THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE, PERCEIVED STRESS AND COPING MECHANISMS IN THE UNDERGRADUATE NURSING STUDENT

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THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE, PERCEIVED STRESS 
AND COPING MECHANISMS IN THE UNDERGRADUATE NURSING STUDENT

By

MARISSA REBELLO

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Abstract

**Purpose:** The aim of this study was to evaluate the relationship between emotional intelligence (EI), coping mechanisms and perceived stress in undergraduate nursing students.

**Design:** A quantitative non-experimental descriptive design was followed.

**Method:** The data was collected through a convenience sample. The sample was collected during an undergraduate nursing class where the students in the classroom were asked to participate in the study. The students that chose to participate took a survey that included data collection on demographics, EI scores, perceived stress and coping mechanisms. The Perceived Stress Scale (PSS) (Cohen et al., 1983), the Brief COPE (Carver, 1997), and the Schutte Self-Report Emotional Intelligence Test (SSEIT) (Schutte et al., 1998) were used to collect the key data.

**Data Analysis:** The IBM SPSS software was used to statistically analyze the provided data. Descriptive statistics such as percentages, frequencies and means of the data were used to describe the demographics of the sample. Statistical tests such as the Pearson’s correlational test, independent t-test and Chi-squared test for significance were utilized to analyze the data for statistically significant relationships.

**Results:** The SSEIT, PSS and Brief COPE were the tools utilized for data collection. All of these instruments had internal reliability as shown by their Cronbach’s alpha reliability coefficient. Statistically significant relationships were found between EI and perceived stress (r=-0.419), EI and coping mechanisms (p= 0.001), as well as perceived stress and coping mechanisms (p<0.001). Overall, a sample of 147 students was used to determine these relationships. Demographics were also collected, but no statistically significant relationship was found in the demographic data as related to EI, perceived stress or coping mechanisms.
Discussion: The findings show that there is a negative relationship between emotional intelligence and perceived stress. This result found that as emotional intelligence increases, perceived stress in the undergraduate nursing student decreases. The relationship between emotional intelligence and coping mechanisms also existed, showing that students with higher emotional intelligence ($\bar{x}=131.05$) tend to utilize adaptive coping mechanisms while those with lower emotional intelligence ($\bar{x}=116.7$) utilize maladaptive coping mechanism. PSS and coping mechanism also had a statistically significant relationship showing that students who had lower perceived stress scores ($\bar{x}=19.35$) typically utilized adaptive coping, while maladaptive coping was used in students who had higher perceived stress ($\bar{x}=27.143$). More research needs to be done to establish if these relationships are significant in the population and can be generalize to other nursing programs.

Keywords: emotional intelligence (EI), coping mechanisms, perceived stress, adaptive coping, maladaptive coping, nursing students
The Relationship Between Emotional Intelligence, Perceived Stress and Coping Mechanisms in the Undergraduate Nursing Student

Chapter 1: INTRODUCTION

Undergraduate nursing schools across the country place coursework, clinical requirements and responsibility upon their students and expect top-notch work. These nursing schools have the goal of providing the best education to the nursing students to mold them into competent and confident nurses. While this type of education produces high pass rates on the national nursing exams, it fails to take into consideration the stress it places on the students. Many nursing students feel that balancing coursework, clinical, and life provokes high levels of perceived stress (Karaca, Yildirim, Ankaralli, Acikgoz, & Akkus, 2017). The nursing students must learn how to deal or cope with their stress and it is their prerogative to decide if they utilize adaptive or maladaptive coping mechanisms. Lower stress levels have been shown to be associated with students who are more effective in their studies and well adjusted to their environment (Enns, Eldridge, Montgomery, & Gonzalez, 2018). Understanding the correlation between the students’ perceived stress, coping skills and emotional intelligence fills a knowledge gap in the research. Determining these factors may influence nursing curriculum to develop an educational strategy that develops nursing students with lower stress and adaptive coping.

Enns and colleagues (2018) found that students who choose caring disciplines tend to have higher emotional intelligence (EI) than those who select other degrees such as engineering. Higher levels of EI have been thought to influence how a person may perceive their stress, and whether or not they can cope with this stress properly to encourage a healthy mental state.
The intent of this chapter is to clarify the purpose, background and necessity, statement of the problem, and the overarching theoretical framework for the study. The research questions, definitions, assumptions, and limitations will also be presented.

**Purpose**

The purpose of this correlational quantitative study was to determine the relationship between EI, perceived stress, and coping mechanisms in undergraduate nursing students enrolled in a large school of nursing at a public state university in the southeastern region of the United States. The objective of this research was to ascertain if EI is associated with the way a nursing student perceives stress and how one copes with that stress. The goal of this research was to shed light on the stress and management of the stress that an undergraduate nursing student beholds. By determining whether EI has a correlation with stress, or coping in the nursing student, further investigation might be conducted by implementing interventions. Interventions might be included in the curriculum to provide students approaches to increase EI, resulting in decreased stress, and increased adaptive coping mechanisms. Further research may identify whether these interventions positively influence educational outcomes and result in more competent nurses in the field as well as potentially lead to less nursing burnout due to a healthier mental status.

**Statement of the Problem**

In a recent study by Shinde and Hiremath (2014), 81.3% of 323 Bachelor of Science in nursing students were identified as having moderate to severe stress. Identifying the extent of the students’ perceived stress and how they cope with this stress is important to their health, and they ultimately will carry these coping mechanisms into their career (Enns et al., 2018). Emotional intelligence has been shown as a link between positive coping, decreased stress and overall improvement in educational results (Perera & Digiaco, 2015; Michelangelo, 2015; Codier &
Odell, 2014). Although many studies have established linkages between EI, stress, and coping there have not been repeated comparison evaluations to support others’ claims, nor has the research been focused on the nursing student population.

**Background and Necessity**

Developing new nurses who are emotionally competent, critical thinking, caring and ethical can contribute to positive outcomes for nurses and patients, in addition to reducing cost in hospitals. Higher EI scores have been linked to lower perception of stress and having better coping mechanisms in nurses and nursing students. In tandem, students develop into novice nurses that are emotionally competent, critical thinkers, ethical and caring (Michelangelo, 2015). Furthermore, it has been shown that individuals who are exposed to chronic moderate to severe stress can have negative long-term health outcomes, both physiological and psychological, and are more inclined to have maladaptive coping mechanisms (Cohen, Janicki-Deverts & Miller, 2007). Nursing students continue to present with moderate to severe stress. Individuals with higher stress have been shown to have a higher burnout rate in their professions (Enns et al., 2018).

In general, providing information about EI, stress, and coping to nursing educators can influence how curriculum is designed. By identifying students’ demographic influencers, intensity of perceived stress, EI score, and coping, future curriculum could be developed for nursing students to increase retention, emotional competency, decrease stress, and create a healthier well-educated nursing student. The future of nursing curriculum to include factors that could influence EI, stress, and coping may help to minimize burnout in nursing students, as well as, prevent burnout in the nursing career path by instilling positive patterns of self-awareness and self-care in relation to stress.
Research Questions

The research questions that will guide this study are:

1) What is the relationship between emotional intelligence, perceived stress, and coping mechanisms in the undergraduate nursing student?

2) What is the relationship between the demographics of age, gender, student status and emotional intelligence, coping mechanisms, and perceived stress in the undergraduate nursing student?

Hypotheses

There will be a significant difference in the mean emotional intelligence scores between students that utilize adaptive versus maladaptive coping mechanisms. There will be a negative correlation between EI scores and perceived stress scores. There will be a significant difference in mean perceived stress scores and utilizing adaptive versus maladaptive coping mechanisms. There will be a statistically significant relationship between the demographics and the independent variables of EI, coping and stress.

Theoretical Framework

Lazarus’s Transactional Theory of Stress and Coping (1990) deals with stress and coping in the cognitive meditational realm within emotion. This theory expresses that stress is developed from two processes. Stress is produced from the relationship of environment and the response of the person subjected to the stressors. In relation to this study, nursing school is the environment that contributes stressors to the students. Nursing school is an environment students interact with daily. School can provide stability, however, may also instigate negative stressors in students, such as workload (Karaca et al., 2017). How the student perceives and mediates stress could be
influenced by their EI or their previous learned coping mechanisms. Emotional intelligence, in turn, could influence the student perception of the stressors presented to them.

Lazarus (1990) also found that coping mechanisms are learned and are influenced by the person’s perception to stress. One of the goals of this study is use the Lazarus framework to uncover how students perceive their stress. Stress, in Lazarus theory categorizes stress into three types: harm, threat or challenge (Lazarus, 1990). When identifying nursing students’ stress, it will be key to distinguish if their stress related to nursing school is perceived as harm, threat or challenge stress. Categorization of the students’ stress is important because harm means that damage has happened to them psychologically, threat is feeling that harm is near, and challenge results from the person wanting to master a stressor (Krohne, 2001). Lazarus’s theory distinguishes appraisal forms for stress. Primary appraisal of stress is considered goal relevance, goal congruence, and type of ego-involvement. Primary appraisal refers to issues the person cares about, keeping accordance with personal goals, and personal commitment (Krohne, 2001). For the research topic, nursing school can be categorized as a primary appraisal of stress. Secondary appraisal is concerned with coping options or potential. Determining how the students’ perceive their stress in correlation to the students’ EI score could give insight into how students react to stress based on their level of emotional intelligence. Overall, Lazarus’s theory supports that stress appraisal and management of stress is influenced by the surrounding environment along with psychosocial factors. In relation to this study, the investigation of perceived stress, and coping of this stress with be engaged through the environmental and psychosocial lens related to emotional intelligence and the environment of undergraduate nursing school.
Conceptual Variable Definitions

**Adaptive coping.** Positive behaviors the individual utilizes to handle stress, which can benefit the individual psychologically and/or physiologically (Su et al., 2015).

**Coping mechanism:** The cognitive and behavioral way in which stress is acted on or adapted to (Su et al., 2015).

**Emotional intelligence.** The ability to understand each individual’s owns emotions and others’ emotions and collecting this information to lay a pathway for one’s own actions and thinking (Schutte et al., 1998).

**Maladaptive coping.** Negative behaviors the individual utilizes to handles stress, which can harm the individual psychologically and/or physiologically (Su et al., 2015).

**Perceived stress/stress.** In a given situation, how much emotional strain the individual feels or thinks they are under (Cohen, Kamark, & Mermelstein, 1983).

**Stressor.** Something that causes or induces emotional strain.

Operational Variable Definitions

**Brief COPE.** This tool is a compressed version of the COPE Inventory. This tool uses 28 items to measure coping mechanisms. Individuals are asked to respond how often they use each identified coping mechanism when presented with a stressful situation. Adaptive and maladaptive coping mechanisms are identified and classified with the use of this tool (Carver, 1997). Internal reliability was supported in this scale, with each category receiving a Cronbach’s α score of greater .50, which is the minimum needed to support internal reliably analysis (Carver, 1997). Adaptive coping strategies are defined as: emotional support (α=.71), positive reframing (α=.64), acceptance (α=.57), religion (α=.82), humor (α=.73), active coping (α=.68), planning (α=.73), and use of instrumental support (α=.64). Maladaptive coping strategies are defined as:
venting ($\alpha=.50$), denial ($\alpha=.54$), substance use ($\alpha=.90$), behavioral disengagement ($\alpha=.65$), self-distraction ($\alpha=.71$), and self-blame ($\alpha=.69$) (Carver, 1997; Su et al., 2015). Students were identified as using more adaptive or maladaptive coping strategies based on the larger percentage of adaptive or maladaptive coping strategies the participant possesses (Su et al., 2015).

**Perceived stress scale.** Cohen et al. (1983) developed the Perceived Stress Scale/Score (PSS) tool to measure the severity of stress and frequency of stress appraised by an individual. This is a 10 item self-reported questionnaire in which people report the frequency of the perceived stress event presented to them. The individual will rank each event from 0 (never) to 4 (very often). Higher scores are strongly linked to higher perceived stress. The PSS results ranging from 0 to 13 are considered low stress; 14 to 26 moderate perceived stress; and scores 27 to 40 are severe perceived stress (Cohen et al., 1983). In determining reliability for the PSS, Cohen, and colleagues (1983) conducted three tests and the coefficient alpha reliability scores were found to be .84, .85 and .86, reflecting a reliable testing method.

**Schutte self-report emotional intelligence.** Schutte and colleagues (1998) developed a 33-item self-reported survey in order to quantify emotional intelligence. Scores range from 33 to 165. Higher measured scores are associated with higher emotional intelligence (Schutte et al., 1998). An internal reliability analysis was conducted on this 33-item test that resulted in a Cronbach’s $\alpha$ score of .90 indicating internal reliability. However, the reliability is based on the assumption that all people completing the survey read on at least a fifth grade level (Schutte et al., 1998).

**Assumptions**

Assumptions for this study include the following: 1) students will be honest, unbiased, and respond independently when answering the questionnaire provided; 2) the tools utilized to
measure emotional intelligence, perceived stress and coping are reliable and valid; 3) all participants will read on at least a fifth grade level; 4) all students are held to the same expectations and standards as provided by the nursing school values and curriculum.

**Limitations**

This research study relied on self-reported, convenience sample data, which can include error, such as lack of self-awareness or bias. The sample was collected from only one large public university. Sample size is also a limitation of this study. Due to the fact that data will be collected during a time in which the nursing student roster is lower, fewer people from the population will be involved. With these limitations, the study could be limited when determining generalizability to other nursing schools. In addition, the sample collected was is mostly female. With the majority of the sample being female is consistent with the population the research relating to male and female nursing students may not be accurate due to the small sample of males included in the study.
Chapter 2: REVIEW OF LITERATURE

Stressors are inevitable in the environment of nursing school. These stressors come from the nursing students’ school environment, balancing social lives and their overall well-being. Many students may view their stress negatively over time (Altoik & Stun, 2013). With this perception of stress, students must develop coping mechanisms to help carry them forward in their education. Some students may display positive coping mechanisms, while others may have maladaptive coping strategies. Poor coping could lead to chronic stress, which results in negative health outcomes in the students (Enns et al., 2018). To decrease negative psychological and physiological health impacts on students it is important to identify the stressors nursing student’s deal with and how they cope with the stressors. In the future, interventions could be placed to decrease stress and teach students healthy methods to deal with their stress leading to an overall healthier lifestyle.

Increased EI has been identified as a link to lower perceived stress. It is possible that individuals with increased EI are increasingly flexible with their stressors and; in turn, interpreted stress has a lesser effect on the individual. In addition, individuals with a higher EI scores seek out more appropriate coping mechanisms to handle stress (Enns et al., 2018; Mccloughen & Foster, 2017). Studies have also shown that higher EI scores lead to more successful students. Students with the increased EI scores have increased emotional competence, critical thinking skills, leadership qualities, are more caring, have ethical behavior, have higher grade point averages and an overall increased life satisfaction (Codier & Odell, 2014; Michelangelo, 2015). Emotional intelligence scores have been shown to increase with training programs; with this in mind, identifying student’s EI would be important (Michelangelo, 2015). If EI scores can increase with training, then students can easily elevate their EI scores. This
would, in theory, lead to better coping mechanisms and a lower perception of stress. This chapter provides a review of the literature to demonstrate the importance and the relationships between EI, stress, and coping mechanisms.

**Emotional Intelligence (EI)**

Štiglic, Cilar, Novak, Vrbnjak, Stenhouse, Snowden, and Pajnkihar (2018) conducted a cross sectional, descriptive study about EI. The intent of the study was to determine many different theories. First the study identified if EI levels are different in nursing students with past experience caring for others in juxtaposition to students without care experience. The study also tested if nursing students have higher EI scores than their engineering peers and evaluated if gender influenced EI scoring. One hundred and thirteen nursing students and one hundred and four engineering students, all of who recently started their schooling at a university in Slovenia, were surveyed for this research. From the statistical evidence, it was indicated that nursing students had higher EI scores than their engineering peers (TEIQue $t = 3.972; p < 0.001$; SSEIT $t = 8.288; p < 0.001$). However, there were no statistically significant results to support that female students have higher EI scores than males. In addition, lower EI scores were not associated with any previous care experience (TEIQue $t = -1.633; p = 0.105$; SSEIT $t = -0.595; p = 0.5$). Štiglic and colleagues (2018) concluded that nursing students have increased EI scores in comparison to engineering students; however, gender, and previous care experience did not influence EI with statistically significant scores. In addition, more research would need to be conducted to evaluate if EI drives a student to select specific areas of study such as nursing or engineering (Štiglic et al., 2018).

In a longitudinal study conducted by Kaya, Şenyuva, and Bodur (2018), the Critical Thinking Disposition Scale and Emotional Intelligence Assessment Scale were utilized to
determine if nursing students’ frame of mind based around critical thinking and EI changed during nursing school to view critical thinking and EI as crucial tools. This study evaluated 182 nursing students over the course of their nursing school studies. Most students surveyed started their studies with moderate EI and critical thinking scores. A moderate positive correlation (r=0.367) was identified between self-motivation at the start of the academic year and the student’s critical thinking skills in their final year of school (Kaya et al., 2018). This showed that students with more motivation increased their own critical thinking abilities by the end of nursing school, and viewed critical thinking as an important skill set. Kaya and colleagues (2018) explained that it is evident that critical thinking skills grow as students’ progress in their nursing studies. However, it is recommended in their conclusion that the subjects of EI and critical thinking need to be further investigated.

Barkhordari, and Rostambeygi (2013), conducted a descriptive cross-sectional study on 87 freshmen and senior baccalaureate nursing students at Islamic Azad University of Yazd. The purpose of this study was to compare and assess EI similarities and differences between freshman and senior nursing students. A survey was given to the students that included demographic information and the Baron Emotional Quotient Inventory (EQ-i) to assess the students’ EI. The average score of EI for first year students was 282.37 ± 27.93. In comparison, the senior students had a mean score of 289.64 ± 21.13. This was not a statistically significant difference. With no statistically significant information, the study concluded that more information on EI would need to be collected (Barkhordari & Rostambeygi, 2013). The authors also noted that EI does impact choices and stress in the nursing student, but gaps in the knowledge base clearly still exist.
A meta-analysis research study was completed by Michelangelo (2015) with the goal to investigate EI and its relationship to nursing ability. This meta-analysis utilized 395 studies, with 27 of those studies focused on nurses or nursing students. The traits of leadership, ethical behavior, health, reflection, nursing student performance, and job retention/satisfaction were investigated in relation to EI. All the studies reported a weak to strong correlation of EI to at least one of the traits mentioned previously. There was a moderate cumulative effect size of $r = 0.3022$ across all studies. Michelangelo (2015) inferred that EI training and increased EI scores improve outcomes of nursing students and nurses in relationship to the six traits previously mentioned. This study showed that nurses and nursing students should be trained with a stronger focus of EI in mind. By increasing EI scores, cost of health care to the public could be decreased by having more effective and competent nurses (Michelangelo, 2015).

Codier and Odell (2014) conducted an exploratory, descriptive, quantitative study with the aim of measuring EI, and investigating if there is a relationship between the grade point average of a first year nursing student and their EI score. The sample of the study was 72 undergraduate student nurses at a university in the United States. The students were given a survey, which quantified their EI ability through the use of the Mayer–Salovey–Caruso Emotional Intelligence Test. Nursing students’ pre-admission grade point average was also analyzed. A statistically significant correlation between total EI ($r = .24$), and experiential EI ($r = .25$) was found in relationship to grade point average ($>.05$). Overall, there was a relationship between the GPA the students earned and the measured EI ability of the students. The study suggested that longitudinal research should be conducted to identify if EI determines not only pre-graduation success, as found, but also post-graduation success (Codier & Odell, 2014).
In a qualitative study, McCloughen, and Foster (2017) interviewed nursing and pharmacy students with the goal to recognize troublesome situations the students were presented with during clinical and identify what mechanisms the students utilized to handle the situation. Twelve nursing and eight pharmacy students in their final year of study at an Australian university were selected to be the sample group. The study showed that many students had different and challenging interpersonal situations throughout their clinical placements. Many of the situations were caused by rude behaviors or criticism. These situations involved student-staff and intra-staff conflict. Students with a range of EI scores used emotionally intelligent behaviors to control the situations, resulting in a positive learning experience and minimizing discomfort. However, a few students in difficult situations displayed maladaptive behaviors, which negatively impacted their education. In conclusion, during stressful interpersonal interactions emotionally intelligent behaviors are effective. Teaching methods to perpetuate these positive behaviors would be beneficial to the education of nursing and pharmacy students, and provide positive learning outcomes (McCloughen & Foster, 2017).

Perera and Digiacomo (2015) used a multi-wave design model to address gaps in trait EI. More specifically, the study linked EI, perceived social support, engagement coping, adjustment, and academic performance in undergraduates. Four hundred and seventy undergraduates were surveyed. The instruments included the Trait Emotional Intelligence Questionnaire-Short-Form, Social Provisions Scale, COPE inventory, Organization and Attention to Study Questionnaire, Warwick-Edinburgh Mental Well-Being Scale-Short Form and grade point average. The results showed that trait EI had a direct linkage to social support ($\gamma = .474, p < .001$) and engagement coping ($\gamma = .568, p < .001$). Trait EI also indirectly predicted adjustment through engagement coping ($\gamma\beta = .197, 95\% \text{ BC CI} = .111, .283$) and social support ($\gamma\beta = .138, 95\% \text{ BC CI} = .064,$
There are statistical correlations between coping, social support, and adjustment ($\gamma \beta = .329, 95\% \text{ BC CI} = .211, .446$). Perera and Digiacomo (2015) summarized that those with high scores on trait EI are linked to students with better psychological adjustment, and the students typically perceive greater social support, which is subset of engaged coping (Perera & Digiacomo, 2015).

**Coping**

Sim and Bang (2016) completed a quantitative study with the objective to identify a relationship between coping, adjustment to college life and EI in nursing students. Two hundred and twenty-seven associate degree nursing students were given a structured questionnaire. The questionnaire included the use of the Wong and Law Emotional Intelligence Scale, Coping Strategy Indicator, and the College adjustment scale. The statistical analysis using Pearson’s correlation of the data showed meaningful positive correlations between EI and stress coping ($r=.294, p<.001$), stress coping and acclimatization to college life ($r=.301, p<.001$), and EI and acclimatization to college life ($r=.534, p<.001$). Results indicated that by improving EI there would be an increase stress coping and adjustment to college life. It would be necessary to develop an intervention for improving EI in nursing students and test that intervention to fully test this theory (Sim & Bang, 2016).

A quantitative, prospective correlational survey research was conducted by Por, Barriball, Fitzpatrick, and Roberts (2011) to assess relationship between perceived stress, coping, wellbeing, perceived nursing competency, performance in junction with the students’ EI. The sample included 130 student nurses. Of the group, 117 were female and 13 were male. About half the sample population was enrolled in a three-year diploma program ($n=66$), approximately one third was in a three-year higher education nursing program ($n=43$) and less than one fifth
(n=21) of the students were in an accelerated diploma program. There was a positive relationship found between EI and wellbeing (p<0.05), problem-focused coping (p<0.05), and perceived nursing competency (p<0.05). A negative relationship was identified between EI and perceived stress (p<0.05). The main conclusion brought to light by the researchers (2011) suggested that with feelings of control and emotional competence, nursing student have more effective coping strategies. The fact that better coping strategies enhanced the student’s wellbeing is evident (Por et al., 2011).

Bodys-Cupak, Majda, Skowron, Zalewska-Puchela, & Trzcinska (2018) conducted a quantitative correlational study that aimed to assess the level of stress nursing students had in difficult situations and to identify the different coping mechanisms the students used throughout their training. Samples of 110 first year students were surveyed using the research tools, which include the Perceived Stress Scale, and the Inventory to Measure Coping Strategies with Stress. The chi-square (χ²) independence test and Mann-Whitney test was used to perform statistical analysis on the data. Results found that during high stress situations students typically chose active coping or emotional support strategies. The high stress situations typically resulted from student nurses interacting with patients, families and personnel. Students rarely reported increased stress from work environment or utilizing clinical instruments. The researchers determined that nursing students are forced into many difficult situations and most perceived their stress as severe (60%), while 10.0% of the perceived low stress, and 30.0% of them perceived moderate stress. Positive reevaluation strategies (χ²=13.88; p=.01) or humor (χ²=6.71; p=.03) were used most often used in the identified stressful situations by students who had low perceived levels of stress. With growing stress levels, students are more likely to use poor coping mechanisms such as avoidance (χ²=7.59; p=0.02). In addition, it was inferred that
nursing students rarely applied coping strategies that focused on their emotion and would rather focus on problem at hand (Bodys-Cupak et al., 2018).

A cross-sectional descriptive study was performed by Yıldırım, Karaca, Cangur, Acıkgoz, and Akkus (2017) that focused on determining the relationships in nursing students between education related stress, stress coping, self-esteem, social support and health status. The sample of the study was made up of 517 students in a Bachelor of Nursing program during the 2014-2015 year. Using the chi squared statistical ratio, it was expressed that nursing students’ level of perceived self-esteem and social support influenced their stress coping levels. However, there was no statistical relationship with general health status. The researchers concluded that there is a valuable connection between stress coping, self-esteem and social support. With these results in mind, intervention studies need to be conducted to evaluate the use of the variables of self-esteem and social support to further positive stress coping during a nursing student’s education (Yıldırım et al. 2017).

Karaca et al. (2017) conducted a quantitative, cross-sectional study with the objective to determine the perceived clinical stress levels, coping behaviors and stress response during students’ clinical practice. The sample of this study was 876 students from four different universities. Of the sample collected, 34% were in nursing school. Data was collected with the use of Coping Behavior Inventory, Perceived Stress Scale, and the Physio-Psycho-Social Response Scale. Data analysis included the use of Mean ± Standard deviation, along with a one-way ANOVA analysis. Results revealed that nursing students had an overall higher perception of stress in comparison to other disciplines. This stress stemmed from the behaviors of the instructors and nursing staff (2.52 ± 0.95) and by workload and assignments (2.53 ± 0.96). The study also found that as students levels of perceived stress climbed, the students were more likely
to utilize avoidance as their coping mechanism. These finding are important to inform educators about students coping and stress. Educators can identify stressors in the student’s lives and discuss proper coping mechanisms to facilitate proper learning and create a less stressful environment (Karaca et al., 2017).

Shinde and Hiremath (2014) conducted a non-experimental, descriptive research study that aimed to identify stressors, assess stress levels, and coping mechanisms that are utilized by undergraduate nursing students. Information from 323 nursing students was collected and analyzed. The research found that 15.8% of students had severe stress, 18.6% identified as having mild stress, and the majority of student nurses (65.5%) were categorized as having moderate stress. The stressors that were identified were curriculum, clinical positions, faculty, communication, and support systems. Student nurses utilized multiple different coping mechanisms. Positive thinking as a coping mechanism was utilized by 50% of students, emotional support was utilized by 37%, social support by 65%, spiritual support by 25%, and diversion activities as 30%. Only 13.6% of students had effective coping ability, and 70.6% of students were classified as having moderate coping ability. In conclusion, the study exposed that student nurses deal with a variety of stressors. These stressors can be broken down into categories. In addition, students utilize many different coping mechanisms to deal with their stress. However, the majority of students do not utilize these mechanisms to efficiently and effectively cope with their stress (Shinde & Hiremath, 2014).

Stress

Identifying the major stressors in students’ second year of nursing school was the aim of the qualitative, phenomenological student conducted by Altoik and Stun (2013). During this study, 15 nursing students, all in their second year of nursing school, were interviewed. Clinical
practice, theoretical training, and social and personal lives were identified as the categories of the student’s main source of stress. The result of the data collected through a series of interviews provides support in the idea that students have many stressors that are internal and external. In reference to the students’ stress, they lack skills in social and coping areas. This lack of skills causes more internal stresses to externalize, and were manifested in the behavior of the students. The research team concluded that helping students to develop their social skills and coping mechanisms might help alleviate the inevitable stress of nursing school (Altoik & Stun, 2013).

Zhao, Lei, He, Gu, and Li (2014) conducted quantitative, cross-sectional research with the objective to gather data on nursing students in stressful situations and relate the effects of the student’s self-efficacy and coping strategies during this event. Two hundred and thirty-one nursing students in China were given a self-report questionnaire, which included demographics, Perceived Stress Scale, Coping Behavior Inventory and Generalized Self-Efficacy Scale. Results of the data collected was analyzed through descriptive statistics of mean, standard deviation, percentage, and hierarchical multiple regression analysis. Workload and assignments were the most common stressors the students experienced (2.20 ± 0.63). Transference was the most utilized coping strategy by the students (2.38 ± 0.65). Stress that developed from taking care of patients and other common sources was found to be moderated through the use of self-efficacy in the students. The researchers concluded that in order to decreases stress and have positive coping strategies, students self-efficacy needs to be improved. Further research is warranted in order to identify how to increase student’s self-efficacy (Zhao et al., 2014).

De Souza, Ramos Costa, Rodrigues, Bevilaqua, Inoue, De Campos, and Matsuda (2016) conducted cross-sectional research to determine the stress level in undergraduate nursing students. This study involves data collected from 111 nursing students. By utilizing the weighted
mean from the response of the surveys it was found that lack of time was related to the main stressor experienced. Leisure, time with family and time for extracurricular activities are the break down for lack of time within the stressors category. However, the highest level of stress was found to be linked to the categories of professional training (52.2%), professional communication (33.3%) and time management (32.4%). The researchers concluded that low levels of stress were presented in the general activities of school. Activities related to time management were identified as a consistent stressor throughout schooling for students, especially related to time for academic activities, social, and family life (De Souza et al., 2016).

Wolf, Stidham, and Ross (2015) conducted an embedded mixed methods study, with two main objectives in mind. The first objective was to identifying predictors of stress in accelerated and generic bachelor’s level nursing students. The second goal was to describe stressors and coping strategies used by the nursing students. The sample consisted of 210 student nurses, 75 of whom were accelerated, and 135 were in the generic program. The students were given a questionnaire that consisted of the Perceived Stress Questionnaire, Rosenberg Self-Esteem Scale, Multidimensional Scale of Perceived Social Support, and open-ended questions. Quantitative findings were analyzed, using an independent t-test and multiple regressions. Results found that history of depression ($\beta = .166$), years in the program ($\beta = .159$), self-esteem ($\beta = -.270$), and emotional support ($\beta = -.179$) were significant predictors of stress levels. Qualitative findings supported that students had three major categories of stressors; problematic relationships; time management, and fear of failure/incompetence in clinical issues. In addition, coping mechanisms that decreased students’ stress was identified as increasing their self-esteem, perception of social support, and positive thinking. This study demonstrates that history of depression, low self-esteem and little social support areas specific predictors of stress in student nurses. Educators
should encourage students to utilize positive thinking and finding emotional support systems to help with stress reduction in their student nurses (Wolf et al., 2015).

Enns et al. (2018), performed a cross sectional correational study with a goal to investigate role of coping response and the influence these responses have on perceived stress, along with determining the linkage between emotional intelligence and perceived stress of the students in helping disciplines. Students who focused their studies on majors that lead them to altruistic career paths were asked to participate in this study. Students were asked to complete a survey that included questions about the student’s demographics, the Perceived Stress Scale, COPE, and the Schutte Self-Report Emotional Intelligence Test. A sample of 203 nursing, psychology and social work students was surveyed. In order to determine statistical linkages of the data means, standard deviations, maxima and minima, and the bias-corrected bootstrapping, multiple mediation approach was used to analyze the data. Higher EI was linked with lower perceived stress ($B = -0.43[0.03], t(199) = -6.75, p < .001$). The relationship was partially mediated by coping responses. The responses can be maladaptive ($z = 3.17, p < .01$) or adaptive ($z = 2.21, p < .05$). Higher EI was also correlated with adaptive coping mechanism ($B = 0.54 [0.03], t(199) = 8.95, p < .001$). This research study suggests that implementing strategies to increase EI could reduce a student’s perceived stress, particularly a student in a helping discipline. However, interventional research would be needed to support this conclusion (Enns et al., 2018).

In the descriptive cross-sectional research Shaban, Khater, and Akhu-Zaheya (2012), worked to identify coping strategies and categorize the types of perceived stress nursing students feel during their initial clinical practice experience. The researchers surveyed 181 nursing students in their second year of school from two Jordanian universities. The Perceived Stress
Scale and Coping Behavior Inventory were used to assess the students. The data was then analyzed with the use of proportions and t-tests. The results expressed that most of the students perceived their stress resulted from workload ($\bar{x} = 2.34$), clinical environment ($\bar{x} = 1.88$), and stress from nursing staff and teachers ($\bar{x} = 1.77$). It was also determined that the least utilized coping mechanism was avoidance ($\bar{x} = 1.58$). The most popular coping mechanisms were problem-solving behaviors ($\bar{x} = 2.5$), staying optimistic ($\bar{x} = 2.34$) and transference ($\bar{x} = 2.23$). The researchers concluded that identifying the main stressors of nursing students and their coping mechanism should be kept in mind during course design for the students. This could help with students’ stress management and promote continued positive coping mechanisms. In addition, workshops that promote positive coping should be provided to students and nursing faculty (Shaban et al., 2012).

**Summary**

Understanding the linkage between EI, stress and coping mechanisms in the undergraduate nursing student is paramount for the student to learn to the best of their ability and transition into the role of novice nurse with ease (Michelangelo, 2015). Factors such as curriculum, social support, workload and clinical environment can increase a student’s perceived stress (Shaban et al., 2012; Shinde & Hiremath, 2014). Promoting increased EI can influence how a student perceives stress and if the student nurse can utilize positive coping mechanisms (Fitzpatrick & Roberts, 2011). Many researchers concluded that, by establishing interventions that promote either EI or adaptive coping mechanisms, perceived stress in students can be decreased which promotes better educational outcomes and satisfaction (Altoik & Stun, 2013; Enns et al., 2018; Shaban et al., 2012; Sim & Bang, 2016). However, more data is needed to support the theories of multiple researchers. In order to promote this idea, more research
identifying specific stressors of nursing students, their coping mechanisms, and EI during specific time periods of nursing school is necessary.

Lazarus’ Transactional Theory of Stress and Coping was used as the strong underpinning for this research. This is due to the theorized idea that stress and coping are learned and are developed in the cognitive meditational realm within emotion (Karaca et al., 2017). Determining how emotional intelligence influences perceived stress, and coping response could influence how students learn. By determining the relationship between the variables through the framework of Lazarus’s theory new teaching methods could ultimately be developed to benefit the mental health, growth and educational outcomes of undergraduate student nurses.

By continuing research on stress, EI, and coping, gaps in the current knowledge base can be addressed. Eventually, if evidenced based, it would be possible to implement interventions to promote increased EI and have positive educational outcomes and an increase in competent nursing students. In order to continue to promote the best education for student nurses, it is important to continue to grow knowledge with further research in the field of stress, coping and emotional intelligence.
Chapter 3: Methods

This study examined the relationship between emotional intelligence, perceived stress, and coping mechanisms in the undergraduate nursing student. Relationships identified through the use of predetermined tools and specifically chosen statistical tests were examined in this study. This chapter discusses the design of the research, setting, population, and instruments used within the questionnaire for data collection. Ways of protecting subjects during data collections, data collection procedure, threats to validity, organization and analysis of the collected data are also discussed.

Research Design

The research questions that were investigated in this study are:

1) What is the relationship between the emotional intelligence, perceived stress and coping mechanisms in the undergraduate nursing student?

2) What is the relationship between the demographics of age, gender, and student status and emotional intelligence, coping, and/or perceived stress in the undergraduate nursing student?

This study followed a non-experimental, descriptive, design perspective. Descriptive research observes, describes and documents aspects of situations. This classification of research can help to produce a theory about a situation, as well as establish correlational or statistically significant relationships from the data (Polit & Beck, 2017). The goal of this research was to identify if any relationships between emotional intelligence, perceived stress, and specific coping mechanisms in undergraduate nursing students exist. In addition, the demographics of age, gender, and student status were analyzed to identify any relationships existing between EI, perceived stress, and coping mechanisms as related to the aforementioned demographics.
Population and Setting

The data for this research was collected from a large public nursing school at state university in the southeastern region of the United States. All of the participants were at least eighteen years or older, currently enrolled in the undergraduate nursing program and currently in nursing classes. All ethnicities and genders were asked to participate in this study. No one was turned away from the study if they met the criteria listed above. The data was collected during part of a class time break from an undergraduate nursing class with the use of a created questionnaire (Appendix B). The classes were selected based on approval from professors to have access to their students. The data was collected during the spring and summer semesters of 2019. The total sample size reached \( n=147 \) at the conclusion of the data collection process.

Data Collection Procedures

The nurse researcher created a survey packet/questionnaire. This packet was covered with a consent form (Appendix A); under the consent form was the survey (Appendix B), which included a demographic survey, the Brief COPE, Perceived Stress Scale (PSS), and the Schutte Self-Report Emotional Intelligence Test (SSEIT). Nursing faculty at the university were contacted and asked if thirty minutes of time, possibly during a break, could be used from class to engage students to be involved in this research study. The professors of the classes agreed to the proposal for data collection. Students were told the purpose of the research, informed that there was minimal risk involved in their participation, and reviewed the consent form. The students were informed that they could stop participation at any time. Subjects who agreed to take the survey were given the packet and asked to complete it promptly. Upon completion of the survey the participant placed the completed survey into a large envelop at the front of the classroom to assure anonymity. No names or specific identifiers were collected.
Instruments

The data was collected with the use of the Brief COPE, Perceived Stress Scale (PSS), and the Schutte Self-Report Emotional Intelligence Test (SSEIT). The Brief COPE (Carver, 1997), PSS (Cohen et al., 1983), and SSEIT (Schutte, Malouff & Bhullar, 2009) have all been tested in previous studies to establish reliability and validity. A demographic portion of the questionnaire was also utilized. The following portion of this paper will discuss each of the tools being utilized in the questionnaire for data collection.

**Brief COPE.** The Brief COPE (Appendix B) was created and researched by Carver (1997). The Brief COPE is an abbreviated version of the COPE inventory, which has been previously validated and used in many health-related studies. Removing two scales of the original COPE inventory created the Brief COPE. This omission from the original scale was done due to individuals not completing the inventory because of its length (Carver, 1997). The Brief COPE was selected over the COPE inventory in this research study to minimize the time burden on participants. The Brief COPE also is reliable and valid. Carver (1997) explains how the brief COPE has validity since it identifies both dysfunctional and adaptive coping skill, even when compared to other valid and reliable scales. The sample collected to prove reliability of the Brief COPE ended with 123 participants all of whom survived Hurricane Andrew. This data was collected over three years. An internal reliability analysis was conducted on this 33-item test which resulted with a Cronbach’s $\alpha$ score of .90 indicating internal reliability (Carver, 1997).

Scoring for the Brief COPE is done with the use of a Likert scale. Each item scored is coded and correlates to a specified coping mechanism: self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame. A key is used
to associate scores of specific questions to the coping mechanisms they pertain to. The higher the score on the specific items the more frequently used the coping mechanism is applied by the subject. Permission from the University of Miami College of Psychology to reproduce, use and score the Brief COPE can be found in Appendix C.

**Perceived stress scale.** The perceived stress scale (PSS) was created to evaluate the degree to which events in a person’s life are appraised as stressful. Evidence was reported from three separate samples that the PSS holds validity and reliability with coefficient alpha reliability scores of .84, .85 and .86, reflecting a reliable testing method, therefore, is a useful tool to appraise stress in relation to different events (Cohen et al., 1983). This scale uses a Likert scale to assess reaction during stressful time periods. For the purpose of this study the participants were asked about their reaction or perceived stress in relation to nursing school. The scores were then calculated with the use of multiple reverse responses and then a summation for a total score. Scores ranging from 0-13 are considered low stress, 14-26 is moderate stress, and 27-40 is considered high-perceived stress (Cohen et al., 1983). Permission to use the perceived stress scale is given through Carnegie Mellon University’s Department of Psychology and can be used for any non-profit academic research (Appendix D).

**Schutte self-report emotional intelligence test.** The Schutte Self-Report Emotional Intelligence Test (SSEIT) characterizes or quantifies the appraisal of emotion, emotional expression, regulation and utilization of emotion in self and others to solve presented problems or conflicts (Schutte et al., 2009). The SSEIT has a test-retest reliability of .78 (Schutte et al., 1998). The SSEIT also has validity, finding positive relationships with other tests that measure emotional intelligence or emotional scales with a Cronbach’s α score of .90. Due to these factors, the SSEIT has been utilized in many different research opportunities because of its good
reliability and reasonable evidence in relation to validity (Schutte et al., 2009). This test is also scored with the use of a Likert scale. When scoring, specific scores are reversed number, as a 1 would become a 4. Once the reversal process is completed the total of all the answers are added together. The higher the score, the more emotionally intelligent the subject is assumed to be. Permission to use this scale was given from Dr. Nicola Schutte the creator and head researcher on the SSEIT (Appendix E).

**Demographic survey.** Demographics of the participants were collected through the use of the questionnaire (Appendix B). The demographics that were used to gather data reflected the participant’s gender, age, race, marital status, number of dependents, employment status, and student status (accelerated or traditional educational program). The variables for the demographic portion of the questionnaire were created after reviewing the study of Enns et al. (2018). Enns and colleagues (2018) analyzed similar variables of emotional intelligence and stress related to many important, easily generalized demographic variables. By selecting, classifying and analyzing the demographic variables appropriately, the results of the study can be easily replicated in order to assure internal generalizability.

By classifying each demographic variable properly, the sample can be accurately described to the audience. Age is categorized as a ratio level variable, with mean, median and range used to describe this specific statistic. Gender, race, marital status, number of dependents, student status, and employment status are all categorized at the nominal level of data. These variables are considered nominal because each requires the participant to select a category that the subject fits into (Pyrczak, 2018). Nominal level data is describes through the use of frequency tables, and percentages (Pyrczak, 2018).
Threats to Validity

Generalizability of the study to other populations is one of the main threats to external validity. This is due to the fact that the setting of this study is only one large public university nursing school in the southeastern region of the United States. Also, the sample collected is a convenience sample since the researchers gained access via permission from professors and asking the students in specific classes to participate. The convenience sampling and setting constraints could limit the generalizability of the research.

Statistical Analysis for Each Problem

For the study, the use of the IBM SPSS software was used to analyze and report the collected data. The use of descriptive statistics was utilized in order to accurately reflect the data collected from the sample on the demographic variables, along with scores from the Brief COPE, SSEIT, and PSS. Inferential statistics was utilized to estimate the parameters of the population along with testing the proposed hypotheses. In order to test the hypotheses presented in Chapter 1, a Pearson’s correlation test, independent t-test and Chi-squared test for significance were chosen. A Pearson’s correlation test is used to identify if a linear relationship between variables exist while determining the strength and direction of this relationship of EI and PSS, age and PSS, and age and EI. The independent t-test compares the difference between two independent samples means such as: EI and coping, PSS and coping, EI and gender, PSS and student status, or EI and student status to determine statistical relationships. The Chi-squared test for significance uses data from two categorical variables to establish statistical relationships, such as in the analysis of the variables of coping related to gender, or coping related to student status.
Protection of Participants

Participant’s confidentiality and anonymity was assured, as presented in the consent, through restriction of data access and limited demographics collected on each participant. The questionnaire was created to not have any specific participant identifiers collected to ensure anonymity. After the surveys were completed and collected the data was entered into a database to begin the analysis. Only the nurse researcher had access to the data collected. This data was only used for its intended purpose in the study and will not be used for other studies. All the surveys are kept in a locked cabinet for three years and then will be shredded. The data on the computer was saved onto a password protected external hard drive and will be deleted after three years from the completion of the study. The data was not and will not be uploaded to the cloud or the hard drive of any computer. Upon completion of the research the data will not be viewed unless it directly relates to the validity of the research conducted. IRB approval (Appendix F) was granted through the university, which the study was conducted and consent for the collection of the data has been approved and agreed to for each participant.
Chapter 4: Results

A summary of the analyzed data from the study will be presented in this chapter. Emotional intelligence (EI), perceived stress scores (PSS) and coping mechanisms of the undergraduate nursing students, as well as the description the demographics of the sample that participated in the study will be discussed. The findings related to the following research questions will be the main area of discussion for this chapter: 1) What is the relationship between the emotional intelligence, perceived stress and coping mechanisms in the undergraduate nursing student? 2) What is the relationship between the demographics of age, gender and student status and emotional intelligence, coping mechanisms, and/or perceived stress in the undergraduate nursing student?

Sample Characteristics

Overall, 147 questionnaires were collected and utilized from two different undergraduate nursing classes at a large public university in the southeastern United States. The primary researcher collected consent and proctored all of the questionnaires that included demographics, SSEIT, PSS and the Brief COPE. Each participant was informed of the research study as well as any risk and benefits to themselves prior to filling out the questionnaire independently. Participation was strictly voluntary and students could opt-out at any time. The total number of surveys collected from the students was 152. Of the 152 surveys collected, only 147 were completed and used, the residual 5 surveys were shredded due to incompletion and not included in the research. The sample of 147 students’ was found to be mainly female (n=125, 85%), with males making up a smaller amount of the data collected (n=22, 15%). The majority of the students identified as Caucasian (n=103, 70.1%), with Black/African Americans (n=17, 11.6%) as the second largest part of the identified race/ethnicity, Asian (n=14, 9.5%) and others
including Hispanic/Latino, Native American, and preferring not to answer category making up the rest of the sample \((n=13, 8.8\%)\). Participant’s ages ranged from 18 to 58, with the average age being around 24.5 \((\bar{x}=24.49, \text{SD}=5.6)\). The majority of the students identified their student status as traditional students \((n=101, 68.7\%)\) while the rest were in the accelerated program \((n=46, 31.3\%)\). Table 1 displays all the demographic data from the students that participated in the study.

Table 1

*Characteristics of Demographics*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
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<td></td>
</tr>
<tr>
<td>Male</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td>Female</td>
<td>125</td>
<td>85</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
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<td>Asian</td>
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<tr>
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<td>Caucasian</td>
<td>103</td>
<td>70.1</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
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<td>0.7</td>
</tr>
<tr>
<td>Native American</td>
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<td>0.7</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>Marital Status</td>
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<tr>
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<td>83</td>
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<tr>
<td>Married</td>
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<td>Divorced</td>
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<td>2.7</td>
</tr>
<tr>
<td>Dependents</td>
<td></td>
<td></td>
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<tr>
<td>None</td>
<td>131</td>
<td>89.1</td>
</tr>
<tr>
<td>1 to 2</td>
<td>11</td>
<td>7.5</td>
</tr>
<tr>
<td>3 or more</td>
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<td>Accelerated</td>
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<tr>
<td>Full time</td>
<td>4</td>
<td>2.7</td>
</tr>
</tbody>
</table>

| Age                                   | 24.49     | 5.6     |

Mean | SD
Results of Research Question 1

Research question one examined the relationship between the emotional intelligence, perceived stress, and coping mechanisms in the undergraduate nursing student. Data for EI was collected with the use of the SSEIT. Data for perceived stress was collected with the use of the PSS. The Brief COPE was utilized to determine the main coping mechanism of each participant. The data was analyzed with the use of Pearson’s correlation test or the independent t-test to determine if the data supported the respected hypotheses.

Schutte self-report emotional intelligence test. The possible range of scores that can be obtained using the SSEIT tool, which is used to measure an individual’s emotional intelligence, is 33 to 165. Utilizing the SSEIT tool, a higher reported score is reliably correlated with higher emotional intelligence (Schutte et al., 1998). One hundred and forty-seven questionnaires, that included the SSEIT, were collected from willing undergraduate nursing students during classes mid-point lecture break. The SSEIT scores, also know as the EI or EI score, of the participants ranged from 70 to 165 with a mean of 129 (SD= 15.32). These results show that the undergraduate nursing students have a slightly above average emotional intelligence score overall. The average SSEIT score across many large samples is 124 (SD=13). Students who scored above 137 have unusually high emotional intelligence (Schutte et al., 2009).

Perceived stress scale/score. The potential range of perceived stress scores when utilizing the PSS in questionnaire format is 0 to 40. The closer the perceived stress score is to 40 the more stressed the student perceives himself or herself to be (Cohen et al., 1983). One hundred and forty-seven questionnaires were collected from students willing to participate in the study. The overall perceived stress scores ranged from 3 to 40 with a mean score of 20.47 (SD= 6.87).
Coping mechanism and the Brief COPE. Coping mechanisms for each participant were determined to be adaptive or maladaptive based on their overall percentage scored on maladaptive or adaptive behaviors identified by the Brief COPE. Adaptive coping strategies were determined as the use of emotional support, positive reframing, acceptance, religion, humor, active coping, planning, and use of instrumental support. Maladaptive coping strategies were identified as venting, denial, substance use, behavioral disengagement, self-distraction, and self-blame (Su et al., 2015). Students were identified as using more adaptive or maladaptive coping strategies based on the larger percentage of adaptive or maladaptive coping strategies the participant possesses (Su et al., 2015). One hundred and forty-seven students participated in the questionnaire, which included the use of the Brief COPE tool. Of these 147 participants, 126 (85.7%) were identified to utilize mainly adaptive coping, while 21 (14.4%) utilized more maladaptive coping mechanisms.

Table 3
Brief Cope Frequencies of Adaptive and Maladaptive Coping

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
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<td>Adaptive</td>
<td>126</td>
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<tr>
<td>Maladaptive</td>
<td>21</td>
<td>14.3</td>
</tr>
<tr>
<td>Total</td>
<td>147</td>
<td>100</td>
</tr>
</tbody>
</table>
Correlation between emotional intelligence and perceived stress scores. The hypothesis presented is that there would be a negative correlation between EI scores and overall PSS in the undergraduate nursing student. The null hypothesis is that there would not be a correlation between EI scores and perceived stress. Using the Pearson’s Correlation test, the test resulted with an $r = -0.419$. Therefore there is a moderate ($0.3 < |r| < 0.5$) negative statistically significant correlation between emotional intelligence and perceived stress at the 0.01 level. The analysis results with the ability to reject the null hypothesis at the 0.01 level.

Figure 1. Scatter Plot of EI and PSS with line of best fit

Relationship between emotional intelligence and coping. The overall hypothesis presented for EI and coping was that there would be a significant difference in the mean emotional intelligence scores between students that utilize adaptive versus maladaptive coping mechanisms. The null hypothesis would be that there was no statistically significant difference between mean emotional intelligence scores and categorized coping mechanisms. An independent t-test was utilized to analyze the data at the chosen significance level of 95% confidence meaning the $p < .05$. Upon analysis the determined $p$ value was 0.001, which rejects the null hypothesis, showing there is a statistically significant difference in the mean of EI scores
and the students’ type of coping mechanism. The mean EI score for students who utilize adaptive coping is 131.05, while the average EI score for maladaptive coping was found to be 116.7.

**Relationship between perceived stress scores and coping.** The overall hypothesis presented for PSS and coping was that there would be a significant difference in mean perceived stress scores and utilizing adaptive versus maladaptive coping mechanisms. The null hypothesis would be that there was no statistically significant difference between the PSS and categorized coping mechanisms. An independent t-test was utilized to analyze the data at the chosen confidence interval of 95% or \( p < .05 \). Upon analysis, a significant difference in mean of perceived stress score and maladaptive and adaptive coping mechanism was determined (\( t_{315.846} = -5.954 p < .001 \)), and therefore we can reject the null hypothesis. There was a significant difference between the mean in the PSS of students who used maladaptive coping and those who used adaptive coping. Adaptive coping had a mean perceived stress score of 19.35, while maladaptive coping had a mean of 27.143 for a perceived stress score.

**Research Question Two**

Research question two examined the relationship between the demographics of age, gender, and student status with emotional intelligence, coping, and perceived stress in the undergraduate nursing student. In order to examine relationships of the data, the use of the Pearson’s correlation test, independent t-test, and Chi-squared test were used in order to identify relationships within the data sets.

**Relationship between student age and perceived stress scores.** The overall hypothesis presented for PSS and the relationship to student age was that there would be a negative correlation between student age and PSS. The null hypothesis stated that there was no statistically correlation between PSS and student age. A Pearson’s correlation was utilized to
analyze the data; the test resulted with an $r = .031$. Based on statistical support the data failed to reject the null hypothesis, assuming no correlation between age and PSS.

**Relationship between student age and emotional intelligence.** The overall hypothesis presented for EI and the relationship to student age was that there would be a negative correlation between student age and EI. The null hypothesis stated that there was no statistically correlation between EI and student age. A Pearson’s correlation test was utilized to analyze the data; the test resulted with an $r = .05$. Based on statistical support the data failed to reject the null hypothesis, assuming no correlation between age and EI.

**Relationship between age and coping.** The overall hypothesis presented for age and coping was that there would be a significant difference with the age of the students and how the students utilized adaptive versus maladaptive coping mechanisms. The null hypothesis was that there would be no statistically significant difference between age and categorized coping mechanisms. An independent t-test was utilized to analyze the data at the chosen significance level of 95% indicating if $p < .05$ there is a determined relationship. The independent t-test was conducted to compare age and coping mechanisms. There was no statistically significant difference in age and adaptive or maladaptive coping ($t_{40.65} = 0.971$, $p = 0.33$). This evidence suggests that there is no relationship between age and the use of adaptive versus adaptive coping.

**Relationship between emotional intelligence and gender.** The overall hypothesis presented for EI and gender was that there would be a significant difference with EI scores based on the student’s gender. The null hypothesis stated that there was no statistically significant difference between EI scores and gender. An independent t-test was utilized to analyze the data at the chosen significance level of 95% indicating if $p < .05$ there is a determined relationship. The independent t-test was conducted to compare EI scores and gender. There was no
statistically significant difference in EI scores and the male or female gender ($t_{26.03} = -0.82$, $p = 0.42$). This evidence suggests that there is no relationship determined between EI and being a male or female.

**Relationship between perceived stress scores and gender.** The overall hypothesis presented for PSS and gender was that there would be a significant difference between PSS of the students and gender. The null hypothesis would be that there was no statistically significant difference between perceived stress scores and gender. An independent t-test was utilized to analyze the data at the chosen significance level of 95% meaning if $p < .05$ there is a determined relationship. The independent t-test was conducted to compare PSS and gender. There was no statistically significant difference in PSS and the male or female gender ($t_{29.37} = -.49$, $p = 0.628$). This evidence suggests that there is no relationship determined between PSS and being a male or female.

**Relationship between emotional intelligence and student status.** The overall hypothesis presented for EI scores and student status was that there would be a significant difference with the EI score of the students and if the student was classified as a traditional or accelerated student. The null hypothesis would be that there was no statistically significant difference between EI scores and student status. An independent t-test was utilized to analyze the data at the chosen significance level of 95% meaning if $p < .05$ there is a determined relationship. The independent t-test was conducted to compare EI scores and student status. There was no statistically significant difference in EI and being a traditional or accelerated student ($t_{101.137} = -0.283$, $p = 0.778$). This evidence suggests that there is no relationship determined between EI and being a traditional or accelerated student.
**Relationship between perceived stress scores and student status.** The overall hypothesis presented for PSS and student status was that there would be a significant difference with the PSS of the students and being a traditional or accelerated student. The null hypothesis would be that there was no statistically significant difference between PSS and student status. An independent t-test was utilized to analyze the data at the chosen significance level of 95% meaning if $p < .05$ there is a determined relationship. The independent t-test was conducted to compare PSS and student status. There was no statistically significant difference in PSS and being a traditional or accelerated student ($t_{99.925} = 1.432$, $p = 0.155$). This evidence suggests that there is no relationship determined between PSS and being a traditional or accelerated student.

**Relationship between coping and gender.** The overall hypothesis presented for coping mechanisms and gender was that there would be a significant association with the type of coping mechanism the student used based on the students gender. The null hypothesis would be that there was no statistically significant association between gender and categorized coping mechanisms. A Chi squared test for significance was used to analyze the respected data. It was found that based on the data $\chi^2 (2) > = 1.506$, $p = 0.220$ which leads to the conclusion that there was no association found between coping and gender due to the $p$ value being greater than .001, thus failing to reject the null hypothesis.

**Coping and student status.** The overall hypothesis presented for coping mechanisms and student status was that there would be a significant association with the type of coping mechanism the student used based on the student’s status (traditional or accelerated). The null hypothesis would be that there was no statistically significant difference between coping mechanisms and student status. A Chi squared test for significance was used to analyze the data.
The data resulted with $X^2 = 0.737, p = 0.692$ which leads to the conclusion that there was no association found between coping and student status due to the $p$ value being greater than .001 thus failing to reject the null hypothesis.
Chapter 5: Discussion

The focus of this chapter will be on the interpretation of the data, discussion of limitations and implications for future research as related to this study.

**Interpretation of Data for Research Question 1**

Research question one examined the relationship between the emotional intelligence, perceived stress and coping mechanisms in the undergraduate nursing student. Data was collected with a questionnaire that utilized the SSEIT, PSS and the Brief COPE tool. At one large public university in the southeast of the United States that has a developed baccalaureate nursing program, nursing students attending two different nursing cohorts were asked to participate in the study by filling out the questionnaire. Out of the two classes, one hundred and forty-seven students completed the questionnaire and consented to be part of the research study. Before the collection of the data hypotheses were formed based on previous research. Previous research supported the hypotheses that there would be a negative correlation between EI scores and overall perceived stress in the undergraduate nursing student (Enns et al., 2018). In addition, there would be a significant difference in mean emotional intelligence scores between students that utilize adaptive versus maladaptive coping mechanisms (Enns et al., 2018; McCloughen & Foster, 2017;). The research also supports there would be a significant difference in the mean perceived stress scores and utilizing adaptive versus maladaptive coping mechanisms (Bodys-Cupak et al., 2018).

A statistically significant relationship was determined between EI and PSS. The correlation was determined using Pearson’s correlation test and an r-value of -0.419, which is interpreted as a moderate negative correlation. This finding shows a correlation between emotional intelligence and perceived stress, supporting a theory that as emotional intelligence
scores increase in the overall student body, the students’ perceived stress of their own nursing school experience decreases. However, correlation does not imply causation in statistically significant data. These correlation findings are similar as resulted in research determined by Enns et al. (2018).

Statistical significance was also found with a relationship between emotional intelligence and coping mechanism classification. It was found that there is a statistically significant difference between the mean of EI scores and the student’s type of coping mechanism at the 95% confidence interval. The mean EI score for students who utilize adaptive coping is 131.05, while the average EI score for students who use maladaptive coping was found to be 116.7. Overall students who possess higher EI scores typically utilize adaptive coping mechanisms.

In addition, there was a statistically significant finding between the PSS and coping mechanism the student utilized. With 95% confidence, it was found that students with adaptive coping had a mean PSS score of 19.35. While maladaptive coping students had a perceived stress scale score mean of 27.143. These results demonstrate that students who have lower perceived stress typically utilize adaptive coping mechanisms.

**Interpretation of Data for Research Question 2**

Research question two analyzed the relationship between the demographics of age, gender, and student status in any relationship with emotional intelligence, coping, and perceived stress in the undergraduate nursing student. Upon statistical analysis of the demographics chosen, statistical analysis in comparison with EI, PSS or coping mechanisms resulted with no statistically significant relationship of any kind. This supports the idea that EI, PSS and coping have a relationship with each other and are not affected with demographics of age, gender or student status.
Limitations

Limitations of this study are related to the use of a convenience sample method. The participants were self-reporters and could have included errors in their documentation, may have lacked self-awareness or brought bias to the questionnaire answers. The generalizability of this study is also limited due to the sample of study being collected at one nursing program at a public university in the southeast.

Lazarus’s Transactional Theory of Stress and Coping in Support of Findings

Lazarus’s Transactional Theory of Stress and Coping (1990) is the foundation of this research. Lazarus’s (1990) theory states that within every stressful situation, there is a stimulus that causes the stress; the individual then goes through the appraisal process, which develops perceived stress and coping mechanisms in response to the stressors. According to Lazarus (1990), the coping process is a learned behavior that can influence the health of the individual. The findings of this research reflect that the perceived stress of the nursing student is related to the coping mechanism that the student utilizes. Within the framework of this research, the nursing student has a relationship with the nursing school environment. Primary appraisal determines the importance the student holds with their goal of becoming a nurse. The primary appraisal process is conducted through each individual’s psychosocial lens. The secondary appraisal process determines how different types of learned coping will be used to handle the environmental stressor in order to achieve their goal. This process is influenced by emotion and overall behavior. Findings show that students whom perceived their stress as higher were more likely to utilize maladaptive coping. Thus, reflecting Lazarus’s theory that situations that create high perceived stress are likely to exceed coping resources, resulting in maladaptive coping, and in turn creating detrimental health outcomes for students (Krohne, 2001). In addition, emotional
intelligence has an impact on the students perceived stress scores and coping mechanism. According to Lazarus, emotion and behavior influence stress and the coping process. Overall, Lazarus’s theory supports psychosocial behavior, emotion and that the surrounding environment influences stress appraisal and coping behaviors (Krohne, 2001; Lazarus, 1990).

**Implications**

The findings from this study support the hypothesis that higher emotional intelligence is related to lower perceived stress in nursing students. In addition, nursing students with high EI scores and lower PSS typically utilize adaptive, non-harmful coping mechanisms. Research has shown that lower stress as well as utilizing adaptive coping in students is a positive indicator for a student’s physical and mental health, as well as supporting better long-term health and career outcomes (Enns et al., 2018). Further research should be conducted to continue to support the theory that by increasing a student’s emotional intelligence and/or lowering the student’s perceived stress promotes adaptive coping skills, regardless of the student’s demographics. Long term research on implementing tools to help nursing students increase their emotional intelligence and provide students with proper coping tools in their nursing classes could benefit students’ perceived stress, thus overall benefiting their health and career goals. Providing students with tools to manage stress and increase their emotional intelligence could lead to overall less burnout due to proper identification of stress and handling the stress before it becomes out of control. Less burnout in nursing leads to higher number of practicing nurses, thus helping with the wide spread nursing shortage of America.

**Conclusion**

Emotional intelligence, perceived stress and coping clearly have a link although, how this benefits student’s long term and within the nursing program is yet to be seen. This research was
conducted as a guide to determine if nursing students’ emotional intelligence, perceived stress and coping mechanism interact in a similar manner as reported by other research that has been conducted on helping professions (Michelangelo, 2015). While results were consistent within this study, a long-term study could identify if tools help students increase their emotional intelligence to impact their perceived stress, ways of coping and overall experience in the nursing school. Emotional intelligence, perceived stress and coping are still areas in nursing education in which not much research has been conducted. Further investigation of this exciting hot topic could influence a big change in nursing education for future nursing students, and nurses. Influencing the emotional intelligence in nurses and nursing students helps promote perceived stress identification and proper stress management. This could lead to nurses and nursing students promoting better health for not only themselves, but for their patients as well. Creating good stress management habits in students early on could influence their mental health, and hopefully develop nurses that have long, happy, healthy lives and careers.
References


Appendix A

Informed Consent Cover Letter
CONSENT COVER LETTER

Title of Research Study: The Relationship between Emotional Intelligence, Perceived Stress and Coping Mechanisms in the Undergraduate Nursing Student

Researcher's Contact Information: Marissa Rebello, BSN, RNC-NIC, (704)898-6621, mrebell1@students.kennesaw.edu

Introduction
You are being invited to take part in a research study conducted by Marissa Rebello of Kennesaw State University. Before you decide to participate in this study, you should read this form and ask questions about anything that you do not understand.

Description of Project
The aim of this study is to evaluate the relationship between emotional intelligence, coping mechanisms and perceived stress in undergraduate nursing students.

Explanation of Procedures
Undergraduate nursing students will be recruited on-campus to complete a survey, which will collect data on the student’s demographics, emotional intelligence scores, perceived stress and coping mechanisms.

Time Required
Ten to fifteen minutes will be taken to explain the reasoning and procedures of the study. The participants will then take between ten and twenty minutes at their leisure to complete the survey.

Risks or Discomforts
There are no known risks anticipated because of taking part in this study. If the participant feels pressure or anxiety while taking this test they are welcome to stop at any time.

Benefits
The results of this study will add to the current body of knowledge about students perceived stress, how they cope, and how emotional intelligence plays a part in this. By understanding more about this topic, interventions can be placed in the current education system to increase emotional intelligence, decrease student stress, and create adaptive coping skills. Further research can determine if these interventions are effective in increasing knowledge and confidence in nursing students.

Compensation (if applicable)
Participants will be given a small snack as a thank you for their time.

Confidentiality
The results of this participation will be anonymous. Participants’ confidentiality and anonymity will be assured, as presented in the consent, through restriction of data access and limited demographics collected on each participant. After the surveys have been collected the data will
be entered into a database to synthesize the data. Only the nurse researcher (Marissa Rebello), statistician and the researcher’s faculty (Dr. Doreen Wagner) will have access to the data collected. This data will only be used for its intended purpose in the study and will not be used for other studies. Surveys will be kept in a locked cabinet for 2 years and then shredded. The data on the computer will be saved onto the hard drive of the computer and an external hard drive for 2 years and then deleted. All the saved data will be password protected and not uploaded to the cloud. The data will belong to the researcher and Kennesaw State University per IRB approval. The data may not be used without permission and ethical review by the researcher, the research team and the university.

**Inclusion Criteria for Participation**
Participants must be of 18 years of age, and currently enrolled in Kennesaw State University’s Wellstar School of Nursing.

**Statement of Understanding**
The purpose of this research has been explained and my participation is voluntary. I have the right to stop participation at any time without penalty. I understand that the research has no known risks, and I will not be identified. By completing this survey, I am agreeing to participate in this research project.

______________________________

THIS PAGE MAY BE REMOVED AND KEPT BY EACH PARTICIPANT

Research at Kennesaw State University that involves human participants is carried out under the oversight of an Institutional Review Board. Questions or problems regarding these activities should be addressed to the Institutional Review Board, Kennesaw State University, 585 Cobb Avenue, KH3417, Kennesaw, GA 30144-5591, (470) 578-6407.
Appendix B

Questionnaire including Demographics, PSS, Brief COPE, and SSEIT
Demographics

**Evaluating Perceived Stress, Coping Mechanisms and Emotional Intelligence in Undergraduate Nursing Students.**

*Thank you for your participation in this research study. Please answer the questions as honestly as possible. Your participation is optional and if you are uncomfortable you make stop at any time.*

1. Please Select you Gender
   a. Male
   b. Female
   c. Prefer not to answer

2. Please put your age below
   ______________

3. Please Select your race
   a. Asian
   b. Black/African America
   c. Caucasian
   d. Hispanic
   e. Native American
   f. Pacific Islander
   g. Prefer not to Answer

4. Please select your marital status
   a. never married
   b. Married
   c. Divorced
d. Widowed

e. Separated

5. Please select the number of dependents you have
   a. none
   b. 1-2
   c. 2 or more

6. Please select your employment status
   a. not employed
   b. part-time
   c. full-time

7. Please select if you are traditional or accelerated nursing student
   a. Traditional
   b. Accelerated

8. Please select which semester of nursing school you are in:
   a. 1
   b. 2
   c. 3
   d. 4
   e. 5+
Perceived Stress Scale

The questions in the next part of this questionnaire ask you about your feelings and thoughts during this semester. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.

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 1 2 3 4

2. In the last month, how often have you felt that you were unable to control the important things in your life?
   0 1 2 3 4

3. In the last month, how often have you felt nervous and “stressed”?
   0 1 2 3 4

4. In the last month, how often have you felt confident about your ability to handle your personal problems?
   0 1 2 3 4

5. In the last month, how often have you felt that things were going your way?
   0 1 2 3 4

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 1 2 3 4

7. In the last month, how often have you been able to control irritations in your life?
   0 1 2 3 4

8. In the last month, how often have you felt that you were on top of things?
   0 1 2 3 4

9. In the last month, how often have you been angered because of things that were outside of your control?
   0 1 2 3 4

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
    0 1 2 3 4
This part of the questionnaire deals with ways you’ve been coping with the stress in your life since you started nursing school. There are many ways to try to deal with problems. These items ask what you’ve been doing to cope with this one. Obviously, different people deal with things in different ways, but I’m interested in how you’ve tried to deal with it. Each item says something about a particular way of coping. I want to know to what extent you’ve been doing what the item says. How much or how frequently. Don’t answer on the basis of whether it seems to be working or not—just whether or not you’re doing it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can.

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

1. I’ve been turning to work or other activities to take my mind off things.
2. I’ve been concentrating my efforts on doing something about the situation I’m in.
3. I’ve been saying to myself "this isn’t real.".
4. I’ve been using alcohol or other drugs to make myself feel better.
5. I’ve been getting emotional support from others.
6. I’ve been giving up trying to deal with it.
7. I’ve been taking action to try to make the situation better.
8. I’ve been refusing to believe that it has happened.
9. I’ve been saying things to let my unpleasant feelings escape.
10. I’ve been getting help and advice from other people.
11. I’ve been using alcohol or other drugs to help me get through it.
12. I’ve been trying to see it in a different light, to make it seem more positive.
13. I’ve been criticizing myself.
14. I’ve been trying to come up with a strategy about what to do.
EMOTIONAL INTELLIGENCE, STRESS AND COPING

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

15. I’ve been getting comfort and understanding from someone.  
16. I’ve been giving up the attempt to cope.  
17. I’ve been looking for something good in what is happening.  
18. I’ve been making jokes about it.  
19. I’ve been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.  
20. I’ve been accepting the reality of the fact that it has happened.  
21. I’ve been expressing my negative feelings.  
22. I’ve been trying to find comfort in my religion or spiritual beliefs.  
23. I’ve been trying to get advice or help from other people about what to do.  
24. I’ve been learning to live with it.  
25. I’ve been thinking hard about what steps to take.  
26. I’ve been blaming myself for things that happened.  
27. I’ve been praying or meditating.  
28. I’ve been making fun of the situation.
Indicate the extent to which each item applies to you using the following scale:

1 = strongly disagree  2 = disagree  3 = neither disagree nor agree
4 = agree  5 = strongly agree

1. I know when to speak about my personal problems to others
   1  2  3  4  5

2. When I am faced with obstacles, I remember times I faced similar obstacles and overcame them
   1  2  3  4  5

3. I expect that I will do well on most things I try
   1  2  3  4  5

4. Other people find it easy to confide in me
   1  2  3  4  5

5. I find it hard to understand the non-verbal messages of other people
   1  2  3  4  5

6. Some of the major events of my life have led me to re-evaluate what is important and not important
   1  2  3  4  5

7. When my mood changes, I see new possibilities
   1  2  3  4  5

8. Emotions are one of the things that make my life worth living
   1  2  3  4  5

9. I am aware of my emotions as I experience them
   1  2  3  4  5

10. I expect good things to happen
    1  2  3  4  5

11. I like to share my emotions with others
    1  2  3  4  5

12. When I experience a positive emotion, I know how to make it last
    1  2  3  4  5

13. I arrange events others enjoy
    1  2  3  4  5

14. I seek out activities that make me happy
    1  2  3  4  5

15. I am aware of the non-verbal messages I send to others
    1  2  3  4  5

16. I present myself in a way that makes a good impression on others
    1  2  3  4  5

17. When I am in a positive mood, solving problems is easy for me
    1  2  3  4  5
18. By looking at their facial expressions, I recognize the emotions people are experiencing 1 2 3 4 5
19. I know why my emotions change 1 2 3 4 5
20. When I am in a positive mood, I am able to come up with new ideas 1 2 3 4 5
21. I have control over my emotions 1 2 3 4 5
22. I easily recognize my emotions as I experience them 1 2 3 4 5
23. I motivate myself by imagining a good outcome to tasks I take on 1 2 3 4 5
24. I compliment others when they have done something well 1 2 3 4 5
25. I am aware of the non-verbal messages other people send 1 2 3 4 5
26. When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself 1 2 3 4 5
27. When I feel a change in emotions, I tend to come up with new ideas 1 2 3 4 5
28. When I am faced with a challenge, I give up because I believe I will fail 1 2 3 4 5
29. I know what other people are feeling just by looking at them 1 2 3 4 5
30. I help other people feel better when they are down 1 2 3 4 5
31. I use good moods to help myself keep trying in the face of obstacles 1 2 3 4 5
32. I can tell how people are feeling by listening to the tone of their voice 1 2 3 4 5
33. It is difficult for me to understand why people feel the way they do 1 2 3 4 5
Appendix C

Brief COPE Consent and Scoring
Brief COPE

The items below are an abbreviated version of the COPE Inventory. We have used it in research with breast cancer patients, with a community sample recovering from Hurricane Andrew, and with other samples as well. The citation for the article reporting the development of the Brief COPE, which includes information about factor structure and internal reliability from the hurricane sample is below. The Brief COPE has also been translated into several other languages, which have been published separately by other researchers (see below).

We created the shorter item set partly because earlier patient samples became impatient at responding to the full instrument (both because of the length and redundancy of the full instrument and because of the overall time burden of the assessment protocol). In choosing which items to retain for this version (which has only 2 items per scale), we were guided by strong loadings from previous factor analyses, and by item clarity and meaningfulness to the patients in a previous study. In creating the reduced item set, we also “tuned” some of the scales somewhat (largely because some of the original scales had dual factors) and counter-scales that had not appeared to be important among breast cancer patients. In this way the positive reinterpretation and growth scale became positive re-forming (or growth); focus on and venting of emotions became venting (showing was too tied to the experiencing of the emotion, and we decided it was venting we were really interested in); mental disengagement became self-distract (with a slight expansion of mentioned means of self-distraction). We also added one scale that was not part of the original inventory—a 2-item measure of self-blame—because this response has been important in some earlier work.

You are welcome to use all scales of the Brief COPE, or to choose selected scales for use. Feel free to adjust the language for whatever text scale you are interested in.

Citation: Carver, C. S. (1997). You want to measure coping but your protocol’s too long. Consider the Brief COPE. *International Journal of Behavioral Medicine*, 4, 92-100. [abstract]

Following is the BRIEF COPE as we are now administering it, with the instructional orientation for a pre-surgery interview (the first time the COPE is given in this particular study). Please feel free to adapt the instructions as needed for your application.

Citation: Carver, C. S. (1997). You want to measure coping but your protocol’s too long. Consider the Brief COPE. *International Journal of Behavioral Medicine*, 4, 92-100. [abstract]

Following is the BRIEF COPE as we are now administering it, with the instructional orientation for a pre-surgery interview (the first time the COPE is given in this particular study). Please feel free to adapt the instructions as needed for your application.

Scales are computed as follows (with no reversals of coding):

Self-distraction, items 1 and 19
Active coping, items 2 and 7
Denial, items 3 and 8
Substance use, items 4 and 11
Use of emotional support, items 5 and 15
Use of instrumental support, items 10 and 23
Behavioral disengagement, items 16 and 17
Vesting, items 9 and 21
Positive reframing, items 12 and 17
Planning, items 14 and 25
Humor, items 18 and 28
Acceptance, items 20 and 24
Religion, items 22 and 27
Self-blame, items 13 and 26

http://local.psy.miami.edu/faculty/ccarver/sclBrCOPE.html
Appendix D

Perceived Stress Scale Consent and Scoring
Dr. Cohen's Scales:

We welcome copies (e-mail) of any in press or published papers using any of Dr. Cohen's scales that you are willing to share with us, and thank you in advance for your generosity. They will not be redistributed or linked without your permission.

Permissions for use of scales is not necessary when used for nonprofit academic research or nonprofit educational purposes. For other uses, please contact Dr. Howard Cohen.

http://www.psy.cmu.edu/~scohen/scales.html
Figuring Your PSS Score
You can determine your PSS score by following these directions:

• First, reverse your scores for questions 4, 5, 7, and 8. On these 4 questions, change the scores like this:
  0 = 4, 1 = 3, 2 = 2, 3 = 1, 4 = 0.

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

• Individual scores on the PSS can range from 0 to 40 with higher scores indicating higher perceived stress.
  ▶ Scores ranging from 0-13 would be considered low stress.
  ▶ Scores ranging from 14-26 would be considered moderate stress.
  ▶ Scores ranging from 27-40 would be considered high perceived stress.

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

Appendix E

Schutte Self-Report Emotional Intelligence Test Consent
RE: Obtaining Consent to Use the SSEIT

Thank you for your message. You are welcome to use the scale. Please find attached the manuscript version of a published chapter that contains the scale and background information, including regarding scoring, reliability and validity.

Kind regards, Nicola Schutte

From: Marissa Rebello <mrebel11@students.kennesaw.edu>
Sent: Sunday, 17 March 2019 9:01 AM
To: Nicola Schutte <nschutte@kenn.edu.au>
Subject: Obtaining Consent to Use the SSEIT

Dr. Schutte,

My name is Marissa Rebello and I am currently in the process of obtaining my Master’s in Nursing Leadership. For my Master’s Thesis I am researching the Emotional Intelligence, Perceived Stress and Coping mechanisms in the Undergraduate nursing student. To score the student emotional intelligence I would like to use the SSEIT. I would like to obtain consent to use this in my research. I have attached my thesis proposal to this email. Please let me know if you have any questions. Thank you for your time.

Best,
Marissa Rebello, RN
Appendix F

IRB Approval
Study 19-516: The Relationship between Emotional Intelligence, Perceived Stress and Coping Mechanisms in the Undergraduate Nursing Student

4/24/2019

Marissa Rebello, Student
WellStar School of Nursing

RE: Your followup submission of 4/24/2019, Study #19-516: The Relationship between Emotional Intelligence, Perceived Stress and Coping Mechanisms in the Undergraduate Nursing Student

Hello Ms. Rebello,

Your application for the new study listed above has been administratively reviewed. This study qualifies as exempt from continuing review under DHHS (OHRP) Title 45 CFR Part 46.101(b)(2) - Educational tests, surveys, interviews, observations of public behavior. The consent procedures described in your application are in effect. You are free to conduct your study.

NOTE: All surveys, recruitment flyers/emails, and consent forms must include the IRB study number noted above, prominently displayed on the first page of all materials.

Please note that all proposed revisions to an exempt study require submission of a Progress Report and IRB review prior to implementation to ensure that the study continues to fall within an exempted category of research. A copy of revised documents with a description of planned changes should be submitted to irb@kennesaw.edu for review and approval by the IRB.

Please submit a Progress Report to close the study once it is complete.

Thank you for keeping the board informed of your activities. Contact the IRB at irb@kennesaw.edu or at (470) 578-6407 if you have any questions or require further information.

Sincerely,

Christine Ziegler, Ph.D.
KSU Institutional Review Board Director and Chair

cc: dwagne18@kennesaw.edu