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Examination of Percieved Stress and Coping Mechanisms Among Midwest, Undergraduate, Bachelor of Science Nursing Students

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EXAMINATION OF PERCEIVED STRESS AND COPING MECHANISMS AMONG
MIDWEST, UNDERGRADUATE, BACHELOR OF SCIENCE
NURSING STUDENTS

by

Seth T. Dorman
Bachelor of Science, University of North Dakota, 2006

A Thesis

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Master of Science



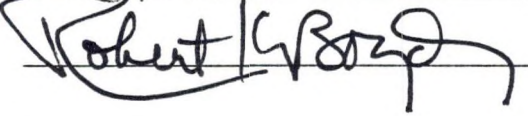
Grand Forks, North Dakota

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Chairperson



This thesis meets the standards for appearance, conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

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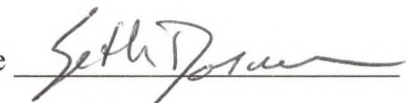
Title Examination of Perceived Stress and Coping Mechanisms Among
Midwest, Undergraduate, Bachelor of Science Nursing Students

Department English

Degree Master of Science

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ABSTRACT

Stress is a concept that affects everyone and has been linked to increased incidences of depression and anxiety as well as causing a variety of physical symptoms. College students have been shown to be at an increased risk for higher levels of stress. While studies have been conducted looking at stress levels and causes of stress in undergraduate nursing students in other countries, very few of these studies have been conducted on a population of students within the United States. The purpose of this study was to examine variables that affect levels of stress in undergraduate Bachelor of Science nursing students from an accredited Midwestern nursing college. This study looked at perceived levels of stress in terms of demographic variables, physical and mental symptoms of stress, sources of stress, and coping mechanisms.

A questionnaire was developed by combining previously developed surveys on stress. Surveys integrated into the questionnaire included the Life Stress Questionnaire, brief COPE, and Psychological Stress Measure. The instrument measures stress symptoms, perceived levels of stress, sources of stress, and coping mechanisms. The survey was administered to students in three different semester levels within an accredited undergraduate school of nursing school in a Midwestern setting.

The results of this study revealed that stress has a significant impact on the lives of nursing students. A statistical significant association of increased age and higher levels of stress was found. School exams were found to be the largest source of stress followed

by paperwork, clinical, and not enough money. The group with higher levels of stress reported using the following coping mechanisms to a significant degree: substance abuse, behavioral disengagement, venting, and self-blame.

The results of this study are helpful to better understand stress in baccalaureate nursing students. A better understanding of the variables that affect stress levels may help faculty implement interventions to reduce stress. Results may increase student awareness of sources of stress and coping mechanisms that have potential to decrease stress and improve the students' physical and mental health.

CHAPTER I

INTRODUCTION

Stress is an abstract concept that is perceived in many different ways. It is something that affects everyone's life in some way. It has been directly linked to an increased incidence of depression and anxiety (Chevins, 2001). Many physical symptoms can be manifested due to increased levels of stress and the inability to cope with stress effectively. Stress affects everyone; however, college students have been shown to be at an increased risk due to the stressors of school performance, finances and the developmental transition occurring during this time period. Stress has been linked to increased dropout rates among college students and physical and mental illnesses (Bray, Braxton, & Sullivan, 1999). Nursing students experience a large amount of stress related to the demands of a rigorous curriculum. When surveying nursing students on causes of stress, Timmins and Kaliszer (2002) found that academic factors were the number one cause of stress.

Background and Significance

Stress is a topic that has several implications and meanings. It has been shown to cause: (a) physical symptoms including frequent headaches, fatigue, constipation, diarrhea, and problems with urination; (b) increased use of alcohol, food and drugs; and (c) withdrawal from family and friends, irritability, hostility, feelings of nervousness, anxiety, and feelings of inadequacy (Thompson & McKinney-Cull, 1995). Many physician visits every year can be attributed to physical symptoms caused by stress.

Millions of healthcare dollars are spent every year on testing and treating symptoms of stress.

While studies have been conducted looking at stress levels and causes of stress in undergraduate nursing students in other countries, very few of these studies has been conducted on a population of students within the United States (U.S.). A review of the literature revealed that the vast majority of studies were conducted on samples of nursing students in Europe. The results of the studies are beneficial but may not be generalizable to populations within the United States, where there are differences in nursing programs as well as cultural differences within the population.

Nursing degrees come with various levels of educational training. The terminology for the different nursing degree levels is not universal. The current levels of U.S. nursing degrees are: Licensed Practical Nurse (LPN), Associates Degree in Nursing (ADN), and a Bachelor of Science in Nursing (BSN). The LPN degree takes between 1-2 years to complete, the ADN takes about 2-3 years, and the classic BSN degree requires a minimum of 4 years.

Most, if not all studies conducted examining undergraduate nursing stress has been done on students attending either two or three-year nursing programs. No studies were found that have focused on students attending a BSN program. Rhead (1995) found a significantly increased level of stress in nursing students earning their nursing degree from a three-year program versus a two-year program. The study was conducted on students in the three year diploma nursing course and those attending a two-year registered general nurse program. Inferring those results, students attending BSN

programs could be at an even higher risk of increased stress due to the increased length of time in the program and increased academic demands.

Purpose

The aim of this study is to identify and examine the variables that affect levels of stress in undergraduate Bachelor of Science nursing students from an accredited Midwestern nursing college. It has been widely accepted that college students, including nursing students, experience a large amount of stress. High levels of stress can lead to many negative outcomes, including physical symptoms of stress and increased rates of dropout. When examining why student nurses dropout of school, it has been found that high stress levels play a major role (Last & Fulbrook, 2003).

A better understanding of the variables that affect stress levels could help faculty implement interventions to reduce stress. Programs could be implemented to assist students in coping with stress as well as finding ways to reduce the number and intensity of stressors that affect undergraduate nursing students. It would also be useful for students to understand sources of stress, along with possible coping mechanisms, to help keep their levels of stress under control to improve overall physical and mental health.

Theoretical Framework

Several nursing theories would be appropriate for the concept of stress. Stress plays a large role in the Systems Model. The Systems Model was founded by Betty Neuman in the 1970s. It “is based on general systems theory and reflects the nature of living organisms as open systems” (Tomey & Alligood, 2002, p. 300). The model relates that each individual is in homeostasis with the environment and if it is knocked off its equilibrium and the individual stays in a state of disharmony for too long, illness may

develop. Neuman defines stress as a “nonspecific response of the body to any demand made on it” (p. 300). Neuman felt that too much stress, or the inability to deal with stress, could move the individual from a homeostatic state.

The core of the Systems Model is the basic set of survival factors. Around the core structure are several different lines of defense and resistance. These different defense lines consist of ways an individual handles, or defends against, stress. She defined the normal line of defense as being the “individual’s usual coping patterns, lifestyle, and developmental stage” (Tomey & Alligood, 2002, p. 302). Neuman’s Model focuses on the individual as a whole unit and how the person fights to keep in an equilibrium state. Interventions are focused on trying to reduce the amount of stress on the whole system, or increase the systems ability to handle stress.

Neuman defined a client’s environment as the external and internal forces causing an effect or being affected by the client at any time. The population being examined in this study is nursing students. Being a nursing student places each of the participants in the nursing school environment. This environment exposes students to an increased amount of external stressors, including academic and financial stress and social adjustments. Neuman describes each individual as having lines of defense. The lines of defense include coping patterns and abilities. Within this current study, students reported on coping mechanisms that are used to deal with stressors. As lines of defense are broken, Neuman relates that the client is at risk for illness.

Interventions can be implemented proactively to deal with stressors or to help an individual recover from a stressful experience that has already broken through their barriers of defense. This descriptive study ultimately identified areas of stress in

undergraduate nursing students and coping mechanisms. Students can use the information to understand sources of stress and to see common coping mechanisms. This information will be helpful for the student to develop coping strategies for areas that elicit high levels of stress. Increased coping abilities can help maintain an equilibrium state. Additionally, the information could be used by nursing faculty to implement interventions as primary prevention. Primary prevention helps to deal with identified stressors before they are able to cause an effect on the individual's system. These interventions will have the potential of helping nursing students to be able to better maintain harmony within the system and wellness.

Research Questions

The research questions to be addressed in this study are the following:

1. What are the perceived levels of stress related to selected demographic variables including age, gender, living situation, financial status, marital status, general employment status, number of credits currently taking, current academic level, and number of children?
2. What stress symptoms are experienced by students?
3. How does the student's perceived levels of stress relate to the causes of stress?
4. How does the student's perceived levels of stress relate to their coping mechanisms?

Definitions

The following definitions will be used for the purpose of this study:

Undergraduate nursing students: Individuals who are currently enrolled and taking classes in a Midwestern accredited Bachelor of Science in nursing program.

Coping mechanisms: Include “conscious or unconscious strategies or mechanisms that a person uses to cope with stress or anxiety” (Miller & Keane, 1992, p. 356).

Perceived: Self-reported answers by members of the sample.

Undergraduate: A college student pursuing a Bachelor’s Degree.

Stress: Any physical, emotional, or mental change that affects the homeostasis of an individual. Stress affects individuals differently depending on their abilities to cope with the change or perceived change.

Accredited school: A college or program that has been certified as fulfilling certain standards by a national and/or regional professional association. Accreditation is a voluntary, privately managed process of peer evaluation of post-secondary education institutions and programs (American Association of Colleges of Nursing, 1996).

Midwest: “Region of the north central United States from Allegheny Mountains west into the Great Plains” (The American Century Dictionary, 1995, p. 362).

Assumptions

The study is based on the following assumptions:

1. Stressors are experienced by everyone and an increase or decrease in the amount or intensity of the stressors impacts the perceived level of stress at any given time.
2. Individuals adapt to stressors in a positive or negative way.
3. Stress levels are able to be quantified.
4. Participants will answer survey questions honestly and completely.

Limitations

The study will have the following limitations:

1. A convenience sample will be used, which limits the interpretation of the results and decreases the ability of the findings to be generalized.
2. The lack in cultural diversity of the sample decreases the ability of the results to be generalized.
3. The descriptive correlational methodology of the study does not allow causative relationships to be made.

Summary

The significance of stress and its impact on people's lives were discussed in this chapter. Stress has been shown to be present at an increased level among college students. The aim of this study was to identify and examine the variables that affect levels of stress in undergraduate Bachelor of Science nursing students from an accredited Midwestern nursing college. Results of this study can help to describe variables that affect stress within this sample population. Research questions for this study and definitions, assumptions, and limitations have been discussed within this chapter.

CHAPTER II

REVIEW OF LITERATURE

This chapter reviews the effects of stress on the body and some of the positive and negative outcomes of prolonged stress without proficient coping skills. Known outcomes of stress among general college students will be presented. Several research studies related to undergraduate nursing student stress will be examined. It is important to look at the methodological approach to each of the studies, as well as, the population being studied in order to consider how well the results can be generalized.

The definition of stress varies widely throughout the literature. In a medical dictionary, Miller-Keane (1992) defines stress as:

The sum of the biological reactions to any adverse stimulus, physical, mental, or emotional, internal or external, that tends to disturb the homeostasis of an organism. Should these reactions be inappropriate, they may lead to disease states. Just as a bridge is structurally capable of adjusting to certain physical stresses, the human body and mind are normally able to adapt to the stresses of new situations. However, this ability has definite limits beyond which continued stress may cause a breakdown, although this limit varies from person to person (p. 1422).

Stress is also identified as physical and psychological. Physical stress can be either emergency stress, which has been described as “a situation that poses an immediate threat” (Miller & Keane, 1992, p. 1422), or continuing stress. Psychological stress is a

perceived threat or stressful situation. “At times the person may not even be aware of the unconscious thought that produces this dramatic reaction (p. 1422).” Both of these types of stress cause a specific physiologic response by the body that increases alertness through an endocrine response.

Burns (1997) has a much broader definition of stress. He defines stress as being synonymous with change. He states that anything that causes change in a person’s life causes stress. Change could occur in one’s daily routine, body health, and be either positive or negative. He also feels that imagined changes are just as stressful as real changes.

Chevins (2001) relates that stress can be acute or chronic, and is brought on by internal or external stressors. Examples of external stressors are pain, hot or cold temperatures, poor working conditions, and abusive relationships. Internal stressors include infections, inflammation, and intense worry. For the purposes of this study, the definition of stress will remain broad and be defined as any physical, emotional, or mental change that affects the homeostasis of an individual.

Effects of Stress

Stress is a topic that continues to be researched within the healthcare community and has been recognized by healthcare professionals for years; however, more recently it is being looked at in its relation to the physiology of the body. Increased levels of stress have been linked to several disease processes, including but not limited to, depression, anxiety, insomnia, and eating disorders. Stress continues to be a very difficult topic to study due to the difficulty in measuring stress levels. Stress is a perceived emotion that seems to become more of a problem when an individual has a lack of healthy coping

mechanisms to deal with the stress. For this reason, it is important to not only look at individuals' levels of perceived stress, but their coping mechanisms as well.

The body's response to stress can be both helpful and harmful. The stress response gives us the speed and strength to ward off an impending threat. As the stress response persists, however, it can lead to harmful effects and increase the risk for obesity, heart disease, cancer, and other illnesses. The National Institute of Child Health and Human Development (2004) suggest that stress causes the release of the stress hormones such as epinephrine, norepinephrine, and cortisol, which circulate in the blood and cause effects on many different organs and body systems. The stress response causes a more focused concentration, faster reaction time, increased strength and ability, and can be felt physically by heart pounding, mind racing, and breathing rapidly.

Stress becomes harmful when it doesn't let up and the amount of stress exceeds an individual's coping mechanisms. Stress can be prevalent through many factors such as finances, death, relationships, and expectations. If stress is chronic, many stress hormone levels remain high within the blood and continue to affect the body, which can become detrimental to the body.

The National Institute of Child Health and Human Development (2004) list several conditions linked to long-term stress, which include suppression of the reproductive system, decreased gastric acid secretion, increased incidence of depression, anxiety, and increased appetite leading to weight gain. Stress has also been shown to decrease immune function making an individual more susceptible to colds, flu, fatigue, and infections. It is theorized that these illnesses happen when a steady stressed state

causes continuous release of stress hormones decreasing the body's reserves and not allowing the immunological response that normally can be mounted by the body.

Stress Among College Students

It has been widely accepted that being a college student is a significant source of stress. College students have pressures that many other members of the population do not. Some stressors include peer relations, school performance, and finances. College students are also experiencing a developmental transition. Developmental transition occurs as students are now most commonly out of their parents' homes and pursuing their own future and career. Stress in college students has been shown to lead to increased dropout rates as well as being linked to the many health concerns described above (Bray, Braxton, & Sullivan, 1999).

A major stress in college students is academic pressure. Misra (2000) related that college students experience high levels of stress at predictable times each semester because of academic commitments, financial pressures, and a lack of time management skills. Academic stress was studied by doing cross-sectional surveys of full time students using random sampling. In the Misra study a total of 249 students returned the survey for a response rate of 42%. A second component to the study surveyed 200 faculty members on their perceptions of students' stress. The faculty response rate was 33.5%. The survey tool consisted of fifty-one Likert style questions that assessed five categories of academic stress including frustration, conflict, pressure, change, and self-imposed stress. Four categories also described reactions to stressors, which were physiological, emotional, behavioral, and cognitive. The items were summed to get a total score of all nine sub-categories. Cronbach's alpha for the categories ranged from 0.59 to 0.82. Questions were

asked on a scale from 1-5, with a higher score indicating greater stress and reactions to stress. Results showed that faculty felt that pressure was the greatest source of stress with self-imposed stress following it. The mean for each was 3.95 and 3.70 respectively. Identified categories of pressure that cause stress include: competition, meeting deadlines, and interpersonal relationships. Students' felt self-imposed stress ($M = 3.72$) was the largest source of stress with pressure ($M = 3.67$) following it. A t-test for self-imposed stress was 0.27 ($p = 0.76$) and was -3.51 ($p = 0.001$) for pressure. Female students and faculty members both had higher scores on self-imposed stress when compared to males. Misra (2000) found that coping methods commonly used included avoidance, religious and social support, and positive reappraisal.

As described earlier, stress has been linked to an increased rate of depression and anxiety. Andrews and Wilding (2004) found that college students had an increased rate of depression and anxiety and related it to the life stress of financial difficulties and other outside pressures, including serious personal illness or injury, serious illness or injury of close relative, death of a close friend or family member, separation in a steady relationship, serious problem with a close friend, serious legal problem, and something of value lost or stolen. The depression and anxiety have a direct negative affect on academic performance. This study shows how increased stress can become a vicious cycle. Stress increases the rate of depression and anxiety, which effect academic performance, both of which further increase the level of stress. From this research it seems clear that the cycle needs to be broken by some kind of positive coping mechanisms.

Kitzrow (2003) examined college students' mental health. She relates that there has been a marked increase in the number of students with serious psychological

problems on campus and the number of students seeking counseling services. A reviewed study conducted in 1998 found that students consistently presented with concerns as severe as suicidality, substance abuse, history of psychiatric treatment or hospitalization, depression, and anxiety. Reasons for the increase of psychological concerns that were discussed included divorce, family dysfunction, instability, poor parenting skills, poor frustration tolerance, violence, early experimentation with drugs, alcohol and sex, and poor interpersonal attachments. High levels of academic distress among college students were significantly related to academic performance. Those with high levels of distress experienced a higher test anxiety, lower academic self-efficacy, and less effective time management and use of study resources. The increase of psychological disorders among college students put them at increased risks of stress and worsening of their mental health conditions with the addition of academic stress.

Stress Among Nursing Students

The baccalaureate nursing curriculum is a very demanding program of study that has the potential to place a large amount of stress on the students enrolled. Demands of the program include a large amount of written paperwork, exams, and extensive clinical hours with hands-on learning time. Like other college students, those in nursing school experience stress, which puts them at risk for an increased dropout rate as well as mental and physical health issues.

A study done by Timmins and Kaliszer (2002) examined stress in 12 areas that are commonly reported to cause stress in nursing students. They performed this study by distributing a 12-item questionnaire to 110 third-year nursing students in Ireland. The factor analysis revealed that five main factors were sources of stress. These factors in

rank order include: academic stress factors, teaching-related staff relationships, clinical experience, financial issues, and death of patients. The authors did this study right before the restructuring of Ireland's nursing education programs. They recommended that educators include adequate support structures for clinical areas, including trying to develop supportive relationships with clinical staff and preceptorship programs, and to have student counseling services available.

Another study examined why students dropout of nursing school (Last & Fulbrook, 2003). The study used focus groups as well one-to-one interviews to gather views about why students leave. In the second stage of the study a questionnaire was developed from the themes raised in the interview phase. The questionnaires were given to a panel of expert student nurses in the form of a three-round Delphi Study. Using a consensus level of 75%, the expert student nurses expressed their views on why others had left the program. The results of the study showed that there was no single contributing factor that made students leave. Issues that were identified as factors that contributed to students leaving the program were communication and operational factors between the university and clinical areas, feelings of not being valued, unmet expectations, and stress. A limitation of the study was that ex-student nurses for ethical reasons weren't able to give their viewpoints.

Evans and Kelly (2004) examined stress experiences and coping abilities of student nurses. A survey aimed at specific constructs was administered to a convenience sample of 52 third-year Diploma student nurses from the Republic of Ireland. The data collection tool was a 109-item questionnaire with a Likert scale design that focused on constructs that included clinical/academic stress, coping, emotions, and personality

factors. The researcher's goal was to provide a holistic perspective on interpreting student nurse stress. The leading stressors that were identified from the study were examinations, academic workload, theory-practice gap, and poor relationships with clinical staff. Reported responses to stress included feeling exhausted and upset under pressure. The students felt that determination and a sense of achievement were ways that they were able to persevere through their studies in the midst of stress. The researchers listed several suggestions for nurse education, with most of them aimed at providing a wide range of support services for students to be able to deal with the stress of schooling. Limitations of the study include a small sample that represented only students from one higher education institution in Ireland. These findings are not widely generalized to all student nurse populations.

Another study, administered to mature undergraduate nursing students in Scotland and Australia, compared course-related difficulties as well as family and financial stressors (Cuthbertson, Lauder, Steele, Cleary, & Bradshaw, 2004). Results from Scotland were compared against those from Australia to examine differences in the education systems. Two hundred and seventy-eight surveys were returned and the overall results were very similar between the two countries. Three of the most common course-related problems reported were social in nature and included lack of time for socializing, hobbies, and exercising. The majority of Australian students ($n = 86$, 72.88%) and Scottish students ($n = 131$, 81.88%) related that financial problems did make participation in courses more difficult. Both groups of students also found the courses emotionally demanding. The researchers concluded that financial stress was an important aspect to

consider for nursing students. They suggested that part-time study options may be beneficial to allow flexibility so students are able to maintain their lifestyles.

Lindop (1999) used questionnaires to compare stress levels in nursing students in 1997 with previous results of a 1988 study. The same questionnaire that was used in 1988 was administered to 146 student nurses in the current Diploma in Nursing program. The previous 1988 study was conducted on 146 students within the same school. The nursing school at that time was a Registered General Nurse (RGN) program. According to Lindop the primary difference in the program was the RGN program was more practically oriented while the current program is more academic. Lindop concluded that many stressful experiences that were a problem in 1988 remained a cause of stress nearly ten years later. The major sources of stress reported included the following: physical hard work, conflict between theory and practice, perceived negative and uncaring attitudes toward patients by staff, feelings of inadequacy, poor communication, academic workload, and examinations. The students who filled out the questionnaires in 1997 reported a much greater level of stress associated with the intense amount of academic work than the previously researched group. This difference was related to the current diploma courses, which are at a higher academic level. The researcher concluded that even though the stressors students experienced haven't changed, the intensity of the stress experienced has increased. Students also reported few skills associated with coping with stress. The most prevalent coping skills reported were talking to family and friends and trying to stay calm despite feelings of pressure.

Jones and Johnston (1997) examined distress, stress, and coping in 220 first-year student nurses in Scotland. They developed questionnaires looking at general health,

stress, and ways of coping. The researchers used a cross-sectional, descriptive study design to examine the above variables in two separate cohorts before and after the students' initial series of hospital clinical rotations. Cohort one received the survey after initial hospital clinical rotations; whereas, cohort two was screened right before their first clinical placement. The research findings showed that both groups experienced a significant amount of distress. Sixty-seven percent of cohort two students reported distress compared with 50% in cohort one. Reported areas of stress were similar between both cohorts with the top five areas being fear of failing a course, examination and/or grades, financial responsibilities, amount of classroom work, and difficulty of classroom work. According to the questionnaire, those who were not distressed reported the same stressors but related them to be at a lower level of intensity. In both groups, the use of direct coping was associated with lower levels of stress. This study revealed a significant problem with stress in nursing students around initial hospital clinical rotations.

Another study using qualitative grounded theory methodology, conducted by Hamill (1995) examined the phenomenon of stress as perceived by Project 2000 student nurses in Ireland. Data were collected via questionnaires from 35 student nurses that were followed by semi-structured interviews with 10 of the participants. Data analysis revealed that categories of codes clustered around two main areas of stress-college-based stressors and clinical-based stressors. Some of the college-based stressors identified by the students were: not treated as adult learners, negative sanctions for complaining, confusing assignment guidelines, waiting time for results of paperwork, amount of self-directed learning, and poor library facilities. Clinical-based stressors include the following: lack of

practical skills, negative attitudes of clinical staff, misunderstanding course aims, different uniform than staff, short placements, and short spans of duty.

The core variable identified by Hamill (1995) that helped to explain the students' perception of stress was a continuum of dependence/independence. The findings indicated as students became more independent in academic freedom and clinical competence, their level of perceived stress declined. Hamill concluded that there needs to be a better link between the college-based and clinical-based areas. She also felt it would be beneficial to have the students develop clinical skills earlier in the program so they could feel valued and contribute to good patient care in the clinical setting. The major theme that resounded through the research was the students who felt a sense of value, whether at the college or in a clinical setting, had a decreased level of perceived stress.

A study conducted in 1992 looked at sources of stress in student nurses and found similar results to previous studies cited (Clarke & Ruffin, 1992). The researchers collected information from 306 student nurses from three different institutions during the students' second week of their first year of nursing school. The educational institutions included a university, college of advanced education, and hospital. Questionnaires were used to gather data from 189 students, from the same three institutions, after the conclusion of their first year of school. No significant differences in levels or causes of stress were found between the facilities, time periods, or genders. Areas that invoked stress were reported as study-related issues, the emotional demands of nursing, the use of technical equipment, interpersonal interaction, and the lack of time for family and personal pursuits. The researchers suggested that it would be beneficial to address these problems by implementing student programs that would focus on improving study skills,

allowing additional opportunities to gain hands-on experience, and provide experiences that encourage further development of social skills.

Two other research studies were conducted with Nepal nursing students to examine the amount and type of stress they experienced as well as their coping strategies. The first study was conducted on a sample of 104 first-year nursing students who had been in the clinical setting for 6 to 8 weeks (Mahat, 1996). This was a descriptive study that identified four stressful events which were the following: interpersonal relationships, initial experiences, feeling helpless, and demeaning experiences. While many mechanisms of coping were identified, the majority of the students identified seeking social support as their most common coping mechanism.

Mahat (1998) also went on to study junior-level baccalaureate nursing students' perceived stressors and ways of coping during the clinical area of their nursing education. Data were collected from a sample of 107 junior students enrolled in their first clinical course. The study looked at stressors and methods of coping. Coping methods were divided into problem-focused and emotion-focused. Results were compared between Caucasian and African American students. Problem-focused coping mechanisms included problem solving and seeking social support; whereas, emotion-focused strategies were tension reduction and avoidance. As in the previous group Mahat studied, there were several stressors present in the clinical setting. The data also revealed that both Caucasian and African American students tended to use problem-focused coping rather than emotion-focused mechanisms.

Rhead (1995) felt that that stress caused by the academic side of training has been ignored while most of the focus has been on the practical aspects of nursing. Rhead

compared Registered General Nurse (RGN) and Diploma of Higher Education in Nursing (Dip. HE Nursing) students using a modified nurse stress scale. She hypothesized that there would be a difference in level of stress between the two groups of students as well as between the clinical and academic areas of education. During the time of the research, the Dip. HE Nursing program was in its infancy and was a more academically rigorous program than the RGN program. Results of the study showed that the Dip. HE Nursing students were significantly more stressed than RGN students. The stress results for the Dip. HE Nursing students were equal for academic and practical elements. The RGN students were significantly more stressed on the practical elements. The data not only revealed stress in the practical and academic realms, but they were also was induced by issues concerning death and suffering in the patient.

Conclusion

Several research studies were examined regarding sources of stress in undergraduate nursing students along with coping mechanisms. Upon reviewing the literature on nursing student stress, several important areas were identified that caused stress among the students. The studies also revealed methods of coping and some outcomes of the stress.

Areas that were identified as increasing the amount of perceived stress among nursing students included academic stress which in turn included the following: workload and exams, clinical experiences, financial issues, death of patients, theory-practice gap, poor relations with clinical staff, physical hard work, and poor communication. These areas of perceived stress were common threads throughout the reviewed studies. Evans and Kelly (2004) revealed the common responses to stress that were reported included

feeling exhausted and upset under pressure. A negative reaction to stress that Last and Fulbrook (2003) reported was an increased dropout rate. No single factor was found that was thought to make students leave, but several of those listed above were identified to be contributors.

Coping mechanisms identified to be helpful in dealing with stress included the following: talking with family and friends, trying to stay calm despite feelings of pressure, seeking social support, being determined, and feeling a sense of achievement. Researchers also suggested some areas of change in the curriculum to help students deal with stress. Timmins and Kaliszer (2002) furthermore, recommended adequate support structures for clinical areas, preceptorship programs, and to have student counseling services available. Evans and Kelly (2004) also felt that it was important to provide a wide range of support services for students to help deal with stress. It was also suggested that some students would benefit from being able to study part-time to allow financial flexibility. This would help to relieve financial stress, something reported by several nursing students.

A few of the studies reviewed examined the differences in perceived stress between different levels of undergraduate nursing education. Rhead (1995) compared RGNs with Dip. HE Nurses. Results showed that the Dip. HE Nurses were significantly more stressed than the RGNs, and were contributed to the increased academic demands of the Dip. HE Nursing program.

After completing the review of the literature, it is evident that there are significant limitations to the studies. The first is related to the population being studied. The vast majority of the studies that have been done on nursing students have been conducted in

different European countries. No studies looking at undergraduate nursing stress within the United States were found in the literature. There are many cultural differences between European and United States students that make it difficult to generalize the results of the studies to students in the United States.

Many of the studies reviewed were also conducted on two and three-year nursing programs. Most of the samples in the studies came from Diploma programs. No studies looking at perceived stress levels in students attending Bachelor of Science in Nursing (BSN) programs were found in reviewing the literature. As previously noted, Rhead (1995) found a significantly increased level of stress in nursing students attending a higher level of nursing education compared to those attending a shorter program. Inferring from these studies, students attending BSN programs would be expected to be at an even higher risk of increased stress, due to the increase in level of academic demands.

CHAPTER III

METHODOLOGY

The purpose of this study was to identify and examine variables that affect levels of stress in undergraduate Bachelor of Science nursing students from an accredited Midwestern nursing college. This research considered perceived levels of stress in relation to demographic variables, symptoms of stress, cause of stress, and coping mechanisms. This chapter describes the population and sample, study design, and data collection. The instrument used to collect data is explained along with the analysis of the data and methods used to protect participants of the study are also described.

Population and Sample

The population selected for the research study included all individuals accepted and enrolled in classes in a Midwestern accredited Bachelor of Science nursing program, a total of 316 students.

The nursing curriculum within the college of nursing where the sample was surveyed consisted of two semesters of pre-nursing and six semesters of courses for students enrolled in the undergraduate nursing program. There was an average of 53 students enrolled in each semester. Each semester consisted of different courses. The college will be implementing changes to the program within the next year that will move the first sophomore semester to pre-nursing. Consequently, the nursing program will then

consist of second-semester sophomores through seniors. During the last semester of the program students are dispersed to hospitals around the country to do a practicum rotation.

Stress has been associated with increased dropout rates. It is important to note that the nursing program from which the sample is being surveyed had an attrition rate of 5.61% over the 2004-2005 academic year, and 6.57% the year before. The average completion rate for students admitted in the fall semester from 1998 to 2001 was 90.44% compared with 81.12% of those admitted in the spring semester between the same years.

A convenience sample methodology was used to select the sample based on accessibility to the researcher. Surveys were administered after three separate lectures to the first and second-semester juniors and first-semester senior nursing students. The sophomore class was excluded due to the upcoming changes in the nursing curriculum and the last semester of senior nursing students was excluded due to access difficulties. Surveying students within three different levels of nursing curriculum provided a good representation of the population. The first-semester junior class had 57 students enrolled. The second-semester-junior class had a total of 53 students and the first-semester-senior class had 51 students enrolled. Attendance is strongly encouraged in lectures, allowing access to the whole class at one time to administer surveys.

Study Design

The study design chosen for this study is descriptive. According to Gillis and Jackson (2002), descriptive research is concerned with the “accurate description of some aspect of society” (p. 31). There was no research on stress found that had been conducted in the United States, on the population being studied. For this reason, a descriptive study on the topic would be beneficial to gather data to develop a better understanding of stress.

Descriptive research also allows the researcher to describe variables and examine relationships between the variables. Demographic variables, perceived levels of stress, sources of stress, and coping strategies will be identified and examined within this study.

Data Collection/Procedures

Data was collected through surveys administered after nursing lectures within a two-week period of time. Surveys were administered and collected during a two-week period of time to limit extraneous variables that may occur at different times in the semester and may affect the levels of perceived stress. The surveys were distributed to the first-semester junior class and senior class two weeks before final exams and to the second-semester junior class one week before final exams. Surveys were administered to the first-semester junior and senior students by nursing faculty after providing an explanation of the purpose of the research. The researcher administered the surveys to the second-semester junior students. Participation in filling out the surveys was strictly voluntary and each survey was collected by the researcher or nursing faculty.

A convenience sample was used to collect data for the study. The sample will consist of any students who are present at lectures for nursing students enrolled in the nursing program. Surveys were administered to first and second-semester-junior and first-semester-senior nursing students. There are a total of 162 nursing students currently enrolled within these three semesters of the undergraduate nursing program. Accounting for some students being absent from the lectures and some choosing not to fill out the surveys, this number of surveyed classes should provide an adequate sample size for data analysis. Given the sample size of 162, and an estimated effect size of 0.30, the power of

the study is about 0.80. Thus, the sample was considered large enough to detect any differences that may be present.

Instrument Reliability and Validity

The survey was a combination of research tools that have been used in the past and are well established. Three tools were combined to allow the data gathered to be thorough and cover all aspects of the research questions. The study's tool examined symptoms of stress, sources of stress, levels of stress, and coping mechanisms. The beginning of the survey consists of demographics, which were analyzed for significance related to stress levels. The next section of the survey evaluates symptoms of stress and to what degree the students feel that certain stressors were causing these symptoms. The sources of stress questions are evaluated using a five-point Likert scale. The two scales are from Van Atta's Life Stress Questionnaire.

Adjustments were made to the stress symptom checklist to decrease the length of the survey as it was quite lengthy. Symptoms from Van Atta's research that were experienced by twenty percent or more of his sample were used within this survey. The total number of stress symptoms used within this survey is sixteen instead of the fifty-three that Van Atta used. Some adjustments to the questions regarding the sources of stress were made. Class paperwork, exams, and clinical was added to be more specific to the target population of students. Van Atta relates that several studies have been completed on the instrument and the reliability is in the .70s. He also related that an investigation of the validity indicates that respondents gave responses specific to each causal area (Van Atta, Lipson, & Glad, 1976).

The next section of the survey focuses on measuring the amount of psychological stress. The scale chosen to do this is a shortened form of the Psychological Stress Measure (PSM). The PSM originally was a 49-item questionnaire assessing the best indicators of stress (Lemyre & Tessier, 2003). The questionnaire has been tested for internal consistency and had inter-item and item-total correlations between 0.35 and 0.85, a Cronbach a coefficient of approximately 0.95. The test maintained a test-retest stability of 0.68 to 0.80. An abridged nine-item version of the questionnaire was developed to be easier to use and less time is needed to adequately assess levels of psychological stress. This version of the questionnaire is being used nationally and internationally and has been shown to have very similar psychometric qualities of reliability, validity, and internal consistency. The nine-item questionnaire is used within this survey and will adequately assess the student's levels of psychological stress.

The last section of the survey focuses on coping strategies. The COPE inventory has been used to assess 15 different coping strategies. The original form was a 60-item questionnaire. A brief COPE has been formulated for ease of use and for decreased amount of time needed to take the survey. The brief COPE assesses 14 different coping strategies and has two questions associated with each. Each statement is evaluated with a four-point Likert scale. According to Carver (1997), the factor structure from the brief COPE was very similar to the full COPE. All reliabilities of the scales meet or exceed .50, regarded as the minimally acceptable. All scales actually exceed .60 except for Venting, Denial, and Acceptance. This information indicates that the brief COPE is internally reliable.

Data Analysis

Data analysis was performed using appropriate descriptive statistics. Statistical tests that were done include: means, z-scores to describe individual variables and cross-tabulations, and correlations to describe relationships between variables. An expert in statistics was utilized to assist with the analysis of the data compiled.

Protection of Human Subjects

Protection of human subjects was attained by gaining approval for the study through the university Institutional Review Board (IRB). Additional methods to assure participant protection included emphasis on the voluntary nature of filling out the surveys. No names will be given on the surveys in order to maintain confidentiality. Consent was implied as participants filled out the surveys. Risks to the participants were very minimal because their participation was limited to filling out a survey and included no interventions. All surveys collected were stored within a locked file behind a locked door and will be retained for three years and then shredded.

Summary

Descriptive research was used to gain a better understanding of variables in relation to perceived levels of stress in undergraduate Bachelor of Science nursing students. Data was gathered using a survey format, administered to a convenience sample in an accredited Midwestern college of nursing. The sample included members from different academic levels within the college of nursing curriculum. Data gathered by the researcher was analyzed using mostly descriptive statistics.

CHAPTER IV

RESULTS

The purpose of this study was to identify and examine the variables that affect levels of stress in undergraduate Bachelor of Science nursing students from an accredited Midwestern nursing college. The author collected data in November of 2005. A description of the study sample and analysis of the data by research question follows.

Sample Characteristics

A convenience sample methodology was used to survey undergraduate Bachelor of Science nursing students. The sample consisted of three different semester classes that had a total of 162 students enrolled in them. One hundred and thirty-seven students returned surveys. Each of the 137 surveys was accepted for analysis. Table 1 shows the distribution of survey respondents by semester level.

Table 1. Survey Respondents by Semester Level.

| Semester | Number | Percent |
|------------|--------|---------|
| Junior One | 50 | 36.5 |
| Junior Two | 41 | 29.9 |
| Senior One | 45 | 32.8 |
| Missing | 1 | 0.7 |
| Total | 137 | 100 |

The demographic characteristics of the sample included age, sex, relationship status, number and ages of children, living situation, number of credits currently taking, semester in school, employment status, occupation, and annual household income (See Appendix).

Of the 137 students surveyed, the minimum age was 20 and the maximum 44 years-old. It is worth noting that 103 students surveyed fell between the ages of 20-23 years-old, which constituted 75% of the sample surveyed.

The gender of the surveyed students was largely female. One hundred and twenty-five of the 137 respondents were female, which constituted 91% of the sample. The majority of the sample surveyed were either in a committed relationship (n = 55, 40.1%), single (n = 47, 34.3%), or married (n = 32, 23.4%). Table 2 shows the marital status of the sample surveyed.

Table 2. Demographic Variable – Marital Status

| Marital Status | Number | Percent |
|------------------------|--------|---------|
| Single | 47 | 34.3 |
| Married | 32 | 23.4 |
| Divorced | 2 | 1.5 |
| Separated | 1 | 0.7 |
| Committed Relationship | 55 | 40.1 |
| Total | 137 | 100.0 |

The vast majority of the sample had no children (n = 111, 81.0%). Thirteen students reported having one child, seven had two children, and five students had three.

The age of the children ranged from four months to 27 years-old. The average age of the children was about seven years-old.

The living situation was divided into two sections with the first being whether students rent or own their house or apartment, and the second being whether they live on or off campus. A total of 107 (78.1%) students responded to the question of whether they rent or own a house or apartment. Of the 107 students who responded, 12 (11.2%) owned a house and the rest rented. Only 60 students responded to the second part of the question and the distribution of those on campus ($n = 27$, 45%) were very similar to those who lived off campus ($n = 33$, 55%).

The question concerning the number of credits each student was taking was responded to by all but one student. The minimum number of credits being taken was seven with the maximum number 20. The vast majority of the students were taking 13 credits ($n = 74$, 54.0%). One hundred and thirteen students (82.4%) were currently taking between 13 and 17 credits.

The next demographic variable examined the students' employment status (full time, part time, or employed within the home). The occupation and number of part time hours worked per week were also surveyed. Of the 111 students who responded to this question, 104 (93.7%) worked part time, four worked full time (3.6%), and three (2.7%) worked within the home. The most commonly reported hours worked for those who worked part time were 20 ($n = 25$, 18.2%) hours a week.

The majority of the students who responded to the annual income level fell into the category of earning less than \$10,000 ($n = 84$, 61.3%). Table 3 shows the distribution of annual income levels.

Table 3. Demographic Variable – Annual Income

| Annual Income | Number | Percent |
|--------------------|--------|---------|
| Less than \$10,000 | 84 | 61.3 |
| \$10,000 to 19,999 | 19 | 13.9 |
| \$20,000 to 29,999 | 12 | 8.8 |
| \$30,000 to 39,999 | 5 | 3.6 |
| \$40,000 to more | 13 | 9.5 |
| Missing | 4 | 2.9 |
| Total | 137 | 100.0 |

Research Question One

The first research question asked “What are the perceived levels of stress related to the selected demographic variables including age, gender, living situation, financial status, marital status, general employment status, number of credits currently taking, current academic level, and number of children?”. In order to address this question, perceived levels of stress were calculated. The area of the survey that sought to measure stress was the psychological stress measure. This section consisted of nine questions that addressed levels of stress with an eight-point Likert scale. A total stress measure mean (SMM) was calculated for each survey by adding up the total number of points on the nine questions, with questions number one and six being reverse scored, and dividing by nine. The SMM was then used as a measure of the student’s amount of perceived stress.

Stress vs. Age

To see if there were any significant differences in the amount of perceived levels of stress related to age, the ages of the sample were divided into two groups. The ages were split into a younger group, ages 20-23, and an older group, ages 24-44 years old. The reason the groups were divided this way was to compare the typical age of students in nursing school with those who were older. The younger group had 103 (75.2%) students in it and the older group had 34 (24.8%). Using the Kolmogorov-Smirnov test of normality, the data were found to be normal in distribution and a two-tailed t-test was done looking for significance. The mean SMM for the younger age was 4.45 compared with 5.05 for the older group. The scale for the SMM is from 1-8. The difference between the two values was found to be statistically significant (Table 4). The results show that the older age group reported a higher level of stress.

Table 4. Results of t-test for Age Groups and SMM

| Ages | n | m | sd | t | df | p |
|----------|-----|------|------|-------|-----|------|
| 20 to 23 | 103 | 4.45 | 1.37 | -2.36 | 135 | 0.02 |
| 24 to 44 | 34 | 5.05 | 0.93 | | | |

Stress vs. Semester Level

The next demographic that was compared with the SMM was the semester in school. The second-semester juniors reported the highest levels of stress with their SMM equaling a mean of 4.89 (n = 41). The first-semester juniors reported the lowest SMM with the mean being 4.29 (n = 50) and the seniors had a mean SMM of 4.73 (n = 45). A

one-way ANOVA showed that the difference between groups was not statistically significant ($f = 2.78, p = 0.07$).

Stress vs. Gender

Female nursing students reported a slightly higher level of stress ($M = 4.60, sd = 1.31$) when compared to males ($M = 4.55, sd = 1.19$); however, a t-test showed the difference was not statistically significant ($t = -0.14, df = 135, p = 0.89$).

Stress vs. Living Situation

The two different groups of living situations were each compared with the SMM and no statistical significance was found using the one-way ANOVA. The living situation comparing those who rent with those who own a home showed that those who own reported a slightly higher level of stress. The mean SMM of those who rented were 4.54 ($sd = 1.31$) compared with 4.85 ($sd = 0.88$) for those who owned homes. The SMM for those who live on campus ($M = 4.88, sd = 1.2$) was slightly higher than those who live off campus ($M = 4.66, sd = 1.39$). Table 5 shows the results of the one-way ANOVA for both living situations.

Table 5. One-way ANOVA Results for Living Situations and SMM

| Living | | | | | | |
|-------------|----|------|------|------|----|------|
| Situation 1 | n | m | sd | f | df | p |
| Own | 12 | 4.85 | 0.88 | 0.66 | 1 | 0.42 |
| Rent | 95 | 4.54 | 1.31 | | | |
| Living | | | | | | |
| Situation 2 | | | | | | |
| On Campus | 27 | 4.88 | 1.2 | 0.42 | 1 | 0.52 |
| Off Campus | 33 | 4.66 | 1.39 | | | |

Stress vs. Income Level

Annual income levels were explored to see if there were any significant differences in the amount of stress that were reported within income groups. A Kruskal-Wallis test showed that there was no significant difference in the amount of stress reported among different income levels ($f = 2.57, df = 4, p = 0.63$).

Stress vs. Marital Status

The marital status was divided into five groups single, married, separated, divorced, and committed relationship. The majority of the sample was divided into single ($n = 47$), married ($n = 32$), and committed relationship ($n = 55$). Only two students were divorced and one was separated. The groups were compared against the SMM and there was found to be no statistical significant differences; however, the two divorced students ($m = 5.89$) and the one who is currently separated ($m = 5.89$) had a higher SMM (Table 6).

Table 6. One-way ANOVA Results for Marital Status and SMM

| Marital | | | | | | |
|--------------|-----|------|------|------|----|------|
| Status | n | m | sd | f | df | p |
| Single | 47 | 4.56 | 1.34 | 0.41 | 4 | 0.80 |
| Married | 32 | 4.68 | 1.10 | | | |
| Divorced | 2 | 5.17 | - | | | |
| Separated | 1 | 5.89 | - | | | |
| Committed | 55 | 4.54 | 1.39 | | | |
| Relationship | | | | | | |
| Total | 137 | 4.60 | 1.29 | | | |

Stress vs. Employment Status

The employment status was divided into full-time (n = 4), part-time (n = 104), and working within the home (n = 3). The uneven distribution of the sample prevented any significance in the results. The SMM was highest for those working within the home (M = 5.26, sd = 1.2) compared with those who worked full time (M = 4.81, sd = 1.35) and those that worked part time (M = 4.60, sd = 1.36).

Stress vs. Credits

The number of credits in which students were currently enrolled was divided into three groups for analysis. The groups consisted of those taking 7 to 11 credits (n = 12), 12 to 14 (n = 91), and 15 to 20 (n = 33). A full-time student at the university is defined as enrolled in 12 credits or more. The three groups were analyzed looking for significance when compared with the SMM. The group enrolled in the most credits had the highest mean SMM (m = 4.66); however, not to the point where it was significant (Table 7).

Table 7. One-way ANOVA results for Credits and SMM

| Credits | n | m | sd | f | df | p |
|---------|-----|------|------|------|----|------|
| 7-11 | 12 | 4.48 | 1.69 | 0.09 | 2 | 0.92 |
| 12-14 | 91 | 4.61 | 1.31 | | | |
| 15-20 | 33 | 4.66 | 1.08 | | | |
| Total | 136 | 4.61 | 1.29 | | | |

Stress vs. Children

The number of children that students reported having were divided into two groups, which included those who reported having no children (n = 111, 81.6%) and

those who reported between one and three children ($n = 25, 18.4\%$). A t-test was used to analyze the two groups with the SMM. The group with children had a higher mean SMM but no significance was found using a two-tailed t-test ($t = -0.4, df = 134, p = 0.15$).

Research Question Two

Research question two asked “What stress symptoms are experienced by students?” The 16 most common stress symptoms reported in Van Atta’s Life Stress Questionnaire were listed in the survey as a symptom checklist. The students were instructed to check all of the stress symptoms that currently apply to them.

A total of 126 students responded to this section of the survey. Eleven students did not respond to this section or the subsequent section, which asked questions in a Likert scale format. The researcher did not include these sections for the 11 students in the analysis. The most common stress symptom reported by students was stiffness or pain in muscles or joints ($n = 80, 63.5\%$) followed by feeling inadequate ($n = 53, 42.1\%$). Table 8 gives a breakdown of the stress symptoms reported.

The stress symptoms were also analyzed by semester level to see if there were different symptoms experienced by the different semester levels within the nursing program. A cross-tabulation was done and Pearson’s Chi-Square found that there was statistical significance in the stress symptoms argumentativeness ($df = 2, p = 0.00$), troublesome thoughts ($df = 2, p = 0.00$), and nightmares ($df = 2, p = 0.02$) when compared with semester level. The first-semester seniors reported argumentativeness as being a stress symptom more commonly experienced than the other semesters ($n = 16, 40\%$). The seniors also reported experiencing troublesome thoughts more than the other semester levels ($n = 15, 37.5\%$). The second-semester juniors more commonly reported

experiencing nightmares (n = 9, 22.5%). Table 9 reports the results of the three statistical significant findings.

Table 8. Frequency table of Stress Symptoms Reported

| Stress Symptom | n | Percent |
|-----------------------------|----|---------|
| Dizziness | 6 | 4.8 |
| Numbness | 5 | 4.0 |
| Lack of Sexual Satisfaction | 12 | 9.5 |
| Stiffness | 80 | 63.5 |
| Intestinal Disturbances | 34 | 27 |
| Tearfulness | 23 | 18.3 |
| Argumentativeness | 30 | 23.8 |
| Others Have It "In" For Me | 16 | 12.7 |
| Feels Inadequate | 53 | 42.1 |
| Troublesome Thoughts | 26 | 20.6 |
| Drinking Too Much | 10 | 7.9 |
| Hallucinations | 0 | 0 |
| Aggressive Ideas | 0 | 0 |
| Feels Paranoid | 8 | 6.3 |
| Nightmares | 16 | 12.7 |
| Recurrent Ideas | 24 | 19 |

Table 9. Significant Cross-tabulation Results of Stress Symptoms and Semester Level

| Semester | Stress Symptom | n | Expected | df | p |
|------------|----------------------|----|----------|----|------|
| Junior One | Argumentativeness | 11 | 10.8 | 2 | 0.00 |
| Junior Two | Argumentativeness | 3 | 9.6 | | |
| Senior One | Argumentativeness | 16 | 9.6 | | |
| Junior One | Troublesome Thoughts | 4 | 9.4 | 2 | 0.00 |
| Junior Two | Troublesome Thoughts | 7 | 8.3 | | |
| Senior One | Troublesome Thoughts | 15 | 8.3 | | |
| Junior One | Nightmares | 1 | 5.8 | 2 | 0.02 |
| Junior Two | Nightmares | 9 | 5.1 | | |
| Senior One | Nightmares | 6 | 5.1 | | |

Research Question Three

Research question three asked “How does the student’s perceived levels of stress relate to the causes of stress?” The causes of stress were reported in a five-point Likert scale with one meaning that this source of stress had no impact on the stress symptoms the student reported in the previous section of the survey and a five meaning that it very much was a cause of stress symptoms reported. To compare the causes of stress with the level of stress, the data were split into two groups by the SMM. Students with a SMM at 4.50 or below were in one group (n = 53, 42.4%) and those above 4.50 in the second group (n = 72, 57.6%).

Pearson’s correlation was used to analyze the data without missing cells and Cramer’s V for those with missing cells. Analysis of the data found several sources of stress to be statistically significant when the two groups of higher and lower SMM were

compared. The sources of stress that were statistically significant included the following: health of self ($v = 0.31$, $p = 0.02$), relationship with instructors ($v = 0.37$, $p = 0.00$), not enough money ($r = 0.36$, $p = 0.00$), paperwork ($v = 0.43$, $p = 0.00$), exams ($v = 0.38$, $p = 0.00$), clinical ($r = 0.38$, $p = 0.00$), separation/conflict with spouse ($v = 0.29$, $p = 0.03$), and demands of work ($v = 0.32$, $p = 0.01$).

For each of the sources of stress that were found to be statistically significant, the group with the higher SMM reported them to be more of a cause of their stress symptoms. The highest source of stress reported by the entire sample was school examinations followed by paperwork. A total of 46 students (39.7%) related that examinations were very much a source of stress and 45 students (35.7%) reported the same for paperwork.

Research Question Four

Research question four asked “How does the student’s perceived levels of stress relate to their coping mechanisms?” To answer this question the sample was again divided into groups based on their SMM. Those with a SMM from 4.50 or below were in one group and those above 4.50 were in the other group. The value of 4.5 was chosen to divide the groups because it is the middle SMM score based on the Likert scale used. The extent to which coping strategies were used was reported on a Likert scale from one to four. One represented “I haven’t been doing this at all” and four was “I’ve been doing this a lot”. The data were compared by cross-tabulating the results and Pearson Chi Square was used for the questions without missing cells and Cramer’s V for those with missing cells.

The 28 questions about coping mechanisms listed on the survey were from the brief COPE. There were two questions for each coping mechanism, which added to the reliability of the responses. The 14 types of coping mechanisms surveyed included the following: self-distraction, active coping, denial, substance abuse, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame. Each of the questions surveyed were analyzed individually against the two groups of SMM.

Four coping mechanisms were found to have statistical significance with both of the questions that were related to each of these mechanisms. These coping mechanisms were substance abuse, behavioral disengagement, venting, and self-blame. In each of the questions for these coping mechanisms, the group with the higher SMM reported using them more often.

The group with the higher stress levels reported using each of the coping mechanisms that were found to be significant to a greater extent than the lower stress group. Three of the coping mechanisms found to be significant by both questions could be considered detrimental mechanisms. These were substance abuse, behavioral disengagement, and self blame.

Additional Findings

In addition to the research questions that were analyzed, sources of stress were analyzed to see if there were differences between semester levels. In order to look for a correlation, the data were split by semester level and a cross tabulation was done by each source of stress. The data were analyzed using Pearson Chi-Square. There was found to be a significant difference in several sources of stress when compared with semester

level. These sources included the following: conflict with family ($r = 0.38$, $df = 8$, $p = 0.02$), relationship with instructors ($r = 0.42$, $df = 8$, $p = 0.01$), dependency of others ($r = 0.43$, $df = 8$, $p = 0.00$), not enough money ($r = 0.52$, $df = 8$, $p = 0.00$), school demands/paperwork ($r = 0.36$, $df = 8$, $p = 0.40$), school demands/clinical ($r = 0.38$, $df = 8$, $p = 0.04$), separation/conflict with spouse ($r = 0.46$, $df = 8$, $p = 0.00$), and drug problems ($r = 0.40$, $df = 8$, $p = 0.00$).

The second-semester juniors reported conflict with society as being a larger source of stress than the senior or first-semester juniors. On the Likert scale, seven students from the second-semester junior class reported that conflict with society was either “much” or “very much” a source of stress compared with zero for the first-semester juniors and two for the seniors.

It was also interesting to find that the second-semester juniors and seniors felt that relationships with instructors were a larger source of stress compared with the first-semester juniors. This finding was also true of the stressor dependency of others.

The seniors reported that “not enough money” was a high source of stress with the second-semester juniors reporting similar findings. A little over 26% ($n = 10$) of the seniors felt that not enough money was “very much” a source of stress compared with 2.5% ($n = 1$) for the second-semester juniors and 6.7% ($n = 3$) for the first-semester juniors.

School demands for both paperwork and clinical were reported as a higher source of stress among the seniors and second-semester juniors. Over 52% ($n = 21$) of the seniors felt that paperwork was “very much” a source of stress compared with 35.7% ($n = 15$) of the second-semester juniors and 20% ($n = 9$) of the first-semester juniors (table

10). Clinical demands followed the same trend as paperwork when compared across the semesters (Table 11).

Table 10. Cross-tabulation for Semester in School and Paperwork

| | Semester | Junior- | Junior- | Senior- | | | |
|-----------|-----------|---------|---------|---------|-------|----|------|
| | In School | One | Two | One | Total | df | p |
| Stress j: | 1 None | 6 | 2 | 2 | 10 | 8 | 0.04 |
| School | 2 Little | 7 | 4 | 2 | 13 | | |
| Demands: | 3 Some | 13 | 5 | 6 | 24 | | |
| Paperwork | 4 Much | 10 | 14 | 9 | 33 | | |
| | 5 Very | 9 | 15 | 21 | 45 | | |
| | Much | | | | | | |
| Total | | 45 | 40 | 40 | 125 | | |

Table 11. Cross-tabulation for Semester in School and Clinical

| | Semester | Junior- | Junior- | Senior- | | | |
|-----------|-----------|---------|---------|---------|-------|----|------|
| | in School | One | Two | One | Total | df | p |
| Stress l: | 1 None | 9 | 2 | 3 | 14 | 8 | 0.04 |
| School | 2 Little | 7 | 9 | 5 | 26 | | |
| Demands: | 3 Some | 12 | 9 | 5 | 27 | | |
| Clinical | 4 Much | 5 | 8 | 14 | 27 | | |
| | 5 Very | 6 | 10 | 11 | 27 | | |
| | Much | | | | | | |
| Total | | 39 | 38 | 38 | 115 | | |

Separation or conflict with a spouse or mate was reported to create more stress among the second-semester juniors and seniors. Over 58% (n = 21) of the seniors

reported this to be at least a little source of stress. The first-semester juniors had about 11% (n = 5) of the class report it as a stressor and the second-semester juniors 38% (n = 15).

It was interesting that the seniors also reported that drug problems were a larger source of stress when compared with the other students. Thirteen (33.4%) of the senior class reported that drug problems were at least a little source of stress. The second-semester juniors had five (12.5%) students report this as a little source of stress and one (2.2%) first-semester junior reported the same.

Summary

The data analysis of each research question was discussed within this chapter. Sample characteristics as well as several statistically significant findings were discussed. It is interesting to note that those who reported a higher level of perceived stress felt that their sources of stress were most commonly caused by health of self, relationship with instructors, not enough money, paperwork, exams, clinical, separation/conflict with spouse, and demands of work. The group with a higher level of perceived stress also reported more commonly using the coping mechanisms substance abuse, behavioral disengagement, venting, and self-blame.

CHAPTER V

DISCUSSION, CONCLUSION, RECOMMENDATIONS

The purpose of the study was to identify and examine the variables that affect levels of stress in undergraduate Bachelor of Science nursing students from an accredited Midwestern nursing college. This was accomplished through a survey of students in three separate undergraduate nursing classes. This chapter includes the author's discussion, conclusion, and recommendations based on this study.

Discussion

The effects of stress have been an area of increasing concern within public health. College students are at an increased risk for stress related to many changes occurring in their lives. There has been concern about the role of stress in dropout rates and its link to many health concerns. Stress among undergraduate nursing students has been researched; however, the populations being studied were generally in Europe and not in Bachelor of Science in Nursing (BSN) programs. Because of the lack of studies in the United States and within BSN programs, results are difficult to generalize. Therefore, the aim of this study was to use descriptive research to develop a better understanding of variables that affect stress within this population.

This research identified variables in correlation to levels of perceived stress. It also helped to identify the sources of stress and coping mechanisms used. The first research question examined demographic variables related to perceived levels of stress. It

was interesting to find that students who were in the older age group had a statistically significant higher level of perceived stress. There were no further findings that were statistically significant; however, the second-semester juniors reported the highest level of perceived stress ($M = 4.89$) followed by the first-semester seniors ($M = 4.73$) and the first-semester juniors ($M = 4.29$).

Several factors may contribute to the reason the stress was the highest among second-semester juniors and seniors. Currently, the nursing program from which the sample was taken has one session each year that they review applications and admit students into the program. The top half of the applicants are accepted into the program and start the next fall. The next half of the students accepted start the following spring. Because of this format, those who are accepted in the spring semester may not have as strong of an academic record as those who start in the fall. When this survey was administered the second-semester juniors were the semester class that had been admitted in the spring and the other two semesters had been admitted in the fall. This may have contributed to the increased levels of stress this group of students experienced. The seniors increased level of stress most likely was multifactorial. Increased age was statistically significant for increased levels of stress. The seniors were generally probably older and had many other variables that may have all added up to increase stress levels.

The second research question examined the stress symptoms reported by students. The most common symptom reported was pain in muscles or joints ($n = 80, 63.5\%$), followed by feeling inadequate ($n = 53, 42.1\%$). When stress symptoms were compared across the semester levels, the seniors reported more argumentativeness and troublesome thoughts compared with the others. The second-semester juniors reported experiencing

more nightmares to a significant degree. It is important to note that the seniors and second-semester juniors have an increased level of perceived stress and also reported an increase in the amount of stress symptoms that they experienced.

The third research question examined sources of stress related to perceived levels of stress. The group with a higher level of perceived stress reported being more affected by health of self, relationship with instructors, not enough money, paperwork, exams, clinical, separation/conflict with spouse, and demands of work. The largest source of stress for the entire sample was school exams followed by paperwork. It was interesting to find that when the data were split by semester level and sources of stress examined, significant sources of stress included the following: conflict with family, relationship with instructors, dependency of others, not enough money, paperwork, clinical, separation/conflict with spouse, and drug problems. Each of these sources of stress was reported as more of an impact within the second-semester juniors or seniors when compared to the first-semester junior class. The senior class reported drug problems as more of a source of stress when compared to the other student categories.

The last research question compares perceived levels of stress with coping mechanisms. The group with a higher level of perceived stress reported using the following coping mechanisms more frequently to a significant degree: substance abuse, behavioral disengagement, venting, and self-blame. It is important to note that three of these mechanisms could be seen as counterproductive and could be a positive feedback loop inducing an increased level of stress. These coping patterns reported by those with higher levels of stress are concerning. Student nurses are taught about coping mechanisms and how to evaluate types of mechanisms used by their patients and to

promote positive coping mechanisms. It appears that they need to evaluate their coping mechanisms and develop positive coping mechanisms to help deal with their stress.

Throughout the research, it was interesting to find that the first-semester juniors reported the least amount of stress ($m = 4.29$). The first-semester juniors also reported experiencing less symptoms of stress, less intensity of sources of stress, and used less coping mechanisms.

Conclusions

The results of this descriptive study are instrumental in helping to identify and examine variables that affect stress in undergraduate Bachelor of Science nursing students. Valuable information was gathered related to demographic variables and stress levels. The findings in this research are consistent with the majority of the past studies that were reviewed. The most common sources of stress reported within this study have also been found in past studies including: school examinations, school paperwork, school clinicals, and financial concerns.

Differences in perceived levels of stress, sources of stress, stress symptoms, and coping mechanisms were identified by semester level. This information is valuable to evaluating nursing curriculum and to increase faculty and student awareness of variables that affect stress in each of these semester levels.

The role of stressors and coping mechanisms on overall health is consistent with the theoretical framework applied to this study. Betty Neuman's Systems Model relates that each individual is in homeostasis with the environment and stress without adequate coping mechanisms can lead to disharmony and illness. The study showed that those with increased sources of stress had a higher level of perceived stress. Also, coping

mechanisms used by those that had increased levels of perceived stress were largely counterproductive. The health of students and whether increased levels of perceived stress had any correlation with illness was not evaluated within this study. Such a correlation is implied in the Systems Model.

The research of this study may be difficult to generalize to other undergraduate Bachelor of Science nursing students and programs because all of the data were collected in one Midwestern nursing program. Additionally, based on the finding of 91.0% of the students being female, it would be difficult to generalize the results to other programs that didn't have this similar gender ratio.

Recommendations

The following recommendations will be categorized into nursing practice, education, research, and policy. The recommendations are based on information obtained from this study.

Nursing Practice

Even though the population being examined within this study was undergraduate Bachelor in Science nursing students, stress has a large effect on nurses in practice. Stress has been implicated in nurse burn-out rates and in the phenomenon of “reality shock”, which has been shown to affect graduate nurses entering practice. Concentrating on appropriate coping mechanisms may help alleviate some of this stress. The results of this study show that many coping mechanisms being used among the undergraduate nursing population could be counterproductive. This may be true of practicing nurses as well. Newer nurses collaborating with fellow nurses, and especially those with experience and

who have been through similar situations, could have a positive impact on lowering stress levels.

Nursing Education

The results of the research conducted are very beneficial to nursing education. The results can increase nursing faculty and student awareness of variables that affect stress. It can also help to better understand sources of stress that may be anticipated and interventions may be established to help students develop positive coping mechanisms to assist in dealing with the stressors that are present in nursing education.

Presentation of this data during the first year of nursing education may be beneficial for students to gain a better understanding of sources of stress and allow for anticipation of interventions to help control stress. Encouragement of positive coping mechanisms that will help students be successful within the program may help students who are entering the nursing program. It may be beneficial to list resources that are available to students that may alleviate stress. Such resources could include collaboration with upperclassmen for advice, information on exercise opportunities and facilities, learning resource center information, and counseling services provided at the University. Because academic issues were by far the source of the largest amount of stress, the collaboration with upperclassmen who have been through the same issues could help alleviate some stress. It may also be helpful to hold more examination review sessions to help decrease stress from what this research showed as the largest source of stress among all semester levels.

Nursing Research

Further research recommendations include a replication of this study to see if the results can be reproduced. It would be beneficial to see if the first-semester juniors continue to have a decreased perceived level of stress, less stress symptoms, and use less coping mechanisms. It would also be beneficial to use a sample from different colleges of nursing to allow more generalization of the results. A more in-depth analysis of which classes specifically were sources of stress in each semester level could be helpful since academic issues were the largest source of stress. This would provide a review of the undergraduate nursing curriculum to see what classes are the largest sources of stress, which may or may not be repositioned within the program.

Nursing Policy

It may be beneficial to provide student nurses education on sources of stress and possible positive coping mechanisms as they begin their nursing curriculum. A list or discussion of campus resources that they could use as coping mechanisms could be provided. In addition, in class meetings at various times during their education, workshops or flyers may assist students in connecting with resources to address their stress levels.

Summary

Stress is a concept that affects the lives of everyone. College students have been shown as a vulnerable population due to all of the changes that occur in their lives and the academic demands of school. The intention of this study was to develop a better understanding of stress and how it relates to this population. The study showed that stress does impact the lives of undergraduate Bachelor of Science nursing students.

Recommendations related to the research findings, including increasing faculty and student awareness of variables that affect stress and sources of stress, were discussed. Education of positive coping mechanisms and a system that promotes positive ways in dealing with stress may benefit the overall well-being of students and allow for a successful nursing education.

APPENDIX

Study of Perceived Stress and Coping Mechanisms among Midwest, Undergraduate, Bachelor of Science Nursing Students

My name is Seth Dorman, a Masters of Science in Nursing candidate at the University of North Dakota. I would like to invite you to participate in a study that will explore variables related to stress levels within Bachelor of Science in Nursing (BSN) students. The study will be utilized for my thesis. The attached survey with questions regarding variables related to stress will take less than fifteen minutes to fill out.

The results of this survey will provide information which can be utilized in developing future programs aimed at improving stress levels. The results can also be used to develop a better understanding of sources of stress among BSN students. Students can use the information to help their coping mechanisms balance the stressors in their lives.

The attached survey is completely anonymous and your decision whether or not to participate is completely voluntary. If you choose not to fill out the survey, your decision will not prejudice your future relations with the University. Do not put your name on the survey. The information will be reported in aggregate form only so your response will not be identifiable back to you. Only the researcher, the advisor, a statistics expert, and people who audit IRB procedures will have access to the data. All surveys will be kept for three years after the research is finished and then shredded. They will be kept in a locked file cabinet behind a locked office door. Filling out the survey will serve as your consent to participate in the study. If you have questions about the research, please call Seth Dorman at 773-0485 or Julie Anderson at 777-4541. If you have any other questions or concerns, please call Research Development and Compliance at 777-4279.

Stress Questionnaire

Age: _____ Sex: _____ Relationship status: Single Divorced
 Married Separated
 Committed relationship

Number of children: _____ Ages of children: _____

Living situation: Own a house Rent house or apartment
 Live on Campus Live off of campus

Number of credits currently taking: _____
 Semester of nursing school: Junior I Junior II Senior I

Employment Status: Full time Part time Employed within the home
 Occupation: _____ If part time, # of hours worked per week _____

Annual yearly household income:

Less than 10,000 _____
 10,000-19,999 _____
 20,000-29,999 _____
 30,000-39,000 _____
 40,000 or more _____

Part I: Stress Symptom Checklist: Please check all the symptoms below which apply to you as you are today.

- | | |
|--|--|
| 1 <input type="checkbox"/> Dizziness | 10 <input type="checkbox"/> Troublesome thoughts |
| 2 <input type="checkbox"/> Peculiar numbness of any part of the body | 11 <input type="checkbox"/> Drinking too much |
| 3 <input type="checkbox"/> Lack of sexual satisfaction or impotence | 12 <input type="checkbox"/> Hallucinations |
| 4 <input type="checkbox"/> Stiffness or pain in muscles or joints | 13 <input type="checkbox"/> Homicidal or aggressive ideas |
| 5 <input type="checkbox"/> Intestinal disturbances | 14 <input type="checkbox"/> Believing or imagining that others are thinking or talking about me. |
| 6 <input type="checkbox"/> Tearfulness | 15 <input type="checkbox"/> Nightmares |
| 7 <input type="checkbox"/> Argumentativeness | 16 <input type="checkbox"/> Recurrent ideas you can't shake |
| 8 <input type="checkbox"/> Feeling that others have it in for me | |
| 9 <input type="checkbox"/> Feeling inadequate | |

To what extent do you consider that the stress signs checked by you above result from the following sources:

| | SCALE | | | | |
|---|-------|--------|------|------|-----------|
| | None | Little | Some | Much | Very Much |
| a. Conflict with society | 1 | 2 | 3 | 4 | 5 |
| b. Conflict with family | 1 | 2 | 3 | 4 | 5 |
| c. Health of self | 1 | 2 | 3 | 4 | 5 |
| d. Health of parent, friend or other | 1 | 2 | 3 | 4 | 5 |
| e. Inadequacy of living arrangements | 1 | 2 | 3 | 4 | 5 |
| f. Relationships with instructors | 1 | 2 | 3 | 4 | 5 |
| g. Weakness (dependency) of spouse, mate or friend. | 1 | 2 | 3 | 4 | 5 |
| h. Not enough money | 1 | 2 | 3 | 4 | 5 |
| i. Not enough friends | 1 | 2 | 3 | 4 | 5 |
| j. Demands of school | 1 | 2 | 3 | 4 | 5 |
| | 1 | 2 | 3 | 4 | 5 |
| | 1 | 2 | 3 | 4 | 5 |
| k. Separation, conflict with spouse | 1 | 2 | 3 | 4 | 5 |

or mate

| | | | | | |
|------------------------------------|---|---|---|---|---|
| l. Religious conflicts | 1 | 2 | 3 | 4 | 5 |
| m. Drug problems (include alcohol) | 1 | 2 | 3 | 4 | 5 |
| n. Demands of job, work | 1 | 2 | 3 | 4 | 5 |

To what extent do you consider that the stress signs you checked interfere with your performance as a student:

| | | | | |
|------------|----------------|------|------|-----------|
| Not at all | Little or None | Some | Much | Very Much |
| 1 | 2 | 3 | 4 | 5 |

Part II: Circle the number that best indicates the degree to which each statement has applied to you recently, that is, in the last 4 to 5 days.

| Description of Mood | Not at all | Not really | Very Little | A bit | Some-what | Quite a bit | Very much | Extremely |
|--|------------|------------|-------------|-------|-----------|-------------|-----------|-----------|
| 1. I feel calm | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 2. I feel rushed; I do not seem to have enough time. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 3. I have physical aches and pains; sore back, headache, stiff neck. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 4. I feel preoccupied, tormented or worried. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 5. I feel confused; muddled thoughts, lack concentration or lack focus. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 6. I feel full of energy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 7. I feel great weight on my shoulders | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 8. I have difficulty controlling my reactions, emotions, moods, or gestures. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9. I feel stressed | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

Part III: The following is a list of questions about how you cope with stress in your life. Answer each question based on to what extent you have been doing what the item says. Please circle the appropriate number answer that corresponds with each question. The answering scale is as follows:

- 1= I haven't been doing this at all
- 2= I've been doing this a little bit
- 3= I've been doing this a medium amount
- 4= I've been doing this a lot

| | | | | |
|--|---|---|---|---|
| 1. I've been turning to work or other activities to take my mind off things. | 1 | 2 | 3 | 4 |
| 2. I've been concentrating my efforts on doing something about the situation I'm in. | 1 | 2 | 3 | 4 |
| 3. I've been saying to myself "this isn't real." | 1 | 2 | 3 | 4 |
| 4. I've been using alcohol or other drugs to make myself feel better. | 1 | 2 | 3 | 4 |
| 5. I've been getting emotional support from others. | 1 | 2 | 3 | 4 |
| 6. I've been giving up trying to deal with it. | 1 | 2 | 3 | 4 |
| 7. I've been taking action to try to make the situation better. | 1 | 2 | 3 | 4 |

- | | | | | |
|--|---|---|---|---|
| 8. I've been refusing to believe that it has happened. | 1 | 2 | 3 | 4 |
| 9. I've been saying things to let my unpleasant feelings escape. | 1 | 2 | 3 | 4 |
| 10. I've been getting help and advice from other people. | 1 | 2 | 3 | 4 |
| 11. I've been using alcohol or other drugs to help me get through it. | 1 | 2 | 3 | 4 |
| 12. I've been trying to see it in a different light, to make it seem more positive. | 1 | 2 | 3 | 4 |
| 13. I've been criticizing myself. | 1 | 2 | 3 | 4 |
| 14. I've been trying to come up with a strategy about what to do. | 1 | 2 | 3 | 4 |
| 15. I've been getting comfort and understanding from someone. | 1 | 2 | 3 | 4 |
| 16. I've been giving up the attempt to cope. | 1 | 2 | 3 | 4 |
| 17. I've been looking for something good in what is happening. | 1 | 2 | 3 | 4 |
| 18. I've been making jokes about it. | 1 | 2 | 3 | 4 |
| 19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping. | 1 | 2 | 3 | 4 |
| 20. I've been accepting the reality of the fact that it is happening. | 1 | 2 | 3 | 4 |
| 21. I've been expressing my negative feelings. | 1 | 2 | 3 | 4 |
| 22. I've been trying to find comfort in my religion or spiritual beliefs. | 1 | 2 | 3 | 4 |
| 23. I've been trying to get advice or help from other people about what to do. | 1 | 2 | 3 | 4 |
| 24. I've been learning to live with it. | 1 | 2 | 3 | 4 |
| 25. I've been thinking hard about what steps to take. | 1 | 2 | 3 | 4 |
| 26. I've been blaming myself for things that happened. | 1 | 2 | 3 | 4 |
| 27. I've been praying and meditating. | 1 | 2 | 3 | 4 |
| 28. I've been making fun of the situation. | 1 | 2 | 3 | 4 |

Thank you for your time.

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