Nurses' Health and Professional Quality of Life

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Nurse's Health and Professional Quality of Life

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Georgia College and State University

5/2/2018

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Dedication

I would like to dedicate this paper to all the nurses who work diligently every day to provide the best possible care to their clients. You are the foundation upon which all of us depend. Your dedication and caring for your clients on a daily basis, proves that despite everything you face in your work environment, you continue to put your patients above anything else. I hope that this will provide you with the inspiration and knowledge you need to recognize how important you are to the profession and how important your health is as well. Just remember, to take care of your clients, you must first take care of yourselves.
Acknowledgements

Thanks go to my project committee members: Dr. Sheryl Winn, Chair, coach and role model. I would not be here if it were not for your willingness to take on the role as my chair. Thank you. Dr. Sarah Handwerker, who is an awesome writing coach and cheerleader. You have been my editor and my cheerleader when I was down. Thank you. Dr. Lucy LeClerc, a smart and personal site coordinator. You helped me navigate through the arena of research as a site coordinator and for that I thank you. Each of you have been there through the setbacks to provide encouragement and hope throughout this project guiding me every step of the way. You gave me what I needed, even when I did not know I needed something. For that I will be forever grateful.

Camille Pace, you are a marvelous addition to the team of helpers. Your quick mind made working with you a pleasure. You made the data analysis process so much easier and I finally came to understand all the elements of the data analysis through your mentoring.

I would not be here to complete this if it had not been for my classmate and study buddy, Paula Stover. This is an adventure I would never have done on my own. I honestly believe the good Lord intervened when I missed the first deadline the year before. He knew I needed your support and friendship to make it through. Thank you for always being there.

I never would have stayed and completed this program without the love and support of my husband, Richard Amason. He has always told me I could do anything I set my mind too, but it was not always easy, and he held me up during those times. Thank you. You are my reason for living. To my parents, Samuel and Anne Hicks who always believed I could complete this adventure. I am only sorry my dad will not be able to see me in person, but he is my guardian angel. On more than one occasion he sent me rainbows to let me know I was OK. I
miss you. To my grandchildren, Jordan, Nicholas, Bennett, Brianne and Anna Blake, you have been patient and thoughtful while Nana went through this process. A good lesson in showing that you are never too old to learn. Always continue to reach for that shining star, whatever it is. I love all of you.
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Nurse's Health and Professional Quality of Life

Abstract

This study investigated relationships between general health (GH), professional quality of life (PQL) and perceived stress (PS) of nurses at a 382-bed southeastern hospital.

Background: Several studies showed that GH and PQL are associated. The health, quality of life, and perceived stress of nurses was a growing concern in the hospital. Nurse leaders needed data to inform evidence-based efforts to promote nurse health and improve quality of life while reducing stress.

Design: This cross-sectional correlation study measured GH, PQL, and PS using four validated and reliable instruments: The Medical Outcomes Short Form (SF-12), the Professional Quality of Life scale (ProQOL), the Perceived Stress Scale (PSS) and the Pittsburgh Quality Sleep Index (PQSI). Descriptive data was gathered based on associations found in the literature.

Relationships between variables were tested using multiple regression.

Discussion: This study found several significant relationships between general health, quality of life, stress, and sleep for nurses, however there was no correlation with physical health and all other health indicators. Data provided nurse leaders with evidence to inform targeted interventions based on needs of nurses employed at this hospital. Generalization is limited but provides a foundation for future research and can inform efforts at hospitals of similar size and scope.

Key words: compassion fatigue, health, professional quality of life, nurses, perceived stress
Chapter One

The nursing profession is committed to caring for clients in the best way possible. Because of that philosophy, nursing was voted the most trustworthy profession every year for the past decade (Gallup, 2016). Nurses are taught to serve as caregivers, educators and role models. But who is taking care of the nurses? How can nurses take care of someone else, if they do not take care of themselves? It may appear selfish to care for oneself first, but if that is not done, there is little caring, or compassion left for clients (Duarte, Gouveia, & Cruz, 2016). As airline passengers are reminded, if the oxygen masks descend, each person places their own mask before assisting others. However, studies on nurses’ health have found that nurses often do not follow a healthy lifestyle (James et al., 2013; Letvak, Ruhm, & Gupta, 2012; Nahm, Warren, Zhu, An, & Brown, 2012; Perry, Gallagher, & Duffield, 2015). As professionals, nurses need to acknowledge their needs, stresses, and limitations to be successful caregivers (Duarte et al., 2016). The need for raised awareness is so great that the American Nurses Association declared 2017 as the “year of the healthy nurse” with a monthly marketing program to challenge nurses toward improved health status (American Nurses Foundation, n.d.).

Two studies have shown that general health (GH) and professional quality of life (PQL) are positively correlated (Yadollahi, Razmjooei, Jamali, Niakan, & Ghahramani, 2016; Sarafis, Rousaki, Tsounis, Malliarou, Lahana, Bamidis, Niakas and Papastavrou, 2016). These factors were a growing concern for one large southeastern hospital. Nurse leaders needed data to inform evidence-based interventions to promote health, quality of life, and decreased stress for nurses. This correlation study aimed to investigate relationships between general health, quality of life, stress and sleep. Baseline data gathered in this study was used to inform nurse leaders regarding
targeted interventions that foster general health, quality of life and reduce stress in nurses at this hospital. Generalization is limited but could provide a foundation for future research for other facilities of similar size and scope.

**Background**

Multiple studies on nurses’ health suggest that nurses often do not follow a healthy lifestyle (James et al. 2013; Letvak, Ruhm, & Gupta, 2012; Nahm et al., 2012; Perry, Gallagher & Duffield, 2015). Nurses know the importance of a healthy lifestyle, but that knowledge is not always evident in their own self-care (Ross, Bevans, Brooks, Gibbons, & Wallen, 2017). Additionally, professional quality of life affects mental health (Stamm, 2010). To be effective leaders and health educators, nurses must follow a healthy lifestyle both personally and professionally (Ross et al., 2017). To bring this issue to the forefront, the American Nurses Association (ANA) initiated a campaign called “Healthy Nurses Healthy Nation” (Putnam, 2017). The campaign engaged nurses in activities to improve their overall health and wellness (Putnam, 2017). The goal was for every nurse to implement a healthy lifestyle which could be transferred to a family member and/or coworker. With 3.6 million nurses, the influence of individual nurses could rapidly create a healthier nation.

The American Nurses Association (ANA) Health Risk Assessment completed in 2013-2014 identified major areas addressing a work environment that is safe and healthy for the nurses. This appraisal provided a detailed overview of nurses across the nation (American Nurses Association [ANA], 2014). Data from nurses’ health status identified the average BMI as 28, which is considered overweight. Sixty-six percent of nurses reported a loss of breaks and increased overtime hours due to heavy workloads (ANA, 2014). The number one concern for eighty-two percent of the nurses was workplace stress which is a primary component of
compassion fatigue (CF). Fifty percent of nurses reported working ten hours or more per day which again leads to increased stress levels and higher CF levels. These statistics support the fact that nurses across the United States are stressed, overworked, and missing vital health promoting break-times (ANA, 2014).

Additionally, two systematic reviews revealed that decades of research demonstrate that nurses experience five major general health and quality of life risk indicators: Burnout/compassion fatigue, overweight/obesity, high stress levels, and lack of exercise and sleep (Ledoux, 2015; Lee, Park, & Min, 2015). By evaluating the GH, PQL, and stress levels of nurses, organizations can take appropriate measures before the stage of CF is reached (Coetzee & Klopper, 2010). One study suggested that when proper interventions such as decreased workload, mutual gratitude and better relationships between nurses and clients, are implemented, the quality of life of nurses increases (Meng, Luo, Liu, Hu, & Yu, 2015).

The largest segment of the healthcare community and the majority of client care providers are nurses (Perry et al., 2015). While providing care, nurses frequently offer lifestyle education designed to improve health outcomes. Credibility as role models can be affected by their own lifestyle (Perry et al., 2015). Nurses know the importance of a healthy lifestyle, but that knowledge is not always evident in their own self-care (Ross et al., 2017). The need for raised awareness became so essential that the ANA declared 2017 as the “year of the healthy nurse” and provided incentives every month to motivate nurses toward a healthier lifestyle (ANA, n.d.). Additionally, when nurses neglect to follow a healthy lifestyle, they may also fail to teach those choices appropriately to their clients (Hensel, 2011).

**Problem Statement**
A group of nurses in a 352-bed southeastern hospital was identified as having potential GH, PQL and PS risk symptoms. Nursing leadership was interested in addressing these concerns, however, baseline data was needed. Health is a primary focus of the nursing profession. However, as research demonstrates, nurses often focus more on client health than on their own (Hensel, 2011).

**Purpose of the Study**

The purpose of this cross-sectional correlation study was to investigate relationships between general health, quality of life, stress and sleep of nurses at a large southeastern hospital. As an employee at this hospital, this Doctor of Nursing Practice (DNP) student identified a group of nurses with potential risk factors and a lack of awareness about these symptoms: burnout/compassion fatigue, high perceived stress levels, sleep deprivation, lack of physical exercise and overweight/obesity. The American Nurses Association declared 2017 “the year of the healthy nurse” in response to similar national concerns and challenged nurses across the nation to engage in health promotion activities (ANA, n.d.). Before evidence-based health awareness and promotion interventions could be implemented, baseline data was required to support investment into programs.

**Research Questions and Hypotheses**

The hypothesis suggested that relationships exist between nurses’ health and several variables. The following research questions were addressed:

**Aim 1** – To determine the general health of the nurses working at a large southeastern hospital in the United States.

**Research question 1:** How do the nurses rate their health status as measured by the Medical Outcomes Short Form (SF-12)?
**Research question 2:** Are body mass index, sleep status, and physical activity associated with general health in these nurses as measured by the demographic survey and the Pittsburg Sleep Quality Index (PQSI)?

**Aim 2** – To determine the professional quality of life of nurses working at a large southeastern hospital in the United States.

**Research question 3:** How do nurses rate their quality of life as measured by the Professional Quality of Life survey (ProQOL)?

**Aim 3** – To determine the stress levels of the nurses working at a large hospital in the southeastern United States.

**Research question 4:** What is the perceived stress level of the nurses?

**Research question 5:** What factors are associated with a higher level of perceived stress in the nurses as measured by the Perceived Stress Scale (PSS-10)?

**Aim 4** – To investigate relationships between the study variables.

**Research question 6:** Are there key concepts of health, as measured by the Medical Outcomes Short Form (SF-12), that are associated with higher levels of perceived stress, quality of life and sleep in the nurses as measured by the Perceived Stress Scale (PSS-10), Professional Quality of Life Scale (ProQOL), and the Pittsburgh Sleep Quality Index (PSQI)?

**Hypotheses:** The null hypothesis was accepted for all relationships except the correlations between physical health and all other health indicators as described in Chapter Four.

**Concepts and Definitions**

Associations between four main concepts were investigated: General health perception, professional quality of life, perceived stress and sleep quality. The concepts and related components are briefly defined in this section and are explored further in Chapter Two.
General Health Perception. The general health of nurses was defined and measured by the Medical Outcomes Short Form (SF-12) (RAND Corporation [RAND], n.d.). The SF-12 examines eight individual parameters: physical functioning, pain, well-being, levels of energy or fatigue, social functioning, overall health, and any job limitations related to physical or mental issues. The instrument also includes one item that is specific to any change in physical health (RAND, n.d.). This study investigated three components of general health as listed below.

Body Mass Index (BMI). Findings from the Harvard Nurses’ Health Study between 1976 and 2016 found that more than half of the nurses reported having a BMI greater than 30 and exercising less than two hours per week. Those same nurses also reported eating fruit less than the minimum requirements (Yu et al., 2016). As with many high-stress professions, nurses are less likely to eat healthy and get enough quality rest (ANA, 2014). The Body Mass Index (BMI) was used as a measure of physical health in this study. Volunteers were completing the study’s instruments in an online format; therefore, accurate measurements of the participant’s height and weight was not possible. To determine the BMI, the participants provided their last measured height and weight on the demographic form. The height and weight of each participant was entered into the standard BMI formula by dividing the weight in pounds (lb) by height in inches (in) squared and multiplying by a conversion factor of 703 ("NIH/BMI Calculator," 2017). BMI was used as a continuous variable in this study and determined weight categories based on the Centers for Disease Control and Prevention (CDC) guidelines (Centers for Disease Control [CDC], 2016, June 16). Participants were considered underweight if their BMI was less than 18.5, of normal weight if their BMI was between 18.5 and 24.9, overweight if their BMI was between 25 and 30, and obese if the BMI was greater than 30. Furthermore,
obesity was divided into 3 subscales; Class 1 with a BMI of 30 to less than 35, Class 2 with a BMI of 35 to less than 40, and Class 3 if the BMI was 40 or greater (CDC, 2016, June 16.).

**Physical activity.** Physical activity is one of the most important indicators of a healthy lifestyle and is a major component of both physical and mental health in nurses (Ross et al., 2017). According to the Centers for Disease Control and Prevention (CDC) “big data” resource, physical activity has the ability to improve a person’s mental and physical wellbeing and lower stress levels (Centers for Disease Control and Prevention [CDC], 2017, May 8). For this project physical activity was defined as any body movement that utilizes skeletal muscles and was measured on the demographic survey by answering five questions specific to physical activity level and intensity adapted from the World Health Organization ("GPAQ," 2017).

**Sleep.** Sleep was defined as a natural state of the mind and body characterized by a change in consciousness and a decrease in interactions with surroundings (NIH, n.d.). Sleep was used as a measure of general health in this study. Volunteers completed the survey in a self-report format, so accurate measurements of sleep hours were not possible. The Pittsburgh Sleep Quality Index (PSQI) (Buysse, Reynolds, Monk, Berman, & Kupfer, 1989) measured both the quantity and quality of sleep through nine questions utilizing a Likert scale of 0 - 3. Zero represented “not during the past thirty days” while three represented “three or more times a week.” A global sum of five or more represented a “poor sleeper.” Adequate sleep protects health, fights infection, supports metabolism, and fosters work productivity. Restful sleep allows nurses to perform at maximal levels, maintain better moods, and improve overall health (NIH, n.d.). According to the CDC adults over the age of 18 need seven or more hours of sleep a night. However, the majority of the population has become short sleepers (persons who sleep less than seven hours a day) (CDC, n.d.).
The lack of adequate sleep is considered so important that ANA developed a position statement to address this health risk factor (American Nurses Association [ANA], 2014). The statement defines restorative sleep as vitally important for heightened awareness, and improved mood, motivation, and judgment. It also increases energy, stamina, concentration and the person’s ability to learn (ANA, 2014).

The state of Georgia reported that 38 - 44.1% of the population are short sleepers, and the number is higher in Cobb County (CDC.gov/sleep). Cobb County reported short sleepers as 38.2 - 48.5 % of the population. The numbers are even more dramatic in relation to those with a BMI over 30 or those who are inactive. In people with a BMI over 30, 33% reported being short sleepers 95% CI [32.5-33.5] while 26.5 reported sufficient sleep, CI 95% [26.2-26.9]. Those who were physically inactive 27.2% were short sleepers 95% CI [26.8-27.7] while 20.9% reported sufficient sleep 95% CI [20.6-21.2]. This study variable was continuous and was used to determine whether volunteers were short sleepers or sufficient sleepers based on the CDC categories (Centers for Disease Control [CDC], 2016, November).

Professional Quality of Life (PQL). Professional quality of life was characterized on a compassion satisfaction/compassion fatigue continuum. Compassion satisfaction (CS) represented the positive components of PQL while compassion fatigue (CF) represented the negative. The balance of these two components made up the professional quality of life. CS included pleasure derived from work, a job well done, positive relations with co-workers and contributions to the greater good. CF included burnout and secondary traumatic stress. Burnout usually has a gradual onset and involves feelings of hopelessness and difficulty within the work environment regarding performance. Secondary traumatic stress usually has a rapid onset after exposure to extreme stress experienced by clients, families, and communities. It is the
combination of burnout and secondary traumatic stress that makes up compassion fatigue. PQL was measured by the Professional Quality of Life Scale (ProQOL) (Stamm, 2010).

**Compassion satisfaction and compassion fatigue.** CS and CF are difficult to identify and therefore, nurses do not always recognize the symptoms of CF in themselves (Coetzee & Klopper, 2010). Even though most nurses can define CF, they do not know how it manifests (Todaro-Franceschi, 2016). Coetzee identified three CF stages: compassion discomfort, compassion stress, and compassion fatigue. These stages are progressive and cumulative. Stage three (compassion fatigue) results in burnout, accidents, breakdowns, apathy, a desire to quit, unresponsiveness, callousness and indifference (Coetzee & Klopper, 2010). If the symptoms of CF are not identified in the early stages, it may become impossible to recover to that state of compassionate functioning (Coetzee & Klopper, 2010). Symptoms in the last stage of compassion fatigue can be calamitous for the nurse (Coetzee & Klopper, 2010). A nurse in the last stage of compassion fatigue places him/herself and clients in danger related to his/her apathy, unresponsiveness and indifference. The nurse no longer has the desire to care in this stage. Therefore, it is essential that nurses be made aware of the symptoms of compassion fatigue so appropriate preventative interventions can be implemented. For this study, CF and CS were measured by the ProQOL instrument.

**Perceived stress.** Stress has been defined as something that occurs either in the workplace or in the personal lives of individuals. For nurses, this is common in the workplace, but the individual coping strategies make a difference in how it manifests itself (Tucker, Weymiller, Cutshall, Rhudy, & Lohse, 2012). How nurses perceive that stress depends on the demands being made on them at the time. If the perceived stress is greater than their ability to cope, a stress response occurs. Some of the factors that can influence this response includes acuity of
the clients, the number of clients, specific shift worked, co-worker attitudes, physicians, supervisors and feeling ill prepared to handle the situation (Tucker et al., 2012). Those stress responses can lead to a decreased quality of life. Unfortunately, most nurses do not recognize how stressed they are. For this study stress levels were measured by the Perceived Stress Scale.

**Significance to Advanced Nursing Practice and the Clinical Setting**

Diseases related to lifestyle choices have reached epidemic proportions in the United States (Ross et al., 2017). As healthcare providers, nurses see the results of these choices daily. Nurses make up the biggest portion of healthcare providers in the United States. What better population to address the current health issues and reverse this trend? Knowing what is needed to lead a healthy lifestyle does not always translate into the lifestyle of the nurse, however (Ross et al., 2017). It is essential that nurses become aware of their own general health and quality of life risk symptoms so that appropriate health promotion and stress reduction interventions can be implemented. Increased GH and PQL in nurses must be strived for so that client education is viewed as credible by the client. By evaluating these factors, organizations can take appropriate measures to promote better health and improved GH and PQL in nurses. One study suggested that when proper interventions are implemented, the health status of nurses improves (Meng et al., 2015).

The American Nurses Association (ANA) position statement outlines the responsibilities of employees and employers to maintain a healthy environment which in turn leads to a healthy life work balance (ANA, 2014). Awareness of the risks and manifestations of symptoms can enable nurse leaders to facilitate peer support evidence-based health promotion initiatives.

The ANA chose 2017 to focus on the health of nurses (ANA, n.d.). Since there are over three million nurses in the United States, being unhealthy could have a disastrous impact on
client health. Numerous studies have been done to determine the GH, PQL, and PS of nurses but not at this hospital. Since nurses often do not recognize they are affected by these issues, it is imperative to obtain baseline data. Raising awareness of these issues is a first step in helping nurses identify and improve their own health risks and stress levels to better focus on client outcomes. Additionally, a systematic review reported on studies that demonstrated GH and PQL in nurses’ impacts client care and client outcomes (Cocker & Joss, 2016).

**Benefit to Clinical Area.** A 382-bed southeastern U.S. hospital with over 800 RNs was selected based on researcher observations. This DNP student noticed a general lack of health and quality of life with increased stress symptoms from co-workers who appeared to be unaware of the dangers. Concern became alarming as nurses began to leave the hospital and voiced increased dissatisfaction with workload, assignments and the potential of poor client outcomes. The Director of Professional Practice, a doctorally prepared nurse, agreed the study was important and feasible. The director served as the facility site mentor and a project committee member. Internal resources were made available to support the project.

Identification of the GH, PQL, and PS scores of nurses provided valuable information for nurse leaders to guide corrective interventions. Information from this hospital’s findings can be used to inform supportive initiatives for the 15,000 RN’s throughout the system.

**Summary**

This DNP project gathered baseline data for nurse leaders on the GH, PQL, and PS of nurses in a large southeastern U. S. hospital through a correlation study with self-report survey. As stated earlier, GH, PQL, and PS of nurses have been found to impact client care and health outcomes. The ultimate goal of improving nurse and client health outcomes can be achieved through well-informed employee support initiatives.
Chapter Two

Theoretical Framework and Literature Review

This chapter addresses the theoretical framework and current evidence from the literature supporting the study of GH, PQL, and PS in nurses who work in a large southeastern hospital. The Health Belief Model was utilized to describe the concept of general health as it relates to physical activity, sleep and BMI. The concept of the professional quality of life was defined through discussion of compassion satisfaction and compassion fatigue. Perceived stress was defined using evidence from a variety of professional disciplines. A summary of findings from the literature is provided.

Theoretical Framework

To guide this study the Health Belief Model (HBM) was chosen due to its efficacy with predicting health behaviors in the general population (Becker, 1974). This model was developed in the 1950’s by the United States Health Department to determine why people did not utilize available screenings (Janz & Becker, 1984). The HBM addresses health risk behaviors such as inactivity, inadequate sleep patterns, poorly managed weight, and harmful stress responses. The model is based on four major constructs that represent how to approach an individual so that a change in health behaviors occur (Rosenstock, Strecher, & Becker, 1988). The basic principle lies in the fact that health behavior is determined by one’s own belief system (Turner et al., 2004). The model assumes that the majority of people use common sense and logic when dealing with the best option as it pertains to themselves (Turner et al., 2004). However, for this to occur, individuals must believe it is possible to address the issue, believe that the action taken will be effective, and believe they are capable of implementing the action (Turner et al., 2004). The HBM consists of four major constructs: perceived severity, perceived susceptibility,
perceived benefits, and perceived barriers (Rosenstock et al., 1988). Any one of these constructs taken individually or in combination with another can explain those health behaviors (Rosenstock et al., 1988).

**Perceived severity.** The severity of the risk to the individual determines whether corrective action is taken. If the individual does not believe that the problem causes a serious risk to themselves or their clients, nothing will be accomplished (Rosenstock et al., 1988). Additionally, the consequences of inaction must be perceived as important to the individual. For example, a nurse must believe that the extreme lack of sleep is a client safety issue. Another nurse must believe that higher stress levels are detrimental to work performance and quality of care.

**Perceived susceptibility.** This construct refers to whether individuals believe that health problems pertain to themselves (Rosenstock et al., 1988). Even if the problem is acknowledged, unless it is considered a serious health problem, it is unlikely any change will occur. Unless an individual believes the healthier behavior can either correct or prevent the problem, nothing will be done. So nurses must be able to recognize when their health is in jeopardy and intervene appropriately. For example, a nurse who has a BMI greater than 28 must believe that there is an increased risk for back injury or chronic health issues. Furthermore, a nurse with a high score on the ProQOL must believe that she is at risk of developing compassion fatigue.

**Perceived benefits.** The benefits of behavior change must be perceived as more important than inaction, otherwise risky behaviors continue. For example, a nurse must believe that increased physical activity will improve mood, decrease stress, and improve work performance. Another nurse must believe that lowered PS levels will increase their health and improve the work environment (Rosenstock et al., 1988).
**Perceived barriers.** Individuals are reluctant to change their health behaviors due to a belief that the difficulty of change leads to increased costs, time, and effort (Rosenstock et al., 1988). Additionally, changing health behaviors may lead to unexpected social changes. For example, a nurse may find it difficult to comply with a healthy diet when unhealthy food is readily available. Also a nurse who does not recognize the symptoms of compassion fatigue will not make necessary changes to prevent further burnout or secondary traumatic stress.

In summary, the HBM provides a strong framework to support the investigation of associations between GH, PQL, and PS in nurses. The constructs of perceived susceptibility, perceived severity, perceived benefits and perceived barriers provide clarity for prediction of health behaviors. It is imperative that nurses recognize GH, PQL, and PS risk factors before appropriate interventions are implemented.

**Appraisal of Evidence**

Initially, Galileo and Cochrane databases were searched for peer reviewed, English, academic journal articles published from 2011-2017. Keywords were burnout, compassion fatigue, stress, health, and well-being. Utilizing the words “AND”/ “OR” in a variety of combinations resulted in 1152 articles. As screening continued, it became obvious that the areas to be investigated overlapped. Burnout and compassion fatigue were used interchangeably making it more difficult to separate the two terms. Another search was conducted that utilized the terms “compassion fatigue” and “well-being”. That search netted 536 articles. These articles were narrowed to a focus on GH, PQL, and PS within the United States. A search was also conducted to address the primary issues of GH in nurses as defined by the American Nurses Association regarding the effect of physical activity, sleep, and BMI. The search was finally
narrowed to 120 relevant articles. The literature was synthesized using the PRISMA Statement format (Moher, Liberati, Tetzlaff, & Altman, 2009).

**Literature Review**

Evidence for this study focused on general health (GH), professional quality of life (PQL), and perceived stress (PS). GH concepts included: body mass index, sleep, and physical activity. PQL was measured along the compassion satisfaction-compassion fatigue continuum. PS measured how life events were perceived to be stressful. Each concept is discussed individually with a summary at the end of this chapter.

**General health.** The National Institute for Wellness and Care Excellence made recommendations in 2015 on improving the health and well-being of nurses. Defining well-being is a complex process, but what is known is that the well-being of nurses is directly related to client care (Francis, 2013). Zubaran et al. (2008) found that health issues were key factors in quality of life and interactions between health status and quality of life were no different for persons with a disease or disability.

**Body Mass Index (BMI).** The prevalence of overweight and obesity in the United States is alarming (CDC, n.d.). Adults over the age of 20 are overweight (34%) and 35.7% of them are considered obese (CDC, n.d.). The National Institutes of Health categories overweight as a BMI between 25 and 29.9, obesity as a BMI over 30, and morbid obesity as a BMI greater than 40 (National Institutes of Health [NIH], n.d.). As the population’s weight continues to rise, so do epidemic-level lifestyle diseases such as cardiovascular disease, stroke, cancer and diabetes (CDC, n.d.). According to the ANA Health Risk Appraisal, nurses are less healthy than average Americans (ANA, 2014). Additionally, the Harvard Nurses’ Health Study indicated that nurses are overweight or obese (60%) and eat fruit less than the minimum requirements (50%) (Yu et
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As with many high-stress professions, nurses are less likely to eat healthy (ANA, 2014). This is not to say that all nurses who are overweight are unhealthy but it does place them at risk for other health issues. An unhealthy BMI can affect balance and lead to an increased risk of falls and musculoskeletal problems (ANA, n.d.).

Today an estimated thirty four percent of adults are considered obese (CDC, n.d.). There are 300,000 obesity related deaths each year in the US, and the cost of medical expenses related to obesity is $190.2 billion (CDC, n.d.). If obesity rates continue at the 2010 rate (31.66%, CI 95%, [31.34 – 31.98]), cost savings over the next twenty years could be as high as $549.5 billion (Finklestein et al., 2011). Forecasts through 2030 suggest that 42% of the population will be obese and 11% will be severely obese (Finklestein et al., 2011). These forecasts defined obesity as a BMI greater than 30 and severe obesity as a BMI greater than 40. However, current measurement of normal BMI is defined by the National Institute of Health as a value between 18.5 and 24.9 (NIH, n.d.).

Sleep. Adequate quality sleep is as important as proper nutrition and exercise in health promotion (NIH, n.d.). Adequate sleep protects health, fights infection, supports metabolism, and fosters work productivity. Restful sleep allows nurses to perform at maximal levels, maintain better moods, and improve overall health. The ANA recognizes the importance of adequate restorative sleep to heighten awareness, improve mood, motivation, and judgment, and increase energy, stamina, concentration and learning (ANA, 2014).

Unfortunately, the majority of the population have become short sleepers (persons who sleep less than 6 hours a day) (NIH, n.d.). According to the ANA position statement of September 10, 2014, the lack of quality sleep due to long hours and shiftwork can reduce job performance, decrease the nurse’s quality of life and jeopardize the client’s safety (ANA, 2014).
Nurses who are fatigued from lack of sleep or rest are more likely to make faulty decisions (Scott, Engoren, & Engoren, 2014) and twenty four hours without sleep is equivalent to a blood alcohol level of 0.10 (legal intoxication is 0.08) (Gaines, 2016). An increase in errors, loss of short and long term memory, and an increase in risk taking behaviors is linked to fatigue (ANA, 2014). Chronic lack of sleep and long working hours are associated with sleep disturbances, injuries, mood disorders, obesity, diabetes, cardiovascular disease, cancer and metabolic syndromes (ANA, 2014; NIH, n.d.).

An inadequate amount of restful sleep can also influence behaviors and affect relationships. Lack of sleep is also responsible for decreased productivity and increased risk for errors (ANA, 2014). It also affects the endocrine, metabolic and neurological systems leading to decreased overall health (NIH, n.d.). Sleep insufficiency has become a public health issue (CDC, 2016, November). People suffering from lack of sleep are involved in MVA, industrial accidents, and medical errors (CDC, 2016, November; NIH, n.d.). Individuals suffering from sleep deprivation are more likely to suffer from hypertension, heart attacks, diabetes, depression, obesity, cancer, increased mortality and a decrease in their quality of life (CDC, 2016, November; NIH, n.d.).

The ANA position statement stresses that as with many high-stress professions, nurses are less likely to get enough quality rest (ANA, 2014). Fatigue can lead to the nurse’s inability to deliver safe, quality care. The effects of inadequate sleep on clinical decisions becomes very important to clients whose safety depends on alert nurses.

**Physical Activity.** The literature has repeatedly documented that physical activity reduces stress and improves health. For nurses, physical activity benefits physical and emotional health (O’Connell et al., 2016). The benefits of exercise are many and include decreased stress
levels, better sleep, reduced risk of chronic health problems, and improved overall health (U.S Department of Health and Human Services, 2006). According to the American Heart Association, physical activity can improve the quality of life mentally and physically, to lower overall stress levels (American Heart Association, 2017). Physical activity helps individuals maintain or reach a more ideal BMI and promotes better rest (James et al, 2013). Physical activity is an important component of a healthy lifestyle and a major benefit to both the physical and emotional health of nurses (O’Connell et al, 2016). Inactivity is the fourth leading cause of death worldwide and is associated with six percent of deaths across the globe (O’Connell et al., 2016). Results of the Harvard Nurses’ Health Study participants reported significant associations between physical activity and cardiovascular disease and breast cancer (Colditz, 2003).

Physical inactivity and obesity are associated with the built environment (James et al., 2013). The built environment can affect health, especially for those with chronic illnesses. Healthcare workers can provide education about healthy lifestyles, but if the environment is poorly designed, it will be of little benefit (Perdue, Stone, & Gostin, 2003). “Land use patterns, transportation systems, and community designs are components of the built environment that impact ability to travel and exercise” (James et al., 2013, p369). According to the Nurses’ Health Study Parts 1 and 2, women tend to be more affected by this environment and tend to be more obese and less likely to meet exercise guidelines (James et al., 2013). These studies demonstrated that an increase in urban sprawl was associated with lower BMI and more metabolic equivalent (MET) hours per week of physical activity ($r = .41$, 95% CI [0.17, 0.65]). Lower BMI was also associated with more MET hours per week of walking ($r = .26$, 95% CI [0.19, 0.33]) and more MET hours per week of walking, bicycling jogging and running ($r = .47$, 95% CI [0.34, 0.59]). The Nurses’ Health Study Parts 1 and 2 have also shown that women
drive to areas for exercise less than men, so anything that would improve the environment would be beneficial to the women (James et al., 2013). Especially since the latest information from the Kaiser Family Foundation (2017), shows women make up 83% of the nursing population across the US.

**Professional Quality of Life (PQL).** Quality of life for nurses can be defined through the compassion satisfaction and compassion fatigue continuum (Coetzee and Klopper, 2010). This seminal work was originally identified by Figley and Stamm and is described below (Sacco, Ciurzynski, Harvey, & Ingersoll, 2015). It is imperative that PQL be addressed in nurses as evidenced by the research published in June 2015, by the National Institute for Health and Care Excellence (NICE). At that time recommendations were made on the importance of employee health and well-being (Bryson, Forth, & Stokes, 2015). The Florence Nightingale Foundation reported that in 2007 nurses’ morale was at a ten year low. Six years later it was even lower. Another study showed that for every additional client added to the average workload, the rate of client mortality increases by seven percent (Aiken et al., 2014). The work environment is unlikely to change related to the shortage of nurses, high acuity of clients and an increased workload for the nurses. Previously mentioned research demonstrates that GH and PQL of nurses is linked with quality of care (Francis, 2013).

**Compassion satisfaction (CS)-compassion fatigue (CF) continuum.** The CS/CF continuum was originally developed and published by Figley and Stamm (as cited by Sacco, Ciurzynski, Harvey, & Ingersoll, 2015). The groundbreaking work identified that nurses can experience stress while also gaining a sense of satisfaction in providing good client care. This combination of positive and negative emotions comprises the professional quality of life and impacts the nurse’s ability to care for clients. However, too many negatives can upset the
balance and alter the professional quality of life. Nurses are often in stressful situations that can lead to CF (White, 2017). As a result, nurses can be physically and emotionally fatigued (Ledoux, 2015). The term “quality of life” is known to nurses but many do not recognize when their own quality of life is suffering (Todaro-Franceschi, 2016).

Negative emotions in nursing are associated with disengagement from clients, poor work attitudes, lack of concern, and increased absenteeism (Kelly, Runge, & Spencer, 2015). The negative implications of CF on client care and the increase in mortality rates are a result of a decrease in problem solving behaviors, teamwork and poor communication in the work environment (Brunetto et al., 2013).

A concept analysis by Coetzee (2010) defined CF categories: risk factors, causes, processes, and manifestations. Additionally, three stages were identified: compassion discomfort, compassion stress, and compassion fatigue. These stages are progressive and cumulative. According to Coetzee (2010), stage one, compassion discomfort, causes weariness, desensitization, inability to provide nursing care, and a decrease in delicacy of perception, attention and enthusiasm. Stage two, which is compassion stress, results in loss of strength, decreased output, diminished performance, loss of endurance, increased physical ailments, irritability, inability to share in suffering, lack of spiritual awareness and boredom. Stage three, which is compassion fatigue, results in burnout, accidents, breakdowns, apathy, a desire to quit, unresponsiveness, callousness and indifference. Early identification of CF is important. The power to recover may be lost and full restoration of compassionate functioning may not be possible. Symptoms in the last stage of compassion fatigue can interfere with work performance (Coetzee & Klopper, 2010). Nurses who are stressed or suffering from CF make more errors that could lead to negative client outcomes (Scott, Engoren, & Engoren, 2014).
Burnout. This well-documented psychological response to chronic job stressors leads to harmful health outcomes and diminished compassion satisfaction (Laschinger & Fida, 2014). This stress syndrome is characterized by emotional exhaustion, depersonalization and a decreased feeling of accomplishment (Lang, Pfister, & Siemans, 2010). The term is often used interchangeably with compassion fatigue, and some authors even believe it can be contagious (Hinderer et al., 2014). This study used compassion fatigue, a term consistent with the Professional Quality of Life Scale.

Perceived Stress. The stress in healthcare workers may be a combination of both personal and professional aspects. How the individual is able to cope determines whether that person is able to perform at the designated levels when caring for their clients. One study by Johnson et al (2016) stated that when an individual experiences stress there are physiological changes that occur like increases in pulse and blood pressure levels. What is imperative is that these stressors must be identified as one of two stages. In the primary stage one looks at the stressor itself, while in stage two the coping abilities of the individual are investigated (Johnson et al., 2016). The effects of work stress may be directly related to the task itself or the fact that the nurse sees the task as demanding, difficult, or unrewarding (Johnson et al., 2016)

Because nurses are well educated in health practices, it is assumed that their knowledge of health practices and the importance of said practices would be better than the laypersons. However, research has shown that nurses are not healthy (Jordan, Khubchandani, & Wiblishauser, 2016). The demands faced by nurses every day can be overwhelming with multiple factors competing for time and attention; clients, family members, physicians, and their own family. As a result nurses are experiencing increased levels of stress, which if left unacknowledged, can lead to negative health outcomes. “Stress can alter homeostasis,
physiological or hormonal balance, changes highly associated with health problems” (Jordan et al., 2016, p. 2). Prolonged stress has also been attributed to negative health behaviors which include overeating, inactivity, using alcohol, tobacco and drugs as well (Jordan et al., 2016).

Summary

In summary, nurses’ GH, PQL, and PS could impact client care and is therefore an important consideration for improving client outcomes. Nurses often overlook their own needs which could put them at risk. The HBM serves as the theoretical framework for this project. The model provides adequate structure for GH, PQL, and PS concepts. This chapter presented evidence to support the study of GH, PQL, and PS in nurses to inform support strategies that foster health and wellness.

Chapter Three

Methodology

The purpose of this project was to explore relationships between GH, PQL, and PS for nurses in a large southeastern hospital. This chapter describes the project design, measurement instruments, data collection, data analysis, setting, population, subject selection, subject protection, expected outcomes, project timeline, project budget, and other resources needed for project completion.

Design

A cross-sectional survey correlation study was used to gather demographic data, GH, and PQL for nurses working in a large southeastern hospital. A level six design was selected due to the need for descriptive evidence prior to research on intervention efficacy at higher levels. The hospital approved the study and a memorandum of understanding was in place. A letter of support was obtained (Appendix A). After IRB approval from Georgia College and State
University (GCSU) participants were recruited internally through means described below. Study costs came in under budget which was estimated to be $2,000. The project’s supplemental materials can be found in the appendices in this order: timeline (Appendix B), materials list and budget (Appendix C), recruitment materials (Appendix D, Figure D1, and D2), informed consent (Appendix E) and survey packet (Appendix F, Figure F1, F2, F3, F4, F5, F6, and F7).

Setting, Population, Sample, and Recruitment

Setting and Population. The hosting hospital is a for-profit 382-bed facility within an 11-hospital system in the southeastern United States. Nurse leaders recognized that risk factors associated with the GH, PQL, and PS in nurses was problematic. With over 800 RNs employed at this hospital, nurse leaders needed baseline data to better understand the variables and to plan interventions. An a priori was run to determine the number of participants. With a power of 0.80 and an alpha of 0.05 it was determined that 260 participants were needed. Conference rooms, break rooms, hospital-wide communication systems, employee email, and bulletin boards were made available to support project logistics.

Sample and Recruitment. A convenience sample of all registered nurses working at the hospital was recruited and surveyed from October 1, 2017 to January 15, 2018. All registered nurses employed part or full time in any position, on any shift, at this hospital during data collection were included. Nurses were excluded if they were unable to complete the study or are not employed directly with this hospital system. Agency or travel nurses were excluded. The host organization’s internal resources were used to announce and introduce the study. Participant recruitment included flyers with project purpose and instructions (Appendix D, Figure D1). Flyers were placed on staff bulletin boards, break rooms, and in bathrooms. Invitations were placed in employee mailboxes (Appendix D, Figure D2). Information phone
calls were made to unit nurse managers and educators. The researcher provided the survey online and in paper format during the pre-determined administration dates.

**Instrumentation**

One validated and reliable instrument, The Medical Outcomes Short Form (SF-12) was used to measure the general health of nurses. Those questions identified both physical and mental health through the survey. The Professional Quality of Life Survey (ProQOL) was used to determine how the nurses view their quality of life. The survey includes components of compassion satisfaction, burnout and secondary traumatic stress. The Perceived Stress Scale (PSS) measured perceived stress levels. Sleep quality and quantity was measured by a fourth instrument, the Pittsburgh Sleep Quality Index (PSQI). Self-reported weight, height, and physical activity were collected using write-in questions. Demographics were collected based on associations found in the literature.

**RAND 12-Item Short Form Instrument (SF-12).** The SF-12 (Appendix F, Figure F2) was used to measure general health in nurses. The instrument was validated in a study of 407 clients and found to correlate strongly with the original SF-36 (Webster & Feller, 2016). The instrument has been validated in other studies and found reliable with Cronbach alphas from .78 to .90 (RAND, n.d.). The SF-12 was also reliable with a Cronbach alpha of >.80 in a study by Hayes, Bhandari, Kathe, and Payakachat (2017). The tool is a 12 item Likert scale using two, three, and five answers. The scoring is precise with pre-coded numeric values for all items in each section. The tool measures eight factors using three-, five-, and six-item Likert scores and a “yes-no” section. The scoring is precise with pre-coded numeric values for all items in each section. A score of 50 on both the physical and mental components is considered average. Scores less than 50 indicate poor health while scores above 50 indicate better health.
Participants were instructed to answer based on current perceptions of the health indicators including role limitation due to physical health problems, physical function, energy/fatigue and general health.

**Professional Quality of Life Scale (ProQOL).** The ProQOL (Appendix F, Figure F3) was validated and found to be reliable in over 100 studies with coefficient alpha of 0.83 for burnout, 0.79 for secondary traumatic stress, and 0.92 for compassion satisfaction (Kelly, Runge, & Spencer, 2015). The 30-question, five-item scale Likert tool is scored from “never” to “very often” with a maximum score of 150. Three factors are scored from low to high: Compassion satisfaction, burnout, and secondary traumatic stress and questions are mixed throughout the survey. There is no indication regarding which questions belong to which category. After completion of the survey, the questions are scored according to the survey guidelines to obtain three individual scores. The average scores on each scale is 50. Participants were asked to answer questions based on experiences within the last thirty days. ProQOL is a psychometrically sound instrument for assessing PQL in nurses.

**Perceived Stress Scale (PSS).** The PSS (Appendix F, Figure 4) is the most widely used tool to measure perceived stress in individuals. The tool, which was developed by Cohen, Kamarak and Meromelstein in 1983 has several models. The instrument utilized for this study is the PSS 10 with Cronbach alpha of .78. The PSS 10 is a psychometrically valid tool for measuring stress in the nursing population (Cohen, et al., 1983).

**Pittsburgh Sleep Quality Index (PSQI).** The PSQI (Appendix F, Figure 5) is a self-reported measure of the quantity and quality of sleep in adults for the last 30 days. The instrument has an internal reliability of 0.83 and the validity compares to both lab and clinical problems related to sleep (Buysse, et al., 1989). Participants were asked to answer a series of
question regarding their sleep habits within the last thirty days. A Likert scale was used to determine their global score.

**Demographics.** To obtain additional data on GH, nurses were asked to indicate current weight and height on the demographic questionnaire so that BMI could be calculated by the researcher (Appendix F, Figure F6). Physical activity levels were measured by self-reported responses to five questions pertaining to the amount and intensity of activity. Demographic data was gathered based on associations found in the literature: age, gender, ethnicity, work hours, education level, years of nursing experience, length of employment at the hospital unit, and physical activity.

**Data Collection, Data Entry, and Data Security**

Data was collected via electronic and paper surveys after informed consent was obtained (Appendix E). A password protected software program (SPSS Version 23.0) was utilized to analyze and store data on the Georgia College and State University (GCSU) secure network. Data was kept confidential and secure with encrypted password protection. Anonymous surveys were administered through Google Docs, Survey Monkey, and paper hard copies. Recruitment information was distributed through hospital email to all eligible nurses (Appendix D, Figures D1 and D2). Electronic and paper surveys will be shredded three years after project completion and the transcribed electronic data will be destroyed per GCSU policy after three years. Survey administration occurred from October 1, 2017 to January 15, 2018. Data collection was extended with IRB approval due to technical difficulties with electronic surveys. The conversion to paper surveys resulted in 102 participants.
Human Subjects Protection, Benefits, Risks, and Expected Outcomes

Approval was obtained through the GCSU Institutional Review Board (IRB) to ensure that risk of harm was minimized. Informed consent was obtained prior to survey access (Appendix E). Each participant indicated that s/he had read and understood the benefits and risks of participation. Electronic signatures were obtained on electronic surveys by checking a box that indicated nurses understood and agreed to participate before access to the survey was granted. Hand written signatures were collected for paper surveys. The survey began after informed consent was completed. No deception and no minors participated in the study. To ensure confidentiality and anonymity during data collection, participants completed an anonymous electronic or paper survey in a setting of their choosing. Participants were volunteers and minimal stress was expected; however, individuals were informed they could stop at any time should stress or discomfort be experienced. The researcher’s phone and email were provided with an invitation to contact the researcher at any time. Data will be retained for three years on a password protected, secured and encrypted network at GCSU and has been reported in aggregate form to protect individual confidentiality. After three years, the researcher will request that data be erased through the electronic shredder approved by GCSU. Electronic and paper surveys will be destroyed after three years. No audio or videotapes were used.

Benefits and risks. The project leader anticipated that benefits would outweigh potential harm. Benefits included empowerment regarding high GH, PQL, and PS scores, increased self-awareness, improved professional awareness, and desire to learn more about personal GH, PQL, and PS. Explanatory announcements noted that nurses care about their clients and their co-workers and that understanding the relationship between these factors may help nursing teams flourish. These incentives were not expected to influence results. Potential harm included
concern over a low GH, PQL or PS score or increased self-awareness regarding low scores without follow up. Nurses in this facility could benefit from findings. Results were shared with hospital nurse leaders to provide evidence for strategic planning.

**Expected Outcomes.** Expected outcomes from this study included an understanding of the relationship between personal GH, PQL, and PS in nurses at a large southeastern hospital. These factors have been studied separately in other health care specialties, but not together in nurses at this hospital and this data was needed to plan evidence-based strategies. Identification of GH, PQL, and PS in nurses is critically important for strategic planning. Data from this study has been conveyed to nurse leaders so that the GH, PQL, and PS of nurses can be addressed.

**Limitations**

Project limits included the correlation survey and convenience sample selection. This design allowed for exploration of GH, PQL, and PS of nurses within one hospital. Sample size was smaller than expected which limits generalizability. The a priori of 260 participants (.80 power, .05 alpha) was not reached due to technical difficulties with accessing the electronic surveys through the hospital internet system. Fifty paper surveys were collected to augment the 17 Google and 35 Survey Monkey surveys. The confidence interval for n = 102 is 8.2% ± 5.03% or 3.17% - 13.23% (“Calculator.net,” n.d.).

**Project Timeline, Budget, and Materials List**

The data collection timeline of 12 weeks was inadequate due to technical difficulties, therefore two additional weeks were added and approved by the IRB (Appendix B). The researcher visited each unit, on each shift, and met with nurse managers and nurse educators to obtain the greatest number of participants possible. Most staff worked three 12 hour shifts per
week and worked scheduled weekends in teams, therefore some weekend visits were made. The data import and analysis timeline of four weeks was adequate.

Project materials and budget are listed in Appendix C. Travel expenditures were well padded so that additional site visits could be covered if needed. The project budget was $2,000 and actual expenses were $1,500. No outside funding was utilized.

The research committee members were invaluable to the success of this project. Relationships with the host facility nurse administrators and managers were key to success of this project and charge nurses were well known to the researcher.

**Data analysis**

Data was analyzed using SPSS version 23.0 and uploaded to the secured GCSU network. Tests for normality were run on descriptive data to determine use of non-parametric or parametric tests and only non-parametric tests were utilized. Data entry precision was checked at least twice with a third spot-check to ensure accuracy. Data cleansing was performed using standard statistical procedures. For example, when nurses entered a range on length of time, the average was calculated, rounded up, and entered as one number. Specific notes are provided in Chapter Four. The highest statistical tests possible were run to determine associations between the variables. GH, PQL, and PS instrument scores were compared to each of the demographic characteristics, including the sleep quality instrument to investigate relationships. An expected confounding variable was age for general health but no association was found. Univariate exploratory tests were performed on all descriptive data. Bivariate tests observed for relationships between the variables. The Spearman’s rho was used since the sample size was greater than thirty (Sylvia & Terhaar, 2014).
Summary

The study design was appropriate for the purposes of this project and for the specialized population of interest. Protection of human subjects and privacy was assured and risk of harm was minimized. Findings may be utilized to survey nurses at the other facilities within this healthcare system. This study sought to concisely measure the GH, PQL and PS of nurses at one large southeastern hospital. Nurse leaders have baseline data to inform targeted interventions that foster or improve GH, PQL, and PS in nurses at this hospital.

Chapter Four:

Results

This chapter describes the results of a correlation study that focused on nurses’ health, professional quality of life, stress levels, and sleep. The research was conducted at a large hospital in the southeastern United States. Data was reported in aggregate form to protect participant confidentiality. This chapter reports on correlations found in relation to each research question.

Demographics

The descriptive data can be found in Table 1. Participant age, gender, BMI, number of months worked at the hospital, number of months on current unit, number of hours worked each week, and ethnicity were all continuous variables and represent 8.2% of the hospital employees (N = 800; n = 102). The sample included 97 (95%) females and 4 (3%) males with one respondent not completing the survey. Ethnicity was highly skewed toward white, non-Hispanic (72.5%, M = 4.34, SD = 1.373). The age range of nurses was 22 to 70 years (n = 98, M = 44.81, SD = 12.446) with four omitted answers. The BMI was determined by calculation of self-reported height and weight. With a sample of 94 and a BMI range of 18.6 to 45.9 (M = 28.04,
SD = 5.988), 39% fell within the normal range (BMI 18.5 – 24.9), 32% were overweight (BMI 25-30), and 29% were obese (BMI > 30).

Twenty nine percent of nurses reported working at the hospital two years or less while 37% have worked ten years or more (n = 98, range = 1 to 384 months, M = 106.63, SD = 102.381). Twenty five percent of nurses have worked on their current unit one year or less and 31.9% have worked 10 years or more on the unit (n = 98, range = 1 to 396 months, M = 84.14, SD = 91.449). The discrepancy in months worked on unit and hospital is noted as a self-report limitation.

Research Questions

The research study focused on several aims that generated six specific questions regarding the relationships between nurse’s health, stress, quality of life, and sleep. The following questions were addressed utilizing the appropriate non-parametric tests:

1. How do nurses rate their health status as measured by the Medical Outcomes Short Form (SF-12)?

2. Are body mass index, sleep status and physical activity associated with general health in these nurses as measured by the demographic survey and the Pittsburgh Quality Sleep Index?

3. How do nurses rate their professional quality of life as measured by the Professional Quality of Life survey (ProQOL)?

4. What is the stress level of nurses as measured by the Perceived Stress Scale (PSS-10)?

5. What factors are associated with a higher level of perceived stress in the nurses as measured by the Perceived Stress Scale (PSS-10)?
6. Are there key concepts of health as measured by the SF-12 that are associated with higher perceived stress, quality of life and sleep as measured by the Perceived Stress Scale (PSS-10), the Professional Quality of Life (ProQOL), and the Pittsburgh Quality Sleep Index (PSQI)? This chapter addresses each of the research questions and the significant findings related to each.

**Question 1**

A Spearman’s Rho coefficient was run to determine relationships between the SF-12 mental and the SF-12 physical components. There was no statistically significant relationship between the two variables ($r_s (100) = -0.017, p = 0.864$). The physical component demonstrated a range of 21.81 to 61.64 ($M = 48.8642, SD = 8.9864$) which averages 41.7, below the national average of 50%. The mental component averaged 37.87 ranging from 13.34 to 62.41 ($M = 45.917, SD = 11.89771$). Twenty five percent of the nurses had scores below 38.8575, while 50% had scores equal to 48.955 and 75% of scores were below or equal to 55.9975. Fifty percent is considered average.

**Question 2**

Spearman’s Rho assessed several relationships between BMI and several scores. Preliminary analysis showed the relationship with PSQI to be monotonic as assessed by a scatterplot (Figure 1). There was a moderate positive correlation between BMI and PSQI for the nurses, $r_s (91) = .353, p = .001$. Preliminary analysis showed that the relationship between ProQOL-BS was monotonic and had a weak positive correlation ($r_s (91) = .0223, p = .031$) as seen on the scatterplot (Figure 2). A weak negative correlation was found between BMI and both SF-12 physical and mental components, SF-12P $r_s (91) = -.334, p = .001$ and SF-12M $r_s (91) = -.269, p = .009$. 

Correlations were run on the remainder of the variables and significant findings were found with the length of time they had worked at the hospital, their age, the number of days they participated in vigorous activity, the number who participate in at least ten minutes of vigorous activity and those who participate in moderate activity for at least ten minutes with BMI. Data can be found in Table 2.

Correlations between PSQI and all variables are summarized in Table 2. The results showed significant relationships with p values from 0.019 to 0.000, however no significant relationship was found between PSQI and ProQOL-STS.

Data was also analyzed to determine associations between all variables and the SF-12 physical component as summarized in Table 2. There were significant correlations with p values of 0.039 to 0.001.

**Question 3**

A Spearman’s Rho determined how nurses rated their quality of life. ProQOL scores were separated into three components: compassion satisfaction, burnout and secondary traumatic stress (STS). Compassion satisfaction scores ranged from 26 - 50 (M = 41.03, SD = 6.11); burnout scores ranged from 11 - 38 (M = 21.53, SD = 5.85); and STS scores ranged from 11 - 42 (M = 20.385, SD = 5.47). A score of fifty is considered average on all three sub-scales. Compassion satisfaction scores were below average for 42.6% of the participants, while burnout and secondary traumatic stress scores were above 50.

**Question 4**

The perceived stress levels of nurses as evaluated by the PSS-10 could not be correlated to any of the demographic variables. Scores for 100 participants indicated that 40.60% scored low stress (n = 41), 46.5% had moderate stress (n = 47) and 11.9% had high stress levels (n = 12).
with a mean of 15.93 (SD 7.58). The concern here is that 58.4% of the nurses surveyed had moderate to high stress levels (Table 3).

**Question 5**

Spearman’s Rho assessed relationships between the Perceived Stress Scale (PSS) and all other variables (Table 4). Preliminary analysis showed the relationship with PSQI to be monotonic, as seen by visual inspection of a scatterplot (Figure 3). There was a significant weak to moderate positive correlation $r_s (98) = .378, p = 0.000$. The relationship with ProQOL-CS $r_s (100) = -0.532, p = 0.000$ was a moderate negative correlation which indicates that as stress increases, compassion decreases. The ProQOL–BS analysis identified a moderate positive correlation, $r_s (98) = .661, p = 0.000$ which indicates that as stress increases, burnout increases as well. ProQOL-STS had a moderate correlation $r_s (100) = 0.59, p = 0.000$. Two other correlations were identified when PSS was compared to SF-12M and Moderate activity days. The SF-12 M showed a negative correlation of $r_s (100) = -0.805, p = 0.000$ and moderate activity had a correlation of $r_s (100) = 0.236, p = 0.018$.

**Question 6**

A Spearman’s Rho assessed the relationships between SF-12P and SF-12M and the remaining variables (Table 5). The relationships were monotonic. Strong negative correlations were found between the SF-12M and all instruments with the exception of the SF-12P.

**Summary**

In summary, several significant correlations were determined in partnership with a University System of Georgia statistician to ensure precision. These findings are discussed in Chapter Five and recommendations to nursing leaders are provided.
Chapter Five

Discussion, Recommendations and Conclusion

This correlation study investigated relationships between general health, perceived stress and professional quality of life of nurses working in a 382-bed southeastern U.S. hospital. The null hypothesis was accepted for only one relationship which was between perceived stress and SF-12-physical. All other variables were significantly correlated below the .05 confidence level. These findings supported other research, however no research had investigated all components within one study. This chapter discusses results and recommendations for additional research and immediate interventions to support nurses at this hospital.

Discussion

General health and professional quality of life have been topics of concern for nurses throughout the years. The American Nurses Association was so concerned over nurse’s health that 2017 was declared the year of the “Healthy Nurse” (ANA, n.d.). After observing unhealthy behaviors and attitudes of nurses at a 382-bed southeastern U. S. hospital, this researcher examined the quality of life and health of 102 (N = 800) nurses to provide nurse leaders with baseline data so that caring interventions could be implemented. Both electronic and paper surveys were used due to technical issues with electronic access at the facility. This challenge may have decreased the number of potential participants however a 12.75% rate was obtained.

Prior research suggested that poor health and quality of life were correlated, but no study had investigated relationships between all the variables in this study. The review of literature highlighted a need to help nurses identify symptoms of increased stress in themselves in order to intervene appropriately (Ross et al., 2017). The literature also explored why nurses are hesitant.
to care for themselves, putting themselves behind their patients. The most frequently reported reason was that nurses did not recognize these problem in themselves. This study sought to understand correlations between nurses’ rating of their health status, sleep status, BMI, physical activity, professional quality of life, perceived stress levels, and selected demographics.

**Summary of Findings**

**Question 1 - How do the nurses rate their general health as measured by the SF-12?**

The Medical Outcomes Short Form (SF-12) scores for 100 participants indicated that 75% of nurses had scores on the mental portion equal to or less than 55.99 with a very low score (13.34) to a moderately high score (62.41) and a mean of 50. This reinforces that stress levels have affected the mental status of these nurses. The median score on the physical component was 51.71 with a range of 21.81 to 61.64. Seventy five percent of the nurses had scores equal to or less than 55.89 which means that nurses do not participate in physical activity. These percentages should be addressed.

**Question 2 - Are body mass index, sleep status, and physical activity associated with general health in these nurses as measured by the demographic survey and the PQSI?**

The significant weak-to-moderate positive correlation between BMI and sleep quality ($r_s (91) = .353, p = .001$) demonstrates what is known about the relationship between sleep quality and weight gain: poor sleep patterns can lead to increased weight. Nurses should know this basic health risk factor, but in this hospital, nurses are not utilizing what they know are healthy lifestyle choices.

The weak positive correlation between BMI and burnout ($r_s (93) = 0.223, p = 0.031$) suggests that BMI and burnout levels rise and decline at similar rates. There was also a weak negative correlation between BMI and the SF-12 which indicates that BMI levels and physical
and mental health status are significantly inversely correlated \( (p < 0.01) \). Other variables such as age, length of time at the hospital, and the number of vigorous activity days all had weak positive correlations with BMI levels (Table 2). Interestingly, the variables of vigorous activity-more than 10 minutes a day and moderate activity-more than 10 minutes a day had very significant weak-to-moderate correlations with BMI \( (p \text{ values of } 0.000 \text{ and } 0.001 \text{ respectively}) \). This finding emphasizes that participation in just 10 minutes per day of moderate to vigorous activities will lower BMI as indicated in prior research. Nurses at this hospital should be reminded of this simple yet powerful health behavior.

Quality of sleep had moderate positive correlations with BMI, perceived stress, and burnout at significant levels \( (p \text{ values of } 0.001, 0.000, \text{ and } < 0.05 \text{ respectively}) \). Sleep quality was negatively correlated to compassion satisfaction and general physical and mental health at significant levels. In other words, sleep quality significantly affects the mental and physical status of nurses at this hospital as well as their compassion satisfaction.

The SF-12P had weak-to-moderate negative correlations with BMI, burnout, sleep quality, age, vigorous activity days, and time sitting or reclining. The most significant findings were the negative correlations between SF-12P and burnout and BMI. These findings indicate that as physical activity increases, the other variables decrease substantially. Nurses must be reminded of these health behaviors and consequences.

**Question 3 - How do nurses rate their quality of life as measured by the Professional Quality of Life Index (ProQOL)?**

The ProQOL measures compassion fatigue/satisfaction, burnout, and secondary traumatic stress with average scores of 50 on each scale. Fifty percent of nurses in this study scored high satisfaction (25%) or average satisfaction (25%). However, more than 42% scored less than 40
on this scale. These findings should be investigated further because the instrument validation studies suggest that scores less than 40 could indicate problems on the job. The scores for burnout (M = 21.53) and secondary traumatic stress levels (M = 20.85) were low which indicates no significant problem in these areas.

**Question 4 - What is the perceived stress level of the nurses?**

The Perceived Stress Scale score for 100 participants indicated that 40.60% scored low stress (n = 41), 46.5% had moderate stress (n = 47) and 11.9% had high stress levels (n = 12) with a mean of 15.93(SD 7.58) indicating that 58.4% of the nurses surveyed had moderate to high stress levels (Table 3). These findings require further investigation.

**Question 5 - What factors are associated with a higher level of perceived stress in the nurses as measured by the Perceived Stress Scale (PSS-10)?**

Significant correlations were discovered between perceived stress and sleep (p = 0.000), burnout (p = 0.000), and secondary traumatic stress (p = 0.000). There was also a weak positive correlation between perceived stress and moderate activity (p = 0.018). Stress also showed a strong negative correlation to the general health mental component and the compassion satisfaction (Table 4). All of these findings indicate a definite correlation between stress in nurses and health risk indicators.

**Question 6 - Are there key concepts of health, as measured by the Medical Outcomes Short Form-(SF-12), that are associated with higher levels of perceived stress, quality of life and sleep in the nurses as measured by the Perceived Stress Scale(PSS-10), Professional Quality of Life (ProQOL, and the Pittsburgh Quality Sleep Index (PQSI)?

The SF-12 physical component was not helpful in identifying correlations related to physical health. It did show a weak negative correlation with sleep (p = 0.011) and burnout (p =
indicating that as physical activity increases quality of sleep and burnout decreases. The SF-12 mental component on the other hand had significant correlations with all instruments with the exception of the SF-12P. The SF-12 mental component had strong negative correlations with the PSS, PQSI, ProQOL-BS, and the ProQOL-STS. It did indicate one strong positive correlation with the ProQOL-CS. See Table 5 for correlation and p values.

**Demographics.** In this sample, twenty five percent of the nurses have been working on their assigned unit for less than one year, while twenty nine percent have been working at the hospital for less than two years. This is important for management to recognize. New nurses are an asset to organizations, but are also at risk for high stress and attrition. New nurses encounter multiple work related stressors every day. Stress from workload, inadequate staffing, multiple role demands and incivility have been identified as primary sources (Halpin, Terry, & Curzio, 2017).

**Recommendations**

With the large proportion of nurses who have been working less than 2 years, management could address possible options to maintain those nurses and decrease the stress levels of the other staff. Nurses are stressed and overworked. Nurses need an organization that is concerned for their wellbeing and puts forth efforts to decrease that stress. That could be as simple as decreasing workload, providing decompression areas on each unit where nurses can go to relax for a few minutes, providing incentives for better health, and adequate managerial support.

This study showed a significant correlation between sleep and BMI. Nurses who work long hours under extreme stress tend to have poor sleep patterns, or are short sleepers. Short sleepers often do not exercise as needed which increases their BMI. When proper nutrition is
often absent in their work environment, they tend to eat whatever is available, whether it is healthy or not. Hospitals need to have good nutritional foods available twenty four hours a day, seven days a week for staff.

Management could take note of problems identified in this study. Nurses are stressed and overworked. There is a large portion of new nurses who need help managing their roles in this facility as seen by the moderate to high stress levels identified. Without proper support and interventions, these nurses will not stay. Nurses also need to find ways to cope with this increased stress. Taking a well-deserved break when feeling stressed can do a lot to decrease that immediate overwhelming feeling. Retreating to a peaceful place could be one solution. The inclusion of rejuvenation stations could be a simple solution for hospitals. Providing a quiet, peaceful retreat where there is calming atmosphere could do the trick and increase job satisfaction. Another option would be to keep a personal notebook. Whether writing about their feelings regarding the day, or just doodling can be very relaxing and nice way to cope with that elevated stress level (American Mobile, n.d.).

Conclusion

This study investigated factors related to general health and quality of life in nurses employed by a southeastern U. S. hospital. Nurse leaders now have baseline data to inform staff support initiatives that raise awareness and improve the health status and professional quality of life for nurses throughout the 11-hospital system. More can be learned from this group and a later study could compare findings with this initial data to determine effectiveness of support strategies. Attention to nurses’ health and quality of life has the potential for improving patient health outcomes through a thriving nurse workforce.
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http://dx.doi.org/http://dx.doi.org/10.1016/j.ijnurstu.2016.02.015


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Appendix A

Letter of Support

Dr. Lucy LeClerc
Director Professional Practice
Wellstar Cobb Hospital

August 24, 2017

Dear GCSU IRB,

Based on my review of the proposed research by Deborah Amason and Dr. Sheryl Winn, I give permission for Mrs. Amason to conduct the study entitled *Nurse’s Health and Professional Quality of Life* within the Wellstar Cobb facility. As part of this study, I authorize the researcher(s) to distribute informational flyers and surveys to nurses within Wellstar Cobb Hospital. The researcher will distribute flyers to the unit mailboxes on each unit, post announcements to the unit bulletin boards describing the research project, and conduct anonymous online surveys. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization’s responsibilities include: Allowing the researcher access to the designated units, staff break rooms, unit educators and nurse managers. The identity of the nurses who participate will be kept anonymous, and significant data will be distributed to the facility. We reserve the right to withdraw from the study at any time.

We understand that the research will include a brief 20 minute electronic survey that will obtain demographic information, a general health survey, a stress survey, a sleep survey and a professional quality of life questionnaire. Nurses who wish to participate will have access to the electronic survey via hospital email. Answers will be completely anonymous. Surveys will be kept anonymous and no identifying information will be revealed.

This authorization covers the time period of September 1, 2017 to December 15, 2017.

I confirm that I am authorized to approve research in this setting.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Georgia College IRB.

Sincerely,

[Signature]

Lucy LeClerc, PhD, AGN-BC
Director, Professional Practice
Wellstar Cobb Hospital
Lucy.leclerc@wellstar.org

Office: 470-732-4564
Cell: 706-766-8436
## Appendix B

### Project Timeline

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<th>Project Tasks</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
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<th>Feb</th>
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## Project Materials and Budget

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<tr>
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<tr>
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Appendix D

Recruitment Materials

Figure D1- Recruitment Flyer

Figure D2- Mailbox invitation
A DNP Student Project
Your work in an acute care hospital takes a special kind of person. Your health and professional quality of life are important.
I will be conducting a study to investigate the relationships between general health and professional quality of life in nurses who work at this hospital.
My project asks nurses to complete a 20 minute anonymous paper survey.
Your participation in this study may help increase knowledge about health and professional quality of life in nurses within our health care system. Information from the study will be presented to staff and nurse leadership this fall so that future interventions can be planned to foster or improve nurse’s health and quality of life.

I will be on your unit at a variety of times and dates. You will have the opportunity to take a 20 minute online survey. All answers are confidential and anonymous. Nurses in all units are invited to help with the study. Participation is completely voluntary. I hope you will join me in this important work. Those who participate will have an opportunity to win a $50.00 gift card.
Thank you for your time and I hope to see you soon.

Debbie Amason, MS, RN (DNP Student)
Georgia College and State University
678-953-2070
Deborah.amason@bobcats.gcsu.edu
Invitation to Participate in a Research Project

A student project

You are invited to participate in a research survey. The purpose of this study is to investigate the relationship between nurse’s general health and professional quality of life. The ANA designated 2017 the year of the “Healthy Nurse” and this study will contribute to that endeavor.

Debbie Amason, a nurse at Wellstar Cobb and a doctor of nursing practice student at Georgia College and State University is conducting this study under the oversight of the college Institutional Review Board. Address questions or concerns to Dr. Whitney Heppner, GC IRB Chair at irb@gcus.edu; 478-445-0863.

If you are willing to participate in this study, please respond to the email invitation you will be receiving. The questionnaires will take approximately 20 minutes. After completion of the survey you may register for a chance to win one of ten $50 gift cards.

If you would like additional information about this study, please call, text, or email: Debbie Amason at 678-953-2070 or email Deborah.amason@bobcats.gcsu.edu.

My very best regards,
Debbie Amason
Appendix E

INFORMED CONSENT

The Relationship between General Health and Professional Quality of Life in Nurses

You are being invited to participate in a research study about how general health can affect professional quality of life and stress. This study is being conducted by Debbie Amason (DNP student) under the direction of Dr. Sheryl Winn at Georgia College and State University. Ms. Amason may be reached at Deborah.amason@bobcats.gcsu.edu or Debbie.amason@wellstar.org.

The questionnaires will take about 20-30 minutes to complete.

This survey is anonymous. Do not indicate your name on the survey NO survey will be traceable to specific IP addresses to maintain confidentiality. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study. At the end of the survey you will be asked to print a receipt of completion. Those receipts will be collected at the end of the survey period and anyone who participated will be eligible for a drawing for one of ten $50.00 gift cards.

This research project is being conducted because of its potential benefits, either to individuals or to humans in general. The expected benefits of this study include enhanced ability by nurses to recognize risk factors for poor general health and, decreased quality of life and increased stress.

You are not likely to experience physical, psychological, social, or legal risks beyond those ordinarily encountered in daily life or during the performance of routine examinations or tests by participating in this study.

Your participation in this study is voluntary. By clicking the box at the bottom of the survey indicating you have read and understand the survey acknowledges your consent to participate. You are voluntarily agreeing to participate and you are acknowledging that you are 18 years of age or older. You are free to stop answering questions at any time or to decline to answer any particular question you do not wish to answer for any reason. If you are younger than 18, do not proceed.

*Research at Georgia College involving human participants is carried out under the oversight of the Institutional Review Board. Address questions or problems regarding these activities to Dr. Whitney Heppner, GC IRB Chair, CBX 090, GC, email: irb@gcsu.edu; phone: (478) 445-0863.
Appendix F
Survey Packet

Figure 1. Survey Instructions

Figure F2. Medical Outcomes Short Form (SF-12)

Figure F3. Professional Quality of Life (ProQOL)

Figure F4. Perceived Stress Scale (PSS)

Figure F5. Pittsburg Sleep Quality Index (PSQI)

Figure F6. Demographic Survey

Figure F7. Survey Completion Instructions
Instructions for the Study Participant

Thank you for agreeing to participate in this study on the nurses’ health and professional quality of life in this hospital.

This electronic survey packet contains four sets of survey questions, and instructions on how to complete.

Four important tasks are a part of this study:

1. Read the “consent to participate
2. When you are ready to begin, click the button at the bottom of the consent form indicating that you have read and understand the purpose, risks, and benefits of this study
3. Answer the questions in the survey which should take about 20 minutes
4. When finished, you will have the opportunity to register for the chance to win 1 of 10 $50.00 gift cards.

Only Debbie Amason will have access to your survey information. Your participation is completely voluntary, and you are free to stop at any time. If you decide not to participate, simply stop taking the survey. There will be no negative consequence for your decision to not participate.

Items in the packet include:

✓ Introductory cover letter with participant instructions (this page)
✓ SF-12 Questionnaire (general health questions)
✓ ProQOL Questionnaire (professional quality of life questions)
✓ Perceived Stress scale
✓ Pittsburgh Sleep Quality Index
✓ Demographic, weight, height and physical activity questions.
✓ Survey completion instructions

Your participation may benefit future nurses by improving knowledge about general health and professional quality of life in nurses at this hospital.
SF-12® Patient Questionnaire

This information will help your practitioner keep track of how you feel and how well you are able to do your usual activities. Answer every question by placing a check mark on the line in front of the appropriate answer. It is not specific for arthritis. If you are unsure about how to answer a question, please give the best answer you can and make a written comment beside your answer.

1. In general, would you say your health is:
   _____ Excellent (1)
   _____ Very Good (2)
   _____ Good (3)
   _____ Fair (4)
   _____ Poor (5)

The following two questions are about activities you might do during a typical day. Does YOUR HEALTH NOW LIMIT YOU in these activities? If so, how much?

2. MODERATE ACTIVITIES, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf:
   _____ Yes, Limited a Lot (1)
   _____ Yes, Limited a Little (2)
   _____ No, Not Limited At All (3)

3. Climbing SEVERAL flights of stairs:
   _____ Yes, Limited a Lot (1)
   _____ Yes, Limited a Little (2)
   _____ No, Not Limited At All (3)

During the PAST 4 WEEKS have you had any of the following problems with your work or other regular activities AS A RESULT OF YOUR PHYSICAL HEALTH?

4. ACCOMPLISHED LESS than you would like:
   _____ Yes (1)
   _____ No (2)

5. Were limited in the KIND of work or other activities:
   _____ Yes (1)
   _____ No (2)

During the PAST 4 WEEKS, were you limited in the kind of work you do or other regular activities AS A RESULT OF ANY EMOTIONAL PROBLEMS (such as feeling depressed or anxious)?

6. ACCOMPLISHED LESS than you would like:
   _____ Yes (1)
   _____ No (2)

7. Didn’t do work or other activities as CAREFULLY as usual:
   _____ Yes (1)
   _____ No (2)
8. During the PAST 4 WEEKS, how much did PAIN interfere with your normal work (including both work outside the home and housework)?
   _____ Not At All (1)
   _____ A Little Bit (2)
   _____ Moderately (3)
   _____ Quite a Bit (4)
   _____ Extremely (5)

The next three questions are about how you feel and how things have been DURING THE PAST 4 WEEKS. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the PAST 4 WEEKS –

9. Have you felt calm and peaceful?
   _____ All of the Time (1)
   _____ Most of the Time (2)
   _____ A Good Bit of the Time (3)
   _____ Some of the Time (4)
   _____ A Little of the Time (5)
   _____ None of the Time (6)

10. Did you have a lot of energy?
    _____ All of the Time (1)
    _____ Most of the Time (2)
    _____ A Good Bit of the Time (3)
    _____ Some of the Time (4)
    _____ A Little of the Time (5)
    _____ None of the Time (6)

11. Have you felt downhearted and blue?
    _____ All of the Time (1)
    _____ Most of the Time (2)
    _____ A Good Bit of the Time (3)
    _____ Some of the Time (4)
    _____ A Little of the Time (5)
    _____ None of the Time (6)

12. During the PAST 4 WEEKS, how much of the time has your PHYSICAL HEALTH OR EMOTIONAL PROBLEMS interfered with your social activities (like visiting with friends, relatives, etc.)?
    _____ All of the Time (1)
    _____ Most of the Time (2)
    _____ A Good Bit of the Time (3)
    _____ Some of the Time (4)
    _____ A Little of the Time (5)
    _____ None of the Time (6)
When you nurse people you have direct contact with their lives. As you may have found, your compassion for those you nurse can affect you in positive and negative ways. Below are some questions about your experiences, both positive and negative, as a nurse. Consider each of the following questions about you and your current work situation. Select the number that honestly reflects how frequently you experienced these things in the last 30 days.

1=Never       2=Rarely       3=Sometimes       4=Often       5=Very Often

1. I am happy.
2. I am preoccupied with more than one person I nurse.
3. I get satisfaction from being able to nurse people.
4. I feel connected to others.
5. I jump or am startled by unexpected sounds.
6. I feel invigorated after working with those I nurse.
7. I find it difficult to separate my personal life from my life as a nurse.
8. I am not as productive at work because I am losing sleep over traumatic experiences of a person I nursed.
9. I think that I might have been affected by the traumatic stress of those I nurse.
10. I feel trapped by my job as a nurse.
11. Because of my nursing, I have felt "on edge" about various things.
12. I like my work as a nurse.
13. I feel depressed because of the traumatic experiences of the people I nurse.
14. I feel as though I am experiencing the trauma of someone I have nursed.
15. I have beliefs that sustain me.
16. I am pleased with how I am able to keep up with nursing techniques and protocols.
17. I am the person I always wanted to be.
18. My work makes me feel satisfied.
19. I feel worn out because of my work as a nurse.
20. I have happy thoughts and feelings about those I nurse and how I could nurse them.
21. I feel overwhelmed because my case load seems endless.
22. I believe I can make a difference through my work.
23. I avoid certain activities or situations because they remind me of frightening experiences of the people I nurse.
24. I am proud of what I can do to nurse.
25. As a result of my nursing, I have intrusive, frightening thoughts.
26. I feel "bogged down" by the system.
27. I have thoughts that I am a "success" as a nurse.
28. I can't recall important parts of my work with trauma victims.
29. I am a very caring person.
30. I am happy that I chose to do this work.

© B. Hudnall Stamm, 2009-2012. Professional Quality of Life: Compassion Satisfaction and Fatigue Version 5 (ProQOL). www.proqol.org. This test may be freely copied as long as (a) author is credited, (b) no changes are made, and (c) it is not sold. Those interested in using the test should visit www.proqol.org to verify that the copy they are using is the most current version of the test.
YOUR SCORES ON THE PROQOL: PROFESSIONAL QUALITY OF LIFE SCREENING

Based on your responses, place your personal scores below. If you have any concerns, you should discuss them with a physical or mental health care professional.

Compassion Satisfaction ____________
Compassion satisfaction is about the pleasure you derive from being able to do your work well. For example, you may feel like it is a pleasure to nurse others through your work. You may feel positively about your colleagues or your ability to contribute to the work setting or even the greater good of society. Higher scores on this scale represent a greater satisfaction related to your ability to be an effective caregiver in your job.

The average score is 50 (SD 10; alpha scale reliability .88). About 25% of people score higher than 57 and about 25% of people score below 43. If you are in the higher range, you probably derive a good deal of professional satisfaction from your position. If your scores are below 40, you may either find problems with your job, or there may be some other reason—for example, you might derive your satisfaction from activities other than your job.

Burnout____________
Most people have an intuitive idea of what burnout is. From the research perspective, burnout is one of the elements of Compassion Fatigue (CF). It is associated with feelings of hopelessness and difficulties in dealing with work or in doing your job effectively. These negative feelings usually have a gradual onset. They can reflect the feeling that your efforts make no difference, or they can be associated with a very high workload or a non-supportive work environment. Higher scores on this scale mean that you are at higher risk for burnout.

The average score on the burnout scale is 50 (SD 10; alpha scale reliability .75). About 25% of people score above 57 and about 25% of people score below 43. If your score is below 43, this probably reflects positive feelings about your ability to be effective in your work. If you score above 57 you may wish to think about what at work makes you feel like you are not effective in your position. Your score may reflect your mood; perhaps you were having a “bad day” or are in need of some time off. If the high score persists or if it is reflective of other worries, it may be a cause for concern.

Secondary Traumatic Stress_____________
The second component of Compassion Fatigue (CF) is secondary traumatic stress (STS). It is about your work related, secondary exposure to extremely or traumatically stressful events. Developing problems due to exposure to other’s trauma is somewhat rare but does happen to many people who care for those who have experienced extremely or traumatically stressful events. For example, you may repeatedly hear stories about the traumatic things that happen to other people, commonly called Vicarious Traumatization. If your work puts you directly in the path of danger, for example, field work in a war or area of civil violence, this is not secondary exposure; your exposure is primary. However, if you are exposed to others’ traumatic events as a result of your work, for example, as a therapist or an emergency worker, this is secondary exposure. The symptoms of STS are usually rapid in onset and associated with a particular event. They may include being afraid, having difficulty sleeping, having images of the upsetting event pop into your mind, or avoiding things that remind you of the event.

The average score on this scale is 50 (SD 10; alpha scale reliability .81). About 25% of people score below 43 and about 25% of people score above 57. If your score is above 57, you may want to think about what at work may be frightening to you or if there is some other reason for the elevated score. While higher scores do not mean that you do have a problem, they are an indication that you may want to examine how you feel about your work and your work environment. You may wish to discuss this with your supervisor, a colleague, or a health care professional.

© B. Hudnall Stamm, 2009-2012. Professional Quality of Life: Compassion Satisfaction and Fatigue Version 5 (ProQOL). www.proqol.org. This test may be freely copied as long as (a) author is credited, (b) no changes are made, and (c) it is not sold.
A more precise measure of personal stress can be determined by using a variety of instruments that have been designed to measure individual stress levels. The first of these is called the Perceived Stress Scale. The Perceived Stress Scale (PSS) is a classic stress assessment instrument. The tool, while originally developed in 1983, remains a popular choice for nurses to understand how different situations affect their feelings and their perceived stress. The questions in this scale ask about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer fairly quickly. That is, don’t try to count up the number of times you felt a particular way; rather indicate the alternative that seems like a reasonable estimate. For each question choose from the following alternatives:

0 – never  1 - almost never  2 – sometimes  3 - fairly often  4 - very often

1. In the last month, how often have you been upset because of something that happened unexpectedly?
2. In the last month, how often have you felt that you were unable to control the important things in your life?
3. In the last month, how often have you felt nervous and stressed?
4. In the last month, how often have you felt confident about your ability to handle your personal problems?
5. In the last month, how often have you felt that things were going your way?
6. In the last month, how often have you found that you could not cope with all the things that you had to do?
7. In the last month, how often have you been able to control irritations in your life?
8. In the last month, how often have you felt that you were on top of things?
9. In the last month, how often have you been angered because of things that happened that were outside of your control?
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
Figuring Your PSS Score

You can determine your PSS score by following these directions:

• First, reverse your scores for questions 4, 5, 7, and 8.

   On these 4 questions, change the scores like this: 0 = 4, 1 = 3, 2 = 2, 3 = 1, and 4 = 0.

• Now add up your scores for each item to get a total. My total score is ___________.

• Individual scores on the PSS can range from 0 to 40 with higher scores indicating higher perceived stress.

   ► Scores ranging from 0-13 would be considered low stress.

   ► Scores ranging from 14-26 would be considered moderate stress.

   ► Scores ranging from 27-40 would be considered high perceived stress.

The Perceived Stress Scale is interesting and important because your perception of what is happening in your life is most important. Consider the idea that two individuals could have the exact same events and experiences in their lives for the past month. Depending on their perception, total score could put one of those individuals in the low stress category and the total score could put the second person in the high stress category.

Disclaimer: The scores on the following self-assessment do not reflect any particular diagnosis or course of treatment. They are meant as a tool to nurse assess your level of stress. If you have any further concerns about your current well-being, you may contact EAP and talk confidentially to one of our specialists.
Figure F5. Pittsburg Sleep Quality Index (PSQI)

The Pittsburgh Sleep Quality Index (PSQI)

**Instructions:** The following questions relate to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for the majority of days and nights in the past month. Please answer all questions.

During the past month,
1. When have you usually gone to bed? ______________
2. How long (in minutes) has it taken you to fall asleep each night? ______________
3. When have you usually gotten up in the morning? ______________
4. How many hours of actual sleep do you get at night? (This may be different than the number of hours you spend in bed) ______________
5. During the past month, how often have you Not during Less than Once or Three or had trouble sleeping because you…
   a. Cannot get to sleep within 30 minutes
   b. Wake up in the middle of the night or early morning
   c. Have to get up to use the bathroom
   d. Cannot breathe comfortably
   e. Cough or snore loudly
   f. Feel too cold
   g. Feel too hot
   h. Have bad dreams
   i. Have pain
   j. Other reason(s), please describe, including how often you have had trouble sleeping because of this reason(s):
6. During the past month, how often have you taken medicine (prescribed or “over the counter”) to nurse you sleep?
7. During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?
8. During the past month, how much of a problem has it been for you to keep up enthusiasm to get things done?
9. During the past month, how would you rate your sleep quality overall?

<table>
<thead>
<tr>
<th></th>
<th>Not during the past month (0)</th>
<th>Less than once a week (1)</th>
<th>Once or twice a week (2)</th>
<th>Three or more times a week (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Cannot get to sleep</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Wake up in the middle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Have to get up to use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Cannot breathe comforta</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Cough or snore loudly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Feel too cold</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Feel too hot</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Have bad dreams</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Have pain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. Other reason(s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Very good (0)</th>
<th>Fairly good (1)</th>
<th>Fairly bad (2)</th>
<th>Very bad (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. During the past month, how would you rate your sleep quality overall?</td>
<td>Very good (0)</td>
<td>Fairly good (1)</td>
<td>Fairly bad (2)</td>
<td>Very bad (3)</td>
</tr>
</tbody>
</table>
## The Pittsburgh Sleep Quality Index (PSQI)

<table>
<thead>
<tr>
<th>Component</th>
<th>Score:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component 1</td>
<td>#9 Score</td>
</tr>
<tr>
<td>Component 2</td>
<td>#2 Score (≤15min = 0; 16 - 30 min = 1; 31 - 60 min = 2, &gt;60 min = 3) + #5a Score (if sum is equal 0 = 0; 1 – 2 = 1; 3 – 4 = 2; 5 – 6 = 3)</td>
</tr>
<tr>
<td>Component 3</td>
<td>#4 Score (&gt;7=0; 6-7=1; 5-6=2; &lt;5 = 3)</td>
</tr>
<tr>
<td>Component 4</td>
<td>(total # of hours asleep) / (total # hours in bed) x 100</td>
</tr>
<tr>
<td>Component 5</td>
<td>Sum of Scores # 5b to #5j (0 = 0; 1 – 9 = 1; 10 – 18 = 2; 19 – 27 = 3)</td>
</tr>
<tr>
<td>Component 6</td>
<td>#6 Score</td>
</tr>
<tr>
<td>Component 7</td>
<td>#7 Score + #8 Score (0 = 0; 1 – 2 = 1; 3 – 3 = 2; 5 – 6 = 3)</td>
</tr>
</tbody>
</table>

Add the seven component scores together for the **Global PSQI Score** ______

Instructions for Demographic Survey

This part of the survey gathers information about your age, gender, race, ethnicity, education, work history. Height, weight and physical activity. This information will aid the study, but you can mark “NA” next to any question that makes you feel uncomfortable. Thank you.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What unit do you work on?</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Male____</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Asian /Pacific Islander ____</td>
</tr>
<tr>
<td></td>
<td>Black (Non-Hispanic) ____</td>
</tr>
<tr>
<td></td>
<td>Hispanic ____</td>
</tr>
<tr>
<td>How long have you worked for the hospital?</td>
<td>_____ Years     _____ Months</td>
</tr>
<tr>
<td>What is your highest nursing degree?</td>
<td>___ ASN   ___ BSN   ___ MSN   ___ DNP</td>
</tr>
<tr>
<td>What is your highest non-nursing degree?</td>
<td>___ Bachelor   ___ Masters   ___ Doctorate</td>
</tr>
<tr>
<td>How long have you been on your current unit?</td>
<td>_____ Years     _____ Months</td>
</tr>
<tr>
<td>How many hours do you work per week?</td>
<td>_____ Hours</td>
</tr>
<tr>
<td>How old are you?</td>
<td>_____</td>
</tr>
<tr>
<td>What is your current height?</td>
<td>_____     What is your current weight?     _____</td>
</tr>
<tr>
<td>*Do you do any vigorous-intensity sports, fitness or recreational (leisure) activities that cause large increases in breathing or heart rate like [running or football] for at least 10 minutes continuously?</td>
<td>Yes _____</td>
</tr>
<tr>
<td>*In a typical week, on how many days do you do vigorous intensity sports, fitness or recreational (leisure) activities?</td>
<td>Never ___ 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___</td>
</tr>
<tr>
<td>*Do you do moderate-intensity sports, fitness or recreational (leisure) activities that causes a small increase in breathing or heart rate such as brisk walking, (cycling, swimming, and volleyball) for at least 10 minutes continuously?</td>
<td>Yes _____</td>
</tr>
<tr>
<td>*In a typical week, on how many days do you do moderate-intensity sports, fitness or recreational (leisure) activities?</td>
<td>Never ___ 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___</td>
</tr>
<tr>
<td>*How much time do you usually spend sitting or reclining on a typical day?</td>
<td>_____ Hours</td>
</tr>
</tbody>
</table>

*Adapted from the WHO Global Physical Activity Questionnaire
Figure F7. Survey Completion Instructions

**Survey Completion Instructions**

Thank you for participating in this study! Now that you are finished, please follow these instructions:

- Click submit
- No one will be able to identify your information
- If you would like to be entered for a drawing for one of the $50 gift cards, email the project leader at Deborah.amason@bobcats.gcsu.edu.
- Drawing will occur at the completion of the data collection period.

If you have any questions or concerns, Debbie Amason’s contact information is listed here. You may call or email her at any time.

Again, thank you for your willingness to participate in this survey to measure Nurses Health and Professional Quality of Life at this hospital. Your participation is a valuable contribution to this nursing research.

Debbie Amason
Deborah.amason@bobcats.gcsu.edu
68-953-2070 (cell)
Table 1

Demographics \((N = 102)\)

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>M(SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender female ((n= 97, 95%))</td>
<td>101</td>
<td>1.96(.196)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>n</th>
<th>M(SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>White non-Hispanic</td>
<td>74</td>
<td>4.34(1.373)</td>
<td></td>
</tr>
<tr>
<td>Black non-Hispanic</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian Pacific</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native American</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>98</td>
<td>44.8(12.446)</td>
<td>22-70</td>
</tr>
<tr>
<td>BMI</td>
<td>94</td>
<td>28.043(5.988)</td>
<td>18.6-45.9</td>
</tr>
<tr>
<td>Length at hospital</td>
<td>98</td>
<td>106.63(102.381)</td>
<td>1-384 months</td>
</tr>
<tr>
<td>Length on unit</td>
<td>98</td>
<td>84.14(91.449)</td>
<td>1-396 months</td>
</tr>
<tr>
<td>Hours per week</td>
<td>98</td>
<td>84.14(91.449)</td>
<td>1-396 months</td>
</tr>
<tr>
<td>Activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vigorous 10 mins/day</td>
<td>101</td>
<td>1.67(.492)</td>
<td>1-3 minutes</td>
</tr>
<tr>
<td>Vigorous days</td>
<td>101</td>
<td>5.23(2.877)</td>
<td>1-8 days</td>
</tr>
<tr>
<td>Moderate 10 mins/day</td>
<td>101</td>
<td>1.40(.584)</td>
<td>1-3 minutes</td>
</tr>
<tr>
<td>Moderate days</td>
<td>101</td>
<td>4.35(2.677)</td>
<td>1-8 days</td>
</tr>
<tr>
<td>Time sitting/reclining</td>
<td>98</td>
<td>14.68(105.28)</td>
<td>1-999</td>
</tr>
</tbody>
</table>
Table 2

*Question 2 – Correlations between BMI, PQSI, SF-12P, and Other Variables*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measure</th>
<th>BMI</th>
<th>PQSI</th>
<th>SF12-P</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSS</td>
<td></td>
<td>.158</td>
<td>.378**</td>
<td>- .145</td>
</tr>
<tr>
<td>PQSI</td>
<td></td>
<td>.353***</td>
<td></td>
<td>- .254*</td>
</tr>
<tr>
<td>ProQOL CS</td>
<td></td>
<td>-.087</td>
<td>-.235*</td>
<td>.046</td>
</tr>
<tr>
<td>ProQOL BS</td>
<td></td>
<td>.223*</td>
<td>.384****</td>
<td>- .314***</td>
</tr>
<tr>
<td>ProQOL STS</td>
<td></td>
<td>.045</td>
<td>.144</td>
<td>- .169</td>
</tr>
<tr>
<td>SF12-P</td>
<td></td>
<td>-.334***</td>
<td>- .254*</td>
<td></td>
</tr>
<tr>
<td>SF12-M</td>
<td></td>
<td>-.269**</td>
<td>- .413****</td>
<td>- .017</td>
</tr>
<tr>
<td>Length Work Unit</td>
<td></td>
<td>.180</td>
<td>-.061</td>
<td>.067</td>
</tr>
<tr>
<td>Length Hospital</td>
<td></td>
<td>.217</td>
<td>-.049</td>
<td>.042</td>
</tr>
<tr>
<td>Hours/Week</td>
<td></td>
<td>-.141</td>
<td>-.068</td>
<td>-.096</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>.292**</td>
<td>.158</td>
<td>- .279**</td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td>---</td>
<td>- .353***</td>
<td>- .334***</td>
</tr>
<tr>
<td>VigActDay</td>
<td></td>
<td>.224</td>
<td>.041</td>
<td>- .207*</td>
</tr>
<tr>
<td>ModActDay</td>
<td></td>
<td>.107</td>
<td>.118</td>
<td>- .059</td>
</tr>
<tr>
<td>TimeSitRecline</td>
<td></td>
<td>.194</td>
<td>-.089</td>
<td>- .231*</td>
</tr>
</tbody>
</table>

*Note. *p < .05; **p < .01; ***p = .001; ****p = .000*
Table 3

*Perceived Stress Scale Scores*

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low stress</td>
<td>41</td>
<td>40.60%</td>
</tr>
<tr>
<td>Moderate stress</td>
<td>47</td>
<td>46.50%</td>
</tr>
<tr>
<td>High stress</td>
<td>12</td>
<td>11.90%</td>
</tr>
</tbody>
</table>
Table 4

*Perceived Stress Scale Correlations*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measure</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PSS</td>
<td></td>
</tr>
<tr>
<td>PQSI</td>
<td>.378**</td>
<td></td>
</tr>
<tr>
<td>ProQOL CS</td>
<td>-.532**</td>
<td></td>
</tr>
<tr>
<td>ProQOL BS</td>
<td>.661**</td>
<td></td>
</tr>
<tr>
<td>ProQOL STS</td>
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</tr>
<tr>
<td>SF12-P</td>
<td>-.145</td>
<td></td>
</tr>
<tr>
<td>SF12-M</td>
<td>-.805**</td>
<td></td>
</tr>
<tr>
<td>Length Work on Unit</td>
<td>-.195</td>
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</tr>
<tr>
<td>Length at Hospital</td>
<td>-.133</td>
<td></td>
</tr>
<tr>
<td>Hours/Week</td>
<td>-.046</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.128</td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td>.158</td>
<td></td>
</tr>
<tr>
<td>Vigorous Activity Days</td>
<td>.089</td>
<td></td>
</tr>
<tr>
<td>Moderate Activity Days</td>
<td>.236*</td>
<td></td>
</tr>
<tr>
<td>Time Sitting/Reclining</td>
<td>-.123</td>
<td></td>
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</tbody>
</table>

*Note. *p < .05; **p < .01*
Table 5

*Correlations with SF-12*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measure</th>
<th>SF12-P</th>
<th>SF12-M</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSS</td>
<td>-.145</td>
<td>-.805*</td>
<td></td>
</tr>
<tr>
<td>PQSI</td>
<td>-.254*</td>
<td>-.413**</td>
<td></td>
</tr>
<tr>
<td>ProQOL CS</td>
<td>.046</td>
<td>.567**</td>
<td></td>
</tr>
<tr>
<td>ProQOL BS</td>
<td>-.314**</td>
<td>-.675**</td>
<td></td>
</tr>
<tr>
<td>ProQOL STS</td>
<td>-.169</td>
<td>-.524**</td>
<td></td>
</tr>
<tr>
<td>SF12-P</td>
<td>---</td>
<td>-.017</td>
<td></td>
</tr>
<tr>
<td>SF12-M</td>
<td>.017</td>
<td>-.413**</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *p = < .05; **p = < .01*
Figure 1

Age of Nurses

Note. Average age of the nurses surveyed was 44.
Figure 2

*BMI of Nurses*

Note. Average BMI is in the overweight range of 28 or higher.
Figure 3

*Length of Time at Hospital*

![Graph showing length of time at hospital with notes on mean, standard deviation, and N.](image)

*Note.* 29% have worked at hospital less than 2 years. Recorded in months.
Figure 4

*BMI and PSQI*

*Note.* Moderate correlation with $r_s (91) = .353, p = .001$
Figure 5

*BMI and ProQOL-BS*

*Note.* Weak positive correlation $r_s (91) = .0223, p = .031$
Figure 6

*PSS and PSQI*

Note. Weak to moderate positive correlation $r_s(98) = .378$, $p = 0.000$
Figure 7

*PSS and ProQOL-CS*

*Note.* Moderate negative correlation $r_s (100) = -0.532, p = 0.000$
Figure 8

*PSS and ProQOL-BS*

*Note.* Moderate positive correlation, $r_s (98) = .661, p = 0.000$
Figure 9

*PSS and ProQOL-STS*

\[ y = -3.06 + 0.91x \]

*Note.* Moderate correlation \( r_s(100) = -0.085, p = 0.000 \)