurricane Katrina are less satisfied overall with their job. Conversely, the positive coefficient on Length as Nurse (0.343) indicates that nurses who have more nursing experience are more satisfied overall with their job. As a whole, the model is statistically significant at the 10 percent level, because its F-statistic (0.099) is less than 0.10 (see Table 39).

Demographics and Burnout Personal Accomplishment

Table 41 represents a regression that includes 156 observations (N). A total of 30 cases were dropped from this analysis due to a missing response along one or more of the variables used in the model.

Table 41

Model Summary for Regression Analysis using Personal Accomplishment of Maslach Burnout Inventory as Dependent Variable

Model	N	R Square	Adjusted R Square	Std. Error of the Est.
10	156	.070	.033	6.317

The R^2 value of 0.070 indicates that 7.0 percent of the variation in the personal accomplishment subscale of the Maslach Burnout Inventory can be explained by the demographic variables used in the analysis.

Table 42

Analysis of Variance for Personal Accomplishment of the Maslach Burnout Inventory as the Dependent Variable

Model		Sum of Squares	df	Mean Square	F	Sig
10	Regression	447.498	6	74.583	1.869	.090
	Residual	5946.111	149	39.907		
	Total	6393.609	155			

Table 43

Regression Analysis using Personal Accomplishment of Maslach Burnout Inventory as Dependent Variable

Model		B	SE	Beta	t	Sig
10	(Constant)	39.885	2.933		13.600	.000
	Gender	-1.591	1.545	-.083	-1.030	.305
	Highest Nursing Degree	-1.433	.757	-.157	-1.893	.060
	Age	1.243	.671	.229	1.853	.066
	Length of Current Position	-.728	.555	-.126	-1.311	.192
	Work on Coast During Katrina	-.043	1.216	-.003	-.036	.972
	Length as Nurse (years)	-.052	.078	-.089	-.669	.505

The results in Table 43 demonstrate that Highest Nursing Degree and Age are statistically significant at the 10 % level. The remaining independent variables included in the regression are not statistically different than zero, and thus do not help explain any of the variation in the dependent variable, the Personal Accomplishment Index, which is a subscale of the Maslach Burnout Inventory. The coefficient on Highest Nursing Degree is less than zero (-1.433), which indicates that nurses who hold more advanced nursing degrees tend to a lower sense of personal accomplishment (negative self-evaluation), and as a result, have higher levels of burnout . In contrast, the positive coefficient on Age (1.243) indicates that older nurses tend to have a higher sense of personal accomplishment (positive self-evaluation), and as a result, have lower levels of burnout. As a whole, the model is statistically significant at the 10 % level, because its F-statistic (0.090) is less than 0.10 (see Table 42).

Demographics and Burnout Emotional Exhaustion

Table 44 includes 156 observations. A total of 30 cases were dropped from this analysis due to a missing response along one or more of the variables used in the model.

Table 44

Model Summary for Regression Analysis Using Emotional Exhaustion of Maslach Burnout Inventory as Dependent Variable

Model	N	R Square	Adjusted R Square	Std. Error of the Estimate
11	156	.079	.042	10.305

The R^2 value of 0.079 indicates that 7.9 percent of the variation in the Emotional Exhaustion Index can be explained by the demographic variables used in the analysis.

Table 45

Analysis of Variance for Emotional Exhaustion of Maslach Burnout Inventory as Dependent Variable

Model 11	Sum of Squares	df	Mean Square	F	Sig
Regression	1352.907	6	225.484	2.123	.054
Residual	15823.529	149	106.198		
Total	17176.436	155			

Table 46

Regression Analysis using Emotional Exhaustion of Maslach Burnout Inventory as Dependent Variable

Model 11	B	SE	Beta	t	Sig.
(Constant)	14.818	4.784		3.097	.002
Gender	2.253	2.521	.072	.894	.373
Highest Nursing Degree	2.930	1.235	.195	2.374	.019
Age	-1.467	1.094	-.165	-1.341	.182
Length of Current Position	1.656	.905	.175	1.830	.069
Work on Coast During Katrina	-2.023	1.984	-.089	-1.020	.310
Length as Nurse (years)	.009	.128	.009	.069	.945

The results in Table 46 demonstrate that Highest Nursing Degree is statistically significant at the 5 % level, and Length in Current Position is statistically significant at the 10 % level. The remaining independent variables included in the regression are not statistically different than zero, and thus do not help explain any of the variation in the dependent variable, the Emotional Exhaustion Index, which is a subscale of the Maslach Burnout Inventory. The coefficient on Highest Nursing Degree is greater than zero (2.930), which indicates that nurses who hold more advanced nursing degrees are more emotionally exhausted and fatigued with work than other nurses, and as a result, have higher levels of burnout. This finding is consistent with the results in Model #10 regarding the Highest Nursing Degree variable. Similarly, the positive beta estimate for Length of Current Position (1.656) reveals that nurses who have worked in their current longer tend to feel more emotionally exhausted with their work, and consequently, are more burnt out than nurses with less tenure. As a whole, the model is statistically significant at the 10 % level, because its F-statistic (0.054) is less than 0.10 (see Table 45).

Demographics and Burnout Depersonalization

The regression represented in Table 25 includes 156 observations (N). A total of 30 cases were dropped from this analysis due to a missing response along one or more of the variables used in the model.

Table 47

Model Summary for Regression Analysis using Depersonalization of Maslach Burnout Inventory as Dependent Variable

Model	N	R Square	Adjusted R Square	Std. Error of the Estimate
12	156	.128	.093	5.746

The R^2 value of 0.128 indicates that 12.8 percent of the variation in the Depersonalization Index can be explained by the demographic variables used in the analysis.

Table 48

Analysis of Variance for Depersonalization of Maslach Burnout Inventory as Dependent Variable

Model 12	Sum of Squares	df	Mean Square	F	Sig
Regression	720.493	6	120.082	3.637	.002
Residual	4919.065	149	33.014		
Total	5639.558	155			

Table 49

Regression Analysis using Depersonalization of Maslach Burnout Inventory as Dependent Variable

Model 12	B	SE	Beta	t	Sig.
(Constant)	9.987	2.667		3.744	.000
Gender	-3.916	1.406	-.218	-2.786	.006
Highest Nursing Degree	.585	.688	.068	.850	.397
Age	-.966	.610	-.189	-1.584	.115
Length of Current Position	1.001	.505	.185	1.984	.049
Work on Coast During Katrina	1.421	1.106	.110	1.285	.201
Length as Nurse (years)	-.071	.071	-.130	-1.005	.317

The results in Table 49 demonstrate that Gender is statistically significant at the 1 percent level, and Length in Current Position is statistically significant at the 5 % level. The remaining independent variables included in the regression are not statistically different than zero, and thus do not help explain any of the variation in the dependent variable, the Depersonalization Index, which is a subscale of the Maslach Burnout Inventory. The coefficient on Gender is less than zero (-3.916), which indicates that female nurses are less likely to develop negative and cynical attitudes towards others than male nurses, and as a result, have lower levels of burnout. On the other hand, the positive coefficient on Length of Current Position (1.001) reveals that nurses who have held their

current position for longer tenures are more likely to become more depersonalized than others, which leads to higher levels of burnout. This finding matches the results regarding the Length of Current Position variable. As a whole, the model is statistically significant at the 1 % level, because its F-statistic (0.002) is less than 0.01 (see Table 48).

Nurse Comfort Questionnaire Reliability

Because the Nurse Comfort Questionnaire has never been tested until this study, analysis to ascertain internal reliability was preformed. This questionnaire was not found to be reliable based on analysis done from results of this study (Chronbach's alpha .382).

Summary

This chapter presented the results of the statistical analysis of the data obtained for this study. This included a description of the sample and of the facilities used for the purposes of collection of data. Demographic variables were presented as well as some interesting findings unrelated to the research questions and/or hypotheses, but nevertheless interesting for this field of study. Also presented were the statistical results for testing the proposed model identified for this study. Finally, the results of the yet untested Nurse Comfort Questionnaire to determine reliability of the instrument were also presented.

Based on the data presented, it appears that the MAAS scale is the more robust scale for the measurement of mindfulness and for the determination of path analysis in this study. Participants in this study all scored in the average range for burnout, with moderate to good mindfulness across all three mindfulness surveys, just over mid-range for work satisfaction, and for nurse comfort. Further discussion of the results as well as recommendations for further research is presented in the following and final chapter of this dissertation.

Table 50 represents the correlation between nurse comfort and work satisfaction. This correlation is not what was expected. According to this table, when work satisfaction goes up, nurse comfort goes down. However, these results are not significant and may not accurately represent the chosen population.

Table 50

Correlation Matrix of Nurse Comfort and Work Satisfaction

IWS		NC
	Pearson Correlation	-.145
	Sig. (2-tailed)	.051
	N	181

CHAPTER V

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to propose a model that includes four concepts, mindfulness, comfort, work satisfaction, and burnout and to determine the relationships among the concepts. Specifically, the study was designed to determine if the variable, mindfulness had any effect on comfort, work satisfaction, and burnout. This study also served as a pilot study for the use of the nurse comfort questionnaire (Kolcaba, Tilton, & Drouin, 2006; personal communication with Katherine Kolcaba, November, 2006; personal communication with Katherine Kolcaba, July 2007). Data was collected from nurses employed in four different hospitals along the Mississippi Gulf Coast. Nurses completed surveys on mindfulness, comfort, work satisfaction, and burnout.

The nurses surveyed in this study on average scored in the moderate range in all three measures of mindfulness and in the average range for burnout measured by the MBI norms for nurses and physicians. Nurses also scored in the moderate ranges for both nurse comfort, based on the Nurse Comfort Questionnaire, and for work satisfaction as measured by the Index of Work Satisfaction part B. There were some differences between individual hospitals, but scores were generally close among all nurses surveyed.

Discussion

The following is a discussion of statistical data pertinent to research questions, hypotheses, and to the proposed model. There were some interesting findings with regard to the demographic variables in this study; however, these were not pertinent to the research questions and/or hypotheses listed. As such, these results will be presented at the end of this section.

Research Questions

The research questions all pertain to relationships between mindfulness and the other major variables of the study, comfort, work satisfaction, and burnout. All research questions were answered using Structural Equation Modeling (SEM), however, similar results were obtained when research questions were answered using SPSS correlations. For example, in answer to research question one, the relationship between mindfulness and comfort was not statistically significant for both the SEM and the correlation matrix between the aforementioned variables. For this study, mindfulness had no effect on the comfort level of nurse along the Mississippi Gulf Coast.

Research question two involves the relationship between mindfulness and work satisfaction. For this study, the results indicate there are no statistically significant relationships between these two variables. This was the case across all mindfulness measures with both SEM and correlations between mindfulness and work satisfaction.

Results of SEM and the correlations for research question three indicate that using the MAAS (Tables 8 and 13) to measure mindfulness, the relationship between mindfulness burnout is statistically significant for all three subscales of the MBI. This mindfulness measure has the most influence on burnout as compared to the other two mindfulness measures. There are also statistically significant relationships when using the LMS and the MSES to measure mindfulness, the MSES being the weakest of the three mindfulness measures in predicting burnout. It would therefore seem that nurses on the Mississippi Gulf Coast who are more mindful would have fewer problems with the experience of depersonalization and emotional exhaustion. These nurses would seem to experience higher levels of personal accomplishment, thus possibly making them less prone to experience burnout in their work.

The relationship between nurse comfort and burnout was not statistically significant for emotional exhaustion and depersonalization subscales of the MBI. However, there was a significant relationship between nurse comfort and personal accomplishment subscale. Perhaps nurses on the coast put greater importance on their professional careers and advancements in their respective organizations. This would make personal accomplishment more important in their overall sense of well being and comfort in the work place.

Hypotheses

The hypotheses in this study were only partially supported by the data. The mindfulness measure that was the strongest indicator of mindfulness for the research questions, MAAS was not directly proportional to comfort scores as stated in Hypothesis one. Although insignificant, MAAS scores were inversely proportional to comfort scores in this sample. This result was also found when using the MSES and the LMS to measure mindfulness. All scales were inversely proportional to nurse comfort; however, none were statistically significant. This suggests that in this sample, as mindfulness increases, nurse comfort levels decrease. One possible explanation for this result is that perhaps nurses in this study become uncomfortable when they become more mindful and therefore more involved with their patients. Another possible explanation is that because mindfulness is also a way of being involved in a relationship, perhaps for these nurses, this involvement causes more stress and therefore, decreased feelings of comfort. Based on these results, one could draw a tentative conclusion that in this study nurses who are more mindful experience less nurse comfort.

Hypothesis number two was partially supported by the data. Mindfulness scores were directly proportional to work satisfaction scores on all mindfulness measures except

the MSES and one subscale of the LMS, Novelty Producing, which means generating new ideas to learn about current situation. One subscale of the LMS was significantly proportional to work satisfaction scores. It is important to note, however, that the correlation coefficients are very small and in all cases but one, insignificant. The Novelty Seeking subscale which means to view every situation is an opportunity was significant at the .05 level. Based on the results of this analysis, it would seem that as mindfulness increases work satisfaction also increases. Increased self-awareness and focus or involvement with one's patients may result in increased satisfaction with one's work.

Hypotheses three and four were both supported by the data. These were correlations between mindfulness scores and burnout out scores. Mindfulness as measured by all three of the mindfulness measures was inversely proportional to EE and Dp subscale scores of the MBI. The MAAS and the LMS scores were statistically significantly so. Hypothesis number three was supported by the data for all three mindfulness measures, however, only the MAAS and the LMS scores were statistically significant. These results indicate that as mindfulness increases, PA increases and EE and Dp decreases. This is congruent with the literature on mindfulness and burnout. The correlations between the three mindfulness scales are directly proportional with the exception of one. This is the correlation between MSES and MAAS, which is inversely proportional (Table 10). This means that as mindfulness measured using the MSES increases, mindfulness measure using the MAAS decreases, suggesting the possibility of two separate constructs of mindfulness. One correlation was statistically significant, between LMS and MSES, indicating that these two mindfulness measures appear to be measuring the same phenomena.

Hypotheses five was not supported by the data. For nurses in this study as their comfort scores increased so did their scores on the EE and Dp subscales of the MBI. These results are somewhat confusing because clearly if one is suffering from emotional exhaustion it would seem that he/she would have low comfort scores. Concerning the Dp results, perhaps by detaching themselves, the nurses are able to enjoy greater levels of comfort than if they are highly involved with their patients. This could be because nurses feel more stress when a patient dies with whom they were closely involved. Although these results were not what was expected, it must be noted that the correlation coefficients were very small (.070 for EE and .011 for Dp) and insignificant.

Hypothesis six was supported by the data, as nurse comfort scores increased so too did PA scores. As with the burnout subscales EE and Dp, the correlation coefficient was small (.129) and was not statistically significant. For nurses in this study, nurse comfort had no influence on the personal accomplishment of the nurses who work on the Mississippi Gulf Coast.

Structural Equation Modeling

The proposed model for this study was tested by using AMOS grad pack. The model proposed was a path from mindfulness to nurse comfort to work satisfaction and then to burnout (see Figure 2). This model was tested using all three of the mindfulness scales used in this study.

The path analysis using the MSES for measuring mindfulness was the weakest of the three mindfulness models. Table 12 shows the results of this path analysis. There were only two paths that were significant. Those were the paths from MSES to EE and from NC to IWS. Also, the significant paths were not those proposed in the model under investigation. The only significant path using the MSES to measure mindfulness that was

in the proposed model was the path from NC to IWS. Using the MSES to measure mindfulness did not prove to be beneficial for testing the proposed model.

The path analysis using LMS to measure mindfulness was the second best path analysis for the proposed model. This path analysis did not have a single significant path that was proposed in the model for this study. It is interesting to note that the significant paths, LMS to PA, LMS to DP, and LMS to EE were all indicating a significant path from the measure of mindfulness to the measures for burnout.

Using the MAAS to analyze the proposed model revealed the most robust results. Four paths were significant and three of these were significant at the .01 level. This was the strongest path analysis for testing the proposed model. The significant paths in this model were NC to PA, MAAS to Dp, MAAS to PA, and MAAS to EE. Three of these significant paths were from the mindfulness measure to individual burnout measures. The fourth significant path was from nurse comfort to the personal accomplishment subscale of the MBI. There were no significant paths that were proposed in the model.

These SEM results indicate that there is a strong path from mindfulness as measured by MAAS to burnout. This is congruent with other studies which have shown the relationship to be significant. No other path was supported. Based on these results, the proposed model for this study does not appear to be the correct path. Further analysis and alternate models need to be run in the future to determine the correct path or a model that closely resembles the correct path.

The conceptual model that was used has been shown to be applicable for patients but never empirically evaluated in relation to nurses. Results of this study do not support and bring in to question the application of the model applied to nurses as related to their jobs. It is possible that nurse comfort is difficult to measure because of the work nurses

do. Nurses work for comfort of their patients without expecting comfort in the work setting.

Incidental Findings

There were several interesting findings from the regression analysis of the demographic variables and the three mindfulness scales. Regression analysis using the Mindfulness Attention Awareness Scale (MAAS) as the dependent variable revealed that the longer the nurses worked in their current position, the less mindful they were. Also, nurses who hold advanced nursing degrees have lower levels of mindfulness. It seems that a more educated individual would have a higher propensity toward being mindful. On the other hand, perhaps nurses who have higher nursing degrees have difficulty empathizing with people who are not at their educational level. Perhaps these nurses are desensitized due to their educational experiences, or perhaps the socialization of the educational setting encourages a more objective versus subjective state of mind. This analysis also revealed that nurses who have longer tenures in their current position have lower levels of mindfulness. Perhaps these nurses were beginning to exhibit symptoms of burnout and were therefore less able to pay attention on purpose to their patients. Working during Katrina had a positive effect on these nurses. The traumatic experience during Hurricane Katrina could have resulted in nurses who were empathetic and therefore began to have more focus and pay more attention to their patients' wants and needs.

Regression analysis using the Langer Mindfulness Scale (LMS) as the dependent variable also revealed that nurses with longer work tenures have lower mindfulness scores. No other results were significant in this analysis. The demographic variables did not explain the change in the dependent variable, LMS. The subscales of the LMS

revealed similar results with regard to longer work tenures and decreased mindfulness, with one exception.

The analyses using the Engagement scale of the LMS as the dependent variable revealed that the demographic variable, gender, is statistically significant and therefore helps explain the change in the dependent variable, Engagement. This result indicates that the female nurses in this study were less aware of their environment than were the male nurses in this study.

The analyses using the Flexibility subscale of the LMS revealed that nurses who have worked in their current positions longer were more flexible and are therefore able to embrace change more than those nurses with shorter work tenures. This result is incongruent with other results (regression with MAAS and LMS as dependent variables) where nurses with longer tenures have less mindfulness. Gender was also found to be significant with females being less flexible and more resistant to change than male nurses in this study. According to these results, the concept of Flexibility has more to do with being mindful than do the concepts Engagement, Novelty Seeking or Novelty Producing. When using the Engagement scale as the dependent variable, there was a significant effect on this variable. Male nurses in this study pay more attention to their environment than do their female counter parts. This is similar to results from other studies. In his dissertation research, Johnson (2007) found that males in his study were more mindful than were females.

The analysis using the Engagement subscale of the LMS as the dependent variable also revealed that gender had an effect on the dependent variable, Engagement. This result indicates that female nurses notice less details about their environment than do their male counterparts for the nurses in this study.

Regression analysis using Mindfulness-Based Self-Efficacy (MSES) as the dependent variable revealed that length of time as a nurse was significant. Nurses who have more nursing experience tend to have a better sense of Self-Efficacy than do nursing with less nursing experience. The other independent variables were insignificant and did not help to explain the change in the dependent variable, MSES.

Nurse Comfort as the dependent variable revealed no significant change in the regression analysis; therefore the demographic variables do not help explain any variance in Nurse Comfort scores. On the other hand, working on the coast during Hurricane Katrina resulted in nurses who were less satisfied with their work. One possible explanation for this result is that these nurses are experiencing effects of burnout and this possibly affected their work satisfaction. As noted earlier, the nurses in this study had moderate burnout scores.

The three burnout subscales used as dependent variables in the regression analyses revealed interesting results. Personal Accomplishment was decreased and Emotional Exhaustion was increased in nurses with advanced nursing degrees. Younger nurses also exhibited lower levels of PA than did older nurses. This result itself is incongruent as by the mere fact of time to obtain a degree, nurses with advanced degrees are somewhat older than are nurses with less education. Also, it appears that the higher the education, the less likely one is to be mindful. This is somewhat confusing because it would seem that more education would make one more mindful, but as stated earlier, this could be as a result of societal influences. As noted in the demographics, nurses in this study whose ages range from 41-60+ made up approximately 47% of the entire sample and the majority of the advanced degrees in this study are held by nurses who are in the 20-40 age range. Nurses who have longer tenures in their current position had increased

EE and DP, indicating a propensity to burnout and female nurses had decreased levels of DP than did males. Perhaps the length of time in current position has more weight on these preceding results than does advanced degree. Also, these results could indicate desensitization it appears that age may have more weight on the subscale PA than does the variable "advanced nursing degree."

Conclusions

The main purpose of this study was to propose a model that depicts the relationships among the concepts mindfulness, work satisfaction, nurse comfort, and burnout. Specifically, the study was designed to determine if the variable, mindfulness had an effect on comfort, work satisfaction, and burnout. It is important to determine factors that can affect burnout and to determine the path of the effects of various concepts believed to be related to burnout. To this end, I used three different mindfulness scales to test my proposed model. Path analysis did help to determine which scale had a greater impact on burnout. The path analysis model that was more robust was that using the Mindfulness Attention Awareness Scale to test for mindfulness. This scale has been used in previous work looking at the effects of mindfulness on burnout. The Langer Mindfulness Scale showed similar results with regard to the three burnout subscales, however, the effect on the subscales were not as strong as those between the MAAS and the burnout subscales. The Mindfulness-Based Self-Efficacy Scale did not prove to have a large impact on the three subscales of the MBI, Emotional Exhaustion, Depersonalization, and Personal Accomplishment. In fact, only one path was significant when using the MSES as the dependent variable. This was the path from MSES to EE subscale of the MBI. Other than the significant paths discussed above, mindfulness to the proposed model was not significant for the purposes of this study.

Recommendations

Some interesting information was obtained via correlations among the major variables of the study and the demographic variables, however, these relationships were not significant in answering the research questions, or in testing the hypotheses. The information gleaned from these relationships could be important in future research in this area. For instance, the hospitals with the lowest response rates had the highest and the lowest levels of work satisfaction. Both of these hospitals were private hospitals. More information concerning the management of and the culture of these organizations might prove beneficial to help determine ways to improve nurse work satisfaction. Another interesting result was that in some cases nurses who had increased work satisfaction also had increased depersonalization (DP) and in one case, decreased mindfulness, suggesting that nurses are happier at work if they are disconnected with their patients. This is a disturbing incidental finding of this study and is cause for concern for the future of nursing. It is quite possible that this is the result of nurses trying to cope with stressors at work. They may be coping by detaching from their patients to help decrease their emotional distress. One way to rectify this would be to teach mindfulness to nursing students in the first year of nursing school. Early training with students to understand burnout and how it relates to patient care and work satisfaction in the workplace would play a large part in decreasing nurse burnout when these students enter the work environment. The healthcare profession does not need happy nurses who are desensitized and perhaps respond only in a perfunctory manner to their patients' needs. This would eventually cause a situation where patients are not satisfied with nursing care and subsequently with the healthcare providing institution. Educating nursing students to meet the needs of their patients would help to produce nurses who are dedicated to

patient care and to patient satisfaction. This can be a slippery slope as nurses often neglect their own needs when attending to the needs of others, resulting in burnout. Therefore, this education must also include the importance of meeting their needs as well as the needs of their patients.

Future research in mindfulness with a larger sample size is needed to validate the findings of this study. First, a larger sample is needed to test the nurse comfort questionnaire. Secondly, a mindfulness intervention study with practicing nurses which teaches mindfulness is also needed. This study would include testing mindfulness, work satisfaction, nurse comfort, and burnout before mindfulness training and retesting after mindfulness training, a stronger more substantial study. Subsequently, the nurses could also be tested one to two years after mindfulness training. This research would also assist with the development of a theoretical model for nurse mindfulness. This present study tested only the proposed model. Alternate models with alternate paths must be tested in order to find a model that appropriately depicts the relationships among mindfulness, work satisfaction, nurse comfort, and burnout.

Lastly, before any of the further research recommendations above could be done, it must be thoroughly determined that comfort is a psychological state appropriately attributed to nurses in their work setting. A concept analysis would be the starting place. Any measure developed to operational the concept would need thorough psychometric testing to develop reliability and validity.

APPENDIX A

PERMISSION FORMS

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

Institutional Review Board

118 College Drive #5147
Hattiesburg, MS 39406-0001
Tel: 601.266.6820
Fax: 601.266.5509
www.usm.edu/irb

HUMAN SUBJECTS PROTECTION REVIEW COMMITTEE
NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Human Subjects Protection Review Committee in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months. Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: **29082504**
PROJECT TITLE: **The Relationship Between Mindfulness, Comfort, Job Satisfaction, and Burnout**
PROPOSED PROJECT DATES: **02/23/09 to 12/05/09**
PROJECT TYPE: **Dissertation or Thesis**
PRINCIPAL INVESTIGATORS: **Pamela Lichtenberg Heard**
COLLEGE/DIVISION: **College of Health**
DEPARTMENT: **Nursing**
FUNDING AGENCY: **N/A**
HSPRC COMMITTEE ACTION: **Exempt Approval**
PERIOD OF APPROVAL: **08/31/09 to 08/30/10**

Lawrence A. Hosman

Lawrence A. Hosman, Ph.D.
HSPRC Chair

9-2-09
Date

Permission to Conduct a Nursing Survey

This is to certify that Pamela L. Heard has our permission to conduct a nurse survey utilizing the nurses in this hospital for the purposes of gathering data for her dissertation research. We understand that Ms. Heard is collecting data to ascertain the degree of burnout, job satisfaction, comfort, and mindfulness among nurses employed in our facility.

We understand that the final data analysis will be made available to us, along with an interpretation of the results.

We understand that any data collected by Ms. Heard will be made available to us after completion of the dissertation. All data used for analysis will be confidential and will not contain any identifying information as to individual or participating hospital. Alpha-numeric variables will be used for identification purposes and will only be known by Ms. Heard.

Signed Jennie Kaufmann

Title Chief Nursing Officer Bibb Regional

Doctoral Student Pamela L. Heard

Permission to Conduct a Nursing Survey

This is to certify that Pamela L. Heard has our permission to conduct a nurse survey utilizing the nurses in this hospital for the purposes of gathering data for her dissertation research. We understand that Ms. Heard is collecting data to ascertain the degree of burnout, job satisfaction, comfort, and mindfulness among nurses employed in our facility.

We understand that the final data analysis will be made available to us, along with an interpretation of the results.

We understand that any data collected by Ms. Heard will be made available to us after completion of the dissertation. All data used for analysis will be confidential and will not contain any identifying information as to individual or participating hospital. Alpha-numeric variables will be used for identification purposes and will only be known by Ms. Heard.

Signed Judy S. Rhyne

Title CNO Garden Park Med. Ctr. 05/09 survey

Doctoral Student Pamela L. Heard

Permission to Conduct a Nursing Survey

This is to certify that Pamela L. Heard has our permission to conduct a nurse survey utilizing the nurses in this hospital for the purposes of gathering data for her dissertation research. We understand that Ms. Heard is collecting data to ascertain the degree of burnout, job satisfaction, comfort, and mindfulness among nurses employed in our facility.

We understand that the final data analysis will be made available to us, along with an interpretation of the results.

We understand that any data collected by Ms. Heard will be made available to us after completion of the dissertation. All data used for analysis will be confidential and will not contain any identifying information as to individual or participating hospital. Alpha-numeric variables will be used for identification purposes and will only be known by Ms. Heard.

Signed Tammy Tolbert RN MSN

Title Education Coordinator Ocean Springs Hospital

Doctoral Student Pamela L. Heard

RE: Permission to Conduct a Nursing Survey
Doctoral Student: Pamela L. Heard

This is to verify that Pamela L. Heard has our permission to conduct a nurse survey among nurses in this hospital who voluntarily and anonymously participate. The purpose of this survey is to gather data for her dissertation research. We understand that Ms. Heard is collecting data to ascertain the degree of burnout, job satisfaction, comfort, and mindfulness among nurses employed in our facility.

We understand that the final data analysis will be made available to us, along with an interpretation of the results.

We understand that any data collected by Ms. Heard will be made available to us after completion of the dissertation. All data used for analysis will be confidential and will not contain any identifying information as to individual or participating hospital. Alpha-numeric variables will be used for identification purposes and will only be known by Ms. Heard.

Iva Nell Vaughan, MSN, FNP-BC
Director of Professional Practice
Singing River Hospital
2809 Denny Avenue
Pascagoula, MS 39581
228-809-1716
IvaNell.Vaughan@mysrhs.com

APPENDIX B

DEMOGRAPHIC DATA SHEET

Male_____ Female_____

Highest Degree Held _____

Highest Nursing degree held_____

Age
____ < 20
____ 21-30
____ 31-40
____ 41-50
____ 51-60
____ > 60

Length of time in current position
____ <3 months
____ > 1 year
____ > 5 years
____ > 10 years
____ > 15 years

Were you working on the coast as a nurse during Katrina?

Yes No

Length of time practicing as a nurse_____

APPENDIX C

THE MINDFULNESS ATTENTION AWARENESS SCALE

Day-to-Day Experiences

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what *really reflects* your experience rather than what you think your experience should be. Please treat each item separately from every other item.

1	2	3	4	5	6
Almost Always	Very Frequently	Somewhat Frequently	Somewhat Infrequently	Very Infrequently	Almost Never

I could be experiencing some emotion and not be conscious of it until some time later.	1	2	3	4	5	6
I break or spill things because of carelessness, not paying attention, or thinking of something else.	1	2	3	4	5	6
I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5	6
I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	1	2	3	4	5	6
I tend not to notice feelings of physical tension or discomfort until they really grab my attention	1	2	3	4	5	6
I forget a person's name almost as soon as I've been told it for the first time	1	2	3	4	5	6
It seems I am "running on automatic," without much awareness of what I'm doing.	1	2	3	4	5	6
I rush through activities without being really attentive to them.	1	2	3	4	5	6
I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.	1	2	3	4	5	6
I do jobs or tasks automatically, without being aware of what I'm doing.	1	2	3	4	5	6
I find myself listening to someone with one ear, doing something else at the same time.	1	2	3	4	5	6
I drive places on 'automatic pilot' and then wonder why I went there.	1	2	3	4	5	6
I find myself preoccupied with the future or the past.	1	2	3	4	5	6
I find myself doing things without paying attention.	1	2	3	4	5	6
I snack without being aware that I'm eating.	1	2	3	4	5	6

APPENDIX D

THE LANGER MINDFULNESS SCALE

Personal Outlook Scale

Instructions: Below are a number of statements that refer to your personal outlook. Please rate the extent to which you agree with each of these statements. If you are confused by the wording of an item, have no opinion, or neither agree nor disagree, use the "4" or "NEUTRAL" rating.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

1. I generate few novel ideas.	1	2	3	4	5	6	7
2. I like being challenged intellectually.	1	2	3	4	5	6	7
3. I am always open to new ways of doing things.	1	2	3	4	5	6	7
4. I like to investigate things.	1	2	3	4	5	6	7
5. I am rarely alert to new developments.	1	2	3	4	5	6	7
6. I have an open mind about everything, even things that challenge my core beliefs.	1	2	3	4	5	6	7
7. I try to think of new ways of doing things.	1	2	3	4	5	6	7
8. I find it easy to create new and effective ideas.	1	2	3	4	5	6	7
9. I am very curious.	1	2	3	4	5	6	7
10. I avoid thought provoking conversations.	1	2	3	4	5	6	7
11. I am very creative.	1	2	3	4	5	6	7
12. I make many novel contributions.	1	2	3	4	5	6	7
13. I do not actively seek to learn new things.	1	2	3	4	5	6	7
14. I can behave in many different ways for a given situation.	1	2	3	4	5	6	7
15. I like to figure out how things work.	1	2	3	4	5	6	7
16. I seldom notice what other people are up to.	1	2	3	4	5	6	7
17. I stay with the old tried and true ways of doing things.	1	2	3	4	5	6	7
18. I attend to the "big picture."	1	2	3	4	5	6	7
19. I am not an original thinker.	1	2	3	4	5	6	7
20. I "get involved" in almost everything I do.	1	2	3	4	5	6	7
21. I am rarely aware of changes.	1	2	3	4	5	6	7

APPENDIX E

THE MINDFULNESS BASED SELF-EFFICACY SCALE

MINDFULNESS-BASED SELF-EFFICACY SCALE© (MSES)

Bruno A. Cayoun & Janet Freestun,
University of Tasmania

NAME……..…….. DATE…….... Session/Week No.…

Circle one number in the shaded column according to how much you now agree or disagree with each statement below, using the following scale:

Not at all	**A little**	**Moderately**	**A lot**	**Completely**
0	**1**	**2**	**3**	**4**

Try not to spend too much time on any one item. There are no right or wrong answers.

1	I am able to think about what I am about to do before I act	0 1 2 3 4
2.	When an unpleasant thought enters my mind, I can cope with it	0 1 2 3 4
3.	When I relax, I can feel sensations in my body	0 1 2 3 4
4	I get easily overwhelmed by my emotions	0 1 2 3 4
5.	I find it difficult to make new friends	0 1 2 3 4
6.	I try to avoid uncomfortable situations even when they are really important	0 1 2 3 4
7.	I am aware when I am about to do something that could hurt me or someone else	0 1 2 3 4
8.	Stopping myself from engaging in unwanted or hurtful behaviours is very difficult	0 1 2 3 4
9.	I know that my thoughts don't have the power to hurt me	0 1 2 3 4
10.	When I am stressed, I am aware of unpleasant body sensations	0 1 2 3 4
11.	When I feel very emotional, it takes a long time for it to pass	0 1 2 3 4
12.	I feel comfortable saying sorry when I feel I am in the wrong	0 1 2 3 4
13.	It is ok for me to feel strong emotions	0 1 2 3 4
14.	It is often too late when I realise I overreacted in a stressful situation	0 1 2 3 4
15.	If something needs to be done, I am able to complete it within a reasonable time	0 1 2 3 4
16.	I get so caught up in my thoughts that I end up feeling very sad or anxious	0 1 2 3 4
17.	When I have unpleasant feelings in my body, I prefer to push them away	0 1 2 3 4
18.	I believe that I can make my life peaceful	0 1 2 3 4
19.	I can resolve problems easily with my partner (or best friend if single)	0 1 2 3 4
20.	I can face my thoughts, even if they are unpleasant	0 1 2 3 4
21.	I am tolerant with myself when I am repeating old habits that are no longer helpful	0 1 2 3 4
22.	My actions are often controlled by other people or circumstances	0 1 2 3 4
23.	I get caught up in unpleasant memories or anxious thoughts about the future	0 1 2 3 4
24.	I can deal with physical discomfort	0 1 2 3 4
25.	I feel I cannot love anyone	0 1 2 3 4
26.	I am often in conflict with one (or more) family member	0 1 2 3 4
27.	I avoid feeling my body when there is pain or other discomfort	0 1 2 3 4
28.	I find it difficult to accept unpleasant experiences	0 1 2 3 4
29.	I do things that make me feel good straightaway even if I will feel bad later	0 1 2 3 4
30.	When I have a problem, I tend to believe it will ruin my whole life	0 1 2 3 4
31.	When I feel physical discomfort, I relax because I know it will pass	0 1 2 3 4
32.	Even when things are difficult I can feel happy	0 1 2 3 4
33.	I can feel comfortable around people	0 1 2 3 4
34.	Seeing or hearing someone with strong emotions is unbearable to me	0 1 2 3 4
35.	If I get angry or anxious, it is generally because of others	0 1 2 3 4

APPENDIX F

THE NURSE COMFORT QUESTIONAIRE

Thank you VERY MUCH for helping us understand your COMFORT with your job. Below are statements that relate to how you feel right now. Six numbers are provided for each question; please circle the number you think most closely matches your feeling. Your responses should describe your comfort <u>right now.</u>

		STRONGLY DISAGREE					STRONGLY AGREE
1.	My feel relaxed at work	1	2	3	4	5	6
2.	I feel competent	1	2	3	4	5	6
3.	I have enough support	1	2	3	4	5	6
4.	There are those I can depend on when I need help	1	2	3	4	5	6
5.	I don't want to come to work	1	2	3	4	5	6
6.	My work load gets me down	1	2	3	4	5	6
7.	I feel confident	1	2	3	4	5	6
8.	I feel like I don't belong here	1	2	3	4	5	6
9.	I feel my work is valued	1	2	3	4	5	6
10.	I am inspired by knowing that I am part of a team	1	2	3	4	5	6
11.	These surroundings are pleasant	1	2	3	4	5	6
12.	The background noise is nerve-racking.	1	2	3	4	5	6
13.	No one understands me	1	2	3	4	5	6

		STRONGLY DISAGREE					STRONGLY AGREE
14.	My fatigue is difficult to endure	1	2	3	4	5	6
15.	I am inspired to do my best	1	2	3	4	5	6
16.	I am unhappy when I am at work	1	2	3	4	5	6
17.	My values do not fit with this institution	1	2	3	4	5	6
18.	I feel like I belong here	1	2	3	4	5	6
19.	My work breaks refresh me	1	2	3	4	5	6
20.	I do not feel healthy right now	1	2	3	4	5	6
21.	This work makes me feel scared	1	2	3	4	5	6
22.	I am afraid for my future	1	2	3	4	5	6
23.	I am being treated fairly	1	2	3	4	5	6
24.	I have experienced changes which make me feel uneasy	1	2	3	4	5	6
25.	I eat a meal off the unit every day	1	2	3	4	5	6
26.	I would like to see my clinical leaders more often	1	2	3	4	5	6
27.	The temperature on this unit is fin	1	2	3	4	5	6
28.	I am angry	1	2	3	4	5	6
29.	I can rise above my concerns	1	2	3	4	5	6
30.	The mood around here uplifts me	1	2	3	4	5	6
31.	I am content	1	2	3	4	5	6
32.	My body aches from my work	1	2	3	4	5	6
33.	My patient care is personalized	1	2	3	4	5	6
34.	I have few opportunities to be a change agent	1	2	3	4	5	6

	STRONGLY DISAGREE					STRONGLY AGREE
35. I feel out of place here	1	2	3	4	5	6
36. I work well with my administrators and leaders.	1	2	3	4	5	6
37. I don't have many friends at work cards and phone calls	1	2	3	4	5	6
38. I am encouraged to make important patient care decisions	1	2	3	4	5	6
39. I do not receive positive reinforcement here	1	2	3	4	5	6
40. Here, all nurses are considered leaders	1	2	3	4	5	6
41. There is not enough cooperation among departments or disciplines here	1	2	3	4	5	6
42. When I am asked to precept a student or new nurse, it is a burden	1	2	3	4	5	6
43. The lighting is conducive to my well-being	1	2	3	4	5	6
44. Most of my work is true nursing work	1	2	3	4	5	6
45. I intend to stay here	1	2	3	4	5	6
46. I feel my career is upwardly mobile	1	2	3	4	5	6
47. My schedule fits my life-style	1	2	3	4	5	6
48. Patient rooms are easy to work in	1	2	3	4	5	6

APPENDIX G

INDEX OF WORK SATISFACTION

Please read each statement carefully and circle the number that most closely indicates how you feel about each statement. If you strongly agree with the first statement, circle 1; if you agree with it, circle 2; if you mildly or somewhat agree, circle 3. The center number (4) means "undecided". Please use it as little as possible.

Remember: The more strongly you feel about the statement, the further from the center you should circle, with agreement to the left and disagreement to the right.

	Agree						Disagree
1. My present salary is satisfactory.	1	2	3	4	5	6	7
2. Nursing is not widely recognized as being an important profession.	1	2	3	4	5	6	7
3. The nursing personnel on my service pitch in and help one another out when things get in a rush.	1	2	3	4	5	6	7
4. There is too much clerical and "paperwork" required of nursing personnel in this hospital.	1	2	3	4	5	6	7
5. The nursing staff has sufficient control over scheduling their own shifts in my hospital.	1	2	3	4	5	6	7
6. Physicians in general cooperate with nursing staff on my unit.	1	2	3	4	5	6	7
7. I feel that I am supervised more closely than is necessary.	1	2	3	4	5	6	7
8. It is my impression that a lot of nursing personnel at this hospital are dissatisfied with their pay.	1	2	3	4	5	6	7
9. Most people appreciate the importance of nursing care to hospital patients.	1	2	3	4	5	6	7
10. It is hard for new nurses to feel "at home" in my unit.	1	2	3	4	5	6	7
11. There is no doubt whatever in my mind that what I do on my job is really important.	1	2	3	4	5	6	7
12. There is a great gap between the administration of this hospital and the daily problems of the nursing service.	1	2	3	4	5	6	7
13. I feel I have sufficient input into the program of care for each of my patients.	1	2	3	4	5	6	7
14. Considering what is expected of nursing service personnel at this hospital, the pay we get is reasonable.	1	2	3	4	5	6	7
15. I think I could do a better job if I did not have so much to do all the time.	1	2	3	4	5	6	7
16. There is a good deal of teamwork and cooperation between various levels of nursing personnel on my service.	1	2	3	4	5	6	7

Continued

	Agree						Disagree
17. I have too much responsibility and not enough authority.	1	2	3	4	5	6	7
18. There are not enough opportunities for advancement of nursing personnel at this hospital.	1	2	3	4	5	6	7
19. There is a lot of teamwork between nurses and doctors on my own unit.	1	2	3	4	5	6	7
20. On my service, my supervisors make all the decisions. I have little direct control over my own work.	1	2	3	4	5	6	7
21. The present rate of increase in pay for nursing service personnel at this hospital is not satisfactory.	1	2	3	4	5	6	7
22. I am satisfied with the types of activities that I do on my job.	1	2	3	4	5	6	7
23. The nursing personnel on my service are not as friendly and outgoing as I would like.	1	2	3	4	5	6	7
24. I have plenty of time and opportunity to discuss patient care problems with other nursing service personnel.	1	2	3	4	5	6	7
25. There is ample opportunity for nursing staff to participate in the administrative decision-making process.	1	2	3	4	5	6	7
26. A great deal of independence is permitted, if not required, of me.	1	2	3	4	5	6	7
27. What I do on my job does not add up to anything really significant.	1	2	3	4	5	6	7
28. There is a lot of "rank consciousness" on my unit: nurses seldom mingle with those with less experience or different types of educational preparation.	1	2	3	4	5	6	7
29. I have sufficient time for direct patient care.	1	2	3	4	5	6	7
30. I am sometimes frustrated because all of my activities seem programmed for me.	1	2	3	4	5	6	7
31. I am sometimes required to do things on my job that are against my better professional nursing judgment.	1	2	3	4	5	6	7
32. From what I hear about nursing service personnel at other hospitals, we at this hospital are being fairly paid.	1	2	3	4	5	6	7
33. Administrative decisions at this hospital interfere too much with patient care.	1	2	3	4	5	6	7

Continued

	Agree						Disagree
34. It makes me proud to talk to other people about what I do on my job.	1	2	3	4	5	6	7
35. I wish the physicians here would show more respect for the skill and knowledge of the nursing staff.	1	2	3	4	5	6	7
36. I could deliver much better care if I had more time with each patient.	1	2	3	4	5	6	7
37. Physicians at this hospital generally understand and appreciate what the nursing staff does.	1	2	3	4	5	6	7
38. If I had the decision to make all over again, I would still go into nursing.	1	2	3	4	5	6	7
39. The physicians at this hospital look down too much on the nursing staff.	1	2	3	4	5	6	7
40. I have all the voice in planning policies and procedures for this hospital and my unit that I want.	1	2	3	4	5	6	7
41. My particular job really doesn't require much skill or "know-how."	1	2	3	4	5	6	7
42. The nursing administrators generally consult with the staff on daily problems and procedures.	1	2	3	4	5	6	7
43. I have the freedom in my work to make important decisions as I see fit, and can count on my supervisors to back me up.	1	2	3	4	5	6	7
44. An upgrading of pay schedules for nursing personnel is needed at this hospital.	1	2	3	4	5	6	7

APPENDIX H

MASLACH BURNOUT INVENTORY

CHRISTINA MASLACH • SUSAN E. JACKSON

MBI–*Human Services Survey*

The purpose of this survey is to discover how various persons in the human services or helping professionals view their jobs and the people with whom they work closely.

Because persons in a wide variety of occupations will answer this survey, it uses the term *recipients* to refer to the people for whom you provide your service, care, treatment, or instruction. When answering this survey please think of these people as recipients of the service you provide, even though you may use another term in your work.

On the following page there are 22 statements of job–related feelings. Please read each statement carefully and decide if you ever feel this way *about your job*. If you have *never* had this feeling, write a "0" (zero) in the space before the statement. If you have had this feeling, indicate *how often* you feel it by writing the number (from 1 to 6) that best describes how frequently you feel that way. An example is shown below.

Example

How often:	0	1	2	3	4	5	6
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times times a week	Every day

How Often 0–6	**Statements:**
1. _____	I feel depressed at work.

If you never feel depressed at work, you would write the number "0" (zero) under then heading "How often." If you rarely feel depressed at work (a few times a year or less), you would write the number "1." If your feelings of depression are fairly frequent (a few times a week, but not daily) you would write a "5."

1055 Joaquin Road, 2nd Floor
Mountain View, CA 94043
800-624-1765 www.cpp.com

11 10 09 08 07 45 44 43 42 41 40 39 38 37

3463

MBI–*Human Services Survey*

How often:	0	1	2	3	4	5	6
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times times a week	Every day

How Often 0–6	Statements:
1. _____	I feel emotionally drained from my work.
2. _____	I feel used up at the end of the workday.
3. _____	I feel fatigued when I get up in the morning and have to face another day on the job.
4. _____	I can easily understand how my recipients feel about things.
5. _____	I feel I treat some recipients as if they were impersonal objects.
6. _____	Working with people all day is really a strain for me.
7. _____	I deal very effectively with the problems of my recipients.
8. _____	I feel burned out from my work.
9. _____	I feel I'm positively influencing other people's lives through my work.
10. _____	I've become more callous toward people since I took this job.
11. _____	I worry that this job is hardening me emotionally.
12. _____	I feel very energetic.
13. _____	I feel frustrated by my job.
14. _____	I feel I'm working too hard on my job.
15. _____	I don't really care what happens to some recipients.
16. _____	Working with people directly puts too much stress on me.
17. _____	I can easily create a relaxed atmosphere with my recipients.
18. _____	I feel exhilarated after working closely with my recipients.
19. _____	I have accomplished many worthwhile things in this job.
20. _____	I feel like I'm at the end of my rope.
21. _____	In my work, I deal with emotional problems very calmly.
22. _____	I feel recipients blame me for some of their problems.

(Administrative use only)

		cat.		cat.		cat.
EE:	_____	_____	DP:	_____	_____	PA: _____ _____

REFERENCES

Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J. A., Busse, R., Clake, H., Giovannetti, P., Hunt, J., Rafferty, A. M., & Shamian, J. (2001). Nurses' reports on hospital care in five countries. *Health Affairs, 20*(3), 43-53.

Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J., & Silber, J. H. (2002). Hospital staffing and patient mortality, nurse burnout, and job dissatisfaction. *Journal of The American Medical Association, 288*(16), 1987-1993.

Auerbach, D. I., Buerhaus, P. I., & Staiger, D. O. (2007). Better late than never: Workforce supply implication of later entry into nursing. *Health Affairs*, *26*(1), 178-185.

Baer, R. A. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology: Science and Practice, 10*(2), 125-143.

Baer, R. A., Smith, G. T. Hopkins. J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, *13*(1), 27-45.

Beauchamp, T. L., & Childress, J. F. (2001). *Principles of biomedical ethics*, (5th ed.). Oxford: Oxford University Press.

Beddoe, A. E. & Murphy, S. O. (2004). Does mindfulness decrease stress and foster empathy among nursing students? *Journal of Nursing Education*, *43*(7), 305-312.

Benson, H. (1975). *The relaxation response*. New York: William Morrow.

Bernard Hodes Group (2006). *The 2006 aging nursing workforce survey*. Retrieved January 2008 from http://www.hodes.com/industries/healthcare/resources/research/agingworkforce.asp

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., Segal, Z. V., Abbey, S., Speca, M., Velting, D., Devins, G. (2004). Mindfulness: A proposed definition. *Clinical Psychology: Science and Practice*, *11*(3), 230-240.

Blackledge, J. T. (2007). Disrupting verbal processes: Cognitive defusion in acceptance and commitment therapy and other mindfulness-based psychotherapies. *The Psychological Record*, *57*, 555-576.

Brink, P. J. & Wood, M. J. (1998). *Advanced design in nursing research,* (2nd ed.). London: Sage.

Brown, K. W., & Ryan, R. M. (2003). The benefit of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, *84*, 822-848.

Brown, K. W., Ryan, R. M., Creswell, J. D. (2007). Mindfulness: Theoretical foundation and evidence for its salutary effects. *Psychological Inquiry, 18*(4), 211-237.

Buerhaus, P. I., Staiger, D. O., & Auerbach, D. I. (2000). Implication of an registered nurse workforce. *Journal of the American Medical Association*, *283*(22), 2948-2954.

Buerhaus, P. I. Donelan, K., Ulrich, B. T., Norman, L., & Dittus, R. (2005). Is the shortage of hospital RN's getting better or worse? Findings from two recent national surveys of RN's. *Nursing Economics*, *23*(2), 61-71, 96.

Buerhaus, P. I., Staiger, D. O., & Auerbach, D. I. (2008). *The future of the nursing workforce in the United States: Data, trends and implications*. Boston: Jones and Bartlett.

Carmack, B. J. (1997). Balancing engagement and detachment in caregiving. *Journal of Nursing Scholarship*, *29*(2), 139-143.

Cayoun, B. A. (2004). *Advances in mindfulness training integration: Towards a non-dualistic cognitive-behaviour therapy*. Paper presented at the 2004 biennial conference of the Australian Psychological Society's Buddhism and Psychology Interest Group, Deakin University, Melbourne, Australia.

Cayoun, B.A. & Freestun, J. (2004). *Mindfulness-based self-efficacy scale* (MSES), University of Tasmania. Retrieved on December 12, 2007 from

http://www.psychtechnologies.com.au/questionnaires/msesforms.pdf.

Chang, V. Y., Palesh, O., Caldwell, R., Glasgow, N., Abramson, M., Luskin, F., Gill, M., A., & Koopman, C. (2004). The effects of a mindfulness-based stress reduction program on stress, mindfulness self-efficacy, and positive states of mind. *Stress and Health, 20,* 141-147.

Coelho, H. F., Canter, P. H., & Ernst, E. (2007). Mindfulness-based cognitive therapy: Evaluating current evidence and informing future research. *Journal of Consulting and Clinical Psychology*, *75*(6), 1000-1005.

Cohen-Katz, J. (2004). Mindfulness-based stress reduction and family systems medicine: A natural fit. *Family Systems and Health, 28*(2), 204-206.

Cohen-Katz, J., Wiley, S. D., Capuano, T., Baker, D. M., & Shapiro, S. (2004). The effects of mindfulness-based stress reduction on nurse stress and burnout, a quantitative and qualitative study. *Holistic Nursing Practice,* 18(6), 302-308.

Cohen-Katz, J., Wiley, S. D., Capuano, T., Baker, D. M., & Shapiro, S. (2005). The effects of mindfulness-based stress reduction on nurse stress and burnout, part II a quantitative and qualitative study. *Holistic Nursing Practice, 19*(1), 26-35.

Cohen-Katz, J., Wiley, S. D., Capuano, T., Baker, Deitrick, L., D. M., & Shapiro, S. (2005). The effects of mindfulness-based stress reduction on nurse stress and burnout, part III a quantitative and qualitative study. *Holistic Nursing Practice, 19*(2), 78-86.

Cohen-Katz & Mansfield, J. (1997). Turnover among nursing home staff. A review. *Nursing Management*, *28*(5), 59-62, 64.

Coomber, B. & Barriball, K. L. (2007). Impact of job satisfaction components on intent to leave and turnover for hospital-based nurses: A review of the research literature. *International Journal of Nursing Studies*, *44*(2), 297.

Curtis, E. A. (2007). Job satisfaction: A survey of nurses in the republic of Ireland. *International Nursing Review, 54*, 92-99.

Davidson, R. J., Kabat-Zinn, J., Schumacher, J., Rosenkranz, M., Muller, D., Santorelli, S. F., Urbanowski, F., Harrington, A., Bonus, K., & Sheridan, J. F. (2003). Alterations in brain and immune function produced by mindfulness meditation. *Psychosomatic Medicin*e, *65*, 564-570.

Dekeyser, M., Raes, F., Leijssen, M., Leysen, S., & Dewulf, D. (2008). Mindfulness skills and interpersonal behaviour. *Personality and Individual Differences*, *44*, 1235-1245.

Department of Health and Human Services (DHHS). (2008). Retrieved October 13, 2008 from http://www.hrsa.gov/about/budgetjustification09/nursefaculty.htm.

DiGiacomo, M., & Adamson, B. J. (2001). Coping with stress in the workplace: Implications for new health professionals. *Journal of Allied Health*, *30*(2), 106-111.

Dimidjian, S., & Linehan, M. M. (2003). Defining an agenda for future research on the clinical application of mindfulness practice. *Clinical Psychology: Science and Practice, 10*(2), 166-171.

Duquette, D., Kerouac, S., Sandhu, B. K., & Beaudet, L. (1994). Nursing burnout. *Issues in Mental Health Nursing*, *15*(4), 337-358.

Epeland, K. E. (2006). Overcoming burnout: How to revitalize your career. *The Journal of Continuing Education in Nursing, 37*(4), 178-184.

Farrell, G. A., & Dares, G. (1999). Nursing staff satisfaction on a mental health unit. *Australian and New Zealand Journal of Mental Health Nursing, 8*, 51-57.

Foley, M., Lee, J., Wilson, L., Young Cureton, V., & Canham, D. (2004). A Multi-factor analysis of job satisfaction among school nurses. *The Journal of School Nursing, 20*(2), 94-100.

Forsyth, D. M., & Cannaday, N. J. (1981). Preventing an alleviating staff burnout through a group. *Journal of Psychosocial Nursing Mental Health Services*, *19*(9), 35-38.

Freudenberger, H. (1974). Staff burn-out. *Journal of Social Sciences, 30*(1), 159-165.

Freudenberger, H. J. (1983). Burnout: Contemporary issues, trends, and concerns. In Farber, B. (Ed.). *Stress and burnout in the human service profession*, pp 23-29. New York: Pergamon Press.

Freudenberger, H. J. (1989). Burnout: Past, present and future concerns. *Loss, Grief, and Care, 3*(1/2), 1-10.

Front, J. (January/February, 2008). A quiet revolution. *Psychotherapy Networker*, *1,* 29-34.

Garden, A. M. (1989). Burnout: The effect of psychological type on research findings. *Journal of Occupational Psychology*, *62*, 223-233.

Gazella, K. (2005). Bringing mindfulness to medicine: An interview with Jon Kabat-Zinn, PhD. *Advances*, *21*, 22-27.

Goleman, D. (May 21, 1993). A slow, methodical calming of the mind. *New York Times Magazine*, 32-50.

Greenglass, E. R., Burke, R. J., & Fiksenbaum, L. (2001). Workload and burnout in nurses. *Journal of Community and Applied Social Psychology*, *11*, 211-215.

Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits. A meta-analysis. *Journal of Psychosomatic Research*, 57, 35-43.

Gueritault-Chalvin, V., Kalichman, S. C., Demi, A., & Peterson, J. L. (2000). Work-related stress and occupational burnout in AIDS caregivers: Test of a coping model with nurses providing AIDS care. *AIDS Care*, *12*(2), 149-161.

Gyatso, G. K. (2001). *Transform your life*: *A blissful Journey*. New York: Tharpa Publications.

Hanh, T. N. (1999). *The miracle of mindfulness*. Boston: Beacon Press.

Havens, D. (2001). Comparing nursing infrastructure and outcomes: ANCC magnet and nonmagnetic cne's report. *Nursing Economics*, *19*(6), 258-266.

Hayes, S. C. (2002). Acceptance, mindfulness, and science. *Clinical Psychology: Science and Practice, 9*(1), 101-106.

Hayter, M. (March, 1999). Stress and burnout in aids care nurses working in home care settings. *Journal of European Association of Nurses in AIDS Care*, *4*, 2-4.

Herndon, F. (2008). Testing mindfulness with perceptual and cognitive factors: External vs. internal encoding and the cognitive failures questionnaire. *Personality and Individual Differences, 44*(1), 32-41.

Hirst, I. S. (2003). Perspectives of mindfulness. *Journal of Psychiatric and Mental Health Nursing, 10*, 359-366.

Hiscott, R. & Connop, P. (1996). Why hospital mental health staff terminate employment. *Perspectives in Psychiatric Care, 32*(1), 7-11.

Hofmann, S. G., & Asmundson Gordon, J. G. (2008). Acceptance and mindfulness-based therapy: New wave or old hat? *Clinical Psychology Review*, *28*, 1-16.

HRSA (2007). *The registered nurse population: Findings from the 2004 national sample survey of registered nurses.* Retrieved February 2007 from http://bhpr.hrsa.gov/healthworkforce/rnsurvey04.

Johnson, C. J. (2007). The measurement of mindfulness (Doctoral dissertation, University of Texas at El Paso, 2006). *Dissertation Abstracts International, 67/11,* 185.

Judge, T.A. & Locke, E. A. (1993). Effect of dysfunctional thought processes on subjective well-being and job satisfaction. *Journal of Applied Psychology, 78*(3), 475-490.

Kabat-Zinn, J. (1990). *Full catastrophe living: using the wisdom of your body and mind to face stress, pain, and illness.* New York: Delta.

Kabat-Zinn, J. (1994). *Wherever you go there you are: Mindfulness meditation in everyday life.* New York: Hyperion.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice*, *10*, 144-156.

Kabat-Zinn, J., Massion, A. O., Kristerller, J., Peterson, L. Fletcher, K. & Pbert, L. (1992). Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *American Journal of Psychiatry, 149*, 936-943.

Khurshid, K., Merchant, R. J., & Hirani, D. (2005). Registered nurses perception of work satisfaction at a tertiary care university hospital. *Journal of Nursing Management, 13*, 32-39.

Kim, J. (1994). *Serenity nursing interventions for older adults: A replication study.* Unpublished master's thesis, University of Louisville, Louisville, KY.

Koehn, M. L. (2000). Alternative and complementary therapies for labor and birth. *Holistic Nursing Practice, 15*(1), 66-77.

Koivula, M., Paunonen, M., & Laippala, P. (2000). Burnout among nursing staff in two Finnish hospitals. *Journal of Nursing Management*, 8(3), 149-158.

Kolcaba, K. Y. (1991). A taxonomic structure for the concept comfort: Synthesis and application. *Image: Journal of Nursing Scholarship*, *23*, 237-240.

Kolcaba, K. Y. (1994). A theory of holistic comfort for nursing. *Journal of Advanced Nursing, 19*, 1178-1184.

Kolcaba, K. (2001). Evolution of the mid range theory of comfort for outcomes research. *Nursing Outlook, 49*(2), 86-92.

Kolcaba, K. Y. (2003). *Comfort theory and practice*. New York: Springer.

Kolcaba, K. Y. & DiMarco, M. (2005). Comfort theory and its application to pediatric nursing. *Pediatric Nursing*, *31*(3), 187-194.

Kolcaba, K. Y. & Fox, C. (1999). The effects of guided imagery on comfort of women with early stage breast cancer undergoing radiation therapy. *Oncology Nursing Forum*, *26*(1), 67-72.

Kolcaba, K. Y. & Kolcaba, R. J. (1991). An analysis of the concept of comfort. *Journal of Advanced Nursing*, *16*, 1301-1310.

Kolcaba, K., Tilton, C., & Drouin, C. (2006). Comfort theory. A unifying framework to enhance the practice environment. *Journal of Nursing Administration, 36*(11), 538-544.

Kovner, C., Brewer, C., Fairchild, S., Poornima, S., Kim, H., & Djukic, M. (2007). Newly licensed rn's characteristics, work attitudes, and intentions to work. *American Journal of Nursing*, *107*(9), 58-70.

Krogstad, U., Hofoss, D., Veenstra, M., & Hjortdahl, P. (February 17, 2006). Predictors of job satisfaction among doctors, nurses, and auxiliaries in Norwegian hospitals: Relevance for micro unit culture. *Human Resources for Health*, *4*(3) doi: 10.1186/1478-4491-4-3.

Langer, E. J. (1989). *Mindfulness.* Cambridge, MA: Da Capo Press.

Langer, E. J. (2000). Mindfulness research and the future. *Journal of Social Issues, 56*(1), 129-139.

Langer, E. J. (2005). *On becoming an artist: Reinventing yourself through mindful Creativity.* New York: Ballentine Books.

Lau, M. A., & McMain, S. F. (2005). Integrating mindfulness meditation with cognitive and behavioural therapies: The challenge of combining acceptance and change-based strategies. *Canadian Journal of Psychiatry, 50*(13), 863-869.

Lazar, S. W., Kerr, C. E., Wasserman, R. H., Gray, J. R., Greve, D. N., Treadway, M. T., McGarvey, M., Quinn, B. T., Dusek, J. A., Benson, H., Rauch, S. L., Moore, C. I., & Fischl, B. (2005). Meditation experience is associated with increased cortical thickness. *Neuro Report, 16*(17), 1893-1897.

Leckie, M. S. & Thompson, E. (1979). *Symptoms of stress inventory*. Seattle, WA: University of Washington.

Lees, S., & Ellis, N. (1990). The design of a stress-management programme for nursing personnel. *Journal of Advanced Nursing*, *15*, 946-961.

Leigh, J., Bowen, S., & Marlatt, G. A. (2005). Spirituality, mindfulness, and substance abuse. *Addictive Behaviors*, *30*, 1335-1341.

Leininger, M. (1991). Culture *care diversity and universality: A theory of nursing.* New York: National League for Nursing Press.

Locke, E.A. (1976). The nature and causes of job satisfy action. In Dunnette, M. D. (Ed.). *The handbook of industrial and organizational psychology*. pp 1297-1349. Chicago: Rand McNally.

Mackenzie, C. S., Poulin, P. A., & Seidman-Carlson, R. (2006). A brief mindfulness-based stress reduction intervention for nurses and nurse aides. *Applied Nursing Research*, *19*(2), 105-109.

Mackillop, J., & Anderson, E. J. (May, 2007). Further psychometric validation of the mindful attention awareness scale (MAAS). *Journal of Psycopathological Behavioral Assessment, 29*, 289-293.

Majumdar, M., Grossman, P., Dietyz-Waschkowski, B., Kersig, S., & Walach, H. (2002). Does Mindfulness meditation contribute to health? Outcome evaluation of a German sample. *The Journal of Alternative and Complementary Medicine*, *8*(6), 719-730.

Maslach, C. (1982). *Burnout: The cost of caring*. New Jersey: Prentice Hall.

Maslach, C. (2001). Job burnout. *Annual Review of Psychology*, *52,* 397-422

Maslach, C. (2003). Job burnout: New directions in research and intervention. *Current Directions in Psychological Sciences, 12*(3), 189-192.

Maslach, C., Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Organizational Behavior, 2*(2), 99-113.

Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach burnout inventory manual.* Palo Alto, CA: Consulting Psychologists Press.

Matchim, Y., & Armer, J. M. (2007). Measuring the psychological impact of

mindfulness meditation on health among patients with cancer: A literature review. *Oncology Nursing Forum, 34*(5), 1059-1066.

McComb, J. J., Tacon, A., Randolph, P., & Caldera, Y. (2004). A pilot study to examine the effects of a mindfulness-based stress-reduction and relaxation program on levels of stress hormones, physical functioning, and submaximal exercise responses. *The Journal of Alternative and Complementary Medicine, 10*(5), 819-827.

McIlveen K.H., & Morse J.M. (1995). The role of comfort in nursing care: 1900-1980. *Clinical Nursing Research*, *4*(2), 127-148.

Messenger, T. C., & Roberts, K. T. (1994). The terminally ill: Serenity nursing interventions for hospice clients. *Journal of Gerontological Nursing*, *20*(11), 17-22.

Morse, J. M. (1983). An ethnoscientific analysis of comfort: A preliminary investigation. *Nursing Papers/Perspectives in Nursing*, *15*(1), 6-19.

Mueller, C. W., & McCloskey, J. C. (1990). Nurses' job satisfaction: A proposed measure. *Nursing Research*, *39*(2), 113-117.

Nelson, R. (2002). US nursing shortage a "national security concern." *The Lancet, 360*, 855.

Nightingale, F. (1860). *Notes on nursing: What it is and what it is not.* London: Harrison, 59, Pall Mall, Bookseller to the Queen.

Oman, D., Shapiro, S. L., Thoresen, C. E., Plante, T. G., & Flinders, T. (2008). Meditation lowers stress and supports forgiveness among college students: A randomized controlled trial. *Journal of American College Health, 56*(5), 569-578.

Ott, M. J. (July, 2004). Mindfulness meditation: A path of transformation and healing. *Journal of Psychosocial Nursing Mental Health Services, 42*(7), 22-29.

Parsons, S. K., Simmons, W. P., Penn, K., & Furlough, M. (2003). Determinants of satisfaction and turnover among nursing assistants. The results of a statewide survey. *Journal of Gerontology Nursing*, *29*(3), 51-58.

Pierce, C. M., & Molloy, G. (1989). The construct validity of the Maslach burnout inventory: Some data from down under. *Psychological Reports*, *65*(3), 1340-1342.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. Journal of Applied Psychology*, 5*(88). 879-903.

Praissman, S. (2007). Mindfulness-based stress reduction: A literature review and clinician's guide. *Journal of the American Academy of Nurse Practitioners*, *20*(4), 212-216.

Raiger, J. (2005). Applying a cultural lens to the concept of burnout. *Journal of Transcultural Nursing*, *16*(1), 71-76.

Roach, B. L. (1994). Burnout and the nursing profession. *Health Care Supervisor*, *12*(4), 41-47.

Roberts, K. T., & Whall, A. (2007). Serenity as a goal for nursing practice. *Journal of Nursing Scholarship*, *28*(4), 359-364.

Robinson, F. P., Mathews, H. L., & Witek-Janusek, L. (2003). Psycho-endocrine-immune response to mindfulness-based stress reduction in individuals infected with the human immunodeficiency virus: A quasiexperimental study. *The Journal of Alternative and Complementary Medicine*, *9*(5), 683-694.

Roemer, L., & Orsillo, S. M. (2002). Expanding our conceptualization of and treatment for generalized anxiety disorder: Integrating mindfulness acceptance based approaches with existing cognitive-behavioral models. *Clinical psychology: Science and Practice*, *9*(1), 54-68.

Roth, B. & Stanley, T., W. (2002). Mindfulness-based stress and healthcare utilization in the inner city: Preliminary findings. *Alternative Therapies in Health and Medicine, 8*(1), 60-62, 64-66.

Rotter, J. (1966). Generalized expectations from internal versus external control of reinforcement. *Psychological Monographs*, *80*, 1-28.

Safran, J. D., & Segal, Z. V. (1990). *Cognitive therapy: An interpersonal perspective*. New York: Basic Books.

Sapse, A. T. (1997). Cortisol, high cortisol diseases and anticortisol therapy. *Psychoneuroendocrinolgy*, *1*(22), S3-S10.

Schatz, C. R. ed. (2004). The benefits of mindfulness. *Harvard Women's Health Watch, 11*(6), 1-3.

Schmidt, S. (2004). Mindfulness and healing intention: concepts, practice, and research evaluation. *The Journal of Alternative and Complementary Medicine, 10*(1), S7-S14.

Schure, M. B., Christopher, J., & Christopher, S. (2008). Mind-body medicine and the art of self-care: Teaching mindfulness to counseling students through yoga, meditation, and qigong. *Journal of Counseling and Development*, *86*(1), 47-56.

Segal, Z., Williams, J. M. G., & Teasdale, J. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. New York: The Guilford Press.

Selye, H. (1978). *The stress of life*. New York: McGraw-Hill.

Shannahoff-Khalsa, D. (2003). The complications of meditation trials and research: Issues raised by the Robinson, Mathews, and Witek-Janusek paper-"psycho-endocrine-immune response to mindfulness-based stress reduction in individuals infected with the human immunodeficiency virus: A quasiexperimental study." *The Journal of Alternative and Complementary Medicine, 9*(5), 603-605.

Shapiro, S. L., Brown, K. W., & Biegel, G. M. (2007). Teaching self-care to caregivers: Effects of mindfulness-based stress reduction on the mental health of therapists in training. *Training and Education in Professional Psychology*, *1*(2), 105-115.

Shapiro, S. L. & Schwartz, G. E. (2000). Intentional systemic mindfulness: An integrative model for self-regulation and health. *Advances in Mind Body Medicine*, *16*(2), 128-134.

Shoemaker, P. J., Tankard, J. W., & Lasorsa, D. L. (2004). *How to build social science theories.* Thousand Oaks, CA. Sage.

Singh Khalsa, D. (1997). *Brain longevity: The breakthrough medical program that improves your mind and memory.* New York: Warner Books.

Stacciarini, J. M. & Troccoli, B. T. (2004). Occupational stress and constructive thinking: Health and job satisfaction. *Journal of Advanced Nursing, 46*(5), 480-487.

Stamps, P. (1997). *Nurses and work satisfaction: An index for measurement*. Chicago: Health Administration Press.

Suzuki, E., Itomine, I., Kanoya, Y., .Katsuki, T., Sayaka Horii. S. & Chifumi Sato,C. (2006). Factors affecting rapid turnover of novice nurses in university hospitals. *Journal of Occupational Health, 48*(1), 49-61.

Tacon, A. M., McComb, J., Caldera, Y., & Randolph, P. (2003). Mindfulness meditation, anxiety reduction, and heart disease: A pilot study. *Family & Community Health, 26*(1), 25-33.

Tan, S. Y. (2007). Use of prayer and scripture in cognitive-behavioral therapy. *Journal of Psychology and Christianity*, *26*(2), 101-111.

Van Servellen, G., Topf, M., & Leake, B. (1994). Personality hardiness, work-related stress, and health in hospital nurses. *Hospital Topics*, *72*(2), 34-39.

Walker, L. O., & Avant, K. C. (2005) *Strategies for theory construction in nursing*, 4th Ed. Upper Saddle River, New Jersey: Prentice Hall.

Watson, J. (1999). *Nursing: Human science and human care: A theory of nursing*. Boston: Jones and Bartlett Publishers.

Williams, K. A., Kolar, M. M., Reger, B. E., & Pearson, J. C. (2001). Evaluation of a wellness based mindfulness stress reduction intervention: A controlled trial. *American Journal of Health Promotion, 15*(6), 422-432.

Witkiewitz, K., Marlett, G. A ., & Walker, D. D. (2005). Mindfulness-based relapse prevention for alcohol use disorders: The meditative tortoise wins the race. *Journal of Cognitive Psychotherapy*, *19*(3), 221-228.

Wu, S, Zhu, W., Wang, Z., Wang, M., & Lan, Y. (2007). Relationship between burnout and occupational stress among nurses in china. *Journal of Advanced Nursing*, *59*(3), 233-239.

Yung, P. M. B., Fung, M. Y., Chan, T. M. F., & Lau, B. W. K. (2004). Relaxation training methods for nurse managers in Hong Kong: A controlled study. *International Journal of Mental Health Nursing*, *13*, 255-261.