THE EFFECT OF JOB STRESS AND SOCIAL INTERACTIONS ON NURSING JOB PERFORMANCE: A REPLICATION STUDY
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Chapter I

Introduction

The term stress is a generic concept utilized to describe a wide array of phenomena that causes an altered psychophysiological state (Lazarus & Folkman, 1984). Stress is commonly used as a term to describe distress, or the “negative interpretation of an event (real or imagined) to be threatening that promotes continued feelings of fear or anger…” (Seaward, 2004, p.522). Nursing is generally recognized as a high-stress occupation due to the nature of the work (International Labour Organization, n.d.). National Institute for Occupational Safety and Health (1995) defined nursing as among 40 occupations with higher than expected incidence of stress-related disorders.

Sources of stress in nursing are multi-faceted. Nursing is known to be emotionally, physically and intellectually demanding work (Rowe, 2003). Nursing is emotional work where compassion is expected, dealing with suffering is common and reports of interpersonal conflict, including verbal abuse, between colleagues is common (Cohen-Katz, Wiley, Capuano, Baker & Shapiro, 2005; Rowe, 2003; Repar & Patton, 2007; Rowe & Sherlock, 2005). Nursing is also known to be physically demanding, with long hours and overtime a common expectation as well as the physical daily demands of providing care to a number of patients with minimal resources and sometimes poorly designed delivery systems or working environments (Repar & Patton, 2007; Stordeur,
D’Hoore & The NEXT Study Group, 2007; Rauhala & Fagerstrom, 2007). Nursing is also an intellectual profession with accountability to maintain competence and exercise informed judgment to seek consultation, accept responsibilities and delegate to others (American Nurses Association, 2001). This awareness of responsibility that the consequence of a mistake may be death or serious injury is another source of stress in the nursing profession (Rowe, 2003).

That stress can have negative effects on an individual is well-established. Prolonged occupational stress has been shown to affect nurses emotionally and physically, including symptoms of minor mental health morbidity, decreased job satisfaction, increased burnout, compassion fatigue, depression, illnesses and work-related injuries (Barling, Kelloway & Iverson, 2003; AbuAlRub, 2004; Salmond, 2005; Wu, Zhu, Wang, Wang & Lan, 2007; Repar & Patton, 2007). Evaluation of the effect of a distressed nursing workforce on an organization has shown increased absenteeism and turnover, decreased engagement and productivity and general workforce dissatisfaction (Pilette, 2005; Repar & Patton, 2007).

**Background and Significance**

Nursing has always been a stressful occupation due to its high emotional and physical demands (Rowe, 2003; Repar & Patton, 2007). In recent decades, nursing’s increasing complexity, responsibilities and healthcare demands have escalated the level of stress experienced in the profession. In a 2001 survey conducted by the American Nursing Association over 70% of nurses surveyed listed chronic or acute affects of stress and overwork among their top three concerns. Hospital systems are designed with the intent to ensure standards of care and meet regulatory requirements but have been known
to increase the workload of the nurse and to create increased documentation and system
management responsibilities assigned to nursing personnel that reduce the time that
nurses spend at their primary objective—the care of the patient (Krichbaum, et al., 2007;
Salmond, 2005). Nurses report that time spent away from the bedside is increasing.
Some studies report that 40% of their time is spent away from the patient’s bedside doing
tasks such as documenting, managing interruptions or managing hospital systems (Aiken,
Sean, Sloane, Sochalski & Silber, 2002; Salmond, 2005). The toll of these factors that
create occupational stress on the nursing workforce is being realized in increased nursing
burnout, turnover, job performance and the decrease in the quality of care provided
(Beaudoin & Edgar, 2003; AbuAlRub, 2004; Salmond, 2005; Rowe, 2003; Wu et al,
2007).

Recently, a national demand for increased quality and safety in the healthcare
arena has arisen. In July of 2006, the Institute for Healthcare Improvement initiated the
100,000 Lives Campaign which challenged the nation's healthcare system to implement
changes that reduce the loss of life due to errors in healthcare. This was in response to the
Institutes of Medicine’s landmark study that reported that tens of thousands of
unnecessary deaths occurred in the health care system due to medical error (Kohn,
Corrigan & Donaldson, 2000). In December of 2006, the initiative was expanded to focus
on healthcare improvement strategies that will decrease the amount of patients
experiencing unintended physical injury in the healthcare system. Entitled the 5 Million
Lives Campaign, the focus is on several initiatives such as preventing high risk drug
errors, reduction of surgical complications, reduction of hospital-acquired pressure ulcers
and improved care for congestive heart failure (Institute for Healthcare Improvement,
The impact of nursing on these quality initiatives is high. Other organizations, such as the Department for Health and Human Services have taken a stance to increase transparency and apply pressure for the improvement of healthcare organizations by requiring public reporting of specific quality indicators on their website (Health and Human Services, 2005). In order to survive in this environment, healthcare organizations must uncover the weaknesses that exist in their systems that reduce quality of care and implement improvements.

Nursing’s impact on those they care for extends beyond their ability to be empathic and caring, although that is what makes it unique. Nursing sensitive quality indicators such as pressure ulcer rate, nosocomial infection rates and falls have been identified as an outcome of the process of nursing and can be affected by a nurse's job performance (Gallagher, 2002; Gallagher & Rowell, 2003). It is essential for the healthcare industry to understand the factors that prevent nurses from a high level of job performance and work to mitigate these factors if they seek to improve the outcomes of patients. Extreme and prolonged stress in the workplace has been identified as a possible cause of decreased job performance for many professions, including nursing. Sources of stress for nurses in the healthcare setting include concern for their own physical safety, inter- and intra-professional conflict, organizational or system issues and the emotional needs of caring (American Nursing Association, 2001; McVicar, 2003; Rauhala & Fagerstrom, 2007).

Problem Statement

Nursing is a highly stressful profession that combines a number of highly technical tasks requiring expert knowledge and a personal engagement with patients
requiring empathy and compassion. The complexity of nursing is growing exponentially. The identification of sources of stress and support for effective coping mechanisms is essential for the health of individual nurses and for the health of the profession.

Stress is known to affect organizational variables such as turnover (Omdahl & O’Donnell, 1999) and has also been shown to affect health (Way & MacNeil, 2006; Lin, Lin & Shiao, 2007; Kawano, 2008). Less is known about the relationship between job performance and stress (AbuAlRub, 2004). Strategies for managing nursing stress have been identified in the literature, including adequate resources, strengthening individual coping abilities and collegial support in the workplace (Repar & Patton, 2007; AbuAlRub, 2004; Cohen-Katz, et al., 2005). The effect of the social environment, including support of coworkers and support of nursing leadership has also been studied. Many studies support the hypothesis that helpful social interactions at work can reduce the effect of job strain (Way & MacNeil, 2006; Cox, 2003; Chang, et al., 2006).

Purpose of the Study

The purpose of this study is to describe the effect of job-related stress on the job performance of hospital nurses, as well as the effect of co-workers’ social support on the stress-performance relationship. This study is a replication of AbuAlRub's 2004 study that investigated the effects of job stress on job performance and the effect that social support has on this relationship.

Research Questions

The research questions explored by this study are: (a) do nurses with a perception of high social support have reduced job stress; (b) do nurses with high social support have high job performance; (c) do nurses with high job stress have low job performance;
and (d) as job stress increases, do nurses with high social support perform better than nurses with less social support?

Framework

Lazarus' Transactional Model of Stress and Coping will be utilized as the framework for this study (Lazarus & Folkman, 1984). This model describes the process of reaction to a stressor as a dynamic process that is highly variable due to multiple factors. When a stress is applied, primary appraisal is one's perception of the stressor as positive/benign or challenging or irrelevant. Secondary appraisal is the individual's assessment of the coping options available and the likelihood of each option to create the desired outcome. This appraisal leads to the coping efforts that produce the outcomes of the coping process which is adaptation (Lazarus & Folkman, 1984).

Research Design

This study will use a correlational descriptive research design to explore the relationship between nursing job related stress and job performance and the effect of social support on the stress-performance relationship. A convenience sample of registered nurses employed in direct patient care in hospitals throughout the state of Idaho will be utilized.

Definitions of Terms

Conceptual.

The variables that will be studied are job stress, job performance, and social support. For purposes of the study each variable is defined.

Psychological stress is defined as "a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources
and endangering his or her well being” (Lazarus & Folkman, 1984, p.19). Occupational stress is "the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker.” (National Institute for Occupational Safety and Health, n.d., p.10). Job performance is defined as "the effectiveness of the person in carrying out his or her roles and responsibilities related to direct patient care" (AbuAlRub, 2004, p.75). Social support is the interpersonal transactions that may promote well-being or ability to cope (AbuAlRub, 2004; Joiner & Bartram, 2004).

Operational.

The instruments to be used in this study include the Nursing Stress Scale, Schwirian Six Dimension Scale, and McCain and Marklin Integration Scale. Stress will be measured with the 34-item Nursing Stress Scale (Gray-Toft & Anderson, 1981). In addition, to evaluate stressors that are related to patients and their families, eight additional items of the subscale on patients and families from the Expanded Nursing Stress Scale will be added (French, Lenton, Walters & Eyles, 2000). Job performance will be measured with the Schwirian Six Dimension Scale of Nursing Performance which measures 52 items related to leadership, teaching and collaboration, planning and evaluation, interpersonal relations and communications, professional development and critical care on a 4 point scale (Schwirian, 1978). Social support will be measured using the McCain and Marklin Social Integration Scale (AbuAlRub, 2004).

Limitations

The limitation of this study is related to generalizability. Since all study participants will be hospital nursing staff from the state of Idaho, there may be specialty
and regional bias. The results may not be applicable to nurses outside the state of Idaho or working in community nursing, nursing leadership positions, nursing faculty or other nursing positions outside the hospital.

**Assumptions**

Job stress, job performance and social support can be identified and measured. Assumptions will be made that the measurement of these phenomena can be statistically correlated to understand their relationship to one another.

**Summary**

The complexity and acuity of nursing today is very high and only increasing in today’s healthcare environment which is, in turn, increasing the experience of stress by nurses. It is important to recognize this phenomenon and identify factors that can mitigate this issue. The purpose of this study is to understand the impact of job stress among nurses on job performance and the effect of social support on the stress-performance relationship. Lazarus Transactional Model of Stress and Coping will be used for the conceptual framework. As quality healthcare is coming to the forefront as a priority, understanding the effect of stress on the performance of nurses is essential as they are key players in the quality equation in healthcare. In addition, understanding the role of social support in this relationship will add to the existing nursing research that will assist organizations in creating work systems or cultures that help to mitigate stress and increase job performance among nurses.
Nursing has been identified as a high-stress profession that is not just physically but also emotionally and intellectually demanding (Rowe, 2003; American Nurses Association, 2001), which can translate to stress. This stress has been shown to affect nurses’ mental health, physical health, performance and job commitment. Variables such as social support, personal coping mechanisms and organizational factors have been shown to have an effect on stress reactions in nurses. Further investigation of the impact of job stress and mitigating factors is needed to identify the most appropriate interventions for reducing stress in the nursing profession. The purpose of this study is to describe the effect of job-related stress on the job performance of hospital nurses, as well as the effect of co-workers social support on the stress-performance relationship.

The literature is organized into four sections. The first section describes the conceptual framework. The second section describes literature related to the sources of stress and impact that job stress has on nurses. The third section reviews studies that describe the relationship between stress and nurses’ physical and mental health. The fourth section reviews studies that explore mitigating factors to the effect of stress in nursing.

*Conceptual Framework*
The Transactional Model of Stress and Coping (Lazarus & Folkman, 1984) will be used as a framework for the design of this study. Stress is a term that has been used as a very broad label that does not allow for true understanding of the many variables and processes that contribute to it. This model was developed to provide a framework for professionals such as social workers, nurses, psychologists, researchers, anthropologists in the understanding of the complexities of stress (Lazarus & Folkman, 1984). It allows for the evaluation of multiple factors within individuals and individual situations in the process of coping with stressful events.


When a person experiences a stressor, they evaluate the potential threat in the process of appraisal. Primary appraisal is an evaluation of the individual’s perception of the significance of the event. The event could be considered irrelevant, benign-positive or stressful. Secondary appraisal may occur simultaneously or after the primary appraisal and refers to the individual’s assessment of what strategies or options the individual may have to cope with the stressor. This is a complex thought process that evaluates each option’s likelihood to achieve the preferred outcome. Simply stated, primary appraisal is the individual’s assessment of what is at stake and secondary appraisal is the assessment of coping options. Primary and secondary appraisals together determine the degree of stress and quality and magnitude of emotional response (Lazarus & Folkman, 1984).
At this point the individual implements strategies to mediate their response to the stressor. Coping is defined by Lazarus and Folkman (1984) as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” p. 178. Coping efforts are implemented to serve two purposes: 1) management of the stressor in the environment and 2) regulation of the emotional response to the stressor. Problem-focused coping and emotion-focused coping are intertwined and can facilitate or compete with each other. For effective coping these coping reactions should be complementary. Many personal factors are at play when an individual determines coping efforts such as health and energy, existential/spiritual beliefs, beliefs regarding control, commitments, problem-solving skills, social skills, social support and material resources. In addition, coping can also be affected by constraints that affect the use of resources such as culture or values, environmental constraints or high levels of threat (Lazarus & Folkman, 1984).

The outcome of the coping effort may result in short- and long-term adaptation that may be positive or negative. Adaptation is classified into three major classes: 1) social functioning, 2) morale and 3) somatic health. Social functioning is defined as how an individual carries out his or her varied roles, including relationships with others. How an individual copes with daily stressors determines their overall social functioning. Morale is concerned with an individual’s overall satisfaction with life and is a long-term outcome of an individual’s assessment of negative and positive emotions in relationship to accumulated stressors over time. As an individual implements coping efforts to overcome stressors over time he or she will reflect on the successes or failures of his or her performance which affects morale. Somatic health is the physiological well-being of
an individual and has been widely assumed to be affected by stress and coping. For instance, studies have shown that various styles of coping result in specific health outcomes such as increased risk of heart attacks among Type A personalities. The relationships among social functioning, morale and somatic health are highly complex (Lazarus & Folkman, 1984).

The Transactional Model of Stress and Coping is an appropriate framework for this study as it explores nursing stress, its effect on job performance and the mediator of social support on this relationship.

**Stress in Nursing**

The role of nursing is becoming increasingly complex. Demands on the nurses’ time that take them away from patients are thought to affect their decisions to remain in the workforce. A study by Krichbaum, et al. (2007) evaluated the work environments of nurses to describe the phenomenon of complexity compression. The purpose of the study was to understand characteristics of the work setting that influence nurses’ ability to provide professional services and to develop possible strategies for improving these work environments.

Complexity compression is the phenomenon that many nurses are experiencing in modern healthcare where “nurses are expected to assume additional, unplanned responsibilities while simultaneously conducting their multiple responsibilities in a condensed time frame” (Krichbaum, et al., 2007, p.88). Nurses from an Assembly of Minnesota Nurses Association Practice and Education Leaders (AMPEL) group meeting were presented with the definition of complexity compression in order to identify factors and common themes related to the phenomenon. The sample consisted of a cross-section
of nurses in practice. The mean number of years in practice was 15.56 years and average hours worked per pay period was 67.87 hours. Advanced practice nurses comprised 9.6% of the sample. The practice setting of the participants varied but a majority of the participants (63.5%) practiced in the hospital. Areas of work included medical-surgical (26.9%), intensive care (15.4%), education/research (3.8%), psychiatric (7.7%), emergency (10%), emergency (19.2%), long-term care (3.8%), public health (1.9%), home care (5.8%) and other (15.4%). Most of the participants worked in patient care (86.5%), while 1.9% worked in case management and 11.5% worked in teaching (Krichbaum, et al., 2007).

An inductive method was used to describe the phenomenon of complexity compression. The participants were assigned to one of eight groups, each representing a mix of settings and experiences. Each group was presented with a definition of complexity compression and asked to identify factors that led to their own personal experiences of complexity compression. Then the group ranked these factors in order of importance based on group consensus. One hundred forty seven factors were identified by the eight groups of nurses. The researchers then worked with the factors to identify themes (Krichbaum, et al., 2007).

Six major themes were identified from 129 of 147 factors. Eighteen factors could not be categorized to a common theme. Major themes were as follows: (a) personal (factors that impact the individual nurse), (b) environmental (factors that impact the immediate work environment), (c) practice (factors that impact the ability to care for patients), (d) systems and technology (factors that impact the mechanisms to accomplish the delivery of health care), (e) administration and management (factors that impact how
the work of nursing is supported by administration), and (f) autonomy/control (factors that impact the ability to make decisions about care of patients). The majority of the factors were categorized under the themes of practice and systems and technology. The researchers also analyzed the groupings of the factors under each theme for percentage of total factors associated with each theme, percentage of factors that were ranked by all of the study groups as having a priority of 1-10 in each theme and the percentage of factors in each theme that were ranked 1-10. Results of this analysis revealed that the themes with the greatest percentages of factors ranked 1-10 within the theme were systems and technology (64%) and autonomy/control (7%). In addition, the greatest percentage of factors ranked 1-10 were found in the themes of systems and technology and practice with 19% and 14%, respectively (Krichbaum, et al., 2007).

Definition and understanding of the phenomenon of complexity compression through this study helps to further the understanding of nurses’ experience. Identification of the six themes could provide avenues for improvement that could reduce the impact of complexity compression on the nursing workforce (Krichbaum, et al., 2007).

Stress and burnout have been identified as reasons nurses leave the profession, as well as being responsible for economic impact such as high turnover, absenteeism and poor quality control. Omdahl and O'Donnell (1999) examined the impact of emotional variables on nurses’ stress and occupational commitment.

The study sample consisted of 164 nurses from various areas of specialty from two large metropolitan hospitals in the north-eastern United States. One of the hospitals was affiliated with the Catholic Church and the other had no religious affiliation. The mean length of time the nurses in the sample had held their current positions was 4.7
years and the mean length of time in the profession was 8.4 years. Gender was primarily female, with 160 female respondents, three male respondents and one respondent not designating gender (Omdahl & O’Donnell, 1999).

The subjects were asked to complete a five-point, Likert-style questionnaire ranging from strongly agree to strongly disagree measuring emotional contagion (assuming the emotions of others), empathic concern (concern for another without sharing emotions), communicative responsiveness (the ability to effectively communicate about difficult or emotional subjects), depersonalization (the treatment of others as objects or difficult people), reduced personal accomplishment (the perception that there is a gap between actual achievement and desired goals), and emotional exhaustion (the experience of fatigue and lack of energy to perform work tasks and occupational commitment). The variables were measured using questions developed from previous studies. The seven items from Davis’ Individual Reactivity Index (1980, 1983) which were found to be unidimensional (measured only one construct) and with alphas greater than 0.8 were included in the instrument. The seven items found to be unidimensional and with alphas greater than 0.65 were used from Mehrabian and Epstein’s (1972) Emotional Empathy Measure. The five items found to be unidimensional and with alpha values above 0.62 for communicative responsiveness from Stiff et al (1988) were included. Seven occupational commitment items found to be unidimensional and with alpha levels of 0.78 as reported by Miller et al (1988) were included. Twenty-one items were included from the Maslach Burnout Inventory (Omdahl & O’Donnell, 1999).

Instrument analysis was also conducted to assess reliability of the tools used, which had an alpha value between 0.62 and 0.86, which is acceptable for reliability.
Questions that had correlation between the item and the overall scale below 0.37 in this sample of nurses were dropped. The results were analyzed using multiple regression to evaluate the relationships among burnout, reduced occupational commitment, demographics and the empathy variables (Omdahl & O’Donnell, 1999).

Multiple regression revealed that the three empathy variables of emotional contagion, empathic concern and communicative responsiveness explained 34.9% of the variance of depersonalization. Empathic concern and communicative responsiveness had significant impact on depersonalization. A negative relationship existed between empathic concern and depersonalization and also between communicative responsiveness. Emotional contagion approached significance in explaining the variance of depersonalization and was positively related. The three empathy variables explained 48.3% of the variation of reduced personal accomplishment. All three variables were significant. There was a negative correlation between communicative responsiveness and reduced personal accomplishment and between empathic concern and reduced personal accomplishment. There was a positive correlation between emotional contagion and reduced personal accomplishment. The three empathy variables accounted for 5.2% of the variation in emotional exhaustion. Only one of the variables was significant however. Emotional contagion had a positive association with emotional exhaustion. The three empathy variables accounted for 10% of the variation of reduced occupational commitment. Only one variable, emotional contagion, had a significant relationship. The association between emotional contagion and occupational commitment was negative (Omdahl & O’Donnell, 1999).
The demographic characteristics of the nurses in relation to the outcome variables were also evaluated finding no significant effects between types of nursing and empathy variables, burnout or occupational commitment. There was a positive correlation between nursing experience and occupational commitment as well as between position experience and occupational commitment (Omdahl & O’Donnell, 1999).

The authors concluded that in an effort to reduce nursing burnout, work should be done to help nurses effectively communicate and to have concern for patients without becoming emotionally involved. They suggested a need to increase awareness in nurses and nurse educators as well as a need to further research in the area of emotional contagion and its potential harm (Omdahl & O’Donnell, 1999).

Understanding the role of stress related to burnout is important to the well-being of both the employee and employer. Jamal and Baba (2000) conducted a study to examine this relationship among Canadian managers and nurses. In this study, the Person-Environment Model of Chronic Job Stress and Maslach’s General Model of Burnout were used as a conceptual framework.

Managers and nurses were chosen as study participants because of the high stress and burnout associated with these jobs. The sample included 67 managers and 173 nurses. Managers attending part-time courses from an urban university and nurses from a large hospital were invited to participate. Of the managers, 72% of the respondents were male with an average age of 31 years and average of 17 years education. Forty-six percent of the managers were from an engineering background and the remainder was from various backgrounds. Of the responding nurses, 67% were female, average age was 39.3 years and average education was 16 years. The average seniority of the nursing
sample was 12.1 years. The research was conducted in two settings in a large metropolitan Canadian city on the east coast (Jamal and Baba, 2000).

The variables were measured in this study by questionnaires administered to managers and nurses. Job stress was measured with a 13 item scale developed by Parker and DeCotiis. Burnout was measured using a 22 item Maslach Burnout Inventory which included measurement of the three dimensions of burnout: emotional exhaustion, lack of accomplishment and depersonalization. Job satisfaction was assessed using a four item Hoppock Scale. Psychosomatic health problems were measured by examining health problems of the participants such as headaches, upset stomach, loss of appetite, and nervousness. A 16-item scale developed by Meyer and Allen was used to measure organizational commitment. Managers were not evaluated for psychosomatic health problems and organizational commitment (Jamal & Baba, 2000).

Pearson correlations were used to examine the data. The research questions were answered by the following findings. Job stress was found to be significantly positively correlated to burnout, including the three dimensions of emotional exhaustion, lack of accomplishment and depersonalization, in both the managers and the nurses. The data supported the hypothesis that job stress was negatively correlated with job satisfaction in both samples and also supported the negative correlation between job stress and organizational commitment in the nursing sample. Job stress was also found to be significantly positively correlated with psychosomatic health problems in the sample of nurses (Jamal and Baba, 2000).

This study adds to the research associating stress with job satisfaction, organizational commitment and psychosomatic health problems. Because the study was
completed using tools that only measure the perceptions of the study participants, the researchers suggest that more objective measures be used in conjunction with subjective measurements for future studies on stress research (Jamal & Baba, 2000).

Specific nursing roles or specialties can present unique stressors to a nurse. Salmond (2005) compared the job stress and general well-being between hospital medical-surgical nurses and home care nurses in a 2005 study. The purpose of this study was to identify causes and severity of stress and explore the relationship of occupational stress to affective mood in hospital based medical-surgical nurses and home care nurses.

The population studied was registered nurses and licensed practical nurses from one urban and one suburban hospital in a northeast healthcare system and three homecare agencies. The sample was a convenience sample of nurses from these agencies. One hundred forty-two research packets were distributed and 95 packets were returned. Six of the 95 returned packets were excluded due to missing data. The majority of participants (96.6%) were female. Ages ranged from 21 to greater than 50 years old, with the majority of participants between age 41 and 50. Forty-six percent of the nurses were bachelors prepared registered nurses while 32.6% were associate prepared RNs, 10.1% diploma RNs, 9.0% masters prepared RNs and 2.2% LPNs. Years in nursing ranged from 1 year to greater than 30 years, with the majority of nursing experience between 11 and 20 years. Years in position ranged from less than 5 years to greater than 25 years, with the majority of participants in their current position less than 5 years. Seventy-five percent of the study population was full-time, 13.5% part-time and 11.2% per diem. Seventy-eight percent of nurses held staff nurse positions, while 5.6% were assistant
managers, 8.9% were managers, 4.5% were supervisors and 2.3 percent were directors (Salmond, 2005).

The Job Stress Survey (JSS) was utilized to evaluate occupational stress. The JSS measures perceived severity and frequency of occurrence of 30 sources of stress. A combined score calculates the job stress index, which indicates overall perceived stress level. The JSS includes subscales to provide additional information on two major components of job stress: job pressures associated with the job and lack of support from supervisors. Study participants rate each question on a scale of 1 to 9. A job pressure index and lack of support index are also evaluated. The JSS data was also utilized to identify the top 10 most stressful items on the survey. The JSS has been established as a reliable tool with Cronbach’s alpha above 0.80. For this study, reliability for measuring frequency and severity of stress and was high with Cronbach’s alpha of 0.92 and 0.96 respectively. Overall, the reliability for the stress index for this study was 0.95 (Salmond, 2005).

The Affect Balance Scale (ABS) measured mental well-being or affect in this study. Participants are asked to answer five positive affect scale items, five negative affect scale items and a final question that asks the participants to rate their overall happiness. This instrument was proven to have a test-retest reliability rate of 0.76 (Salmond, 2005).

In addition, participants that indicated their willingness to participate in an interview to explore workplace stress were contacted by researchers and interviewed utilizing an interview guide. The guide consisted of five open-ended questions that were
prepared by the researchers and reviewed by administrators who were active in stress research (Salmond, 2005).

The data collected were compared between the hospital-based medical-surgical nurses and the home care nurses by performing independent sample t-tests. The medical-surgical nurses reported an average of 5.56 for job stress severity, while home care nurses reported an average of 4.88. The difference in job stress severity between the populations was not significant. Medical-surgical nurses reported job stress frequency at an average of 4.65 scale while home care nurses reported an average of 3.22. Medical-surgical nurses perceived job stress frequency was significantly higher than home care nurses. The job stress index for medical-surgical nurses was 28.49, while the job stress index for home care nurses was 19.13. The difference in job stress index between the two groups was significant. Job pressure severity for the medical-surgical nurses was not significantly different than the home care nurses, with values of 6.25 and 5.6, respectively. Differences in job pressure frequency were also not significantly different between the two populations, where the mean for medical-surgical nurses was 5.8 and the mean for the home care nurses was 4.86. The job pressure index was not significantly different between medical-surgical nurses and home care nurses with average scores of 33.34 and 27.04, respectively. Lack of support severity was also not significantly different between the two groups, where medical-surgical nurses had an average score of 6.04 and home care nurses had an average score of 5.16. Lack of support frequency was significantly different between the two groups where medical-surgical nurses mean score was 4.58 and the home care nurses mean score was 2.39. The lack of support index was
also significantly different where the medical-surgical nurses score was 27.40 and the home care nurses score was 12.10 (Salmond, 2005).

The item index scores also determined that five stressors were common for both the medical-surgical nurses and the home care nurses in the top 10 stressors, including excessive paperwork, meeting deadlines, frequent interruptions, insufficient personnel to handle an assignment and insufficient personal time (Salmond, 2005).

Pearson Product Moment Correlation was calculated to evaluate for correlation between job stress index scales and demographics. It was found that years of experience and age were related negatively to the lack of support, suggesting that more experienced or older nurses perceive higher levels of support. Age was also related negatively to job stress severity. Higher job pressure index scores were found in fulltime employees. Average case load had a positive correlation to job stress index, job pressure index and lack of support index (Salmond, 2005).

Descriptive statistics were used to evaluate the results of the affect balance scores, grouping the scores into negative, moderate or positive. A negative affect was found in 21.3% of the sample, moderate scores were found in 44.9% and 33.7% had positive scores (Salmond, 2005).

One-way ANOVA analysis was used to test the hypothesis that those with higher job stress would have negative affective moods. Results revealed that the job pressure index and job stress index varied across the three mood groupings. Scheffe contrast showed that those with higher scores on the job stress index and job pressure index were significantly more likely to have negative mood scores and those with lower job stress
index and job pressure index scores were more likely to have moderate or positive mood scores (Salmond, 2005).

Qualitative results found both similarities and differences between medical-surgical nurses and home care nurses. Both groups identified paperwork as the biggest source of stress. Both also had common themes of lack of cooperation among co-workers and time associated with workloads. Home care nurses identified work-related factors such as maintaining their work schedules and driving/traffic. They felt they had good job control but were frustrated with decreased decision making due to third-party payer restrictions. Medical-surgical nurses reported common themes of managing competing demands of equal priority, frequent interruptions, lack of team work, verbal abuse, and a lack of ability to rely on the nurse manager for problem solving (Salmond, 2005).

This study found that job stress for medical-surgical nurses is higher than the norm and also higher than for nurses working in home care and that this stress is related to negative affective mood. Attention to the causes of this stress and its repercussions is essential to improve quality of nurses’ working lives and, subsequently, to positively affect the nursing workforce. Focus on the support provided to medical-surgical nurses may be one area for improvement. A replication study is recommended using a larger sample and using random sampling techniques over a larger geographic area to improve reliability in application (Salmond, 2005).

Another example of specialty specific stress is explored in a study that’s purpose was to evaluate the impact of infusion reactions that are common with monoclonal
antibodies on cancer patients, their families and nurses and clinicians that care for them (Colwell, et al., 2007).

Study participants were selected from attendees to the 2005 Annual Oncology Nursing Society Congress that was held in Orlando, Florida. RNs were included if they had greater than 1 year experience, administered chemotherapy to 10 or more patients in the last month, and a monoclonal antibody to five or more patients during the last month. Participants were excluded if they or anyone in their family was employed in marketing, advertising, public relations, marketing research, management consulting, or pharmaceuticals. The sample included 202 nurses. A great majority of the participants were female (99%). Only 3% of the participants were nurse practitioners, while 4% were clinical nurse specialists and 93% registered nurses. The average years of nursing experience was 15.5 years. The average number of physicians in their practice was 16.6. The average number of patients treated with chemotherapy was 91.8 per month and the average number of patient receiving monoclonal antibody therapy was 30.4 (Colwell, et al., 2007).

Trained interviewers conducted 31-item survey interviews with the participants which assessed six areas of concern: (a) frequency and severity of infusion reactions, (b) management of infusion reactions, (c) disruptiveness of infusion reactions on patients, families nurses and the staff (d) nurses perception of risk of specific cancer therapies to cause infusion reactions, and (e) demographics. In addition, the participants were asked to describe how strongly they agreed or disagreed with various statements about infusion reactions. Qualitative information was gathered using open-ended questions related to the impact of infusion reactions on patients, their caregivers, nurses and the nursing staff.
In addition, several questions about the severity of reactions were administered and the National Cancer Institute’s common terminology criteria were used to classify the responses (Colwell, et al., 2007).

In evaluation of the frequency and severity of infusion reactions, 31% of the participants reported that patients experience infusion reactions “often” and 46% reported that patients experienced infusion reactions “sometimes.” When describing severity, 93% reported grade 1 or 2, while 6% reported grade 3 and 1% reported grade 4. Rituxin and paclitaxel were the drugs reported as most frequent infusion reactions (46% and 27%, respectively. Three management strategies were most commonly reported as interventions to treat infusion reactions: temporarily stopping the infusion, hydration and administration of steroids. A majority of the nurses (87%) reported that patients experiencing grade 1 or grade 2 infusion reactions were “often” or “always” re-challenged with the drug. Almost all the nurses (96%) reported that grade 3 or 4 reactions were “very” or “extremely” disruptive to the patient and also disruptive to the nurse (80%) and to the entire staff (79%). Grade 1 or 2 reactions were rated as “very” or “extremely” disruptive to patients by 50% of the staff but only 30% rated them as disruptive to the nurse and only 19% rated them as disruptive to the staff. The qualitative data revealed that 36% felt that infusion reactions affected the nurse emotionally and were a source of apprehension and stress. Seventy-two percent also report that infusion reactions add “tremendous amount of stress and anxiety to the entire staff” (Colwell, et al, 2007). In addition, 94% agreed that nursing staff was well prepared in dealing with infusion reactions and 42% did not feel that physicians adequately educated patients to the risks of infusion reactions (Colwell, et al., 2007).
Forty-four percent of the participants felt that infusion reactions disrupt their normal work routine; 98% felt time was taken from other patients and caused delays in other patients’ chemotherapy (72%). Regardless of the stress and anxiety caused, 21% reported that infusion reactions help increase nurses’ skill and knowledge (Colwell, et al., 2007).

Results of this study indicate that infusion reactions are common in the treatment of cancer patients and they are emotionally difficult and disruptive to patients, family, nurses and staff. Management of infusion reactions is similar between practices. Additional studies of the impact of infusion reactions are suggested by the authors, as well as a heightened awareness for the need for education and support of patients, families, nurses and staff (Colwell, et al., 2007).

**Effect of Stress on Health**

The effect of stress on nurses' health and perception of health has been studied in various settings. It is important to understand the effects of job stress on health in order to keep a vibrant workforce.

Job-related stress and nurses’ response to it may be varied in nursing subspecialties. One study evaluated job-related stress, mental and physical symptoms and the association of those factors with specific nursing subspecialties (Kawano, 2008).

Full-time nurses at four acute care hospitals in urban Japan were requested to complete an anonymous questionnaire. A total of 1,737 nurses responded, of which 48 were male and 1551 were female. The male respondents were excluded from the analysis due to a small number. Of the remaining 1551 responses, 100% were female, with a mean age of 31.4 years and mean nursing experience of 9.4 years. Thirty-three percent
were married, 94.5% were registered nurses and 74.6% worked rotating shifts. The respondents worked in six different subspecialties as follows: 457 in surgery, 327 in internal medicine, 232 in surgery and internal medicine, 233 in intensive care units (ICU), 92 in operating rooms and 220 in outpatient clinics (Kawano, 2008).

The survey included demographic questions and the Brief Job Stress Questionnaire. The six demographic factors evaluated were age, gender, marital status, license, work shift, and years of nursing experience. The Brief Job Stress Questionnaire evaluates chronic job-related stress by assessing quantitative overload, qualitative overload, physical load, workplace environment, job control, skill discretion, job fitness, interpersonal relationships, supervisory support, coworker support and family/friends support. This questionnaire also evaluates six psychological and somatic symptoms by evaluating vigor, irritability, fatigue, anxiety, depression and somatic symptoms. Physical load scale was excluded due to a lopsided distribution that was attributed to floor effect (Kawano, 2008).

Job-related stress factors were evaluated for their association with mental and physical symptoms, adjusted for age, marital status, license and work shift for the entire sample of nurses. The symptom of vigor was most obviously associated with higher scores in job control, job fitness and interpersonal relationships, supervisor support and coworker support. The symptom of irritability was most obviously associated with lower scores in job fitness and interpersonal relationships. The symptom of fatigue was most obviously associated with higher scores in quantitative and qualitative overload, lower scores in job control and job fitness. The symptom of anxiety was most obviously associated with higher scores in quantitative and qualitative overload and lower scores in
job control. Depression was most obviously associated with lower job control and job fitness and poorer interpersonal relationships and supervisor support. Somatic symptoms were most obviously associated with higher scores in quantitative overload and lower scores in job fitness and interpersonal relationships. All of these reported associations were significant at p<0.001 (Kawano, 2008).

Mean scores of each of the subscales of the Brief Job Stress Questionnaire by specialty area were compared using analysis of variance and Bonferroni’s test for multiple comparisons. The findings were as follows. Nurses in the outpatient setting had significantly lower quantitative overload than any other department. They also had significantly lower qualitative overload than surgery, internal medicine and surgery and internal medicine. In addition, outpatient nurses also had significantly higher score for interpersonal relationships than surgery, and internal medicine. ICU nurses had significantly higher qualitative overload than any other department and significantly lower interpersonal relationships than surgery, and surgery and internal medicine, and the outpatient clinic. They also had significantly higher workplace environment score than those in the outpatient setting and significantly higher scores in skill discretion than the outpatient clinic nurses. Nurses in surgery and internal medicine had significantly lower scores in workplace environment than any other department. Surgery nurses had significantly higher scores in supervisor support than those in internal medicine.

Operating room nurses had significantly lower scores of job control and job fitness than any other department (Kawano, 2008).

In evaluating psychological and somatic symptoms, operating room nurses had significantly lower vigor scores than those in surgery and the outpatient areas. Internal
medicine had significantly higher irritability scores than ICU and the outpatient areas. Nurses in the outpatient setting had significantly lower scores in fatigue than all other areas but ICU, significantly lower anxiety scores than all other areas than the operating room and significantly lower depression scores than any of the other areas. The ICU had significantly lower fatigue scores than the operating room. Surgery and internal medicine had significantly higher scores in somatic symptoms than the nurses in the outpatient setting (Kawano, 2008).

In addition, the data were evaluated for associations between departments and psychological and somatic symptoms and between departments and job-related stress factors with symptoms, using multiple linear regression analysis. This data analysis revealed that working in the operating room was significantly associated with higher scores in fatigue and depression and a lower vigor score. Working in surgery and internal medicine or the ICU was associated with higher anxiety (Kawano, 2008).

When adjusted for age, marital status, license, work shift and job-related stress factors, data analysis showed that working in the operating room was significantly associated with higher score of fatigue. Similarly, significantly higher scores of anxiety and depression were found in surgery and internal medicine and working in the ICU had a significant association of higher anxiety scores (Kawano, 2008).

Job-related stress factors associations with psychological and somatic symptoms were examined using multiple linear regression analysis. Quantitative overload was found to be significantly and negatively associated with vigor. Qualitative and quantitative overload were significantly and positively associated with fatigue, anxiety, depression and somatic symptoms. Interpersonal relationships, job control, job fitness,
supervisor support, coworker support and family/friend support were significantly and positively associated with vigor. Quantitative overload and skill discretion were significantly and positively associated with irritability while interpersonal relationships, workplace environment, job fitness and supervisors support were significantly and negatively associated with irritability. Interpersonal relationships, job control, job fitness, supervisor support and family/friend support were significantly negatively associated with fatigue and also depression. Job control, job fitness, and family/friend support were significantly negatively associated with anxiety. Finally, interpersonal relationships, workplace environment, job control, job fitness, supervisor support and family/friend support were significantly and negatively associated with somatic symptoms (Kawano, 2008).

The authors concluded that there are varied associations between different nursing specialties and job-related stress factors with psychological and somatic symptoms. This information is useful in determining workplace procedures and design that would improve mental and physical health of nurses based on the demands of their specific nursing specialty. The findings of associations of job-related stress and symptoms as analyzed in this study were, largely, consistent with other studies. Future research to explore the causal relationships between job-related stress and somatic symptoms using a longitudinal design is suggested as well as seeking a sample with more diversity than in this study (Kawano, 2008).

Stress is thought to be a risk factor for suicide and another study prospectively examined the association between nurses reported stress at home and at work, use of diazepam and risk of suicide (Feskanich, et al., 2002).
The sample consisted of nurses utilized for the Nurses’ Health Study. This study began in 1976 with 121,700 married female registered nurses between the ages of 30 and 55. Every two years, the participants were mailed follow up questionnaires. In 1980 and 1982, questions on stress and diazepam uses were included on the questionnaire. The population utilized in this study was 94,110 women who responded to the 1982 survey. At the time of the survey, 76% of the women worked outside of the home and among the employed women, 90% worked in the nursing profession (Feskanich, et al., 2002).

The Nurses’ Health Study questionnaire asked demographic questions and questions related to smoking status, quantity of cigarettes per day among current smokers, coffee consumption, alcohol intake and marital status. In addition the women were asked questions about diazepam use and their experience of stress at home and at work. Death data were collected as reported by relatives, postal authorities or from a search on the National Death Index. As of June, 1996, 8505 (7%) of the cohort had died and 166 of the deaths were suicides. Of the 166 suicides, 110 occurred after the 1982 survey. Seventy-three of these responded to the 1982 survey (Feskanich, et al., 2002).

Suicide incidence rates were evaluated for each variable of home stress, work stress and diazepam use. The relative risk was determined as an age adjusted incidence rate and was also adjusted for confounding variables, including smoking status and amount, coffee consumption, alcohol intake and marital status. Eighteen percent of suicide cases reported severe home stress and 21% reported severe work stress while the non-suicide cases reported only 8% and 14% respectively. The use of diazepam was higher among suicide cases (14%) than in non-suicide cases (3%). Interestingly, the
amount of suicide cases that reported minimal stress at work was higher (17%) than the non-suicide cases (10%) (Feskanich, et al., 2002).

Each reported characteristic's association with the level of home stress, work stress and diazepam use was evaluated also. The study found that older women were more likely to report minimal stress at home but also reported higher diazepam use. Age was not shown to be related to work stress. Those who reported a heavy smoking habit (25 or more cigarettes per day) had higher percentages of stress at home or at work. Those who reported high coffee consumption (2 or more cups per day) were slightly more likely to report higher work stress and lower diazepam use. Consumption of more than 25 grams of alcohol per day was associated with severe levels of home stress and diazepam use. Divorce and diazepam use were associated with higher levels of home and work stress (Feskanich, et al., 2002).

Associations between work and home stress and diazepam use were evaluated. In the category of home stress, relative risk (RR) was significantly increased in all categories; however severe home stress had the highest RR for suicide (3.7). Minimal and severe work stress was associated with elevated RR (2.4 and 1.9, respectively). Incidence of suicide was highest among those who reported severe stress in one of the categories of work stress and home stress, combined with a moderate or severe ranking in the other stress category. This risk was higher than severe home stress or severe work stress alone (RR= 4.9). Relative risk among the diazepam users was also highly associated with suicide (4.9). Those that reported diazepam use greater than 3 years had a slightly higher RR than those reporting shorter duration of use (5.2 vs 4.1) (Feskanich, et al., 2002).
Overall the factors of home stress, work stress and diazepam use were found to be independent contributor to the risk of suicide. The association was U-shaped between stress and suicide, where suicide risk was higher in the minimal and severe categories for both home and work stress (Feskanich, et al., 2002).

This study was unique in the use of historical data in providing prospective research on the impact of stress on suicide risk. The researchers found that severe levels of stress at home or work were associated with higher risk of suicide. Other factors, such as divorce and use of diazepam also made significant increase to the RR for suicide. The authors suggest further research be done on this topic focusing on a more extensive evaluation of stress (Feskanich, et al., 2002).

Job stress has significant impact on the health of workers and further research is warranted in this area. Research has identified a relationship between stress and the function of the endocrine and reproductive systems. This could be of significant impact in nursing which is a female-dominated profession in most nations. One study set out to investigate whether menstrual irregularity and abnormality were associated with perceptions of work stress among nurses (Lin, et al., 2007).

The population consisted of nursing staff working in five psychiatric hospitals and four general hospitals in Taiwan. Nurses were included in the study if they were female, between the ages of 20 and 45 years and had worked for at least three months. A total of 746 questionnaires was used for the final analysis. The mean age of the sample was 29.6 years. Mean length of employment was 7.5 years. Average worked hours per week was 41.3. Sixty-nine percent held associate degrees and the remainder held bachelor degrees.
A majority of the participants were unmarried (42.2%) and 35.3% had a history of pregnancy (Lin, et al, 2007).

Logistic regression analysis was used to evaluate the relationship of risk factors for menstrual problems among the nurses. It was found that high levels of perceived job stress were significantly associated with irregular menstrual cycles and longer menstrual bleeding time. Being single, never having been pregnant or employment less than 5 years was associated with longer and more irregular periods. Irregular menstrual cycle was more likely to occur in those nurses that worked more than 40 hours per week (Lin et al, 2007).

After adjusting the results by evaluating the variables simultaneously in a combined regression model, it was found that only those who perceived a high level of job stress had a significant risk of irregular menstrual cycles, and longer menstrual bleeding time (Lin, et al., 2007).

The data also revealed a higher prevalence of job stress in nurses when compared to data available regarding other domestic, female work groups. This study indicates that menstrual problems may be associated with high levels of perceived job stress. Since menstrual patterns are an indicator of reproductive health, the impact of nurses’ stress warrants further study. The researchers suggest further research to include retrospective data and laboratory measures for a greater understanding (Lin, et al., 2007).

The relationship between job stress, coping methods demographic characteristics and health was investigated by Chang, et al. (2006). The aims of this study were to: (a) evaluate the relationships between role stress, ways of coping, demographic characteristics and physical and mental health, (b) identify which of the independent
variables (job stress, coping mechanisms, and demographic characteristics) were most likely to predict physical health in nurses and (c) identify which of the independent variables (job stress, coping mechanisms, and demographic characteristics) were most likely to predict mental health in nurses.

Nine hundred registered nurses listed on the New Wales Nurses Registration Board in Australia were randomly selected to be invited to participate in the study. Nurses included in the study had a current license to practice in New South Wales and were currently working in an acute care public hospital. Of the nurses requested to participate, 320 (36%) returned surveys. Ninety-one percent of the sample were female, 70% were married and 58% had children. Those working full time comprised only about half of the sample (49%). The majority of the sample was staff nurses (79%) and 17% were in supervisory/managerial positions. Sixty-four percent of the participants were born in Australia, 17% in the UK, 8% in Asia, 6% in Europe and 2% in New Zealand. About half (51%) reported some likelihood of leaving nursing within 12 months and 20% reported a plan to leave their job within 12 months (Chang, et al., 2006). Average age was 42.59 years, average years working in current unit was 7.72 and average annual household income was $77,380. The average number household inhabitants was 3.42.

Demographic information was gathered using a Demographic Data Questionnaire, which asked sex, age, number of those living in household, years worked as a nurse, years worked on current clinical unit, plans to leave current nursing position and estimated income. The Nursing Stress Scale evaluated stressful situations that commonly occurred on the unit consisting of 7 subscales: (a) death and dying, (b) conflict with physicians, (c) inadequate preparation, (d) lack of support, (e) conflict with nurses, (f)
workload, and (g) uncertainty about treatment. Higher scores on the Nursing Stress Scale correlate with a higher frequency of stressful situations. The Ways of Coping Questionnaire assessed eight possible ways of coping: (a) confronting, (b) distancing, (c) self-controlling, (d) seeking social support, (e) accepting responsibility, (f) escape-avoidance, (g) planful problem solving, and (h) positive reappraisal. High scores on the Ways of Coping Questionnaire correlate to an often used coping skill. To evaluate physical and mental health, the SF-36 Health Survey (Version 2) was utilized. This tool measures nine health concepts: (a) limitations in physical activities due to health issues, (b) limitations in social activities due to physical or emotional issues, (c) limitations in usual role activities due to physical issues, (d) physical pain, (e) general mental health, (f) psychological distress or well-being, (g) limitations in usual role activities due to emotional issues, (h) vitality (energy versus fatigue), and (i) general perception of health (Chang, et al., 2006).

Descriptive statistics of the Nursing Stress Scale revealed that the most common reported stressors (in order from most common) were workload, death and dying, uncertainty about treatment, and conflict with physicians and nurses. Lack of support and inadequate preparation were the stressors that were reported the least. The most commonly reported coping methods utilized were planful problem solving, self-control and social support and the least reported coping method was distancing. The mean for the physical health score was 50.87 which is close to norms established in the general population within the United States (50). The mean for the mental health score was slightly lower (more than one half a standard deviation) than the United States norm of 50.
Physical and mental health scores were correlated to the responses to demographics, Nursing Stress Scale and Ways of Coping Questionnaire. Physical health was significantly and negatively correlated with increasing age, and more years worked as a nurse. Mental health was significantly and negatively correlated with plans to leave current job. Higher frequency of stress related to death and dying, conflict with physicians, conflict with other nurses, workload and uncertainty about treatment was significantly and negatively associated with physical health. All of the subscales of the nursing subscale were significantly associated with reduced mental health. None of the coping mechanism subscales were associated with physical health, and none were associated with better mental health. Coping strategies that were significantly associated with diminished mental health were confrontational coping, self-controlling, accepting responsibility and escape avoidance (Chang, et al., 2006).

Stepwise regression was utilized to understand the unique relationship the demographic, stress and coping mechanism variables had with physical and mental health. In this analysis, age was found to be the only significant individual predictor of reduced physical health. Mental health scores were significantly higher for those with more years on the unit and the coping mechanism of distancing. Mental health scores were significantly lower for the coping factors of escape-avoidance and self controlling. Mental health scores were also lower with higher frequency in the Nursing Stress Scale subscales of lack of support and workload.

The researchers concluded that although correlations were seen between age and some stressors common to nursing, the only correlation found to be significant when controlling for other variables in stepwise regression was with age. However, certain
workplace stressors, ways of coping and demographic characteristics were correlated with mental health changes in the sample. Many of the relationships revealed were significant but had low statistical strength. The researchers suggest exploring some of the significant relationships in future studies to establish causality as well as examining the relationships between organizational factors and mental and physical health (Chang et al., 2006).

**Stress and Coping Mechanisms**

As the stress of working in the nursing profession is well-documented, there are also studies that have recognized that some nurses are more stress resistant than others. Boey (1999) explored the effect of personality, coping and family support on the ability of a nurse to adapt to stress. The purpose of this study was to examine the relationships of specific factors such as personality characteristics, coping strategies and social support on the mental health of nurses. The framework used is based on Kobasa’s hardiness concept which proposes that “hardy” individuals cope with stress better than “nonhardy” individuals, as defined by personality components that determine “hardiness” (Boey, 1999).

The study population included 1043 of the 1355 nursing staff from the three main public hospitals in Singapore. All 1355 of the nursing staff were invited to participate, and there was a 77% response rate. The sample included 371 assistant nurses, 532 staff nurses and 121 nursing officers, while nineteen respondents did not report their status. Ninety-four percent of the study sample was female, the average age was 33.8 years and the average length of service was 15.8 years (Boey, 1999).
Personality, family support, mental health, stress and coping were measured using seven instruments. The subjects’ perceived control over their lives was measured using an abbreviated version of Rotter’s Locus of Control Scale. Reliability evaluation was found to be satisfactory (Cronbach alpha = 0.72). Assessment of personality type (Type A versus Type B) was completed by the Type A Behavior Scale which, when tested for reliability was acceptable with a Cronbach alpha of 0.74. A Self-Esteem Scale measured the subjects’ level of self esteem and was found to be reliable (Cronbach alpha = 0.82). The Family Relationship Scale measured satisfaction with family relations and was utilized in this study to measure family support. It was proven reliable when tested in this study with a Cronbach alpha of 0.84. A General Health Questionnaire was administered to measure the mental health status of the subjects and was found to be reliable (Cronbach alpha = 0.81). The aforementioned measurement tools are well-established tools for stress research. Two tools were created specifically for this study. The Nursing Stress Inventory is a 78 item tool developed specifically for this study that measures the subject’s level of stress related to a description of stressful events commonly encountered by nurses. When tested for reliability, this tool was acceptable with a Cronbach alpha coefficient of 0.80. The Coping Strategy Scale was developed for this study to evaluate the subjects’ mechanisms of coping. Five subscales were created, each representing a mechanism of coping. For two of the subscales, reliability measurements were acceptable, with a Cronbach alpha greater than 0.70 but for the additional three subscales, reliability was marginal, with Cronbach alpha values ranging from 0.60 to 0.64 (Boey, 1999).
The results of the study illustrated that stress resistant nurses were more likely to have higher perceived internal locus of control and higher self-esteem. Although the researchers expected those with Type B personality patterns to be more stress resistant, the data revealed that, actually, this did not affect stress resistance. Nurses that tended to cope by using behavioral and cognitive efforts to deal with threats were more likely to be stress resistant than those who used avoidance techniques to cope. Finally, nurses with more family support have a better mental health status than those with less family support (Boey, 1999).

Mindfulness-based stress reduction has been proposed as an intervention to decrease nursing stress and perhaps improve coping abilities, in turn, reducing nursing burn-out. Mindfulness-based stress reduction (MBSR) emphasizes self-care, compassion and healing and there is growing evidence that it is an effective intervention in patient care. The purpose of this study was to understand the use of MBSR in reducing nurse burnout and stress. The framework of relationship centered care was utilized (Cohen-Katz, et al., 2004). The quantitative and qualitative studies are summarized here.

Study participants were adult English-speaking and reading staff employed at a Pennsylvania hospital in a position with regular direct patient care. Staff members were excluded from the studies if actively suicidal or currently abusing substances. The study sample was divided into three cohorts. Two cohorts began the mindfulness-based stress reduction (MBSR) course in January of 2004 and the third cohort began MBSR in the fall of 2004. The participants in the first and second cohort had an average age of 46, were 100% female, 96% Caucasian and 65% were married. The sample had a mean of one child living at home and a mean of 21 years employment in health care. The average
length of employment at the hospital was 13 years with an average of 7 years in current position. Ninety percent of the participants were nurses. The participants in the third cohort had an average age of 47, 100% were Caucasian females and 81% were married. The average number of children living at home was one. The average length of time in healthcare was 23 years with a average of 12 years in their current position. Eighty-one percent of the participants in the third cohort were nurses (Cohen-Katz, et al., 2005).

For the qualitative portion of the study, data was collected using open ended questions in various venues, including “Getting to Know You” forms, weekly evaluations, final evaluation, e-mails, interviews and a focus group. The “Getting to Know You” forms asked open-ended questions of the study participants concerning challenges or stressors related to their home or work life, their mechanisms for relaxation, medical or mental problems and experiences of abuse. The weekly and final evaluations asked for general comments, learnings and challenges from the week’s lesson, description of importance, awareness and use of MBSR in the participant’s life. Sixteen unsolicited e-mails were received from seven participants, which were included in the qualitative data. One in-depth interview was completed by the hospital marketing department to market the program, asking the participants of MBSR open-ended questions about work, what was learned from the program and its effect on work and personal life. Two in-depth interviews were completed with the Vice President for Clinical Services asking open-ended questions regarding the motivation to support the program and impressions of the results of the program. Also an interview was completed with the nurse participant/observer to understand impressions of the program and the impact observed on colleagues. A focus group was conducted with 7 of 25 MBSR
graduates. The moderator, a MBSR trained physician asked open ended questions about experiences of change after the MBSR training. The responses were analyzed by the development of a 32-item codebook by the research team. This codebook was tested for validity in a process where each researcher coded five randomly selected interviews by hand. After this process was completed, the codebook was refined to a six item codebook, after which the principal investigator coded the responses (Cohen-Katz, et al., 2005).

Results were reported in relationship to the reasons for participating, challenges of participating, benefits of participating, impact on relationships, overall value and how to maintain practice over time. The top reason for participating in MBSR for nurses was family stressors (80%), with comments like “I’m parenting two teenagers, my mother is aging and lives with us, and my father died in the past year. Also, my eldest child is in Iraq.” The nurses’ top reasons for challenges to participation in MBSR were restlessness (52%), pain or medical issues (28%) and dealing with difficult emotions (20%). The benefits of the MSBR and impact of MSBR were divided into data collected during program and data collected post-program. In the early weeks of the program, reported benefits were improved relaxation, slowing down, increased sense of peace, and learning how to be in the present (Cohen-Katz, et al., 2005). Later in the program 14 of 25 nurses reported greater self-acceptance, self-awareness and self-care. Post-program data were collected from interviews with four of the participants and a focus group with seven participants. All interviewed reported an increase in patience, calmness and relaxation. Three of four interviewed reported increased confidence in their work. Five of the seven in the focus group reported improved ability to care for themselves, increased calmness
and confidence. Themes surfacing during the course related to impact of MBSR on relationships were: (a) the thoughts of hearing others stories as therapeutic, (b) an expressed worry for others and (c) improved communication in relationships. Post-program, emerging themes were feeling less reactive or defensive while being fully present in relationships, increased self-confidence, therapeutic presence, and increased empathy and appreciation. (Cohen-Katz, et al., 2005).

The mean overall value of the MBSR was rated as a 9.2 on a scale of 0 to 10. Maintenance of the practice of MBSR was encouraged by the development of informal networks in the hospital and focus groups requested various interventions to encourage the maintenance of long-term practice of MBSR (Cohen-Katz, et al., 2005).

For the quantitative portion of the study, a design method of a true experiment pretest-posttest was used with a control group of study participants on a waiting list for the MBSR program. The study groups were randomized. Burnout was measured by using Maslach’s Burnout Inventory, which measures emotional exhaustion, depersonalization and personal accomplishment using 22 self-reported Likert scale questions. Psychological distress was measured using the Brief Symptom Inventory, which is a 53 item self-reported Likert scale inventory of symptoms that reflect the psychological symptoms of the respondents. Mindfulness was measured using the Mindfulness Attention Awareness Scale, a 15 question self-reported Likert Scale inventory that assesses the extent to which the respondent is mindfully aware of the current happenings (Cohen-Katz, et al., 2004).

Both the treatment group and control groups were tested using the three instruments prior to the intervention of the MBSR training. Both groups were also tested
immediately after the treatment group completed the training. In addition, the treatment group was also assessed a third time, three months after the training. Analysis of the Mindfulness Attention Awareness Scale illustrated no significant difference between the control group and the treatment group prior to the intervention. Significant differences were found for both cohorts on the results of the Mindfulness Attention Awareness scale for the treatment group not only between the pre-intervention and the immediately post-intervention data but also between the pre-intervention and the three month post-intervention data (Cohen-Katz, et al., 2004).

There were no significant differences between the control group and the treatment group when comparing pre-intervention data from Maslach’s Burnout Inventory. After the intervention, the treatment group illustrated significantly lower scores related to emotional exhaustion when compared to the control group. Also, the scores related to reduced personal accomplishment were significantly reduced when compared to the control group. Depersonalization scores were lower in the treatment group when compared to the control group but were not found to be significant. Within the treatment group, over the three assessment times, there was a significant reduction in emotional exhaustion for both cohorts when comparing the pre-intervention data with both the immediate post-intervention data and the three-months post-intervention data. The first cohort trended to an increase in sense of personal accomplishment between the pre-intervention assessment and immediate post-intervention but this trend ended by the third assessment. There was no significant difference in this data. The second cohort trended toward significance when comparing the pre-intervention data related to personal accomplishment to the immediate post intervention and 3-months post intervention data.
The first cohort showed a trend to decreased depersonalization when comparing the pre-intervention data to the immediate post intervention and 3-months post intervention data. The second cohort had no significant change related to depersonalization (Cohen-Katz, et al., 2004).

There was no significant difference between the control group or the treatment group for reduction of psychological distress on the Brief Symptom Inventory. The treatment group showed a reduction from 25% experiencing elevated psychological distress pre-intervention to 8% post-intervention. The control group also had a reduced percentage of psychological distress pre-intervention and after the treatment group had completed the MBSR course (Cohen-Katz, et al., 2004).

MBSR is one technique for stress reduction for nurses and explores the concept of caring for self in order to care for others. Study results found that the impact of MBSR reached farther than expected and that further study of the effects of MBSR on nurses is warranted (Cohen-Katz, et al., 2005).

Team interactions have been explored as a factor in work performance and satisfaction in nursing. Cox (2003) studied the effect of intrapersonal, intragroup and intergroup conflict on team performance effectiveness and satisfaction. A synthesis of several conceptual models was used to guide the research. The model considered conditions that existed before conflict, such as personal variables, task structure and group composition as antecedents of conflict. Intrapersonal conflict, intragroup conflict and intergroup conflict interconnect and affect job stress and team performance. Job stress is correlated with work satisfaction and team performance affects job stress as well.
Registered staff nurses on 13 inpatient units at a 597-bed academic medical center in the southeastern United States were included in the study. Registered nurses that had been in their position less than 6 months were excluded in the sample. The sample consisted of 287 registered nurses (Cox, 2003). Demographic data were not published in the study.

Seven variables were measured utilizing various tools. Skill mix was measured by percentage of RNs in the total of nursing staff on participating units. Unit size was measured as the total number of beds staffed on the unit. Nurse managers provided this data. The Technology Scale measured unit technology, which incorporates multiple dimensions such as patient instability, variability and uncertainty. The items are measured on a 5-point Likert scale. Higher scores indicate a greater proportion of patients with conditions that are unstable, variable or uncertainty. Interpersonal conflict was measured using the Rahim Organizational Conflict Inventory I (ROCI-I). The ROCI-I measures intrapersonal, intragroup and intergroup conflict. It consists of 24 items, including 8 questions for each type of conflict. However, only the items that measured interpersonal conflict were used for this study. This tool has been measured for validity with a Cronbach’s alpha ranging from .78 to .85. Intergroup and intragroup conflict was measured using the Cox Conflict Scale, which consists of 28 items that are answered twice: once in relation to members of the participant’s immediate workgroup and once in relation to other groups or departments in the organization. The tools validity was measured in a pilot with 185 nurses and found to have a coefficient alpha of 0.94. The 6-item Team Performance Effectiveness Scale was used to evaluate team effectiveness. The participants are asked to rate the unit’s performance focusing on dimensions of
quality, efficiency, morale, spirit of teamwork, interpersonal relations, and willingness to help if the unit is understaffed. Cronbach’s alpha for this tool has been previously established at 0.88. Work satisfaction was measured using the Work Satisfaction Scale, which evaluates organizational satisfaction at all levels of the organization. Cronbach’s alpha for the scale has been reported to be 0.87 (Cox, 2003).

The antecedent variables of age, experience, tenure, number of beds, percent RNs and unit technology (defined as the amount of patient instability, variability of patient types and uncertainty between nursing intervention and patient outcome) were correlated to the outcome variables of interpersonal conflict, intragroup conflict, intergroup conflict, team performance effectiveness and work satisfaction. Age, education, and experience showed no significant effect on the outcome variables. Longer tenure had a significant correlation to increased intragroup conflict (p<0.05) and increased intergroup conflict (p<0.01). Skill mix with a higher percentage of RNs had a significant positive correlation to team performance effectiveness (p<0.05). Unit technology was significantly negatively correlated with work satisfaction (p<0.01) (Cox, 2003).

Each variable was measured for effect on the variables in the conceptual model. Age, education and experience were found to have no significant effect on the other variables in the model. It was found that tenure had a significant positive effect on intergroup conflict, skill mix with higher percentage of RNs had a positive effect on team performance and larger unit size had a positive effect on team performance. Higher perceptions of unit technology had a negative impact on work satisfaction. Higher interpersonal conflict had a positive effect on intragroup conflict and a negative effect on work satisfaction. High intragroup conflict had a negative effect on work satisfaction, a
positive effect on intergroup conflict and a negative effect on team performance. It was also determined that high intragroup conflict enhanced the negative effect of intrapersonal conflict work satisfaction. High team performance was shown to have a positive effect on work satisfaction (Cox, 2003).

The study results show significantly that intrapersonal conflict is correlated with increased levels of intragroup conflict and lower levels of work satisfaction. Intragroup conflicts are also associated with lower levels of work satisfaction and enhance the effect of interpersonal conflict on work satisfaction. In addition, high levels of intragroup conflict and low team performance enhance the negative effect of intragroup conflict on work satisfaction. With this knowledge, nurse managers should evaluate conflict in their units and intervene to reduce stress in the workplace and encourage team performance. It is recommended that replication of this study be completed with a larger and more diverse sample of nurses (Cox, 2003).

AbuAlRub (2004) was also interested in relationships between stress, job performance and coworker relationship and conducted a study to explore the effect of job related stress on job performance and to evaluate the effect of social support among coworkers on stress, job performance and the stress-performance relationship. A convenience sample of hospital staff nurses was acquired via contact through a variety of listservs. Nurses were included if they were working as hospital staff nurses for at least 6 months in the last 3 years. Of the 303 final participants in the study, 263 were from the United States and 40 were from outside of the United States. Of the American participants, 56.7% had associate degrees, 33.8% had diplomas, 9.5% had baccalaureate degrees. Their average age was 42.4 years old. A majority of the participants were
women (89.4%) and were married (70%). A majority of the participants had greater than 10 years nursing experience (66.9%) and 58.2% had greater than 15 years nursing experience. Staff nurses comprised 77.6% of the population and 50.2% worked day shift. A number of unit types were represented, including emergency, intensive care, medical-surgical, obstetrics-gynecology, operating room, pediatrics, psychiatry and others. The demographics of the 40 non-American nurses in the sample were similar in means and standard deviation. The majority had associate degrees (47.5%), 37.5% had diplomas and 15% had baccalaureate degrees. The average age was 39.5 years and most were married (77.5%) and women (77.5%). A majority of them had nursing experience between 6 and 15 years (62.5%) and 42.5% had nursing experience greater than 15 years. Staff nurses comprised 70% of the population and 35% of the nurses worked day shift. The unit types represented included the same as the American population but in addition renal units were represented (AbuAlRub, 2004).

Job-related stress was measured with the 34-item Nursing Stress Scale (NSS). To measure specific stressors related to patients and families, eight items from the Expanded Nursing Stress Scale (ENSS) were added to the NSS. The alpha coefficient for the entire scale in this study was .92. To measure job performance, the Schwirian Six Dimension Scale of Nursing Performance was used. This scale consists of 52 items that are measured by the participant using a 4-point scale and has consistently shown high reliability. For this study, the alpha coefficient for the entire scale was .95. Social support was measured with the McCain and Marklin Social Integration Scale which consists of eight items measured on a 5 point scale. It evaluates the social support that an
employee perceives from their coworkers. The alpha coefficient for this scale was .70 (AbuAlRub, 2004).

Pearson-Product Moment correlation between job stress, social support and job performance showed a significant negative relationship between job stress and social support. The data were analyzed with the entire sample and also with each sub-sample of American and non-American nurses. There was no significant difference between the two subgroups (AbuAlRub, 2004).

The effects of job stress and social support on job performance were tested using hierarchical regression analysis. The variables were entered to the equation based on theory of correlation to job performance. Background variables of age, gender, marital status, education, nursing experience, RN experience, unit, type of nursing care model, shift, time commitment, average number of patients cared for, number of friends at work and number of children at home were entered into the equation first to control for effects of these variables on job performance. Fourteen percent of the variation in job performance was explained by these variables. Job stress was then added to the equation and it was found that it did not have any affect on the variance explained by the background variables. The squared term of job stress was added to the equation next to evaluate for the presence of a nonlinear relationship between job stress and job performance. It was found that job stress had a negative relationship with job performance (p<.05) and the squared term of job stress had a positive relationship with job performance (p<.05) which indicates a U-shaped relationship between job stress and job performance. This is consistent with other studies on stress and job performance. A
2% net change in the explanation of variance was also discovered when squared term of job stress was added to the equation, which was significant (AbuAlRub, 2004).

The fourth step was the addition of the social support variable to the equation. A 3% increase in $R^2$ was noted, which was a significant net increase. This shows that perceived coworker social support enhances the perceived level of job performance (AbuAlRub, 2004).

The fifth step was the addition of the product of social support and stress to analyze the mitigating effect of coworker social support on the stress-performance relationship. This step resulted in a net increase in $R^2$ by 1%, which was insignificant (AbuAlRub, 2004).

The results supported the researchers’ hypotheses that nurses with high social support have low perceived job stress and that nurses with high social support have high job performance. However, the data did not support the hypotheses that those with high job stress had low job performance and that as stress increases, the nurses with high social support have better job performance. Overall, the importance of coworker social support was established in this study. Future suggested research includes replication of the study with a randomized sample from non-electronic source (AbuAlRub, 2004).

The effect of other variables on the stress level of nurses is an important area of study. Joiner and Bartram (2004) explored the role of social support and empowerment on work stress in Australian nurses.

The study sample consisted of 157 nurses working in a private hospital in Melbourne, Victoria. A majority of the respondents were female (97%). Clinical nurses comprised 70% of the sample, while 26% were nurse managers and 4% were nurse
educators. A slight majority of participants worked part-time (55%), while 37% were full-time and 8% were casual. The survey was distributed randomly to 600 nurses in the hospital. Five of the 157 returned questionnaires were omitted due to missing data (Joiner & Bartram, 2004).

Supervisor and co-worker support was measured with the social support scale developed by House and Wells. This instrument has been established with satisfactory reliabilities. Spreitzer’s 12-item scale was used to measure the four components of empowerment: meaning, competence, self-determination and impact. This tool has been used in health care settings extensively. Work-related stress was measured with a 15-item instrument developed by Kahn, Wolf, Quinn & Snoek. This tool has established satisfactory reliabilities in previous studies. It aims to identify sources of stress within main categories of role conflict, role ambiguity, work overload, work control and resource inadequacy (Joiner & Bartram, 2004).

Multiple regression analysis was used to evaluate the impact of supervisor support, co-worker support, meaning, impact, competence and self-determination on the stress variables of composite job stress, work control, role conflict/ambiguity, resource inadequacy and work overload. Findings were as follows. Supervisor support, coworker support, impact and competence were significantly negatively associated with the composite job stress score. In order to further understand the findings, each component of the composite job stress score was analyzed with the independent variables. This analysis showed a negative relationship between variables of supervisor support, coworker support, and impact with work control. Supervisor support, coworker support and self-determination were negatively associated with role conflict/ambiguity.
Supervisor support, co-worker support, competence and self-determination were negatively associated with resource inadequacy and supervisor support and coworker support were negatively associated with work overload (Joiner & Bartram, 2004).

The results of the study clearly suggest that social support from coworkers and supervisors as well as factors of empowerment help to mitigate the job stress nurses experience. The authors suggest implementation of processes or programs to enhance relationships and empowerment as strategies for reducing nurses’ job stress. Suggested further research includes exploration of other social support mechanisms and the effect of social support and empowerment on other outcome variables such as nursing absenteeism, retention or quality patient outcomes (Joiner & Bartram, 2004).

Summary

Nursing has been defined as complex emotional, physical and mental work (Rowe, 2003) and with a higher prevalence of job stress when compared to other female occupations (Lin et al, 2007). The expansion of the nursing role and increasing technologies in healthcare is only increasing the level of complexity (Krichbaum et al, 2007). Stress in nursing is caused by a myriad of components inherent to the work such as the emotional risk in caring for other humans, excessive paperwork, conflict, frequent interruptions, inadequate assistance, insufficient personal time and more (Krichbaum et al, 2007; Salmond, 2005; Omdahl & O'Donnel, 1999; Chang et al, 2006). Studies have found that stress in the nursing profession has affected many areas of focus such as professional commitment, absenteeism and organizational commitment. In the current healthcare environment, the retention of nurses in the nursing profession is paramount, but studies have shown that the stress they experience puts them at risk for burnout,
reduced occupational and organizational commitment (Omdahl & O'Donnel, 1999; Jamal & Baba, 2000). For instance, the role of nursing puts them at risk for becoming emotionally involved with those they care for which in turns has been found to have an effect on their sense of personal accomplishment, emotional exhaustion and occupational commitment (Omdahl & O'Donnel, 1999).

In addition, there is significant support within the literature that nurses’ mental and physical health is affected by job and home stress as well as factors within the profession that cause stress. Among the nursing population, higher stress levels are associated with physical symptoms such as menstrual irregularities, fatigue and other physical and psychosomatic symptoms (Kawano, 2008; Lin et al, 2007; Chang et al 2006). Mental health has been proven to be affected by increasing stress also, where job-related stress factors such as overload were associated with anxiety, depression, irritability and negative mood (Salmond, 2005; Kawano, 2008; Chang et al 2006). In fact, one study even places nurses with high job stress with higher relative risk of suicide (Feskanich, et al, 2002).

The literature review also identifies coping mechanisms or moderators that can mitigate or enhance the effect of stress and stressful situations in nursing. Factors such as personality, family support, coping styles, work group dynamics and learned stress management techniques can effect the ability to adapt to stress (Chang et al 2006; Boey, 1999; Cohen-Katz et al, 2004, Cohen-Katz et al, 2005; Cox, 2003). The effects of social support among work groups has been shown to be associated with lower perceptions of stress in one study (Joiner and Bartram, 2004) and a perception of increased job performance in another study (AbuAlRub, 2004). Even age, full-time status, years of
experience, case load, specialty and other variables have been found to effect stress in nurses (Salmond, 2005; Kawano, 2008; Chang et al 2006; Cox, 2003).
Chapter III

Methodology

Introduction

As the complexity of healthcare continues to exponentially increase, ensuring quality patient outcomes is a multi-faceted issue. Nursing has an essential role in the provision of quality care. Understanding the impact of stress on nursing performance and the factors that mitigate this stress is an important undertaking in the current state of healthcare. This study will evaluate these relationships. This chapter contains a description of the methods and procedures for the study.

Purpose

The purpose of this study is to examine the effect of the perception of job stress on staff nurses’ job performance. In addition, the study will investigate the effect of coworker social support on job stress, job performance and the stress-performance relationship.

Research Questions

The research questions explored by this study are: (a) do nurses with a perception of high social support have reduced job stress; (b) do nurses with high social support have high job performance; (c) do nurses with high job stress have low job performance;
and (d) as job stress increases, do nurses with high social support perform better than nurses with less social support?

Population, Sample and Setting

The population will be Idaho nurses working in direct patient care in hospital settings. The sample will be from across the state of Idaho. The convenience sample is expected to be one-third of those nurses that meet criteria and are mailed the questionnaire. Criteria for participation include holding a current license as a registered nurse in the state of Idaho and working as a hospital staff nurse for at least 6 months out of the last three years.

Protection of Human Subjects

Institutional Review Board approval will be obtained through Ball State University. Participants’ rights will be protected. Privacy and confidentiality will be protected. The questionnaires will not ask for the participant’s name, address, or specific work place. No personally identifiable data will be published. Participation in the study will be entirely voluntary. The research proposed involves no risk to subjects. There is little prospect of any direct benefit to the research subjects, but the knowledge gained from the study is generalizable to further the understanding of nursing stress, job performance and the impact of social support. Ultimately, this understanding could benefit the nursing community as evidence for improvement in the nursing work environment. Cover letters will be included with the research questionnaire that will describe the provisions for protection of subjects’ rights and the risks and benefits to the participant. Consent to participation will be implied by the return of the questionnaire.

Procedures
After IRB approval, the executive director of the Idaho State Board of Nursing will be contacted to review the research plan, including the purpose of the study, and plan for protection of human subjects. A timeline will be established and approval sought from the executive director. A mailing list of hospital staff nurses will be obtained from the State Board of Nursing and questionnaires will be mailed with a cover letter and a self-addressed, stamped envelope for return of the questionnaire. A designated date will be established for return of the questionnaire in order to be included in the study.

Instrumentation

Perceived job stress will be measured using the Nursing Stress Scale (Gray-Toft & Anderson, 1981) plus one subscale consisting of eight questions from the Expanded Nursing Stress Scale that evaluate stress related to patients and families (French, et al., 2000). Job performance will be measured using the Schwirian Six-Dimension Scale of Nursing Performance (Schwirian, 1978). Social support will be measured using the McCain and Marklin Social integration scale (McCloskey, 1990).

The Nursing Stress Scale is a 34-item developed in 1981 by Gray-Toft and Anderson. The purpose of the tool was to provide a way of measuring nurses’ stress experienced in the hospital environment. It was based on interviews with physicians and nurses to identify potential stressors (Gray-Toft & Anderson, 1981). The seven major subscales measure situations that have been identified as producing stress for nurses are: (a) death and dying (7 questions), (b) conflict with physicians (5 questions), (c) inadequate preparation (3 questions), (d) lack of support (3 questions), (e) conflict with other nurses (5 questions), (f) workload (6 questions) and (g) uncertainty concerning treatment (5 questions). Reliability was established for test-retest and internal
consistency. The test-retest coefficient for the entire scale was 0.81. Test-retest reliability for each of the subscales ranged from 0.42 and 0.86. Internal consistency for the entire tool was established with Spearman-Brown coefficient (0.79), Guttman split-half coefficient (0.79), coefficient alpha (0.89) and standardized item alpha (0.89). The measurement of internal consistency for all the subscales except two exceeded 0.70 in all reliability tests (Gray-Toft & Anderson, 1981). The validity of the tool was established by evaluating its correlation to other criteria that has been established as theoretically related to stress. The tool was correlated significantly to trait and state anxiety scores as established by the administration and comparison of the IPAT Anxiety Scale Questionnaire and the Affect Rating Scale. It was also theorized that nurses that reported high stress would also report lower job satisfaction and would have higher turnover. There was not a significant correlation between the tools evaluation of job stress and job satisfaction but the data did support the hypothesis that nursing areas with higher stress scores had higher turnover. The tool was also evaluated by administering the tool to registered nurses and nursing assistants, theorizing that the nursing assistants would score lowest. This theory was also supported.

An additional subscale from the Expanded Nursing Stress Scale will be utilized in this study. The Expanded Nursing Stress Scale was developed in 2000 in order to evaluate more sources of nursing stress to expand its relevance outside of hospital nursing and as a reflection in changes in sources of nursing stress since the original Nursing Stress Scale was developed (French, et al., 2000). The addition of the subscale of the Expanded Nursing Stress Scale evaluates stressful situations related to interactions with patients and families using 8 questions. This subscale has been evaluated for
reliability with a Cronbach’s alpha of 0.87 (French, et al., 2000). The subscale also has
significant validity (P< .001) when correlated to measurements of overall life stress in a
one-tailed and two-tailed test. The Nursing Stress Scale and Expanded Nursing Stress
Scale are administered with responses on a 4-point Likert scale.

The Schwirian Six-Dimensional of Nursing Performance was established by
Schwirian in 1978 as a valid, reliable tool to evaluate nursing performance. The tool
consists of 52 questions in 6 subscales: (a) leadership (5 questions), (b) critical care (7
questions), (c) teaching/collaboration (11 questions), (d) planning/evaluation (7
questions), (e) interpersonal relations/communications (12 questions), and (f)
professional development (10 questions). Cronbach’s alpha was computed for each of
the six subscales and range from 0.844 to 0.978, attesting to high reliability of the tool
(Schwirian, 1978). Validity was established via expert consensus, including the
researchers, consultants and pilot responders. The consensus was that the behaviors
evaluated in the tool described the nursing behaviors that contributed to nursing care of
the patient.

The McCain and Marklin Social Integration Scale measures social support using
eight questions that evaluate relationships between coworkers. The questions are
measured on a 5-point Likert scale where 1 is strongly disagree and 5 is strongly agree
(McCloskey, 1990). This scale was created for a 1990 study evaluating job contentment
and has consistently proven reliability with alpha coefficients above 0.70 (McCloskey,
1990; AbuAlRub, 2004; AbuAlRub, 2006)

Research and Design
The study will be conducted utilizing a descriptive correlational design. Descriptive correlational study designs investigate the relationships that exist in a situation and allow for understanding of many interrelationships within the situation (Burns & Grove, 2005). The research variables will be nurses’ job stress, nurses’ job performance and coworker support.

Data Analysis

Pearson-product moment correlation will be used to evaluate research question (a) (do nurses with a perception of high social support have reduced job stress). Pearson-product moment calculations are used to evaluate the degree of linear relationship between two variables (Burns & Grove, 2005).

Hierarchical regression analysis will be used to evaluate research questions (b), (c) and (d) (do nurses with high social support have high job performance; do nurses with high job stress have low job performance; and as job stress increases, do nurses with high social support perform better than nurses with less social support?). Hierarchical regression analysis is used when multiple variables may affect the dependent variable in the equation. It allows the researcher to understand amount of variation caused by each variable (Burns & Grove, 2005). For this study, background variables of age, sex, marital status, education and nursing experience will be loaded initially in order to control for the effect of these variables on job performance. Then each additional variable of job stress and social support will be entered into the equation. Lastly, the product of the social support and stress data will be entered into the equation.

Summary
Increasing the understanding of knowledge regarding nursing stress, its effects on the nursing workforce, including job performance and identifying factors that mitigate the effect of stress is an important undertaking in today’s healthcare environment. This study will add to that knowledge by evaluating the relationships between nurses’ job stress, job performance and social support. The sample will include staff nurses working in Idaho hospitals. After institutional review board approval, questionnaires will be mailed to potential candidates for inclusion in the study. Participation is voluntary. Confidentiality of the participant’s information will be maintained. The study will use a descriptive correlational design. Results will be shared with the Idaho State Board of Nursing to provide direction for future research and distribution to state hospitals.
References


