A Comparison of Perceived Stress in Nursing Students and Students of Other Majors

by

Hannah Kanyuh

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Hannah Kanyuh

APPROVED:

_____
Dr. Amanda Flagg
School of Nursing

_____
Dr. Jenny Sauls
School of Nursing Director

_____
Honors Council Rep
University Honors College

_____
Dr. John R. Vile
University Honors College Dean

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Abstract

This thesis is a pilot comparative research study to explore and compare the perceived stress levels of junior-level nursing students and junior level students of other majors. My objective was to determine if nursing students generally feel more stressed than other students, which was inspired by my personal experiences throughout nursing school. For this project I conducted a survey of junior-level nursing students and junior-level students of other majors, then ran statistical analyses of the data I collected using Statistical Package for the Social Sciences (SPSS) software. The findings indicated that nursing majors did average a higher score on the perceived stress scale than the non-nursing majors. Additional findings showed that there was a statistically significant correlation between nursing majors and increased level of stress; however, this significance was not strong and needs further exploration with a larger population.

Table of Contents

Page

Acknowledgements……iii

Abstract……...iv

List of Tables……..vi

List of Figures……vii

List of Appendices……viii

List of Abbreviations……..ix

I. Introduction……..1

II. Literature Review……...…..4

III. Nursing Degree……7

IV. Approach……...…….10

V. Results……11

VI. Statistical Analysis…….13

VII. Limitations…….18

VIII. Conclusions……19

IX. Future Recommendations……..20

References……..21

Appendices…….23

List of Tables

Page

1. Financial reporting of all participants……...…….11

2. Perceived Stress Scale total score means……...13

3. Analysis of variance……...14

4. Model summary for multiple linear regressions……16

5. Coefficients of multiple linear regressions……17

List of Figures

Page

1. School of Nursing grading scale……..7

2. Majors represented by all participants……...12

List of Appendices

Page

A. American Nurses Association, 2011 Health and Safety Survey……23

B. Perceived Stress Scale……24

C. Validity of Perceived Stress Scale……25

D. Reliability of Perceived Stress Scale……26

E. Demographic Questions……27

F. Score Interpretation of Perceived Stress Scale……..28

G. IRB Approval Letter……..29

List of Abbreviations

BSN: Bachelor of Science in Nursing

GAS: General Adaptation Syndrome

IRB: Institutional Review Board

MTSU SON: Middle Tennessee State University School of Nursing

Preceptor: an RN employed at the clinical site that provides one-on-one instruction and supervision to a nursing student

PSS Total: Total score of the Perceived Stress Scale

RN: Registered Nurse

SPSS: Statistical Package for the Social Sciences

CHAPTER I

Introduction

The purpose of this research study is to answer the question "Are junior level undergraduate nursing students experiencing more perceived stress than junior level students of other undergraduate majors?" It is hypothesized that nursing students will report having increased levels of perceived stress compared to the students of other majors.

Hans Selye, a stress researcher, defined stress as producing non-specific responses in the body when there are outside demands for change. He focused on the psychological and physiological responses of stress, including positive and negative effects on an individual's motivation and performance (Grobecker, 2016). The body's reaction to stress can be described by a model known as the general adaptation syndrome (GAS).

GAS is a defensive reaction that occurs when the body experiences stressful stimuli. The body's reaction varies and is dependent upon the stimuli, the person's assessment of the stimuli, and the consequences involved (Hirsch et al., 2015). The model is a syndrome of interrelated adaptations the body experiences as a result of non-specific stress. The syndrome develops in three stages starting with the alarm reaction, then the stage of resistance, and finally the stage of exhaustion. Manifestations of the alarm reaction are reversed during the stage of resistance and then reappear in the stage of exhaustion. Selye suggested that this finding meant that we have a finite amount of adaptability largely depending on genetic factors (Selye, 1950).

Selye also stated that stress, biologically, is an interaction of damage and defense. All agents that act as stressors produce stress and specific actions simultaneously,

affecting their target organs in multiple ways. Because of this, GAS never occurs purely on its own because it is always occurring simultaneously with the eliciting stressors producing their specific actions. Selye noted that factors such as diet, heredity, and pre-existent diseases also played a large role in altering GAS. The body's defense mechanism employs agonists and antagonists that interact with the target organ to stabilize and adjust its injury response. However, this also causes damage to the organ through the GAS. Defense responses can be conditioned by factors such as diet, heredity, and previous stress exposure. This means that the target organ's response will be based on the stressor's specific actions, the effects of GAS, and the variable conditioning factors. Selye recommended that this information be used in the field of medicine to more effectively treat non-specific injury by utilizing the body's natural defense system in GAS (Selye, 1950).

Stress has the potential to be used as a positive motivator in the learning environment. However, when stress surpasses this motivational level, it can have detrimental effects on a student. When stress reaches harmful levels, it can begin to take a toll on a person's health, learning ability, or productivity. Documented manifestations of harmful levels of stress include tachycardia (elevated heart rate), lowered self-esteem, depression, headaches, or forgetfulness (Chipas et al., 2012). Perceived stress can affect students' physiological and psychological wellbeing while crippling their confidence and academic performance (Grobecker, 2016). With that in mind, my objective with this study is to explore the perceived levels of stress experienced by undergraduate nursing students and compare this data with perceived levels of stress experienced by undergraduate students of other majors.

Work-related stress among nurses has been reviewed in countless studies, and the top concern has consistently been that of acute and chronic effects of stress and being overworked (See Appendix A). In general, nursing students know to expect a very stressful environment once they begin working as a licensed Registered Nurse (RN). However, the research shows that pre-licensure nursing students are experiencing excessive amounts of stress and negative effects of stress before they even earn their license. Studies have shown that the common stressors for nursing students include academic demands, clinical demands, and external demands (Chipas et al., 2012).

Academic demands for nursing students can include strict grading scales, computerized exams, excessive content covered on exams, instructor teaching styles, and a limited number of grade opportunities. Clinical demands may include creating a workable relationship with a preceptor at the clinical site, being closely evaluated, adapting to the stressful environment of a hospital, sleep deprivation, learning how to interact with patients and families, completing paperwork quickly and accurately, and trying to perform nursing skills that students have practiced minimally. External demands can include trying to remain employed around the demanding academic and clinical requirements, inability to be as flexible with scheduling as is needed for clinical rotations, family demands, health demands, etc. Negative consequences of high perceived stress include disturbed self-concept, competence, and learning abilities (Grobecker, 2016). These negative effects of stress can cross over into the professional careers of nurses. Nursing demands are always growing but the supply of nurses is still low. This causes concern that the highly stressful nursing education is keeping potential students away from the nursing profession altogether (Bartlett et al., 2016).

CHAPTER II

Literature Review

It wouldn't be possible to eliminate stress entirely from the nursing world due to the demands, workload, and responsibility for patients' lives (Hirsch et al., 2015). However, it has been found that nursing students often try to cope with their stress using the "escape" method, which is not effective and mostly focuses on avoiding emotions rather than solving the problem (Hirsch et al., 2015). In a comparative study of nursing, medical, and engineering students, it was shown that nursing students denied the existence of their problems more than the other groups of students. Denying the existence of problems is a self-defeating attitude that can be a serious precursor of future mental or psychosocial problems (Behere et al., 2011). Common stressors in nursing students include lack of practical knowledge, lack of free time, and the demands of receiving a professional education (Hirsch et al., 2015). Responsibility for patient care places strenuous emotional demands on nursing students, on top of their already rigorous academic demands, both leading to tremendous perceived stress. Not only does this impact their educational experience, but it also has the potential to influence their personal lives and career development as future professional nurses (Reeve et al., 2013).

A 2015 study by Hirsch, Barlem, Almeida, Tomaschewski-Barlem, Figueira, and Lunardi explored coping strategies used by nursing students in regard to dealing with stress. They defined coping as an ability to adapt that allows a person to react to behaviors or emotions resulting from stress. Coping skills are beneficial in alleviating stress and improving quality of life. The study found that nursing students mostly utilized escape to ineffectively manage their stress. They compared their findings to an academic

satisfaction variable and found that the students that were satisfied with their academics were using positive coping skills while the students who were dissatisfied were using negative coping skills. It is important for nursing students to be self-aware of their stress and the coping skills they are using so that they may develop positive adaptation skills (Hirsch et al., 2015).

A study conducted by Bartlett, Taylor, and Nelson in 2015 explored sources of stress for nursing students. The study also compared the nursing students' stress levels and mental health to those of students in the general student body. The reported findings were a subset of data of a larger study being conducted throughout an entire nursing program. This study was based on the hypothesis that the nursing students would report greater anxiety, depression, stress, and stress-related issues than the general student body. The study surveyed 156 undergraduate nursing students and 76 undergraduate students from the general student body. The survey used a five-point scale with one (1) being no stress and five (5) being tremendous stress (Bartlett et al., 2016).

Their results found that the median score for non-nursing students was three (3) and the median score for nursing students was four (4), and these findings were statistically significant. The study also showed that nursing students reported significantly more stress, anxiety, and sleep disturbances, all of which were affecting academics. The nursing students also reported more migraines and respiratory tract infections, which can result from stress. Recommendations suggested that students should receive assistance with appropriately managing their stress and developing successful coping strategies. Students would benefit from resilience throughout the duration of their program and would experience a decrease in stress response, anxiety, and other negative

health problems (Bartlett et al., 2016). “In a profession where being a role model and health promoter is paramount and where resilience for longevity in the profession is necessary, the importance of a nurse’s own health-promoting behaviors cannot be underestimated” (Bartlett et al., 2016, p. 88).

CHAPTER III

Nursing Degree

The Bachelor of Science in Nursing (BSN) program at MTSU is a four-year program consisting of three semesters of pre-nursing/general education curriculum and five semesters (72 semester hours) of upper-division nursing curriculum. This is a program that students must apply for and meet certain criteria for acceptance. The expectations for students once they are accepted into the program are of importance in relation to stress. The upper-division nursing courses consist of 15 lecture courses (44 semester hours), eight clinical courses (23 semester hours), two lab courses (two semester hours) and one guided elective (three semester hours). The nursing program has implemented a grading scale as shown below in Figure 1, which is different than the majority (if not the entirety) of the university.

A=93-100 B=86-92
C=80-85 D=73-79
F=Below 73

Figure 1. School of Nursing grading scale. Adapted from "Undergraduate Program Student Handbook," by Middle Tennessee State University School of Nursing, 2017, p. 5.

A grade of "C" or better is required in all nursing courses and no extra credit is awarded in any nursing course. If a student receives a grade lower than a "C", the student must retake the course the following semester, with this being the only nursing course the

student can take that semester. If successful with the retake, students will then pick up where they left off in the curriculum the following semester, delaying completion of the program by an entire semester. Only one course retake is allowed. If a student fails a second course (or the same course twice) dismissal from the program occurs. (Middle Tennessee State University, 2017). These high expectations are a definite cause for increased stress for students.

Other sources of stress specific to this program include dosage competency tests. These tests are taken with each clinical course and require a grade of 100% to pass. One retake is allowed at a later date, but if a student does not obtain a grade of 100% on the retake then the clinical course is counted as a failure, effective immediately. A majority of the lecture courses only have four to five exams and no other grade opportunities. These exams generally range from 50 – 100 questions and almost all of them are computerized. With little to no other grade opportunities, these exams have high stakes. The exam policy is also worth mentioning here because no exams can be retaken for any reason. If an exam is missed, the student must automatically take the final exam to make up for the missing exam grade. Otherwise, the final exams are optional with certain criteria to be met to "opt out".

Clinical courses are pass/fail. In order to "pass" a clinical course, the student must receive a 100% on the dosage competency test, participate in all extra labs and/or activities for the course, and satisfactorily pass all clinical shifts and corresponding paperwork. Clinical shift requirements vary with each course, but generally require the student to complete 12 hour shifts at a designated hospital once or twice a week for a set amount of time. Some clinical courses only last six weeks, some last the entire semester.

Satisfactory completion of clinical shifts is based subjectively on either an instructor's or preceptor's evaluation of clinical performance and paperwork.

CHAPTER IV

Approach

This study obtained approval from the MTSU Institutional Review Board (IRB) on January 22, 2018 (See Appendix G). This was a pilot comparative research study conducted at MTSU. Convenience sampling was used based on availability with junior level undergraduate nursing students enrolled in the MTSU SON and junior level undergraduate students of other majors during the Spring 2018 semester. The sample size was 80 students total - 40 nursing students and 40 students of other majors. Data was collected using a ten-question paper survey titled Perceived Stress Scale (See Appendix B). This scale is designed for student use with a validity of 0.75-0.91 using Cronbach's alpha (See Appendix C) and a reliability of 0.91 (See Appendix D). The scale has ten questions with a five-point Likert scale ranging from 0 ("Never") to 4 ("Very often"), designed to measure the degree of perceived stress for situations in one's life. The survey administered to participants included informed consent and IRB information, 12 demographic questions (See Appendix E), and the ten question Perceived Stress Scale. The survey was administered to the junior nursing students in the nursing building and to the students of other majors by randomly selecting students who were in the Student Union building at MTSU. The data was entered into the Statistical Package for the Social Sciences (SPSS) software. The statistical analyses performed are discussed in detail in Chapter VI.

CHAPTER V

Results

Basic descriptive statistics were used to calculate the frequencies for the demographic data. Of the eighty participants, 69 reported falling into the 18 – 24 age range resulting in a percentage of 86.3%. The majority of participants (72.5%) reported being female. 48 participants (60%) reported having a GPA between 3.5 – 4.0, 28 participants reported having a GPA between 3.0 – 3.4, and only four participants reported a GPA between 2.0 – 2.9. The majority of participants reported that they were working part time (52 participants, 65%) while 24 participants did not work at all and four participants worked full time. Eighty-seven and five tenths percent (87.5%) of participants reported that they were not married, and 95% reported not having any children. Only two of the 80 participants reported that they were a primary caretaker of a family member or elderly person. There was some variety in the reported financial means of attending MTSU, with the majority of participants (42.5%) reporting that their primary means of funding their tuition was through scholarships. See Table 1 below for more information. Eighty-two and five tenths percent (82.5%) of participants reported that their annual income fell below $20,000.

Table 1. Financial reporting of all 80 participants.

Financial

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Scholarships	34	42.5	42.5	42.5
	Grants	3	3.8	3.8	46.3
	Loans	22	27.5	27.5	73.8
	Family assistance	15	18.8	18.8	92.5
	Self-supporting	6	7.5	7.5	100.0
	Total	80	100.0	100.0	

From this population, 20 different majors (including Nursing) were represented. The next largest major represented was Aerospace, with 11 participants reporting this as their major. See Figure 2 below for a visual representation.

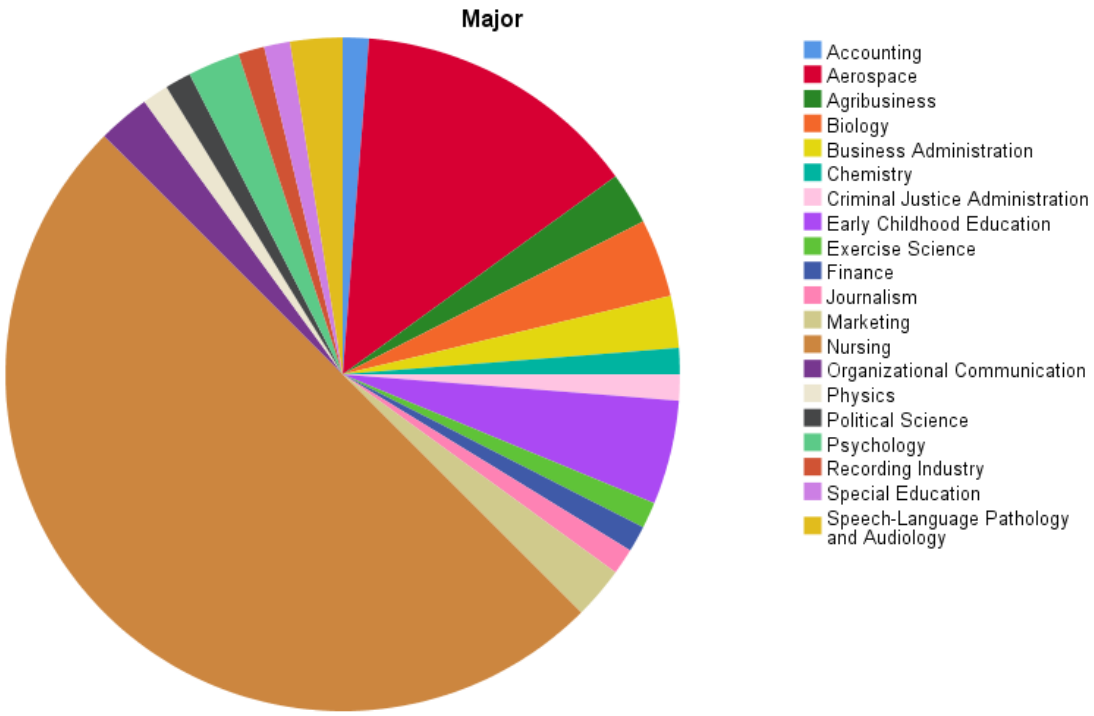

Figure 2. Majors represented by all 80 participants.

CHAPTER VI

Statistical Analysis

The Perceived Stress Scale has a guide for score interpretation (See Appendix F). The total possible score on the scale is 40 points. A score of 0 – 13 falls into the "low stress" category, a score of 14 – 26 falls into the "moderate stress" category, and a score of 27 – 40 falls into the "high stress" category. Basic descriptive statistics were used to calculate the frequencies of the Perceived Stress Scale total score (PSSTotal) interpretations (categories) and the means of the PSS total scores. Of the 80 participants surveyed, no one scored in the low stress category. 70 participants (87.5%) scored in the moderate stress category and only ten participants (12.5%) scored in the high stress category. The lowest score reported was 14 while the highest score was 33. As seen in Table 2, the mean score for the whole population was 22.0125. The mean score for nursing majors was 22.9250 and the mean score for non-nursing majors was 21.1000.

Table 2. Perceived Stress Scale total score means for nursing students, non-nursing students, and all participants combined.

Report

PSSTotal

Major1	Mean	N	Std. Deviation
Nursing	22.9250	40	4.07863
Non-nursing	21.1000	40	3.59344
Total	22.0125	80	3.92813

Analysis of variance (ANOVA) and multiple linear regression were used to further test the data. ANOVA is a statistical tool used to analyze the effect of independent variables on a dependent variable in a regression study. ANOVA (See Table 3) allows two or more groups to be compared simultaneously while testing if a relationship exists between the groups (Investopedia, 2018). Multiple linear regression is a statistical tool used to make predictions about a dependent variable based on the known information about multiple independent variables and to model this relationship. Each independent variable determined to be a predictor of the dependent variable can be used to predict how much of an effect they have on the dependent variable. Multiple regression models allow for a prediction to be made about the outcome of the dependent variable based on the information of multiple independent variables (Investopedia, 2018).

Table 3. Analysis of variance between perceived stress scale total score and independent variables.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	66.613	1	66.613	4.509	.037[b]
	Residual	1152.375	78	14.774		
	Total	1218.988	79			
2	Regression	134.296	2	67.148	4.767	.011[c]
	Residual	1084.691	77	14.087		
	Total	1218.988	79			
3	Regression	191.570	3	63.857	4.724	.004[d]
	Residual	1027.418	76	13.519		
	Total	1218.988	79			

a. Dependent Variable: PSSTotal

b. Predictors: (Constant), Major1

c. Predictors: (Constant), Major1, GPA

d. Predictors: (Constant), Major1, GPA, Financial

Multiple linear regression was conducted to establish predictors of stress score by associating a dependent variable with independent variables. Three regression analyses were conducted (See Table 4 & Table 5). The first analysis (model 1) used PSS total score as the dependent variable and major (nursing vs. non-nursing) as the independent variable. The second analysis (model 2) used PSS total score as the dependent variable and major (nursing vs. non-nursing) and GPA as the independent variables. The third analysis (model 3) used PSS total score as the dependent variable and major (nursing vs. non-nursing), GPA, and financial means to pay tuition as the independent variables.

In model 1, a multiple linear regression was calculated to predict PSS total score based on major (nursing vs. non-nursing). A significant regression equation was found (F (1,78) = 4.509, $p < .037$), with an R^2 of .055. Participants' predicted PSS total score is equal to 24.750 – 1.825 (Major), where major is coded as 1 = Nursing, 2 = Non-nursing. Nursing majors scored 1.825 points higher than non-nursing majors. Major was a significant predictor of PSS total score.

In model 2, a multiple linear regression was calculated to predict PSS total score based on major (nursing vs. non-nursing) and GPA. A significant regression equation was found (F (2,77) = 4.767, $p < .011$), with an R^2 of .110. Participants' predicted PSS total score is equal to 22.823 – 2.061 (Major) + 1.573 (GPA), where major is coded as 1 = Nursing, 2 = Non-nursing, and GPA is coded as 1 = 3.5 – 4.0, 2 = 3.0 – 3.4, 3 = 2.0 – 2.9, 4 = below 2.0. PSS total score increased 1.573 points for each decrease in GPA range and nursing majors scored 2.061 points higher than non-nursing majors. Both major and GPA were significant predictors of PSS total score.

In model 3, a multiple linear regression was calculated to predict PSS total score based on major (nursing vs. non-nursing), GPA, and financial means of paying for tuition. A significant regression equation was found (F (3,76) = 4.724, p < .004), with an R^2 of .157. Participants' predicted PSS total score is equal to 24.568 – 2.407 (major) + 1.786 (GPA) – 0.627 (financial), where Major is coded as 1 = Nursing, 2 = Non-nursing, GPA is coded as 1 = 3.5 – 4.0, 2 = 3.0 – 3.4, 3 = 2.0 – 2.9, 4 = below 2.0, and financial is coded as 1 = scholarships, 2 = grants, 3 = loans, 4 = family assistance, 5 = self-supporting. PSS total score increased 1.786 points for each decrease in GPA range. Nursing majors scored 2.407 points higher than non-nursing majors. Students with scholarships scored 0.627 points higher. Major and GPA were still significant predictors of PSS total score. The financial variable was technically significant (p value < .043), however the data for this variable was nominal.

Table 4. Model summary for multiple linear regressions.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.234[a]	.055	.043	3.84370	.055	4.509	1	78	.037
2	.332[b]	.110	.087	3.75325	.056	4.805	1	77	.031
3	.396[c]	.157	.124	3.67677	.047	4.237	1	76	.043

a. Predictors: (Constant), Major1

b. Predictors: (Constant), Major1, GPA

c. Predictors: (Constant), Major1, GPA, Financial

Table 5. Coefficients of multiple linear regressions.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	24.750	1.359		18.213	.000		
	Major1	-1.825	.859	-.234	-2.123	.037	1.000	1.000
2	(Constant)	22.823	1.592		14.338	.000		
	Major1	-2.061	.846	-.264	-2.436	.017	.984	1.016
	GPA	1.573	.718	.238	2.192	.031	.984	1.016
3	(Constant)	24.568	1.775		13.841	.000		
	Major1	-2.407	.846	-.308	-2.846	.006	.945	1.058
	GPA	1.786	.711	.270	2.514	.014	.963	1.039
	Financial	-.627	.305	-.223	-2.058	.043	.947	1.056

a. Dependent Variable: PSSTotal

CHAPTER VII

Limitations

Limitations of the study may include small sample size, inability to include all potential outside sources of stress, a variety of demographic factors, convenience sampling, limited number of majors represented, and only junior level students represented. This study only represents a small sample of students at a particular university in the United States and only represents a small sample from one nursing program. It is not reflective of every junior level undergraduate student, or every nursing student, and these results cannot be generalized.

CHAPTER VIII

Conclusions

The results of this pilot study did support the hypothesis that nursing students would report having increased levels of perceived stress (mean of 22.9250) compared to the students of other majors (mean of 21.1000). The additional multiple linear regression analysis did indicate that majoring in nursing could be a statistically significant ($p < .037$) predictor of increased perceived stress. However, this is not a very strong significant p value. When other variables were analyzed along with major, the p value became more statistically significant. Multiple linear regression analysis of both major and GPA as predictors of increased perceived stress yielded a p value of $p < .011$. Multiple linear regression analysis of major, GPA, and financial means as predictors of increased perceived stress yielded a p value of $p < .004$. These additional tests draw the conclusion that other variables certainly play a significant role in the nursing students' experience of increased perceived stress.

CHAPTER IX

Future Recommendations

While the results of the study did support the hypothesis, it is recommended that this hypothesis be tested further with a larger population. This pilot study used a small population (80 participants) selected with convenience sampling at only one university. Perhaps this study could be performed at a different university with a larger population, and then grow to be tested at multiple universities. This study also only surveyed junior level students, so it may be beneficial to survey students of other class standings. It is also recommended that the specific requirements and demands of nursing school be taken into consideration in future studies. This may entail including survey questions that ask about hours spent studying per week, number of exams per week, hours spent at clinical per week, etc. It would be interesting to compare the results of this study to the results at a different university where the nursing program was structured differently than the one at MTSU (e.g. four semester program vs. five semester program, program stretched across four years and mixed with general education vs. three semesters of general education and five semester of only nursing curriculum). This study certainly has the potential to be developed and explored further on a much larger scale.

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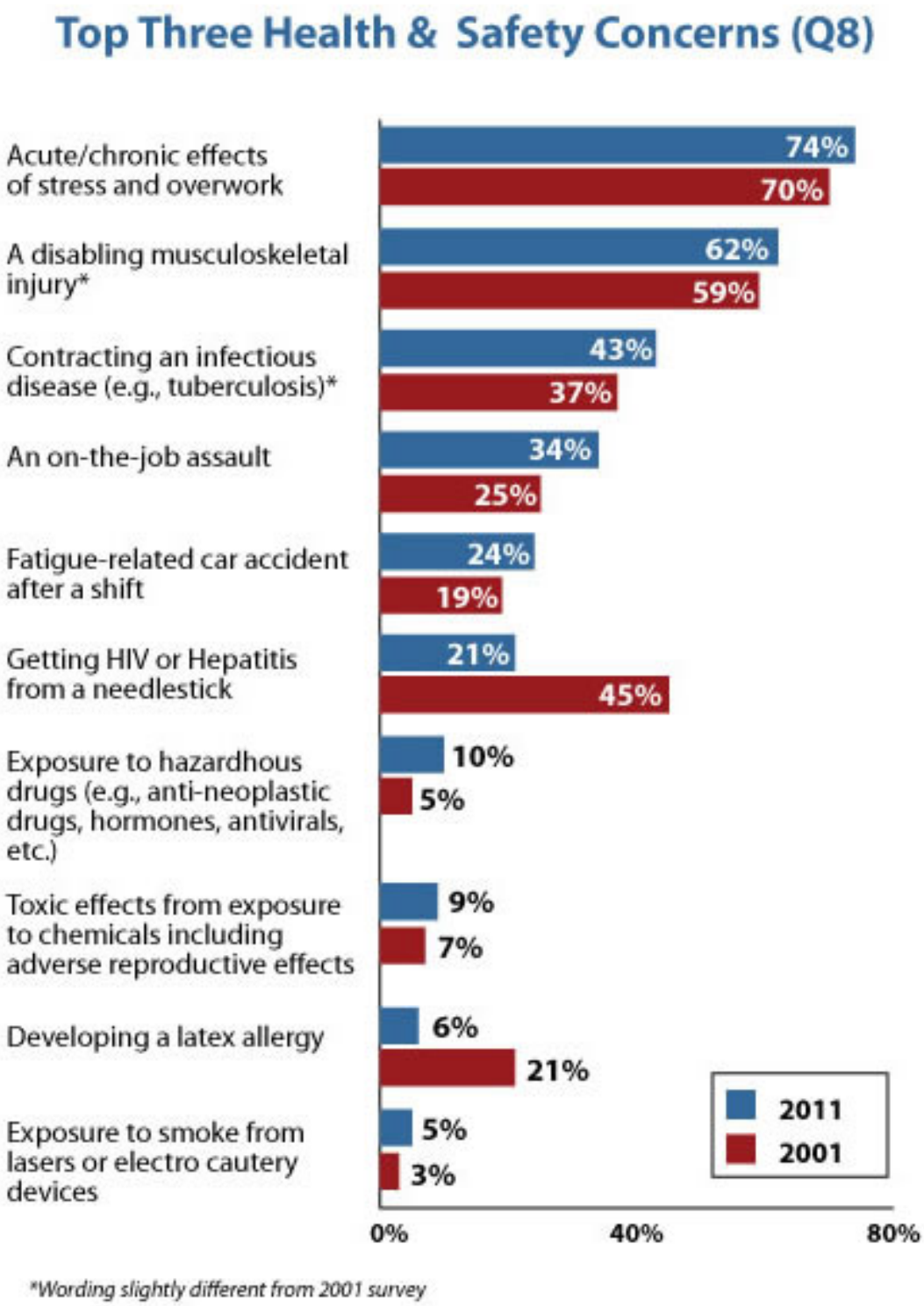
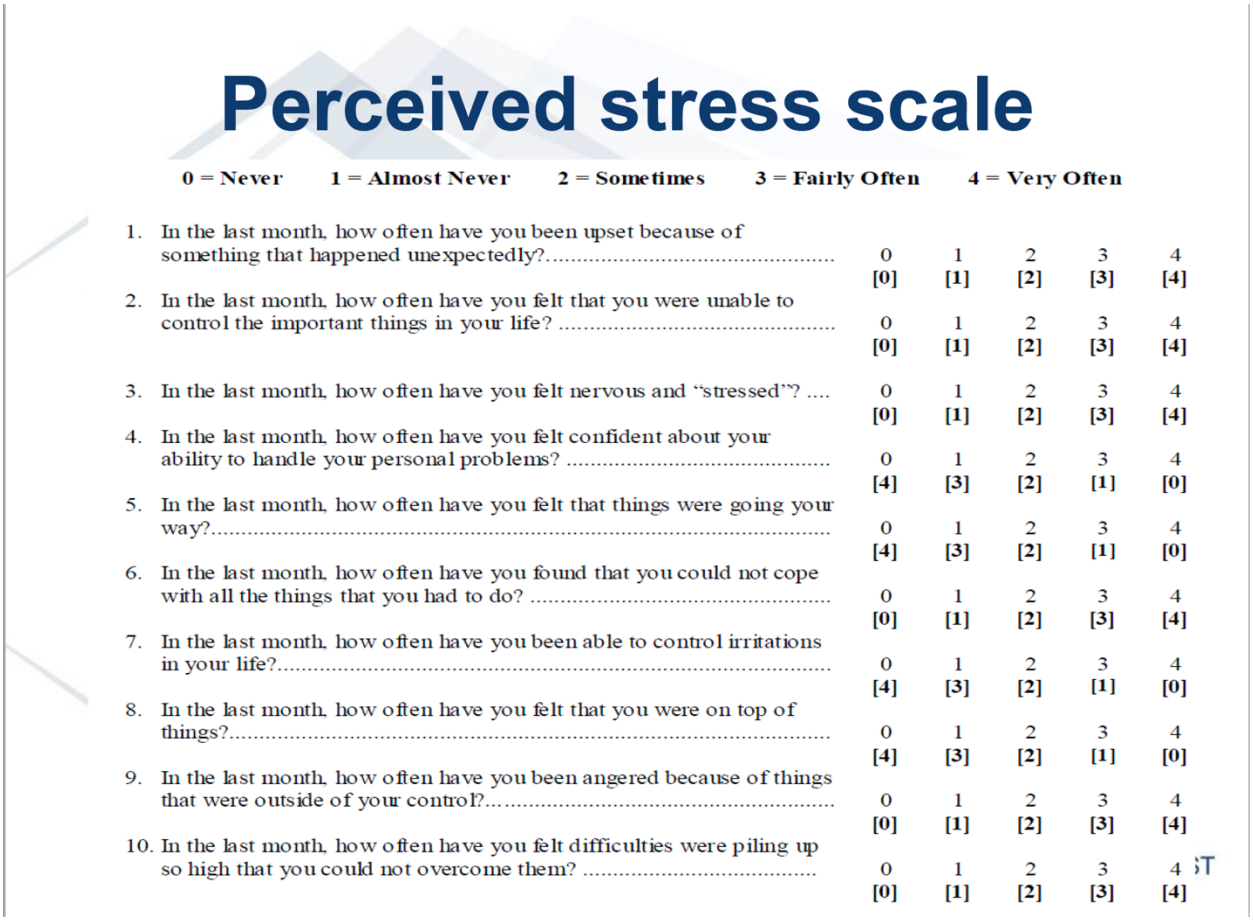
Appendix A

American Nurses Association, 2011 Health and Safety Survey



Appendix B

Perceived Stress Scale



Perceived stress scale

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

1. In the last month, how often have you been upset because of something that happened unexpectedly?	0 [0]	1 [1]	2 [2]	3 [3]	4 [4]
2. In the last month, how often have you felt that you were unable to control the important things in your life?	0 [0]	1 [1]	2 [2]	3 [3]	4 [4]
3. In the last month, how often have you felt nervous and "stressed"?	0 [0]	1 [1]	2 [2]	3 [3]	4 [4]
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	0 [4]	1 [3]	2 [2]	3 [1]	4 [0]
5. In the last month, how often have you felt that things were going your way?	0 [4]	1 [3]	2 [2]	3 [1]	4 [0]
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	0 [0]	1 [1]	2 [2]	3 [3]	4 [4]
7. In the last month, how often have you been able to control irritations in your life?	0 [4]	1 [3]	2 [2]	3 [1]	4 [0]
8. In the last month, how often have you felt that you were on top of things?	0 [4]	1 [3]	2 [2]	3 [1]	4 [0]
9. In the last month, how often have you been angered because of things that were outside of your control?	0 [0]	1 [1]	2 [2]	3 [3]	4 [4]
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0 [0]	1 [1]	2 [2]	3 [3]	4 [4]

Appendix C

Validity of Perceived Stress Scale

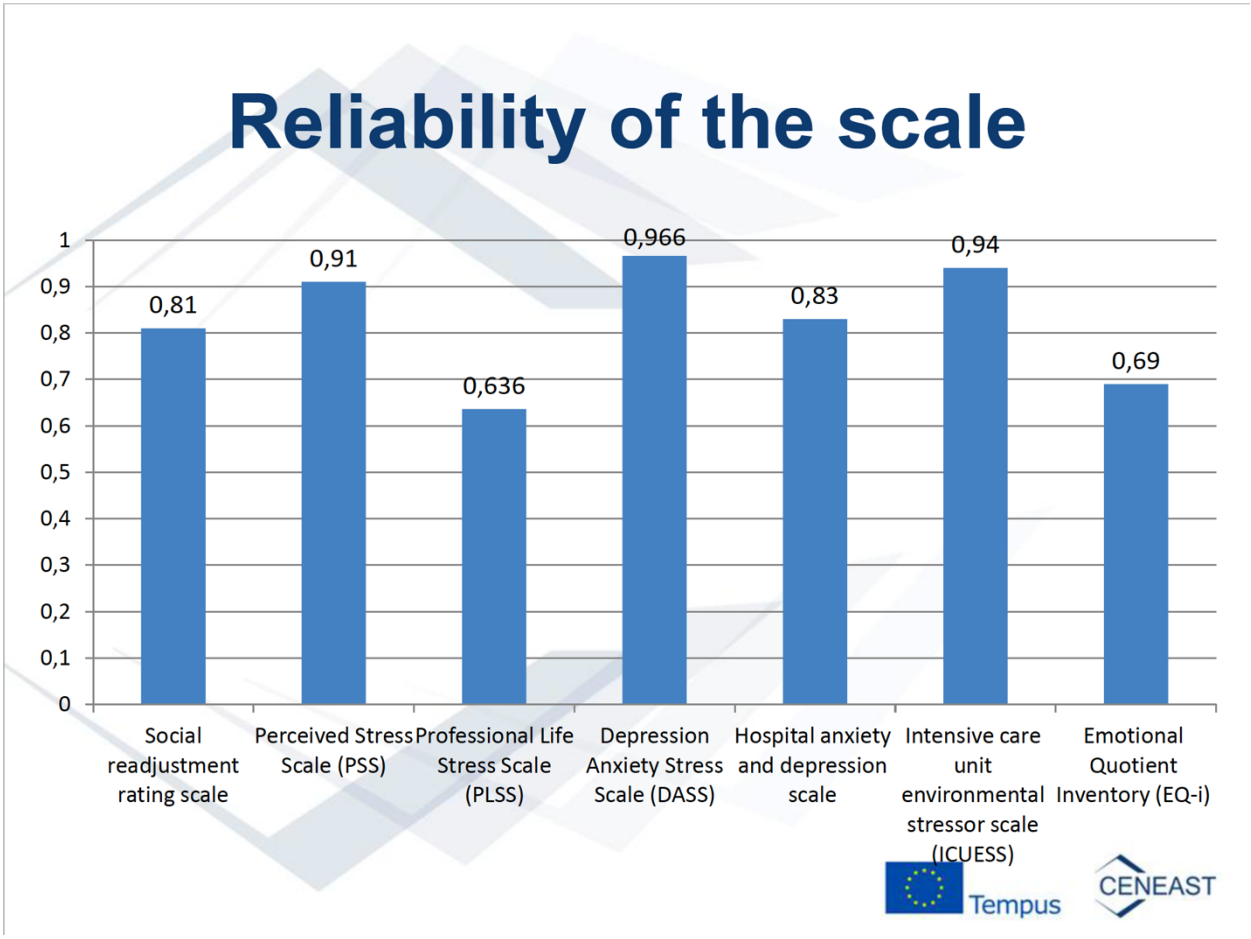
Validity of the scales for students

Title of the scale	Cronbach's alfa
Holmes and Rahe Stress Scale or „Social readjustment rating scale"	0,81 (Salinero-Fort et al. (2011))
Perceived Stress Scale (PSS)	0,75-0,91 (Siqueira Reis et al. (2010))
Professional Life Stress Scale (PLSS)	0.636 (Nasee and Ahme (2013))
Depression Anxiety Stress Scale (DASS)	For stress 0,966 (Crawford & Henr 2003)
Hospital Anxiety and Depression scale	0,83 (Bjelland et al. 2002)
Intensive Care Unit Environmental Stressor Scale (ICUESS)	0,94 (Rosa et al. 2010)
Emotional Quotient Inventory (EQ-i)	0,69 (Cobb 2004)

Tempus CENEAST

Appendix D

Reliability of Perceived Stress Scale



Appendix E

Demographic Questions

1. What is your age?
    a. 18-24
    b. 25-30
    c. 31-40
    d. 41+

2. What is your gender?

    a. Male
    b. Female

3. Is your class standing Junior level?

    a. Yes
    b. No

4. What college does your major belong to?
    a. College of Basic and Applied Sciences
    b. College of Behavioral and Health Sciences
    c. College of Business
    d. College of Education
    e. College of Liberal Arts
    f. College of Media and Entertainment
    g. University College

5. What is your major?

_____

6. What is your current GPA?

    a. 3.5 – 4.0
    b. 3.0 – 3.4
    c. 2.0 – 2.9
    d. below 2.0

7. Are you employed?
    a. Not working
    b. Working part time
    c. Working full time

8. Are you married?

    a. Yes
    b. No

9. How many children do you have?

    a. 0
    b. 1
    c. 2
    d. 3+

10. Are you a primary caretaker for a family member or elderly person?

    a. Yes
    b. No

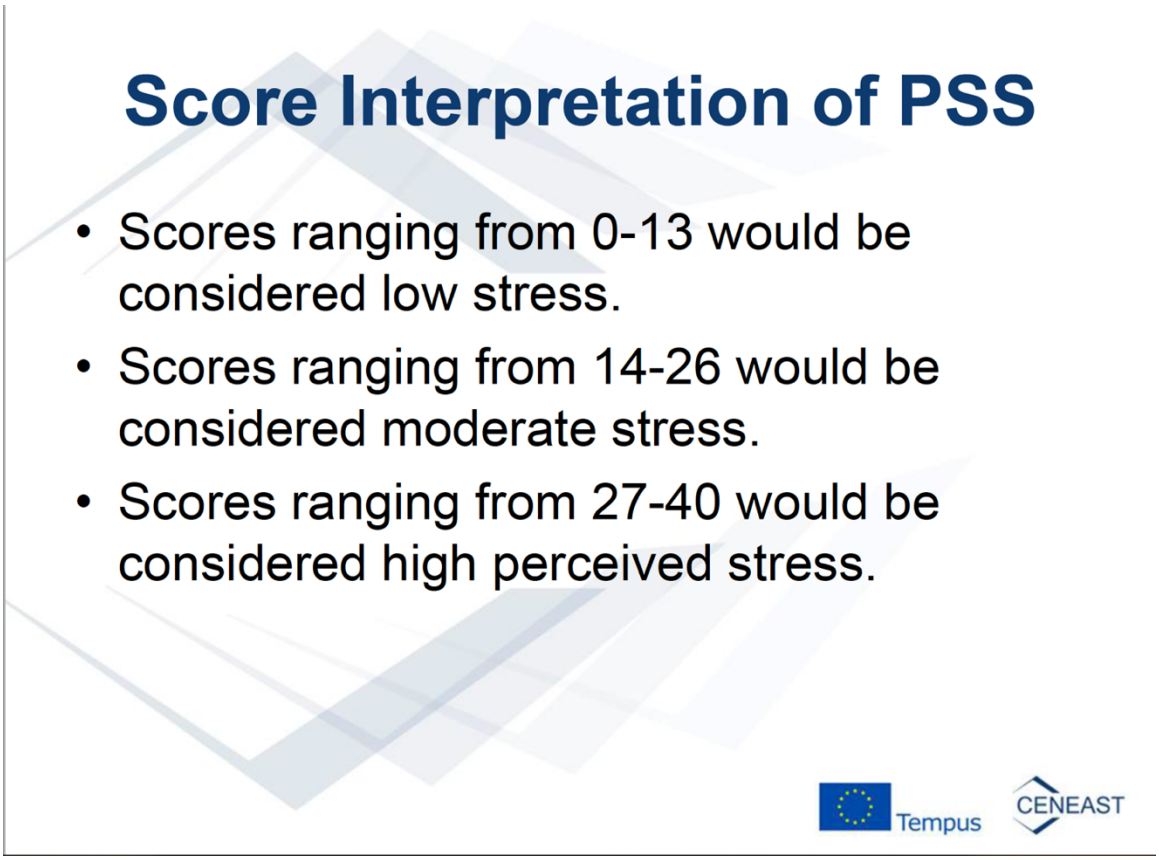
11. What is your primary means of paying to attend MTSU?

    a. Scholarships
    b. Grants
    c. Loans
    d. Family assistance
    e. Self-supporting

12. What is your annual income?
    a. $20,000 or less
    b. $21,000 - $40,000
    c. $41,000 - $60,000
    d. greater than $60,000

Appendix F

Score Interpretation of Perceived Stress Scale



Appendix G

IRB Approval Letter

IRB
INSTITUTIONAL REVIEW BOARD
Office of Research Compliance,
010A Sam Ingram Building,
2269 Middle Tennessee Blvd
Murfreesboro, TN 37129

MIDDLE TENNESSEE STATE UNIVERSITY

IRBN007 – EXEMPTION DETERMINATION NOTICE

Monday, January 22, 2018

Investigator(s): Hannah Kanyuh; Amanda Flagg
Investigator(s') Email(s): hmk2v@mtmail.mtsu.edu; Amanda.Flagg@mtsu.edu
Department: Nursing

Study Title: A Comparison of Perceived Stress in Nursing Students and Students of Other Majors
Protocol ID: **18-1133**

Dear Investigator(s),

The above identified research proposal has been reviewed by the MTSU Institutional Review Board (IRB) through the **EXEMPT** review mechanism under 45 CFR 46.101(b)(2) within the research category *(2) Educational Tests* A summary of the IRB action and other particulars in regard to this protocol application is tabulated as shown below:

IRB Action	EXEMPT from furhter IRB review***	
Date of expiration	**NOT APPLICABLE**	
Participant Size	80 [Eighty]	
Participant Pool	**Adults 18+**	
Mandatory Restrictions	1. Participants must be age 18+ 2. Informed consent must be obtained 3. Identifiable data may not be collected/stored with participant responses	
Additional Restrictions	**None at this time**	
Comments	None at this time	
Amendments	**Date**	**Post-Approval Amendments** None at this time

***This exemption determination only allows above defined protocol from further IRB review such as continuing review. However, the following post-approval requirements still apply:

- Addition/removal of subject population should not be implemented without IRB approval
- Change in investigators must be notified and approved
- Modifications to procedures must be clearly articulated in an addendum request and the proposed changes must not be incorporated without an approval
- Be advised that the proposed change must comply within the requirements for exemption
- Changes to the research location must be approved – appropriate permission letter(s) from external institutions must accompany the addendum request form