

A COMPARATIVE ANALYSIS OF STRESS LEVELS IN UNDERGRADUATE
UNIVERSITY STUDENTS

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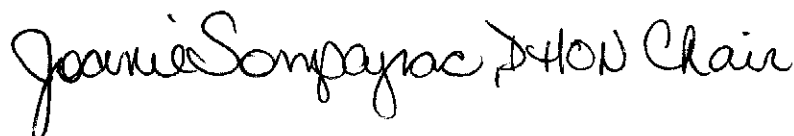

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Abstract

College students suffer high levels of stress during their education experiences. Nursing research supports that the practicum experience of course work yields more stress than class experiences. Both nursing and education have a practicum component in the course work; therefore, it would be assumed that education students, like nursing students, have elevated stress levels during the times they are in those experiences. The purpose of this study was to investigate the perceived level of stress and sources of stress in undergraduate students enrolled in nursing and education practicum courses. In this study a sample of 280 students, 121 baccalaureate nursing majors and 159 education majors, completed the Hassles Assessment Scale to evaluate their total stress score and to identify any specific stressors that correlated with their stress levels.

Findings revealed that both disciplines had higher mean stress scores than students in previous studies using the same instrument. Further analysis revealed that nursing students experienced unpleasantness of stressors significantly more than the education majors. Another significant finding in the total sample was that females were found to be more stressed than males. In addition, senior nursing students were found to have significantly higher total stress scores on all scales when compared to the senior level students in education. The findings of high stress levels in both nursing and education majors during their practicum experiences supports the assumption that stress management needs to be

addressed. Further examination of this topic at different times during practicum experiences could offer more information.

Chapter 1

The Problem

Introduction

Stress is a normal part of life. From birth to death, a person endures stress. It is impossible and not beneficial to avoid all stress in life (Wong, Perry, & Hockenbury, 2002). Stress is a perceived concept, meaning that it can be caused by anything that one feels unbalances the harmony in his or her life. Stress is defined in many ways. According to Neuman, a stressor is any relationship between the person and the environment that is appraised by the person as taxing. The relationship can result in either a beneficial or a harmful outcome (2002). Different types of stress produce anxiety in individuals, which results in feelings of apprehension that can ultimately lead to negative physical, emotional, cognitive and behavioral symptoms (Boyd & Nihart, 1998).

The process of encountering increasing and changing amounts of stress over a period of time helps one to develop methods of stress management in adulthood. Methods that improve adaptation to stress include exercise, time for friends, relaxation, and participation in endeavors that improve self-concept (Wong, Perry, & Hockenbury, 2002). College students are at a high risk for increased stress. Strenuous academic pressure and limited social and personal time can add to the normal stress of life and begin to have a negative affect on a person (Floyd, 1991).

Daily stressors in life cannot be avoided, nor can major life changes.

Stressful events that change one's life for an extended period can lead to health related problems. Events that may cause unhealthy stress include death, divorce, moving away from home, serious illness, and financial struggles (Wong, Perry, & Hockenbury, 2002). Those who dwell on life events suffer higher stress (Sarafine & Ewing, 1999). Stress related health problems are rampant in our society. An estimated 75-90 percent of all primary care health providers see patients with stress related problems (Peckham, 2001). Sustained psychological stress has been associated with numerous health consequences, especially for those who interpret daily hassles of life as being stressful. Research supports that students in higher education have higher stress levels than the general public. Beck, Hackett, Srivastava, Mckim, & Rockwell (1997) stated that nursing students suffer higher levels of stress during their college years than college students in other disciplines.

Nursing students and persons employed in the nursing profession have been identified as a population with an elevated stress level. Stressors for student nurses, identified by Beck & Srivastava (1991), included adjusting to a rigorous program of theory, long hours of study and pressures of student clinical practice requiring emotional and personal maturity. The practicum portion of nursing education was identified by nursing students as more stressful than didactic courses. For nursing students these "real life" situations are stressful due to the

fact that patients can be affected negatively or positively. The idea of causing harm, even death to a patient, is a fear for nursing students and nurses (Admi, 1997). In addition, teacher preparation courses in education also have a practicum component. Practicums put students in real life situations with other humans. Education majors do not deal with life and death situations as often as nurses do; however, the practicum component puts student teachers in the professional role of an educator. Student teachers have a responsibility to educate new generations of society.

In order to generalize the effect of a practicum on both education and nursing students one must determine if there are similarities in responses to stressors. If the practicum is a source of stress for education majors, then they should have elevated stress levels similar to those found in nursing students. It is unknown if stress levels are similar between disciplines of nursing and education during their practicum course experiences.

Statement of the Problem

College students suffer high levels of stress during their education experiences. Nursing research supports that nursing students identify the practicum portion of class as being particularly stressful. Education majors also have practicum courses included in their curriculum. It would be assumed that education majors would also have elevated stress levels during their practicum experience. However, research is not available to support the similarity of stress

levels in the disciplines of nursing and education. It is unknown if the stress levels differ between disciplines of nursing and education, especially during practicum experiences.

Purpose of the Project

The purpose of this study was to investigate the perceived level of stress and sources of stress in undergraduate students enrolled in both nursing and education practicum courses. In this study, stress levels of students in the two professional programs (nursing and education) were evaluated using the Hassles Assessment Scale (Sarafino & Ewing, 1999)(Appendix A). Data gathered through a cross-sectional design allowed examination and comparison of stress in undergraduate students in both nursing and education who were enrolled in similar semesters of practicum courses.

Conceptual Framework

The theoretical framework for this research based on the Neuman Systems Model. Neuman views nursing as a profession that concerns itself with all factors that influence an individual's response to stress (Marriner-Toomey & Alligood, 1998). According to Neuman's theory the nurse can provide balance through identifying the causative stressor, forming a plan to resolve the problem, and using one or more of the three levels of prevention to intervene in the situation. The Neuman model is an open system composed of interacting factors; physiologic, psychologic, socio-cultural, developmental, and spiritual. These five

variables interact in time with each other in relation to the system stability. “The model is based on the client’s reaction to stress as it maintains boundary lines to protect client stability” (McEwen & Wills, 2002, p.145).

Theoretical Definitions.

- Open system – a system in which there is a continuous flow of input and process, output and feedback. It is a system of organized complexity, where all elements are in interaction.
- Wellness/illness – wellness is the condition in which all system parts and subparts are in harmony with the whole system of the client. Illness indicates disharmony among the parts and subparts of the client system.
- Stressors – environmental factors, intra-, inter-, and extra personal in nature, that have potential for disrupting system stability. A stressor is any phenomenon that might penetrate both the flexible and normal lines of defense, resulting in either a positive or negative outcome.
- Boundary lines – imaginary lines of defense that protect the body.
- Flexible line of defense – the outer boundary of the client system, a protective accordion – like mechanism that surrounds and protects the normal line of defense from invasion by stressors
- Normal line of defense – an adaptational level of health developed over time and considered normal for a particular individual client or system; it becomes a standard for determining wellness deviance.

- Lines of resistance – protection factors activated when stressors have penetrated the normal line of defense, causing a reactive symptomatology
- Goal – stability for the purpose of client survival and optimal wellness
- Stability – a state of balance or harmony requiring energy exchanges as the client adequately copes with stressors to retain, attain, or maintain an optimal level of health thus preserving system integrity
- Degree of reaction - the amount of system instability resulting from stressor invasion of the normal line of defense
- Reconstitution – the return and maintenance of system stability, following treatment of stressor reaction, which may result in a higher or lower level of wellness than previously
- Primary Prevention- the general knowledge that is included in the client assessment and intervention in order to identify and reduce or stop the possible or accruing risk factors associated with environmental stressors to prevent possible invasion.
- Secondary Prevention- the symptoms that occur following a reaction to stressors, ranking of intervention priorities, and treatment to reduce their negative effects.
- Tertiary Prevention- the rebalancing or adjusting process that results in reconstitution of the client, thus recycling the client back to primary prevention (Neuman, 1989).

Using the Hassles Assessment Scale, the participants in the study identified stressors or hassles that aggravate their boundary lines and stressors that penetrate the boundary lines. Identification of the stressors' penetration was determined on the scale as the unpleasantness listed in the Hassles Assessment Scale. When stressors penetrate the lines of resistance, response to the stressor occurs causing a reaction. On the Hassles Assessment Scale the degree of reaction was evaluated through the participant's evaluation of agony or worry over the hassle. When this happens, a person must reconstitute himself or herself to gain wellness.

Evaluation of the data obtained through the Hassles Assessment Scale was used to elicit the information needed to determine if undergraduate students of nursing and education are subject to elevated stress, and to identify the sources of stress. Thereafter, each major can implement preventive measures each major to help maintain harmony in the student's systems. After an attack by a stressor, through reconstruction, the system returns to a level of wellness, which may be higher or lower than the previous wellness (McEwen & Wills, 2002). Neuman's model emphasizes the optimum health of a person. This is described as "the best possible health state at any given point in time" (Neuman, 1989, p. 71).

An advantage in using the Neuman System Theory for the current research is that the model has been used extensively in nursing education and is widely accepted as an appropriate framework for studies on stress. The model is designed to be universal, abstract, and applicable for various populations and

settings, including college students. Stress can be the result of penetration through the flexible and normal lines of defense. In this study, stressors were identified by frequency, intensity, and causes of agony by the Hassles Assessment Scale (Sarafino & Ewing, 1999), which will be described in the literature review. Knowledge of the extent of the stressors on nursing and education majors will, in the future, allow for primary prevention rather than secondary or tertiary prevention. The Neuman model gives validity and application to stress and its effects (McEwen & Wills, 2002).

Significance of the Project

Elevated stress levels cause health and other personal problems. Students with high levels of stress can benefit from counseling services. Information acquired from this study provided information and improved knowledge of stress levels in the disciplines of nursing and education. Techniques of stress management for identified stressors in one or both disciplines should be initiated. The data gathered could be used to improve undergraduate student advising and counseling. Furthermore, it could be used to format new research on student nurses and education majors to improve their educational experience and to equip them with techniques for stress management needed in their fields. While the individuals surveyed did not benefit, both disciplines will benefit through knowledge of student stress levels in their respective majors. Information obtained could improve total curriculum evaluation and planning.

Objectives of the Research

- To rate perceived levels of stress of nursing majors during their practicum semesters
- To rate perceived levels of stress of education majors during their practicum semesters
- To measure stressor frequency in nursing students
- To measure stressor frequency in education students
- To compare the perceived levels of stress in nursing students and the perceived levels of stress in education students.

Questions

1. What is the general level of stress in nursing students and in education students?
2. Are any specific stressors correlated with high stress levels in the different disciplines?
3. Is there a difference in the levels of stress of nursing and education students as expressed by the Hassles Assessment Scale?

Hypothesis

Stress levels, as measured by the three subscales of the Hassles Assessment Scale, will show a difference in the frequency and perceived level of stress encountered by undergraduate nursing and education majors. Perceived

stress is defined as the participant's subjective opinion as measured by the total scores on the three subscales of the Hassles Assessment Scale

Chapter 2

Review of the Literature

Student Stress Levels

The CINAHL database was searched for literature related to stress. The majority of the reviewed research supported the notion that student nurses have elevated stress levels when compared to other college students, and students in other health related fields. Beck, Hackett, Srivastava, Mckim, and Rockwell (1997) completed an in depth study of perceived levels of stress and the actual sources of stress in different university professional schools. The research was largely based on previous research done by Beck and Srivastava (1991) that looked at perceived levels and sources of stress in baccalaureate nursing students. The design of the study was descriptive, correlational. Objectives of the study were to determine the perceived levels and sources of stress of students in the health-related fields, and to determine the levels and sources of stress in baccalaureate nursing school students. Data was collected through two questionnaires', the General Health Questionnaire and the Beck-Srivastava Stress inventory. The data was analyzed using the SPSS statistical package 11.0. Results of the research supported that baccalaureate-nursing students experienced elevated stress levels and elevated levels of physiological and psychological stress compared to symptoms of students in other health related fields. These scores did not support evidence of stress levels being influenced by the year in the nursing

program, or by the university the student was attending (Beck, Hackett, Srivastava, Mckim, &Rockwell, 1997). The design of this study was a strength, because it evaluated multiple populations for enhanced validity and reliability of the findings. Furthermore, this research contributed significantly to data supporting the proposed research to evaluate stress levels between a health related field and a non-health related field.

In a study completed by Beck and Srivastava (1997), perceived levels and sources of stress in baccalaureate nursing (BN) students in the USA were evaluated. Perceived levels and sources of stress in various years of the nursing program were identified by using the General Health Questionnaire (GHQ), a stress inventory, and a demographic sheet. Reliability and validity were supported for the GHQ. The stress inventory was not tested for reliability, but face and content validity were established. The data were collected through completion of questionnaires during the sixth week of the semester. Frequencies were computed to determine the mean scores on the individual items and the questionnaires, as well to determine the proportion of students in each category of demographic variables. The t-test was used to examine differences in stress and health, and correlations determined relationships between demographic variables, stress, and general health. Finally, an analysis of variance determined differences among subjects based on years in the program. The results of the study showed high mean levels of stress in the Bachelors in Nursing program and a higher

prevalence of psychiatric symptoms than was found in the general population. In addition, high GHQ scores were consistently found across all years in the nursing program (Beck & Srivastava, 1991). Since nursing programs differ greatly, the study was limited by isolating data collection to one nursing school. The researchers suggested that sources of stress should be evaluated further, and with multiple schools of nursing to see if this evaluation can be generalized.

Stress and the Clinical Component

Following the overwhelming support in Beck and Srivastava's study of elevated stress in nursing students associated with the clinical component, Ganga Mahat (1998) conducted a study to identify junior baccalaureate nursing students' perceived stressors and ways of coping during the clinical component of their studies. The Critical Incident Techniques Tool, developed by Flanagan, was used as the questionnaire in the study, along with a demographic questionnaire.

Neither the reliability nor validity was discussed in the report. All junior baccalaureate-nursing students were asked to participate and were given a packet including both the questionnaire and the assessment tool. Fifty-five percent returned the packet, resulting in 107 students' participation in the study.

Perceived clinical stressors were categorized into five categories after data analysis. Reported findings suggested the top stressor categories to be the initial experience (35.5%), interpersonal relationships (27.1%), ability to perform roles (23.4%), a heavy workload (9.3%), and feelings of helplessness (5.6%). Data also

supported that the initial clinical experience was the top stressor, regardless of ethnicity. Over half of those students who regarded the major clinical stressor to be the initial experience associated elevated stress with administering injections or providing care. However, the most surprising statistic found in the study was that “interpersonal relationships” was a close second stressor regardless of ethnicity. Forty-five percent of the students in this clinical stressor category associated stress with the problem of interacting with their instructors. Other students in this category reported problems interacting with nurses, patients, and others. The remaining students found the stressors in the initial experience to be communication with patients, performing physical assessments, and administering oral medications.

In the stress category, ability to perform roles, the majority of students felt stress because of inadequate preparation, while only eight percent were actually fearful of harming a patient. The two remaining classifications were very close statistically. Most students in the heavy workload category associated stress with learning to care for real people and the demands of nursing school. Furthermore, those students who reported feelings of hopelessness did so specifically when caring for drug-addicted newborns and mothers. Mahat reported that the majority of students evaluated in this study used problem solving and social support coping strategies to deal with stress, although coping strategies differed when related to

each clinical category. Other studies have also looked at stressors and coping in nursing students.

Stress in Different Semesters

An Australian study in 1993 looked at nursing student stress in beginning students. The study was initiated because of a overwhelming number of students dropping out of the program before the end of their first semester. Modeled after the USA nursing schools, the Australian schools should have been well prepared to prevent this recurrent problem. However, as stated in the article, studies from both countries show the same research result; nursing students are stressed and nobody can figure out how to handle it.

In order to conduct the study a questionnaire was passed out during a class to 79 students in the middle of their first semester. All 79 students participated. The questionnaire was derived from the Students Work-place Stressors Schedule, and from issues raised in qualitative interviews with multiple small groups of students. Using the questionnaires, students identified major stressors. Data were analyzed through a multivariate analysis to determine major stressors for the population and to determine if a specific stressor affected any sub-populations. Results supported that the majority of stress felt by the students resulted from anxiety related to course work, for example exams, passing assignments, etc. For the most part personal/interpersonal questions did not elicit a high response of stress, except for the questions relating to finances. In addition, older students

who were returning exhibited much higher stress relating to science requirements and writing assignments than the younger students who entered the program directly from high school. Suggestions made in the article to reduce stress included addressing financial concerns of students, exhibiting a genuine interest in the students' well-being, and including a program to enhance student coping strategies. Research was not included in this study to determine if the suggestions had a positive effect on the completion of the program. The authors supported that further research needs to be done to evaluate what kind of program should be implemented; however, this study did confirm the demands of nursing school worldwide.

Another study completed in 1996 looked at stress and coping strategies of first year Nepalese nursing students in the clinical setting (Mahat, 1996). A convenience sample of 104 nursing students from four campuses was chosen. Data were collected through questionnaires. The questionnaires included demographic data, a written account from the students of the most stressful events in clinical, and an open-ended question about how the students dealt with the stressors. Reliability and validity for these tools were not discussed in the article. Responses from the students were placed into four different categories: interpersonal relationships, initial experiences, feelings of helplessness, and demeaning experiences. Of these four categories, fifty percent of the responses were grouped in interpersonal relationships. Results showed the majority of the

students reported the interpersonal relationship as a negative interaction with their teachers. The next most frequent category of stressors was the initial experience category. The majority of the students identified caring for the patients as the top stressful event. Coping strategies included seeking social support from friends and family to mediate stress and stressors. This finding duplicated research findings of junior baccalaureate students by the same researcher (Mahat, 1998).

Stress and Ethnicity

The review of the research literature in the subject revealed a deficit in research pertaining to stress and coping of different ethnic groups. According to Kirkland (1998) it has been assumed that African Americans might report more stress than Caucasian students, in that it has been reported that many students might come to college from lower-income families, and may be less prepared academically. In addition, African Americans were thought to be institutionally alienated. Kirkland compiled a sample of 23 African American females from three colleges of nursing in North Carolina. Those who agreed to participate completed demographic data forms and interviews following a interview protocol. The COPE scale, shown to be reliable and valid, was used to categorize the student responses. Finding of the study supported priority stressors to include in descending order: academic, environmental, financial, interpersonal, and personal. For academic stressors; performance, written work and clinical practice topped

the charts. In addition, the most reported environmental stressor was teacher/student relationships, with students perceiving teachers to be insensitive.

The most common coping strategy was that of active coping, as it was rated successful 68% of the time. Active coping involved taking action to remove or reduce the stressor. Other coping skills included seeking social support for both instrumental and emotional purposes. In addition, many students indicated in their interviews that transition into the nursing program was the major stressor of nursing school as nursing school is considered an upper division major.

Research data from this study confirms that most students' failures occur in the first semester of nursing school. In conclusion, African Americans appear to have similar coping skills as Caucasians, although a comparative study of both ethnicities from the same nursing school needed to be conducted before a conclusion could be drawn. Teacher/student relationships were again primary stressors to students. Therefore, regardless of ethnicity, student/teacher relationships are one if not the highest stressor in nursing school and in the clinical field.

Sources of Stress

Lo (2002) investigated the perception and sources of stress, coping mechanisms, and self-esteem in nursing students during three years of their undergraduate nursing program. The study noted a lack of previous longitudinal studies. The study questions included were: Are there any differences in level of

stress, coping and self-esteem of nursing students during their three years of study? What stressors do students encounter during their nursing program? How do they cope with their stressors? What support systems do they use during their nursing program? How do they successfully decrease their stress levels in relation to their academic studies by the time they enter their third year of education? The data were collected during class periods through questionnaires. Questionnaires included a 12-item version of the General Health Questionnaire and the Rosenberg Self-Esteem Inventory, both of which showed reliability and validity. Lazarus and Folkman's Ways of Coping, was the instrument of choice for the study; however, neither reliability nor was validity discussed for this instrument. A total of 101 students participated.

The results of the study revealed the top stressor to be nursing studies, with 81.2% of the students identifying this as a stressor. Other stressors identified by the students included finances (61.4%), lack of time for family/friends (48.5%), and health (36.6%). Most students reported problem focused coping as their method of stress relief, which included recreation/sports, problem solving, and social support. Social support for the majority of students came from family and friends (72.5%) while 4% of the students had no support of any kind.

Nursing students in year one had less transient stress compared with year two because of clinical, and students in year three had more positive self-esteem that year two. Students in all semesters reported chronic stress, with no

significant difference in chronic stress over the three years of nursing school (Lo, 2002). Students who were able to decrease their stress over the three years of nursing school did so by improving study skills, making time for family, and improving their personal (self) concept.

Each questionnaire was analyzed individually and then four scales were developed through factor analysis that included: avoidance, effort, advice, and growth. The study supported that stressors change during nursing school; however, chronic stress was consistent in all years. This article supported the significance of the proposed study through identifying the importance of chronic stress. In addition, another question was identified for the current study: Is there a difference in stress during different semesters of nursing or education?

Perception of Stress

Admi's (1997) research took a more in depth look at the clinical experience as a source of stress. This researcher identified the students' perceived stress levels during the initial clinical experience. The purpose of the study was to identify the nursing students' perceptions of stress in their initial clinical experience and to compare that with the actual experienced stress. Previous studies were consulted for this research. The hypotheses included:

- Preclinical expected levels of stress will be higher than actual level of stress

- Levels of stress at the beginning of the clinical experience will be higher than those at the end of the experience
- Younger nursing students (those < 20 years) will have higher NSSS scores than older students

To evaluate these hypotheses the Nursing Student's Stress Scale (NSSS) (1988) was used. Content validity was ensured. The questionnaires were administered three times during the year. Multiple analyses of variance with repeated measures were performed. Also Hotelling's T2 test was used to examine the results. Results of the study supported that perceived stress was higher in the students than actual stress, and that stress during the beginning of the clinical experience was higher than the stress scores at the end of the experience. However, data did not support that younger students were more stressed than older students (Admi, 1997). This study made an important research finding, and did an excellent job in developing a design to gather data about stress during the practicum. Gathering data multiple times showed a consistent pattern of decline in stress throughout the practicum experience.

In another research study, Rhead (1995) looked at the cause of the consistent stress pattern in nursing students in Australia when he asked the question, "Stress among student nurses: Is it practical or academic?" Rhead focused the study on both the academic aspect and the clinical aspects of the educational process. To do this, Rhead compared the Registered General Nurse

and the student nurse obtaining the Diploma of Higher Education. Using a modified nurse's stress scale, the intensity of stress was investigated. The question asked was: Is there a significant difference in the academic and practical stress in the nursing program of Registered General Nurse and Diploma of Higher Education in Nursing?

After distributing questionnaires in the classroom setting, questions were scored 0-3, for each question. The Total Stress Scores (TSS) was obtained for each evaluation and then compiled. All TSS scores were evaluated so that the results could be divided into practical and academic stress. The TSS scores for Registered General Nurses and Diploma of Higher Education were compared through factor analysis. The results of the study supported:

- Registered General Nurses (RGN) were significantly less stressed than Diploma of Higher Education (Dip. H.E.)
- RGN students were more stressed in academic than practical elements of training
- Dip. H.E. nursing students were equally stressed by practical and academic elements
- Male student nurses were found to be less stressed than females
- There were no correlations between the ages and TSS

This study offered a unique aspect to the topic of stress in nursing students. It supported the idea that different courses in nursing school trigger

different scores of stress. In addition, it supported the importance of having a solid and supportive curriculum. Other studies noted that there were higher stress levels in the beginning years of study. RGN students were third year and the Dip. H.E. students in nursing were second year (Rhead, 1995). The study supported the significance evaluating students in each semester of the curriculum.

Few studies evaluated the curriculum set-up, and how this affected students' stress levels. However, curriculum and academics are large portions of stress in college students. In addition, in the review of the literature related to studies of stress in nursing students few articles compared nursing with majors outside the health field; however, one article supported a unique opinion when compared with more recent research (Carter, 1982). Although not recent, this study was conducted to determine if women in the majors of nursing and liberal arts experienced different or similar distress and also to evaluate coping styles of these two groups. The study consisted of students from three baccalaureate schools of nursing and one private undergraduate college of liberal arts. In total 103 nursing students and 103 liberal arts students were included in this study. Multiple instruments were used to collect data including SCL-90R, a social network index, a forty-two question item coping scale, and an unpublished drug use survey. Validity and reliability of these tools were not discussed in the article. Findings between the two disciplines showed similarity between the two, with a few exceptions. Emotional stress in the groups varied only in the psychoticism

symptom dimension, where liberal art majors were significantly higher. When examining at social network, data revealed that nursing students had more close friends than liberal arts majors. The only difference in coping styles was found among liberal arts majors. Liberal arts majors used college-oriented coping styles much more; meaning students in liberal arts sought out support from counselors and administrators more often than nursing students. Also, contrary to the general opinion, both groups of college women had low drug use, with the exception of over the counter medications; and nursing student use was much lower (Carter, 1982). Since these data are old, we must consider the changes that have taken place in society, for example the transition the role of women. The similarity between the two populations leads to a series of questions. Is there really a difference between nursing stress levels and those of other majors? Is there difference in nursing and education major stress levels? If so what is the source?

Summary

Historically in the literature, stress has always been a struggle in nursing. Unfortunately, little has been done successfully to improve this issue. Research completed in supported the use of a comprehensive counseling service for nursing students as a primary intervention (Jones, 1977). Unfortunately, today's research is still suggesting the same. If stress is found to be elevated in nursing students or education students in this research, looking into counseling services would be the next step. How can stress levels be improved? The literature review supports

elevated stress levels in nursing students. The two major causes identified as stressors in the literature are academics and practicum experiences, which are two stressors present in the nursing and education majors.

Support from the literature promotes the need for further evaluation of stress levels in the nursing programs, and the evaluation of perceived stress levels in a non-health related field with a practicum component. Identification of these stressors would allow for a primary intervention for either or both disciplines; therefore, the purpose of this study was to investigate the perceived level of stress and sources of stress in undergraduate students enrolled in both nursing and education practicum courses. In this study, stress levels of students in the two professional programs (nursing and education) were evaluated using the Hassles Assessment Scale (Sarafino & Ewing, 1999) (Appendix A). Data gathered through a cross-sectional design allowed examination and comparison of stress in undergraduate students in both nursing and education who were enrolled in similar semesters of practicum courses.

Chapter 3

Methodology

Data gathered through a cross-sectional design were examined and compared for perceived stress. Data were gathered during classes purposefully selected for this project (Appendix B). Professors of the selected classes consented to allow the research study to take place during their class sessions.

Assessment Tool

The Hassles Assessment Scale was used as the assessment instrument. This instrument has been shown to be a reliable and valid instrument for assessing three dimensions of student stress: the frequency of hassles, the unpleasantness of hassles, and the extent of the respondents' dwelling on hassles (Sarafino & Ewing, 1999). Data supported the use of this research tool with the population of college-aged students (Sarafino & Ewing, 1999). Consent to use the scale was obtained from E.P. Sarafino, the instrument's author (Appendix C). Demographic data inquiries were attached to the end of the Hassles Assessment Scale (Appendix D).

Procedure

As discussed, classes purposefully selected for this project were informed of the purpose of the study both in writing and verbally. All University Students enrolled in the selected courses were invited to participate in the study during a class period. Students were informed that participation was optional and would not affect the student's in the class in any way. Those who agreed to voluntarily

participate were given the packet with the Hassles Assessment Scale. Consent was assumed with completion of the questionnaires.

Protection of Human Subjects

The proposal was submitted to the university's Institutional Review Board (IRB) (Appendix E). Permission from the IRB was obtained prior to data collection. Consent was obtained from all participants as the data were collected through the participant's willingness to participate in the study. Participants were informed that involvement in the study was voluntary and that their participation or non-participation would not affect them in any way. Packets were distributed by the researcher during class sessions. An introduction letter/consent form, Hassles Assessment Scale, and request for demographic data were included in each packet. Each packet was labeled with numbers to ease data compilation and to assure anonymity the packets were completed by the students and returned before they left the room. The researcher collected all data so that anonymity was preserved. Compiled data was given to both the education department and the school of nursing upon completion of the research. Information about dissemination of results was included in the written consent form, so all participants were aware of it prior to completing the questionnaires. The packet took less than 30 minutes to complete.

Chapter 4

Results of Findings

The purpose of this study was to evaluate the stress levels and sources of stress of undergraduate nursing and education majors. Five classes from each discipline were selected to represent the last five semesters of both the education and the nursing program students in each discipline who were also enrolled in their practicum experiences in each discipline. The comparative classes were as follows: semester one - Nursing 254, Education PDS1, Semester two - Nursing 328, Education 321, Semester three – Nursing 326, education 323, Semester four – Nursing 427, education 420, Semester five – Nursing 453, education PDS2. Stress levels were evaluated using the Hassles Assessment Scale developed by Sarafino Ewing, and analyzed using the SPSS. The students were voluntary participants.

Assessment Tool

The Hassles Assessment Scale was used as the assessment instrument. This instrument has been shown to be a reliable and valid instrument for assessing three dimensions of student stress: the frequency of hassles, the unpleasantness of hassles, and the extent of the respondents' dwelling on hassles. Data supported the use of this research tool with the population of college-aged students (Sarafino & Ewing, 1999).

Sample

The samples consisted of undergraduate nursing majors and education majors, both male and female. The accessible populations were undergraduate students enrolled in nursing and education at a medium sized public university in the Southeastern United States. Education and nursing majors were selected due to their similarity. Both populations were majority female, undergraduate, and had a practicum component in their fields of study. Students with a previous degree were omitted, to reduce bias of the results. The participants were selected by convenience and availability. Five nursing classes and five education classes, which were comparable to classes in the five semesters of the nursing curriculum, were the sources of the participants.

Analysis

Reliability for the total assessment including, all the questions asked was 0.84. In addition, the reliability for the scales How often, Unpleasantness, Agonize and combined score of all three scales was 0.875. As a result, the reliability of the data is considered high. The sample set consisted of a total of 280 nursing and education majors from a public university in the Southeast. Of this sample, 121 were students enrolled in the baccalaureate nursing program in the 2005 spring semester, and 159 were students enrolled in the education major of the same semester. The number of participants in each class were: Nursing (N)

254 = 22, N328 = 24, N326 = 26, N427 = 28, N453 = 21, Education (E) PDS1 = 51, E321 = 7, E323 = 18, E420 = 14, EPDS2 = 69.

Of those reporting gender, 50 were male and 259 were female. The mean stress score for males was 278.0 (SD = 84.2), and for the females the mean was 322.8 (SD = 88.8). Comparing these scores to the control group for men and women ($X = 264.36$ and $X = 304.13$ respectively) the participants in this study had less stress than average male and female students, however, when looking at the control scores ($X = 297.59$) in comparison with class and major, not taking gender into consideration, both nursing majors and education majors had higher stress than the control group in all semesters, except in the first semester in nursing, and EPDS2 the fifth semester of education, which reported lower stress.

To further evaluate the data, the mean score for each major was evaluated for each scale (how often, unpleasantness, and worry). For “how often” the mean for N = 113.18 (SD = 27.9), and E = 112.07 (SD = 32.8), which showed there was no significance between majors using both the t-test and ANOVA. However, on the unpleasantness scale, nursing was found to have a higher mean, therefore perceiving hassles as being more unpleasant. The mean was 90.8 (SD = 28.2) for Nursing and 88.74 (SD = 34.0) for education. The ANOVA showed this finding to be significant at (.038). However the t-test showed this finding to not be significant at .058.

When students in each discipline were asked whether they agonized or worried about the hassles, the differences were not shown to be statistically significant between the two groups. The means for nursing and education majors were, 116.7 (SD=29.6), 110.3 (SD=34.8) respectively. Findings supported that nursing majors experienced unpleasantness more significantly than the education majors, and agonized more over the hassles, but these differences in this category were not found to be statically significant.

The most significant finding in the study was the difference in stress levels between genders. Females who participated in the study were significantly more stressed than males according to the data. Significance for each scale is as follows: How Often $P=0.000$, Unpleasantness $P=0.015$, Agonize $P=0.005$, and Total Stress Score $P=0.001$. The only significant finding related to ethnicity was that of unpleasantness felt. The study supported that Caucasian students in nursing and education found the hassles to be statistically more unpleasant than African American students. Other ethnicities could not be evaluated due to the inadequate sample size of those populations.

When looking at the top stressors for the total population; the top five ranked from highest to lowest were: 1) the frequency of exams, 2) worry over exams, 3) frequency of getting up for class or work early, 4) frequency of meeting time demands and deadlines, and 5) frequency of schoolwork difficulty. In order to evaluate the top stressors for each major, the data was divided and reevaluated

according to major. The top five stressors in nursing were from highest to lowest were:

1. occurrences of exams with a $X = 4.17$, max possible 5
2. worry over how often exams occur $X = 4.11$, max possible 5
3. how often schoolwork is difficult $X = 3.95$, max possible 5
4. occurrence of time demands/deadlines/lack of time $X = 3.76$, max possible 5
5. worry over difficult schoolwork $X = 3.69$, max 5

Runners up for the top five most common hassles were occurrences having to get up early $X = 3.68$, and worry over getting low grades $X = 3.66$.

The top five stressors for education were:

1. Occurrences where students had to get up early for class or work $X = 3.52$, max 5.
2. Worry over exams $X = 3.36$, max 5
3. occurrences of exams occur with a $X = 3.35$, max 5
4. Worry over lack of money $X = 3.21$, max 5
5. Occurrences of having to deal with lack of money with a $X = 3.16$, max 5

When comparing the top stressors in both majors it was interesting to find that nursing students had higher averages than education majors on the various hassles except the frequency of lacking money.

In order to evaluate stress levels for each semester, one class from each semester of education and nursing were compared using the t-test. Results of the comparative analysis showed no significant difference between N254 and EPDS1 (first semester). When comparing N328 and E321 (second semester) there was a significant difference, with education having a higher mean on all scales. This finding however loses its reliability due to the small sample size (7) from E321, compared with 24 participants from N328. Neither N326 and E323 nor N427 and E420 showed any significant differences. The senior student sample did show significant difference, with a P level of .003. Nursing students enrolled in 453 ($X = 353.0$, $SD = 68.46$) had a significantly higher mean scale of stress on all scales when compared to the senior level students in EPDS2 ($X = 292.4$, $SD = 107.0$).

In order to evaluate whether stress levels were different throughout the semester in nursing and education, both majors were compared to themselves. For example, education classes were compared with each other and nursing classes were compared with each other.

The mean scores for nursing majors for each class were as follows:

First semester, N254, $X = 282.6$

Second semester, N328, $X = 321.5$

Third semester, N326, $X = 334.2$

Fourth semester, N427, $X = 313.3$

Fifth semester, N453, $X = 353.0$

Significant findings from the data indicated that N326 students experienced more unpleasantness associated with hassles and a greater over all stress score than those students in N254. Data also supported that although students in N427 did not experience a higher overall mean than students in N254, findings were significant in some areas. Data showed that N427 students significantly worried more about hassles than students in N254, although the occurrences of hassles are fewer. Data showed significant findings in all categories between N254 and N453 students, with N453 students being significantly more stressed. The significant levels of the scales were as follows: How Often (.028), Unpleasantness (.004), Worry over (.008), and All Scales (.005). In addition fifth semester students had more over all stress than fourth semester nursing students (N427) with a significance level of .058, which was close to the chosen level of $P = .05$. Differences were shown between the fourth and fifth semesters in the category of unpleasantness with fifth semester students scoring $X = 102.7$, and fourth semester students scoring $X = 87.5$, and a $P = .032$.

The results for Education mean scores are as follows:

First semester, EPDS1 $X = 305.7$

Second semester, E321 $X = 371.0$

Third semester, E323 $X = 345.7$

Fourth semester, E420 $X = 348.4$

Fifth semester, EPDS2 $X = 292.4$

Findings in the data included significantly higher scores for agony and total stress in E321 students when compared with students in EPDS1 with a $P = .026$ and $P = .044$ respectively. In addition, E323 also had a significant higher score in the “how often” scale with a $P = .022$. Data for E420 showed higher stress scores in the agony scale when compared with that of EPDS1. Students in E323, third semester, had hassles more often than those in EPDS2. Furthermore students in 420, fourth semester agonize or worry more significantly than students in EPDS2 with a $P = .041$. For the further explanation see tables (Appendix F).

Chapter 5

Discussion and Implication

Discussion

The most significant finding of this research supports previous research by Rhead (1995) that male students were found to have less stress than female students. In addition, nursing students had a pattern of increasing stress levels as they progressed in the nursing program, except for fourth semester. An additional question arose when evaluating the stress levels. Do fourth semester classes have more men than other nursing classes? Data demonstrated that men had much lower stress. If there is a higher percentage of male students in the fourth semester nursing class, this could explain the lower stress level. Also, the researcher was a fourth semester student, which could have affected the participants stress when taking the questionnaire. Stress levels ranked from lowest to highest in the nursing major as follows: 1, 4, 2, 3, 5.

Education had no pattern in their stress levels. The highest stress scores in education were students from E321 (third semester), and the lowest from PDS2 (fifth semester). The stress levels ranked lowest to highest as follows: 5, 1, 3, 4, 2. When looking at the data results, a big difference can be seen especially in senior students, last semester. Senior nursing students are the most stressed, whereas senior education students are the least stressed. Since both groups have a clinical component, it could be assumed that other stressors may be present.

Although education majors had higher mean scores than nursing students in the total stress score in four semesters, only one comparative group was significant, the fifth semester students; which showed senior nursing students to be significantly more stressed than the senior education majors.

Implications

After evaluating the data it is obvious that nursing students had an increasing stress level through nursing school. Interventions for these students are needed and further research should be completed. Repeating this study in other public universities is recommended. Other findings were that fifth semester students in nursing and education students in E321 (second semester) are the greatest stressed in each major. Because both disciplines showed elevated stress scores when compared to the control group, counseling and stress reducing techniques should be evaluated and introduced into both disciplines. The hypothesis was supported in that nursing and education majors did display differences in their perceived stress. However, if only evaluating mean total stress scores in the disciplines by semester, and excluding fifth semester, findings were not significant.

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Appendix A

Hassles Assessment Tool

Event How often do you experience...	How Often Occurs 0=never 1=rarely 2=occasionally 3=often 4=very often 5=extremely often					Unpleasantness Caused 0=not at all 1=mild 2=moderate 3=very often 4=extreme					Agonize/Worry Over It 1=very little/not at all 2=somewhat 3=moderately 4=a lot 5=a great deal					
1. Annoying social behavior of others (e.g., rude, inconsiderate, sexist/ racist)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
2. Annoying behavior of self (e.g., habits, temper)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
3. Appearance of self (e.g., noticing unattractive features, grooming)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
4. Accidents/clumsiness/ mistakes of self (e.g., spilling beverage, tripping)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
5. Athletic activities of self (e.g., aspects of own performance, time demands)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
6. Bills/overspending: seeing evidence of	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
7. Boredom (e.g., nothing to do uninteresting)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
8. Car problems (e.g., breaking down, repairs)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5

9. Crowds/large social groups (e.g., at parties, while shopping)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
10. Dating (e.g., noticing lack of, uninteresting partner)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
11. Environment (e.g., noticing physical living or working conditions)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
12. Extracurricular groups (e.g., activities, responsibilities)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
13. Exams (e.g., preparing for, taking)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
14. Exercising (e.g., unpleasant routines, time to do)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
15. Facilities/resources unavailable (e.g., library materials, computers)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
16. Family: obligations or activities	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
17. Family: relationship issues, annoyances	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
18. Fears of physical safety (e.g., while walking alone, being on a plane or in a car)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
19. Fitness: noticing inadequate physical condition	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
20. Food (e.g., unappealing or unhealthful meals)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
21. Forgetting to do things (e.g., to tape TV show, send cards, do homework)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
22. Friends/peers: relationship issues, annoyances	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5

Undergraduate Stress Levels, 45

23. Future plans (e.g., career or marital decisions)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
24. Getting up early (e.g., for class or work)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
25. Girl/boy-friend relationship issues, annoyances	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
26. Goals/tasks: not completing enough	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
27. Grades (e.g., getting a low grade)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
28. Health/physical symptoms of self (e.g., flu, PMS, allergies, headaches)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
29. Schoolwork (e.g., working on term papers, reading tedious/hard material, low motivation)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
30. Housing: finding/getting or moving	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
31. Injustice: seeing examples for being a victim of	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
32. Job: searching for or interviews	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
33. Job/work issues (e.g., demands or annoying aspects of)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
34. Lateness of self (e.g., for appointment or class)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
35. Losing or misplacing things (e.g., keys, books)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
36. Medical/dental treatment (e.g., unpleasant, time demands)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
37. Money: lack of	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5

Undergraduate Stress Levels, 46

38. New experiences or challenges: engaging in	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
39. Noise of other people or animals	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
40. Oral presentations/public speaking	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
41. Parking problems (e.g., on campus, at work, at home)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
42. Privacy: noticing lack of	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
43. Professors/coaches (e.g., unfairness, demands of, unavailability)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
44. Registering for or selecting classes to take	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
45. Roommate(s)/housemate(s) relationship issues, annoyances	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
46. Sexually transmitted diseases (e.g., concerns about, efforts to reduce risk of STDs/HIV)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
47. Sports team/celebrity performance (e.g., favorite athlete or team losing)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
48. Tedious everyday chores (e.g., shopping, cleaning apartment)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
49. Time demands/deadlines	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
50. Traffic problems (e.g., inconsiderate or careless drivers, traffic jams)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5

51. Traffic tickets: getting (e.g., for moving or parking violations)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
52. Waiting (e.g., for appointments, in lines)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
53. Weather problems (e.g., snow, heat/humidity, storms)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5
54. Weight/dietary management (e.g., not sticking to plans)	0	1	2	3	4	5	0	1	2	3	4	1	2	3	4	5

Appendix B

Classes selected for survey administration:

Nursing (credit hours)

254 Clinical Practicum I: Health Promotion (4)

Nursing care of clients with emphasis on health promotion. Laboratory: 12 clock hours per week.

328 Psychiatric/Mental Health Nursing (3)

Concepts of nursing care for clients with mental health needs

326 Nursing Science II: Research (3)

An introduction to methods in nursing research emphasizing both nursing theory as a basis for research and the application of research in practice.

427 Adult Nursing I (3)

Concepts of nursing care of adults with alterations in functional health patterns in response to complex health problems (including cancer, immune, nutritional, and neurological disorders).

453r Nursing Practicum VI (3)

Application of theory, practice and research in a variety of clinical settings; preparation for entry into professional nursing practice.

Laboratory: 9 clock hours per week.

Education

Professional Development School I (PDS I)

The Professional Development School I (PDS I) is an intensive, semester-long field experience. Participants spend all day, every day, in a cohort assigned to a local school. In this exploratory experience, the University students work with the faculty and students at all levels of grades K-12, both in the classroom and in non-classroom settings. University faculty provide on-site instruction through an integrated presentation.

PDS I participants complete PDS Lab and Seminar

321 Teaching of Reading in the Secondary and Middle Schools (3)

Integrating reading skills and teaching strategies with the teaching of content area subjects.

323 Teaching Reading (3)

Emphasis on reading as a developmental process and on useful strategies for getting meaning from print; survey of current methods, ways to integrate literature, teaching procedures, assessment techniques, and materials for the teaching of reading. Field component required.

420 Emergent Literacy (3)

Emphasis on the development of an instructional reading program that meets the needs of young children. Surveys classroom teaching models, assessment procedures, methods and materials.

Professional Development School II (PDS II) – student teaching

Appendix C

Permission to Use Scale

Appendix D

Demographic Data

Class/major*Please circle your major **and** the class in which you are enrolled.*

1. Nursing				
N254	N328	N326	N427	N453
2. Education				
PDS1	321	323	420	PDS2

Age *(Please fill in your age)*

Gender *(Please Circle the Number that Applies)*

1 (Male)	2 (Female)
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Marital Status *(Please Circle the Number that Applies)*

1 (Single)	2 (Dating)	3 (Married)	4 (Divorced)
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Number of Children YOU Have *(Please Circle the Number that Applies)*

1 (none)	2 (1-2)	3 (3-4)	4 (5-6)	5 (>6)
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Ethnicity (optional) *(Please Circle the Number that Applies)*

- 1) African American/Black
- 2) American Indian/Alaskan Native
- 3) Native American
- 4) Asian
- 5) Native Hawaiian or other Pacific Islander
- 6) White/Caucasian
- 7) Hispanic/Latino
- 8) Other _____

Appendix E

Institutional Review Board Approval

Appendix F

Informed Consent Statement / Introduction Letter

You are invited to participate in a research study conducted by Sarah Frassrand, an undergraduate honors nursing student at UTC. This research fulfills the requirements of an honors project.

The purpose of the study is to determine stress levels in undergraduate students. The *Hassles Assessment Scale for Students in College* developed by Sarafino and Ewing is attached for this purpose. Reliability and validity support the use of this research tool with a population of college-aged students.

Stress will be determined by examining multiple events. Each event will be measured in three different categories, **How Often the Event Occurs**, **Unpleasantness Caused**, and **Worry over the Event**. Please note that each category is rated using a different scale.

Participation is on voluntary basis, and will not affect your program of study; nor will there be any benefits for you completing the study. **COMPLETION OF THIS QUESTIONNAIRE WILL INDICATE YOUR CONSENT TO PARTICPATE IN THIS STUDY.**

All forms, once completed, should be dropped off in the box located in the front of the room. The only discomfort from participating in this study is the time it takes to fill out the survey, which is about 25 minutes.

The department in which you are enrolled will have access to the aggregate data only after it has been compiled and the semester is completed. Your information will be compiled with that of others in your class and other classes so that it will be impossible to identify your individual answers. Thank you for taking your time to complete this form. The results of this research will be available to you. You will be able to find this study in the library and also in the University Honors Room.

Researcher: Sarah Frassrand UTC Nursing Student

Contact information: University of Tennessee at Chattanooga School of Nursing
Department 1051
Faculty Sponsor: Gerry Ann Bosworth
Metro Building, 319

425-3021

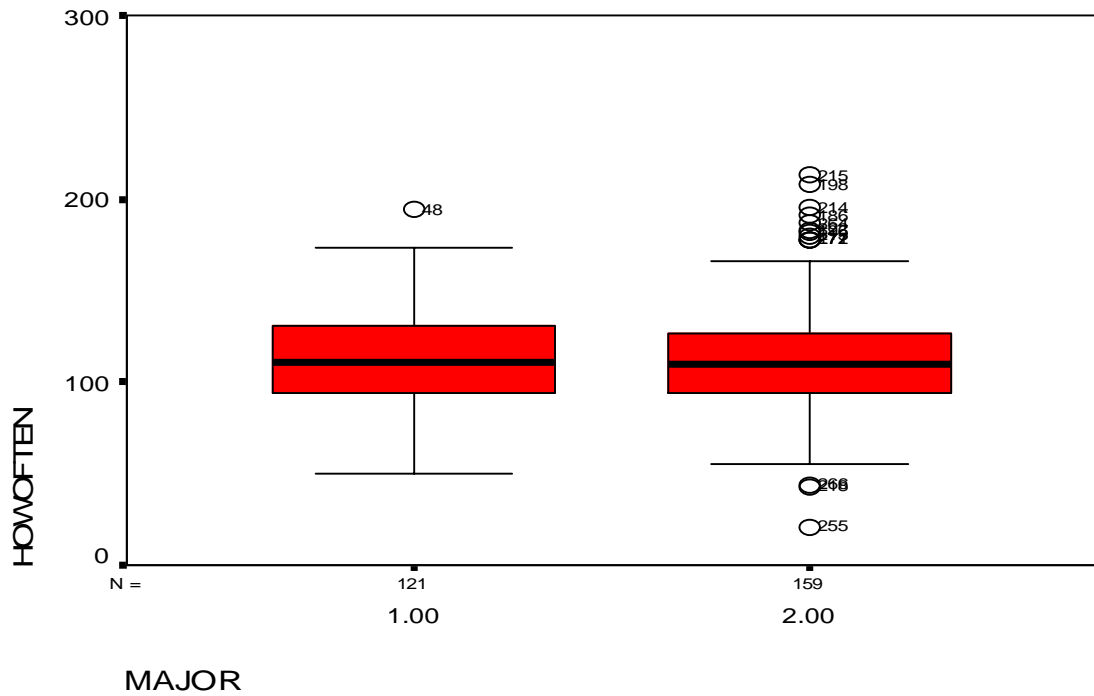
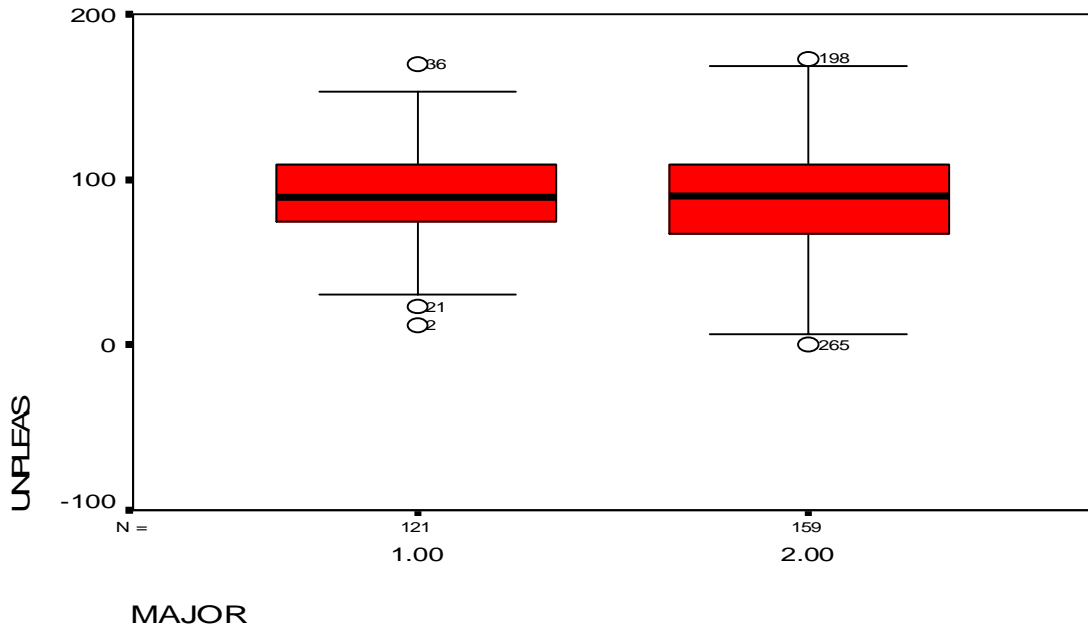
THIS PROJECT HAS BEEN REVIEWED BY THE INSTITUTIONAL
REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS AT THE
UNIVERSITY OF TENNESSEE AT CHATTANOOGA

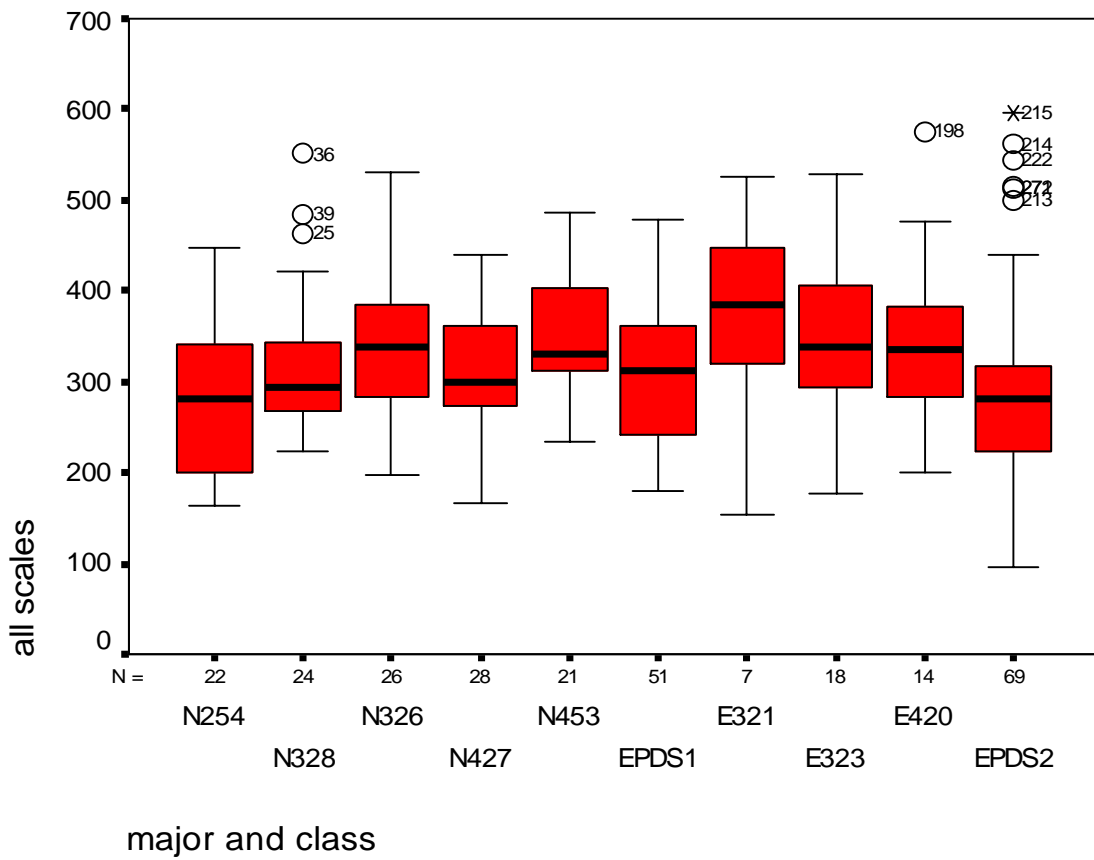
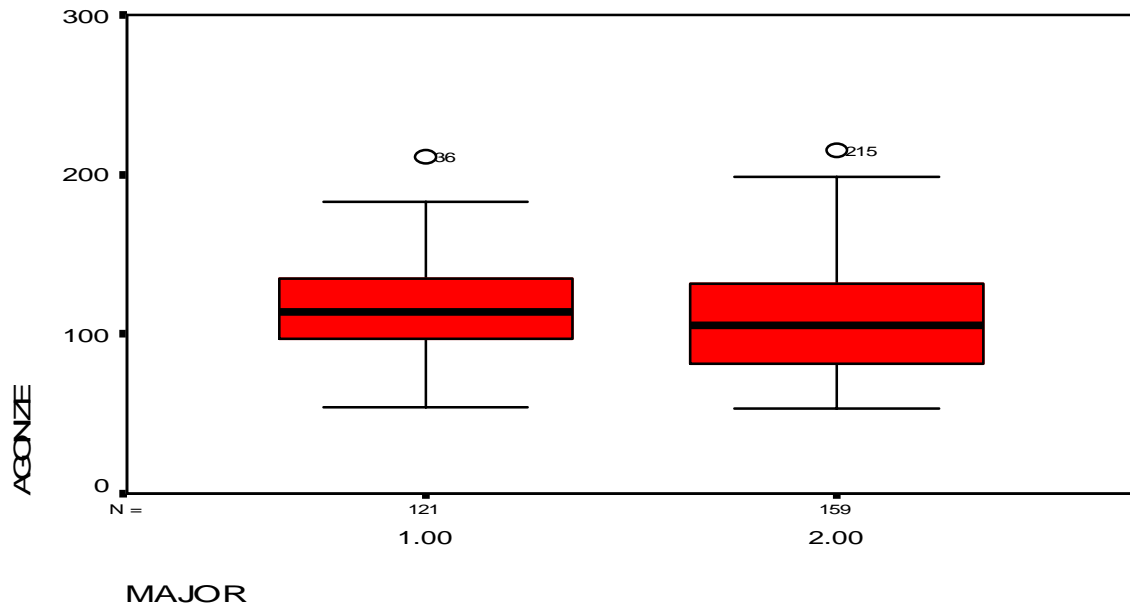
For any questions regarding your rights as a human subject, contact Dr. David
Pittenger, Chair, UTC, IRB Committee at 425-4541.

Appendix G

Tables

* Note numbers on scales represent (# 1) Nursing, (#2) Education





	gender	
	male	female
	97	116
	79.72	91.71
	101.32	115.50
all scales	278.04	322.83

