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Junior Level Baccalaureate Nursing Students' Lived Experiences With Test Anxiety: Can Music Serve As A Means to Reduce Test Anxiety and Increase Self-Efficacy?

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In loving memory of my dearest father Norvall Reed Clark. My thanks go to him for instilling such values as a strong work ethic, respect, caring, and integrity. I often marveled at his ability to maintain and uphold his values and positive demeanor despite the challenges posed by his health problems. Thank you for your smiles, laughs, and appreciation for the things often taken for granted. He remains a true inspiration and his memory lives on in all I do.

Also in loving memory of my late husband, Alan Wayne Harmon, whose abiding love served as a source of strength for me and our two children, Nicholas and Elise. His only desire was to make others happy and as a nurse he wanted to provide the best nursing care to all with whom he came in contact. He was a loving father, brother, son, and husband and we will always remember his unselfish love for his family and friends. I thank him for being a guardian angel to me and the children though we miss him with all of our hearts.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Test anxiety is a pervasive problem in education programs. Nursing education is not an exception as approximately 30% of nursing students are impacted by varying levels of test anxiety that can affect their ability to succeed. This mixed methods study utilizes concepts from Bandura's Social Learning Theory, the Cognitive-Attentional (Interference) Model, and the Georgi Lozanov method to explore the lived experiences of junior level baccalaureate nursing students with test anxiety. The 39 participants in the quantitative portion of the study were randomly assigned to one of two groups. The experimental group (n=18) listened to a nine minute and 27 second segment of Mozart Adagio in E for violin and orchestra (60 beats per minute) in order to ascertain if listening to classical music had an impact on the level of test anxiety and self-efficacy. The control group (n=21) engaged in activity as usual. Just prior to examinations III, IV, and V and following the respective sessions (listening to classical music or activity as usual), all the participants completed the Westside Test Anxiety Scale and the General Self-Efficacy Scale. Results of the independent samples t-test and the ANCOVA analysis revealed that there was no significant difference between the two groups' levels of test anxiety and self-efficacy. Six of the 39 participants agreed to engage in the qualitative aspect of the study in order to explore the lived experiences of nursing students with high levels of test anxiety (score greater than a 3.0 on the Westside Test Anxiety Scale). A total of three semi-structured interviews took place with each of the six participants between examination II and examination V. Colaizzi's process for phenomenological data analysis was used to extract significant statements from the interviews and develop emergent themes. Findings related to the following emergent themes are presented: participant

perceived self-efficacy; impact of academic environment on test anxiety; influences of family environment on test anxiety; manifestations of test anxiety; and cognitive interference.

CHAPTER 1: INTRODUCTION

Kim (pseudonym) is a prospective transfer student from another nursing program who met with me as a nursing faculty advisor. In the senior semester of the nursing program she previously attended, she was unable to meet the necessary passing score on the Comprehensive Predictor Examination after three attempts and was subsequently dismissed from the program. Successful completion of the didactic and clinical portions of nursing courses in the curriculum was not an issue. Admittedly, she stated that she barely passed the didactic courses; however, three of her previous clinical faculty wrote letters endorsing her transfer stating that she was an excellent, caring student in the clinical and laboratory settings performing in accordance with all practice standards. Kim mentioned that she felt that the primary issues hindering her ability to successfully meet all program requirements necessary for graduation were her intense test anxiety, constant worry over being unsuccessful, and self-doubt regarding her ability to succeed in the program. She mentioned that she fought these issues the entirety of her enrollment in the previous program.

General Statement of the Problem

Test anxiety is not a new phenomenon in education and due to the utilization of test-based accountability through No Child Left Behind legislation, it is suggested that the incidence of test anxiety has increased from as low as 10% to as high as 40% in secondary school settings (Cizek & Burg, 2006; King & Ollendick, 1989; Von Der Embse & Hasson, 2012). The rate of test anxiety resulting in functional impairment in college students is approximately 20% to 35% (Damer & Melendres, 2011; Szafranski, Barrera, & Norton, 2012).

According to Shapiro (2014), "test anxiety affects 30% of nursing students, and has detrimental effects on academic performance and student success" (p. 193). The negative effects of test anxiety are caused in part by cognitive interference and worry prior to the examination which can lead to a reduction in the understanding of the material and prevents appropriate examination performance (Lilley, Oberle, & Thompson, 2014). Test anxiety is increased by the high-stakes nature of testing within the nursing programs where students must "achieve certain percentages on every examination in order to progress" (Prato & Yucha, 2013, p. 76). This educator has met with many students over the years who anecdotally declared that they felt their test taking anxiety had a strong impact on their success on a particular examination. They made statements like "I just did not see that phrase in the question when I was taking the test or I would have answered differently" or "I was so anxious during the examination I could not focus."

Due to the omnipresent nature and the negative effects of test anxiety, one can assume that it is at least a contributing factor to student attrition. On average, attrition "among Bachelor of Science in Nursing (BSN) students" is "50% nationwide" (Newton & Moore, 2009, p. 273). Although attrition rates are exceedingly high and problematic for many professional programs, nursing programs, in particular, must act to alleviate the attrition rate not only to assist the individual student but also to offset the inevitable nursing shortage which is projected to be approximately 525,000 nurses by 2022 (Jeffreys, 2007).

Theoretical Framework

The theoretical position on which this study is based evolves from concepts inherent in Bandura's Social Learning Theory, the Cognitive-Attentional (Interference) Model, and the Lozanov method.

Bandura's Social Learning Theory

Bandura focused his research on theories of learning rather than on theories of performance such as those developed by Skinner (Smart, 2012). Bandura's social learning theory posits that "people are able to control and change their behavior, so that people continue to learn and to grow throughout the various stages of life" (Smart, 2012, p. 117). The social learning theory introduces important concepts such as "observational learning, vicarious reinforcement, and self-efficacy" (p. 118).

Through observational learning Bandura affirms that individuals do not necessarily have to be engaged in an activity in order to learn, as is required in both the respondent and operant conditioning theories. Rather, individuals engage in the learning process through activities such as reading, "listening to others, and watching others" (Smart, 2012, p. 118). Additionally, Bandura posits that individuals learn through social interaction, which means that by watching others, behavioral consequences are learned. Hence, behavioral changes may be made without "actually engaging in trial-and-error behavior" (Smart, 2012, p. 118).

The second component of Bandura's Social Learning Theory is vicarious reinforcement. This aspect of observational learning serves to assist individuals in making choices about behaviors. For example, an individual may choose not to engage in

a criminal act when observing another individual go to jail after performing an illegal activity (Smart, 2012).

The final component, self-efficacy, is of primary interest to this study. Bandura (1997) states: "perceived self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). It is the individuals' beliefs regarding their ability to accomplish tasks that drive decisions about engaging in certain endeavors and how long "they will persevere in the face of obstacles and failures" (Bandura, 1997, p. 3). Due to the impact of cognitive interference on self-efficacy, this topic is applicable to the research regarding test anxiety.

Self-Efficacy and Test (Academic) Anxiety

Using self-efficacy as a lens to conduct research on academic anxiety, and more specifically, test anxiety, researchers in the 1970s began to focus less on what "stress and anxiety 'do' to people" and more on "research aimed at strengthening persons' abilities to handle tensions and problematic situations" (Sarason, 1980, p. 12). Such tensions and problematic situations include the ability to persevere academically despite all the challenges faced by the students (i.e., more competitive application processes; lack of tolerance for underachievement starting early in the education career and extending far into graduate work; and the high stakes nature of many academic environments) (Bandura, 1997).

A student with low levels of academic self-efficacy tends to have unmanageable "achievement anxiety" (Bandura, 1997, p. 235). These individuals tend to turn their focus from mastering the knowledge and skills under instruction to their "personal

inadequacies" (Bandura, 1997, p. 236). This leads to thoughts centering on "consequences of failing" (Bandura, 1997, p. 236).

Students with test anxiety exhibit the aforementioned characteristics leading to a self-preoccupation consisting of worry, and emotionality related to "fear of failure and self-blame" (Sarason, 1980, p. 12). According to Sarason (1980), this notion of self-preoccupation is the fundamental principle of test anxiety. Sarason, Pierce, and Sarason (1996) elaborate further regarding self-preoccupation by reinforcing the idea that the individual's negative thoughts (cognitive interference) cause a loss of focus and concentration during the examination and can impede test performance.

Cognitive Interference Model

This model explores the relationship between an individual's intrusive thoughts and anxiety levels and the subsequent impact these concepts have on the "quality or efficiency of exam performance" (Zeidner, 1998, p. 39). According to Zeidner (1998), "performance differences between high- and low-test-anxious students are caused by differences in attentional focus, with these two groups differing in the types of thoughts to which their attention is directed in the face of an evaluative stressor" (p. 65). Zeidner (1998) further postulates that interfering thoughts in evaluative circumstances are determined by both "situational factors" (e.g., length of time studied and personal variables such as family support) and "individual differences" (e.g., degree of worry and self-denigrating thoughts) (p. 66).

Lozanov Method

Georgi Lozanov developed a theory, Suggestology, for education where "the main aim of teaching is not memorization, but understanding and creative solutions of

problems" (Lozanov, 1978, p. 235). The principles of the subsequent pedagogical strategy called "suggestopedia" include:

> 1) Joy, absence of tension and concentrative psychorelaxation.
> 2) Unity of the conscious-unconscious and integral brain activation.
> 3) Suggestive relationship on the level of the reserve complex. (Lozanov, 1978, p. 31)

The method originally developed by Lozanov involved the use of hypnosis in order to "release man's reserve capacity and to stimulate their development" (Lozanov, 1978, p. 1). Enhancing the reserve capacity, according to Lozanov (1978), can do the following: Improve memory substantially; increase the ability to recollect without reinforcement; "decrease the susceptibility to tiredness; promote considerable psychotherapeutic, psychoprophylactic benefits; increase attention span, and enhance hypercreativity" (p. 11).

Lozanov (1978) recognized other methods were necessary to stimulate the reserve capacity. He revealed "suggestion (of hypnosis) is a communicative factor which, to some extent, controls this state" (p. 6). Lozanov (1978) subsequently began to explore means of suggestion in the wakeful state as it was postulated that the beneficial effects of hypnosis could be achieved in the wakeful state. One such methodology involved listening to classical music. According to Lozanov (1978) listening to classical music is a means to achieve "concentrative psychorelaxation" where the person is free of "needless thoughts and movements" (p. 15). The type of music selected for this portion of the study in which the goal is to achieve "concentrative psychorelaxation" is music with a rhythm of 60 beats per minute "which feature[s] a sustained melody in the violin or string section" (Bancroft, 1978, p. 171; Summers, Hoffamn, Neff, Hanson, & Pierce, 1990). Utilization of the method also requires that students breathe deeply. The goal with the use

of the deep breathing and the classical music is a "marked decrease in fatigue and tension, on the one hand, and a marked increase in memorization of the language materials, on the other" (Bancroft, 1978, p. 172). The other important aim of the methodology is that students should be "freed from doubts and hesitations regarding their ability, as well as daily concerns and neuroses" (Bancroft, 1999, p. 47).

Bancroft (1978) discussed research on the utilization of the Lozanov Method in the United States based on elements of the method rather than use of the method "as a whole" (p. 172). Researchers in the United States consider the following elements of primary importance: 1) a classroom that is conducive to learning and that contains essential elements such as soft lighting; 2) a teacher that has a motivating personality; 3) creation of a state of "relaxed alertness in the students" achieved by methods previously discussed such as deep breathing and music (Bancroft, 1978, p. 178). Bancroft's work which describes the utilization of Lozanov's method has implications for this research primarily due to its capacity to promote a relaxed state in preparation for the testing environment.

Philosophical Worldviews

Quantitative data is the traditional form of research and has historically been based on a positivist paradigm, one that embraces "the existence of an objective reality, i.e., one that is independent of the knower" (Clark, 1998, p. 1243). Unfortunately, according to Clark (1998), the results collected while utilizing the unobservable data were "denied any form of real existence" (p. 1244).

Postpositivism emerged as a school of thought as a result of the emphasis on the unobservable data with the positivist approach. Letourneau and Allen (1999) defined

postpositivism as "the search for warranted assertability as opposed to truth" (p. 623). Further, postpositivism has been recognized for eliminating "the intractable problem…of a forced choice between value-laden/qualitative and value-free/quantitative research methods" (Letourneau & Allen, 1999, p. 623). Of critical importance is the understanding that postpositivists assert that absolute truths are "unknowable"; further, claims of acquired knowledge are not established as universal laws but rather as probabilities about "human phenomena" (Letourneau & Allen, 1999, p. 624). This has motivated some postpostivist researchers to carefully design their studies, attempting to utilize research methods to minimize "bias" or "subjectivity" and to enhance the establishment of reliability and validity.

Constructivism is aligned with the qualitative research approach. This epistemological position developed as a result of the positivist and postpositivist approaches and asserts that "social reality is constructed by the individuals who participate in it" and is constructed differently by different individuals (Polit & Beck, 2008, p. 21). This interpretative approach posits that "individuals gradually build their own understanding of the world through experience and maturation" (Polit & Beck, 2008, p. 22). In this context there is "no objective or unitary reality to be discovered" (Bradt, Burns, & Creswell, 2013, p. 126); rather, qualitative research seeks to explore reality from multiple perspectives that are "socially and psychologically constructed" (Yilmaz, 2013, p. 311).

The reality of the individuals involved is based on varied backgrounds that are "value-laden, flexible, descriptive, holistic, and content sensitive" (Yilmaz, 2013, p. 311). With qualitative research, the "aim of inquiry is understanding and reconstruction of the

constructions that people (including the inquirer) initially hold, aiming toward a consensus but still open to new interpretations as information and sophistication improve" (Denzin & Lincoln, 1994, p. 113). Husserl's descriptive phenomenological approach is an inductive qualitative tradition intended to understand and reconstruct individual experiences. Central to the lived experiences is the assumption that "human consciousness actively constitutes objects of experience" (Denzin & Lincoln, 2000, p. 488). Emphasis is placed on the need for the researcher to describe "everyday conscious experiences while preconceived opinions were set aside or bracketed" (Reiners, 2012, p. 1).

Mixed methods research is based on the worldview of pragmatism. Truth, therefore, is derived from both "objective and subjective elements" (Bradt et al., 2013). Davis (2004) defines pragmatism as finding truth that:

> is not ideal, eternal, or universal. It is rather what works – hence practical, temporary, and contextually specific. In brief, practical consequences are seen to be the most important criteria for decisions around knowledge, values, and meaning. (p. 208)

The pragmatic approach highlights the dialectic stance in which multiple paradigms may be employed at different stages in the mixed method design. For this study, the mixed methods approach is utilized in order to provide a more holistic perspective of the lived experiences of the junior level baccalaureate nursing student with test anxiety.

Purpose of the Study

The purpose of this study is to utilize a mixed methods approach to explore junior level baccalaureate nursing students' lived experiences related to test anxiety, and to determine their perceptions regarding music as a means to reduce test anxiety and enhance self-efficacy. The rationale for the mixed methods approach is that by collecting

both qualitative and quantitative data using reliable and valid approaches and instruments, a much broader understanding of test anxiety can be attained (Bradt et al., 2013).

Research Questions

The primary quantitative research questions are:

1) What impact does listening to classical music in the junior level baccalaureate nursing course prior to the examinations have on students' level of test anxiety?
2) What impact does listening to classical music in the junior level baccalaureate nursing course prior to the examinations have on students' level of self-efficacy?

The primary qualitative research questions are:

1) What is the lived experience of junior level baccalaureate nursing students experiencing high test anxiety?

Sub-questions include the following:

a. What emotions do students experience prior to, during, and after taking an examination?
b. What actions do students take to reduce test anxiety?
c. What behavioral acts do students engage in to prepare for the examination?

Definitions

Attrition. Refers to the number of students leaving the nursing program prior to graduation (Jeffreys, 2012).

Clinical Portion of Nursing Courses. The portion of the nursing courses whereby students complete hours in hospital and/or laboratory settings. These hours are separate from the didactic portion.

Cognitive Interference. Zeidner (1998) refers to cognitive interference as those negative intrusive thoughts that distract the student while engaged in an examination. These negative thoughts provide no intuitive insight that will enhance performance in the examination.

Comprehensive Predictor. Refers to a standardized examination from an external vendor that schools of nursing utilize to predict success on the National Council Licensure Examination for Registered Nurses (NCLEX-RN). In order to incentivize students to perform at their best, many schools of nursing attach high stakes progression policies for this examination (this commercial, nationally normalized examination is predictive of success on the NCLEX-RN).

Didactic Portion of Nursing Courses. The portion of the nursing courses where students attend lectures in the classroom.

High Stakes Examination. Haladyna (2006) defines high stakes testing as the designation of a specific test score that must be met in order to avoid certain consequences such as repeating a grade or a course or denying graduation.

National Council Licensure Examination for Registered Nurses (NCLEX-RN). The examination that graduates of a nursing program must pass prior to receiving licensure to practice as registered nurses.

Music Therapy**.** According to Ferrer, Lew, Jung, Janeke, Garcia, Peng, Poon, Rathod, Beckwith, and Tam (2014), music therapy is a "well-established health program

and it is used therapeutically to address an individual's physical, emotional, cognitive, and social needs" (p. 482). For the purposes of this study, the words "music therapy" will be utilized when indicating the use of music as an approach to assess students' perceptions of its effectiveness in reducing test anxiety and enhancing self-efficacy.

Nontraditional Undergraduate Nursing Student. According to Jeffreys (2012), a nontraditional undergraduate nursing student refers to a student who meets at least one of the following criteria: "(1) 25 years or older, (2) commuter, (3) enrolled part-time, (4) male, (5) member of an ethnic and/or racial minority group, (6) speaks English as a second (other) language, (7) has dependent children, (8) has a general equivalency diploma, and (9) required remedial classes" (p. 9).

Retention. Defined as "the continuous enrollment in a nursing program (part or full time) by taking the required courses sequentially until meeting the program's graduation requirements, including courses repeated for previous withdrawal and/or failure" (Jeffreys, 2012, p. 9).

Self-Efficacy. According to Jeffreys (2012), self-efficacy "is the student's perceived confidence for learning or performing specific tasks or skills necessary to achieve a particular goal" (p. 63).

Student Success. Historically, student success has been defined by the students' completion of the program requirements and subsequently by passing the NCLEX-RN. Student success can also be articulated in terms of student retention and defined as "persistence (choosing to continue in a nursing program) and successful academic performance (meeting the necessary academic standards to continue in a nursing program)" (Shelton, 2012, p. 1).

Test Anxiety. According to Roykenes, Smith, and Larsen (2014), "test anxiety is defined as 'the set of phenomenological, physiological, and behavioral responses that accompany concerns about possible negative consequences or failure on an exam or similar evaluative situation" (p. 350).

Traditional Undergraduate Nursing Student. According to Jeffreys (2012), a traditional undergraduate nursing student is a student enrolled in a nursing program that does not meet the criteria of a nontraditional undergraduate nursing student.

Summary

Kim is a student who, as a result of several unfortunate circumstances, was not allowed to progress in the nursing program where she was previously enrolled. The primary reason for her untimely departure from the nursing program was her inability to meet the benchmark on a standardized examination assumed to be the determinant of a student's ability to successfully pass the NCLEX-RN. She admitted that test anxiety contributed to her current circumstances as she consistently had negative thoughts before and during examinations and these thoughts led to an inability to concentrate and focus. Kim's circumstances are representative of approximately 30% of students attending nursing programs across the country and this situation possibly contributes to high attrition rates (Shapiro, 2014). This researcher has met with many students who verbalized similarly that high levels of test anxiety contributed to their inability to focus and to a misinterpretation of examination test items. Students express a variety of cognitive and physical symptoms associated with their high test anxiety. It is the desire of this researcher to contribute to the body of knowledge related to an understanding of the lived experiences of baccalaureate nursing students who have moderate to high levels of

test anxiety and to determine whether listening to music prior to the examination can decrease test anxiety and increase self-efficacy.

In order to explore this phenomenon, this dissertation is organized in the following manner: Chapter one provides a general statement of the problem and the theoretical framework for the study; Chapter two provides a review of the literature in the following areas: historical review of testing in nursing education; a review of current testing practices in nursing education; historical review of test anxiety; review of the literature related to test anxiety; stereotype threats; research related to methods to reduce test anxiety; music therapy; self-efficacy; and a cognitive interference. Chapter three discusses the research methodology utilized in this mixed methods approach. Chapter four presents the research results and chapter five discusses the findings and implications for future research.

CHAPTER 2: REVIEW OF THE LITERATURE

The review of the literature will be divided into the following sections: Historical review of testing in nursing education; a review of current testing practices in nursing education; historical review of test anxiety; review of the literature related to test anxiety; stereotype threats; research related to methods to reduce test anxiety; music therapy; self-efficacy; and cognitive interference.

Studies used in the review of the literature were retrieved through a comprehensive search of the literature from the following databases: Elton B. Stephens Company (EBSCO) Publishing, Cumulative Index to Nursing and Allied Health Literature (CINAHL). A catalog search at Louisiana State University Middleton Library, Our Lady of the Lake College, and Louisiana State University Health Science Center Library was conducted. Search terms include the following: "music therapy," "benefits of music therapy," "types of music," " classical music and music therapy," "music and therapy," "music and test anxiety," "classical music therapy and college students," "test anxiety and college students," "test anxiety," "test anxiety and nursing students," "anxiety and college students," "anxiety and nursing students," "interventions and stress and academia," "self-doubt," "high stakes testing and school children," "no child left behind and test anxiety," "self-efficacy," "self-efficacy and nursing students," "cognitive interference," "achievement gaps," "stereotyping and standardized testing," "test anxiety and differences and black and white," "negative thoughts and testing environment," "intrusive thoughts." Current studies in the United States dated 2009 and beyond were utilized in most cases; however, due to the paucity of literature related to the subject matter, some literature dated prior to 2009 is included.

Historical Review of Testing in Nursing Education

Prior to examining the current testing practices in nursing education programs, a brief historical exploration of the derivation of structured nursing education will be presented. The training of nurses during the 20th century was done primarily through hospital-based apprenticeships rather than through the traditional tertiary programs that are prevalent today. These students were trained by the older nurses on the clinical units, and lectures were provided by physicians who controlled the curriculum because they considered nursing "a subordinate branch of medical practice" (Bullough, 2004, p. 161). Testing for these students was primarily based on examinations that relied essentially on rote memorization from information covered in the classroom rather than testing at higher levels on Bloom's taxonomy.

In the early part of the 20th century, groups of individuals dedicated to advancing nursing as a profession began to form. These groups desired a paradigm shift in nursing away from evaluating performance strictly from a competency based perspective to one that would encompass the true holistic aspect of nursing care (Bullough, 2004; Marks-Maran, 1999). The groups' goals were reflected in the 1923 Goldmark Report which identified the inadequacies of nurses' training and made recommendations to include: formal licensure of practicing nurses; education of nurses by nurse educators; and education focused on training rather than service-oriented (Allen, 2006).

Following the Goldmark Report, tertiary schools of nursing were developed across the United States. These schools were challenged to develop appropriate student evaluation methodologies that not only would meet local and national accreditation standards, but also those that would be capable of measuring student learning outcomes

in order to ensure the provision of high quality, safe patient care (Maclean, 1992). To that end, schools of nursing adopted the Tylerian objectives-based model which, to nurse educators, seemed the most effective manner to measure student success by objectifying and measuring the attainment of student learning outcomes (Maclean, 1992).

By 1982, the National Council for State Boards of Nursing developed a national licensure exam which graduates must pass prior to receiving a license to practice nursing. This licensure examination for registered nurses allows the state boards of nursing to ensure that those nurses licensed to enter practice are capable of providing competent care to patients. Accrediting bodies also require that nursing programs sustain an appropriate pass rate (80%) in order to maintain accreditation status.

With accreditation being determined in part by the pass rate on the NCLEX-RN, schools of nursing have opted to focus their attention on strategies to promote NCLEX-RN success rather than on retention. This often translates into schools of nursing providing students with high stakes tests (teacher made exams that comprise the majority of the course grade or commercial vendor exams with stringent course progression policies) in order "to identify students who are likely to pass the NCLEX-RN" (Spurlock, 2013, p. 5). Nursing programs' concentration on ensuring that students pass the licensure examination has led to a movement within nursing education which focuses on establishing evaluative methodologies (within the program) to ensure student readiness and predict success on the NCLEX-RN.

The aforementioned progression policies have forced nursing programs to deal with legal issues. Students who have not performed well on standardized examinations and who have been affected by progression issues have sued their nursing programs

based on a variety of legal positions. Such positions include: “breach of contract, lack of due process, and even education malpractice” (National League for Nursing Fair Testing Guidelines, 2010). Students faced with potential dismissal due to the inability to meet the benchmark on the standardized examination are appealing their dismissal on the basis of the lack of a clear progression policy regarding standardized testing in the college catalog or program handbook. Additionally, “if standardized tests were inappropriately placed and utilized, the student could base a legal action on educational malpractice” (NLN Fair Testing Guidelines, 2010).

Such legal action has been noted recently in schools of nursing across the country. One such example occurred at the school of nursing at Ohio University. A student took legal action against the nursing school because of the school’s policy related to the requirements associated with the standardized examination administered at the end of the program. In order for the student to pass the senior level nursing course, an approved benchmark must be achieved on the standardized examination (taken at the end of the semester in the senior level course). Under the policy, students must meet the benchmark on the standardized examination within four attempts. If the benchmark is not achieved by the fourth attempt, then a failing grade in the senior level course is recorded in the student’s gradebook. The failing grade is entered despite the student’s status associated with the other course requirements. It should be noted that the policy regarding the requirement associated with the standardized examination changed while the student was enrolled in the nursing curriculum. When the student began the nursing program, students could take the standardized examination as many times as necessary in order to meet the benchmark. The policy changed at some point after the student began the program,

however. The student based her legal complaint on the premise that the school was in breach of contract. Ultimately, the school settled with the student paying her $11,000. The school also agreed to provide the student a review course for the standardized examination and with six more attempts to meet the benchmark. If the student met the benchmark after the review course and within the six attempts, the school agreed to reverse her failing grade in the senior level course (Phillips, 2013).

A Review of Current Testing Practices in Nursing Education

As a result of the previously mentioned problems associated with testing in nursing education programs, the National League for Nurses (NLN) Task Force on High-Stakes Testing issued a position statement regarding "Fair Testing Guidelines for Nursing Education" (NLN, 2010). The guidelines developed are based on the National League for Nursing's core values: "caring, integrity, diversity, and excellence, and on widely accepted testing principles" (NLN Fair Testing Guidelines, 2010). These guidelines as defined by the NLN contend that students have an equal opportunity when taking examinations to ensure their knowledge of the material (NLN Fair Testing Guidelines, 2010). The guidelines were created as a result of the overall need for testing with faculty acknowledgement that current approaches to assessing student learning is both limited and imperfect (NLN Fair Testing Guidelines, 2010).

The NLN guidelines provide a framework for testing based on the fact that any evaluative measure is created not only to assess student achievement, but, most importantly, to support the attainment of knowledge, and to assess the effectiveness of pedagogical practices and program outcomes. Within the aforementioned framework, high-stakes testing standards must be consistent with ethical and fair testing practices. An

exploration of guidelines established by the NLN relative to high stakes testing reveals the following findings. First, the NLN posits that:

> faculty have an ethical obligation to ensure that both tests and the decisions based on tests are valid, supported by solid evidence, consistent across their programs, and fair to all test takers regardless of age, gender, disability, race, ethnicity, national origin, religion, sexual orientation, linguistic background, testing style and ability, or other personal characteristics. (NLN, 2010)

Second, faculty are required to assess that students be prepared and competent with regard to skill acquisition and that they possess the skills and abilities necessary for competent nursing practice even though the assessment strategies for competency are imperfect. The NLN also outlines the importance of several different approaches for knowledge assessment, especially when decisions are made based on high stakes testing results.

Third, the NLN emphasizes the importance of a review of the examinations' reliability, content, and predictive validity. As previously stated, students report that classroom instruction involves more knowledge level instruction; however, the examinations test at the application level on Bloom's Taxonomy. The NLN's guidelines emphasize that it is crucial that more than one mode of learning assessment be used to make high stakes decisions.

Historical Review of Test Anxiety

As previously stated, test anxiety is a pervasive problem in nursing education programs. Prior to describing the specific research that has been conducted regarding test anxiety in nursing programs and colleges in general, a historical review of test anxiety is presented.

According to Segool, Carlson, Goforth, Von der Embse, and Barterian (2013), Sarason wrote approximately 50 years ago that "we live in a test-conscious, test-giving culture in which the lives of people are in part determined by their test performance" (p. 489). An empirical study by Sarason of test anxiety in medical students emerged at about the same time as this statement was made. Results indicated that the medical students exhibited glycosuria (sugar in the urine) upon completion of a stressful examination (Spielberger & Vagg, 1995), while none of the students showed signs of glycosuria prior to the examination. According to Spielberger and Vagg (1995), a study by Alexander Luria in 1932 noted that students exhibit different reactions to the testing environment. The students who "became excited and disorganized during examinations" were labeled "unstable" and those that kept calm were labeled "stable" (Spielberger & Vagg, 1995, p. 4).

The first psychometric scale was developed in the 1930s and utilized by researchers at the University of Chicago in order to explore test anxiety in students. In this study, it was discovered that students with higher levels of test anxiety performed not as well on the examination as those who reported being calm (Spielberger & Vagg, 1995). Additionally, "the potentially serious consequences of test anxiety were also noted by C.H. Brown who attributed the suicides of two university students to worry over approaching examinations" (Spielberger & Vagg, 1995, p. 5).

Spielberger and Vagg (1995) discussed studies conducted by McKeachie in 1951 who attempted to explore "ways to reduce the negative impact of anxiety on students' classroom test performance" (p. 5). It was discovered that test anxiety can be a "valuable motivating force" (Spielberger & Vagg, 1995, p. 5); however, it can be problematic in

terms of its influence on performance if it is not resolved. Test anxiety, according to Spielberger and Vagg (1995), can have a significant impact on the ability to process information and can have a negative impact on the ability to recall information.

Through the work of Sarason and Mandler an association was made between higher levels of test anxiety and situations in which the individuals were being evaluated (Zeidner, 1998). Evaluative situations elicited higher levels of worry and also stimulated the sympathetic nervous system thereby causing increased heart rate. Seymour and others developed a self-report questionnaire (Test Anxiety Questionnaire) in order to study test anxiety; later, they discovered that test anxiety is a complex phenomenon containing both "a cognitive and an affective component" (Zeidner, 1998, p. 9).

According to Damer and Melendres (2011), "worry (concern about performance) and emotionality (physiological arousal)" were identified early on as two major components of test anxiety that are utilized in describing the phenomenon today (p. 165). Damer and Melendres (2011) cited work by Wine (1971) that revealed that "the inward focus on self-defeating thoughts and preoccupation with physiological arousal depletes attentional capacity, leaving the test-anxious individual with scant resources for the task at hand" (p. 165). Worry and self-defeating thoughts would eventually be known as self-efficacy and cognitive interference respectively (Sarason, Pierce, & Sarason, 1996).

Review of the Literature Related to Test Anxiety

No Child Left Behind Legislation

Prior to discussing the literature related to test anxiety in nursing students, a brief discussion of key legislation that has had an impact on youth necessitating research into the construct of test anxiety is provided. The "educational accountability movement" in

the United States led to a strong emphasis on the "educational and occupational outcomes of children" (Segool et al., 2013, p. 489). The legislation that brought the most significant change in the educational environment was the No Child Left Behind (NCLB) Act of 2001. This act changed the landscape of primary and secondary educational environments by multiplying the consequences for poor performance on standardized testing specifically in reading and mathematics. According to Segool et al. (2013), "NCLB test scores are publicly reported and linked to rewards and sanctions, such as school funding, administration, and employment decisions, making this testing high-stakes in nature for educators and communities" (p. 489). According to these researchers, current students continue to be affected by this historic legislation; yet little has been done to investigate the perception of students at the primary and secondary educational levels regarding the experience of test anxiety resulting from high-stakes testing.

An example of research conducted to explore the effects of the No Child Left Behind (NCLB) legislation is a study by Segool et al. (2013) to compare test anxiety, worry, and fear regarding test taking between the NCLB achievement assessment and the classroom examinations in general. The researchers administered the Children's Test Anxiety Scale (CTAS) and the Behavior Assessment Scale for Children (BASC-2-TA) to 335 school children in grades three through five. The results obtained determined that students scored significantly higher related to anxiety and worry scores associated with the high-stakes NCLB assessment compared to the classroom tests. According to the literature, this study is the first to explore the level of anxiety related to high-stakes testing such as the NCLB assessment, especially as it compares to general classroom tests. Though the generalizability of the study is in question due to its population of

predominately Caucasian students, the exploration into this phenomenon is applicable to future studies with a more diverse population (Segool et al., 2013).

Test Anxiety Research in the Undergraduate and Graduate Setting

Cassady and Johnson (2002) developed a new test anxiety scale that assessed the cognitive aspect of test anxiety. The Cognitive Test Anxiety Scale was determined to be a reliable and valid method to assess the "cognitive component of test anxiety" (p. 275). The newly developed scale was administered to 168 undergraduate students in order to explore the manner in which cognitive test anxiety affected performance on three course examinations as well as the "self-reported scores on the Scholastic Aptitude Test (SAT)" (Cassady & Johnson, 2002, p. 270). Results revealed that students with high levels of test anxiety on both the SAT and the course examinations "were significantly outperformed by those with lower levels of test anxiety" (Cassady & Johnson, 2002, p. 287).

Zhang, Charles, and Henderson (2014) explored test anxiety and the academic performance of 166 third-quarter chiropractic students. The Test Anxiety Inventory (TAI) was administered midway in the academic term to all students. Results revealed that 85% of the chiropractic students in the study demonstrated moderate to high test anxiety scores. The total test anxiety score "was a very weak predictive model for written examination performance" (p. 2). However, review of the worry and emotionality subscales were more predictive of examination performance.

Sansgiry and Sail (2006) explored the impact of students' course load on perceptions of test anxiety. The sample consisted of 198 participants who were enrolled in various semesters of a doctor of pharmacy curriculum. Participants completed a test

anxiety inventory and a survey to assess perceptions of course load. Findings revealed that there was a positive relationship between levels of test anxiety and perceptions of course load. Due to the positive relationship between course load and test anxiety, the researchers recommended that educators explore methods to assist students with time management and anxiety reduction strategies (Sansgiry & Sail, 2006).

Test Anxiety Research in Nursing Education

Edelman and Ficorelli (2005) conducted qualitative, phenomenological research to assess nursing students' lived experiences of test anxiety. The primary question under exploration was "What are the lived experiences of the nursing student experiencing test anxiety?" (Edelman & Ficorelli, 2005, p. 56). Researchers utilized a purposive sample consisting of eight female nursing students. Interviews revealed that the experience of test anxiety is unique to the individual. One student stated that she must exercise before the examination and another likes to sit in the cafeteria prior to the examination as the "noise [is] stimulating, and I feel like I am raring to go" (Edelman & Ficorelli, 2005, p. 58). Others stated that they could not think straight; felt powerless; felt physiologically unstable; and one student felt as though her head was not attached to her body. The researchers suggested that nurse educators should continue to explore the lived experiences of test anxiety as well as investigate strategies to reduce nursing students' test anxiety in order to enhance progression.

Brewer (2002) conducted a study to examine "whether nursing students experience an unusual amount of debilitative anxiety" as compared to college students enrolled in general education courses (p. 23). A total of 41 senior level nursing students and freshman college students who were enrolled in a specific college course were

selected for the study. The researchers selected Haber's Achievement Anxiety Test stating that the State-Trait instrument was not appropriate due to the diverse backgrounds of these students. The results revealed that there was no significant difference in the level of debilitative test anxiety experienced by nursing students as compared to general college students.

Driscoll, Evans, Ramsey, and Wheeler (2009) compared the anxiety of nursing students to that of students in other fields. The study included a total of 769 students (298 nursing students and 471 high school and general college students). The Westside Test Anxiety Scale was administered to these students and the results revealed that the test anxiety levels were higher among the nursing students than among the comparison group students ("30% nursing and 17% comparison group had high test anxiety scores; 26% nursing and 18% comparison group had moderately high anxiety scores)" (p. 197).

Waltman (1997) utilized the Test Anxiety Inventory, the Effective Study Test, the Self-Concept of Academic Ability Scale, and the Cognitive Interference Questionnaire to compare test anxiety in 110 traditional nursing students (less than 25 years of age) and non-traditional baccalaureate nursing students (over 25 years of age). The results revealed that there was no significant difference between the traditional and nontraditional students as related to anxiety levels. Both groups showed a significant correlation with cognitive interference. Waltman (1997) stated that "this lends support to cognitive theorists who place considerable emphasis on the thought processes of test-anxious students and indicate that cognitive interferences may be more closely associated with test anxiety than ineffective study and test-taking skills" (p. 177).

Howell and Swanson (1989) utilized a sample of 56 female baccalaureate students to determine the influence of variables such as: "cognitive interference, self-concept, study and test taking skills, and cumulative grade point average" (p. 215) on test anxiety. The researchers utilized Sarason's Test Anxiety Scale, Brown's Effective Study Test, and Brookover's Self-Concept of Ability Scale. The variable that had the most significant effect on test anxiety was academic self-concept; cognitive interference did contribute to test anxiety but not at the level of academic self-concept. According to Howell and Swanson (1989) "results support Meichenbaum and Butler's contention regarding the multidimensional nature of the test anxiety construct" (p. 215).

Stereotype Threats

The primary focus of this research study is the lived experiences of nursing students with high levels of test anxiety. Sawyer and Hollis-Sawyer (2005) recognized individual differences might account for "test anxiety reactions and cognitive ability test performance" (p. 225). These individual differences, or stereotype threats, "occur when an individual becomes apprehensive that his or her academic performance will validate a generally accepted stereotype about the individual's group" (Harrison, Stevens, Monty, & Coakley, 2006, p. 341). Stereotype threats can create achievement gaps leading to anxiety that can have a negative impact on student performance on evaluation sources such as examinations and can cause significant "personal and social consequences" (Appel & Kronberger, 2012; Wicherts, Dolan, Hessen, 2005, p. 696).

According to Davis, Thompson, and Nguyen (2014), "the stereotype threat phenomenon relates to actions often associated with underrepresented groups in math and science fields, such as females, minorities, and rural students" (p. 45). In nursing

education there are various underrepresented groups noted. According to the American Association of Colleges of Nursing 2008 National Sample Survey of Registered Nurses, approximately "5.4% of the RN population is comprised of African Americans; 3.6% Hispanic; and 5.8% Asian/Native Hawaiian" (Nursing World, 2010). Due to the low percentage of ethnically diverse students in the nursing education programs, the propensity of stereotype threats in the student population remains possible. Though there are a variety of ethnically diverse groups susceptible to stereotype threats, this literature review will direct its focus toward the African American population.

A study to explore the impact stereotype threats have on student achievement was conducted by Robertson and Chaney (2015). The primary goal of this qualitative study at a predominantly white college in the south was to better understand the college experience of Black males and to explore factors impacting graduation rates. A purposive sampling technique was used to interview 15 Black male participants. According to Robertson and Chaney (2015), Black males graduate at a rate of 39.5% as opposed to a rate of 61.5% for White males.

Robertson and Chaney (2015) found three themes upon analyzing the interviews: "1) faculty involvement as facilitator of stereotype threat; 2) classroom environment as facilitator of stereotype threat; 3) perceptions of racism as facilitator of stereotype threat" (p. 28). The first theme was derived as a result of common comments regarding the Black males' perceptions of being spoken to "in a stereotypical manner by a faculty member" (p. 28). The second theme arose as a result of a perception by the Black males that they were treated inferiorly in the classroom due to their race. The third theme arose as a result of perceptions that they were treated differently at any point while on the campus as a

result of their race. Though this study is not directly related to test anxiety, it is felt that issues such as these can potentially contribute to anxiety and may have an impact on academic success.

Thames, Byrd, Panos, Arentoft, Hinkin, and Arbid (2015) conducted a study utilizing the Test Anxiety Inventory (TAI) in order to evaluate differences in "evaluative/test anxiety and neurocognitive performance among a community sample of 76 African American (n=40) and European American (n=36) individuals" (p. 106). Participants resided in the Los Angeles community. Findings suggest that "African Americans reported higher concerns about how others would view poor performance than European Americans" (p. 108).

Arbuthnot (2011) discusses potential reasons for the differences occurring between Black and White test takers. One such factor discussed is that on average Black students tend to enroll in "high poverty, high minority schools" (p. 35) and those particular schools have a lower funding amount per pupil. In fact, Arbuthnot (2011) states that "on the national scale, research has shown that the wealthiest schools in the nation spend ten times more per pupil than some of the poorest" (p. 35). These differences have a significant impact on the amount of resources available to the Black schools enabling faculty and staff to facilitate student success; therefore, this is a potential contributor to the "test performance differences of White and Black test takers" (p. 35).

Dapremont (2014) conducted a qualitative research study to assess the ways that Black graduates maintained success while attending "predominately White Nursing education programs" (p. 157). A purposive sampling along with snowball sampling was utilized to select "18 Black nurses between the ages of 21 and 50 years of age who had

graduated from four nursing programs in the years 2000 to 2006" (p. 158). The findings of this research study suggest that the Black participants did not use specific strategies (nor did they know what success strategies meant) when they began their nursing education program. The students often found themselves struggling to make a passing grade. Dapremont (2014) requested that nurse educators develop mechanisms to identify and assist at risk students early on in the nursing program.

Research Related to Methods to Reduce Test Anxiety

A variety of methods to reduce test anxiety have been developed and utilized. A few methods that will be explored further include: imagery, biofeedback, group therapy, exposure to humor, and muscle relaxation.

Stephens (1992) utilized imagery in a study to assess its impact on reducing students' anxiety and enhancing test performance. The sample group consisted of 159 first year ADN (Associates Degree in Nursing) and BSN (Bachelor of Science degree in Nursing) students who were randomly assigned to one of three groups: "imagery only, imagery/relaxation, and a no-treatment control group" (p. 314). The participants in the imagery only group were provided an audiotape using mental images of a fictitious student succeeding in the nursing program. The participants were instructed to view the tape "15 minutes daily for five consecutive days, then three times a week for three weeks" (p. 316). Prior to the examinations, early in the semester, the participants completed the Speilberger State-Trait Anxiety Inventory (STAI) (pretest) and then later in the semester prior to the next examination (posttest). Results revealed that the participants in the imagery only group showed a reduction in anxiety. Researchers

concluded that "imagery alone can be effective in treating nonpathological anxiety" (p. 318).

Prato and Yucha (2013) created a biofeedback-assisted relaxation training (BART) program and assessed its impact on 14 third semester nursing students' test anxiety. The program consisted of relaxation sessions in which the students participated in such activities as diaphragmatic breathing and other evidence-based relaxation strategies. Test anxiety was assessed using the Spielberger's Test Anxiety Inventory (TAI) prior to two course examinations: "pre-BART and post-BART" (p. 78). Results revealed that the diaphragmatic breathing and relaxation strategies decreased respiratory rate and skin temperature. However, no significant change in overall test anxiety was noted.

Damer and Melendres (2011) implemented a set of group therapy sessions over four weeks (called the Tackling Test Anxiety group) to address test anxiety in a public university setting. Specific topics included in the sessions were: "cognitive restructuring, study skills, study habits, self-care, time-management, mindfulness, relaxation and breathing techniques, self-control desensitization, exposure, and practice managing distractions" (p. 166). The Spielberger Test Anxiety Inventory (TAI) was administered prior to the start of the program and following the four week sessions (each session lasted 1.25 hours, meeting once a week). The data collected revealed that students benefitted from this program yielding lower test anxiety scores following the Tackling Test Anxiety sessions.

Kaplan, McCordick, and Twitchell (1979) conducted a study in which 24 participants were assigned to one of four groups: "desensitization only, cognitive only,

combination cognitive plus desensitization, or neither cognitive nor desensitization" (p. 371). The groups met for "two one hour biweekly meetings during the five weeks of the treatment period" (p. 372). The study implemented the Meichenbaum cognitive-behavior modification test anxiety treatment model and utilized a desensitization component which combined relaxation exercises with imagery. The researchers implemented the "Liebert-Morris Test Anxiety Scale, self-ratings of Emotionality and Worry, and a digit symbol performance task" (p. 373). Findings revealed that the cognitive-behavior modification treatment reduced test anxiety more than the desensitization component.

Ford, Ford, Boxer, and Armstrong (2012) utilized humor prior to a difficult math test to determine if its use reduced the anxiety and assisted the students in achieving a better math score. Thirty-three men and 51 women were randomly assigned to one of three conditions: "cartoon, poem, control" (p. 63). Researchers adapted the Spielberger state anxiety scale for this particular study. Results did suggest that the participants exposed to humor prior to the difficult math test expressed lower anxiety and they performed better than the participants assigned to the poem and control groups.

Music Therapy

Music is beneficial to human behavior, human cognition, and human interaction as evidenced by its use throughout the centuries for its healing and stimulating effects (Jausovec, Jausovec, & Gerlic, 2006). It has also been utilized historically to treat patients with seizures, anxiety disorders, and to alleviate symptoms of childhood autism (Jausovec et al., 2006). Additionally, research has investigated the benefits of music in "accelerating learning of foreign languages, reading and mathematics (Lozanov), retention of terminology, and creative ability" (Jausovec et al., 2006, p. 2703). The

following explores the positive effects and the various applications of certain types of music therapy.

Current studies "have found that people perform better on spatial cognitive tasks after listening to 10 minutes of Mozart than after sitting in silence" (Lilley, Oberle, & Thompson, 2014, p. 185). This occurs because music excites the "cortical firing patterns" (Jausovec, et al., 2006, p. 2704) which facilitate the higher functionality of the brain. This "intrinsically rhythmic" nature of the cortical firing patterns is consistent with most of the neurologic processes (Blum, 2013, p. 125) and serves as the link between music and its effect on "human performance" (Jausovec, et al., 2006, p. 2704).

The proposed enhanced cognitive functioning that occurs as a result of listening to music serves as the basis for the "Mozart effect" (Jausovec et al., 2006, p. 2704). Studies mention improved performance on spatial IQ tests for students who listened to Mozart. Additionally, "college students who had spent ten minutes listening to Mozart's Sonata (K.448) had Stanford-Benet spatial subtest IQ scores eight to nine points higher than students who had listened to a relaxation tape or listened to nothing" (Jausovec et al., 2006, p. 2704; Jones & Zigler, 2002, p. 362).

Studies have shown that music therapy is also beneficial in the reduction of stress levels and in enhancing the immune system. Stress has been shown to have a direct impact on physiologic functions as evidenced by its effect on chronic pain complaints, gastrointestinal distress, sleep disturbances, mood disorders, etc. Stress can affect the immune system due to the release of glucocorticoids (steroid hormones). An elevated stress response can impede immune functions (Ferrer et al., 2014). Music therapy has proven to decrease the release of stress-mediating hormones such as glucocorticoids.

A study by Goldenberg, Floyd, and Moyer (2013) explored the effect that classical music has on test performance and self-reported test anxiety. Three hundred fifty nine college student participants were randomly assigned to one of three groups: "1) listen to Mozart while studying and taking an exam; 2) study and take the exam under usual conditions; and 3) choose between these two alternatives" (Goldenberg et al., 2013, p. 1). Even though the results did not reflect any music influence on test anxiety or exam performance, the students did report that they preferred to listen to music during the examination as opposed to there being no music. The researchers recommended future studies to examine physiologic variables related to test anxiety (heart rate, finger temperature) while students listen to "distress-reducing music" (Goldenberg et al., 2013, p. 11).

A study by O'Callaghan, Sproston, Wilkinson, Willis, Milner, Grocke, and Wheeler (2012) explored the impact self-selected music might have on patients' anxiety levels during radiotherapy treatment. One hundred participants were asked to complete the Spielberger State Anxiety Inventory pre and post radiotherapy. Though no significant difference was noted in the reduction of anxiety with the use of self-selected music, participants stated that they would want to listen to music in future sessions as it helped make it seem like the treatment was going by faster. The researchers attributed part of the lack of significance to the fact that participants may have been more influenced by the helpful staff and nurses than by the music.

Comeaux and Steele-Moses (2013) examined the use of complementary music therapy as an adjunct therapy to decrease anxiety associated with postoperative pain. The 41 patients participating in the study were all in the postoperative phase of recovery from

surgery and each completed the State-Trait Anxiety Inventory before and after listening to self-selected music. Findings suggest that the music therapy did decrease pain; however, the intervention showed no impact on anxiety. The researchers stated that the lack of significant findings related to anxiety reduction may be attributed to the fact that these were oncology patients who were receiving surgical intervention for cancers.

Lin, Hsieh, Hsu, Fetzer, and Hsu (2011) conducted a study to determine whether both music therapy and verbal relaxation are effective in reducing state anxiety and the physiological "manifestations among patients with cancer before and after chemotherapy" (p. 988). Ninety-eight patients were randomly assigned to three groups: "the music therapy group received one hour single music session; the verbal relaxation group received 30 minutes of guided relaxation; the control group received the usual care" (Lin et al., 2011, p. 988). The following tools were utilized: Spielberger State-Trait Anxiety Instrument, Emotional Visual Analog Scale, 3 biobehavioral indicators: skin temperature, heart rate and consciousness level – all measured "during and after chemotherapy" (Lin et al., 2011, p. 988). Results of the study revealed that music therapy had a greater positive effect on anxiety level and skin temperature than the control group receiving chemotherapy without music therapy.

A study by Lilley, Oberle, and Thompson (2014) explored the interactive effects of grade consequences and music on anxiety and academic test performance. The study utilized 80 participants whose anxiety was assessed with "three physiological measures and one self-report measure. The physiological measures were systolic blood pressure, diastolic blood pressure, and heart rate. The participants' self-report measure included their score on the State-Trait Anxiety Inventory" (Lilley et al., 2014, p. 185). The results

of the study confirmed that music therapy with calm music resulted in lower systolic blood pressure, lower heart rates, and an overall relaxed state.

Labbe, Schmidt, Babin, and Pharr (2007) conducted a study on a variety of music styles to determine whether listening to classical and self-selected relaxing music following a stressful stimulus resulted in a decrease in anxiety and anger. The 56 college participants were randomly assigned to the self-selected music group, classical, heavy metal music, or silence. The tools utilized for this study included: "a demographic questionnaire, Relaxation Rating Scale, Music Rating Scale, State-Trait Anger Expression Inventory-2, State-Trait Anxiety Inventory-Form Y, and physiological assessment of heart rate, respiration and skin conductance" (p. 164). Results confirmed that students who listened to self-selected music or classical music scored lower ratings of anxiety than students who sat in silence or listened to heavy metal music.

A study by Summers et al. (1990) utilized baroque music (60 beats per minute) in order to determine whether this form of music therapy promoted the reduction of test anxiety in 45 junior level baccalaureate nursing students. The researchers utilized Spielberger's Y Form State-Trait Anxiety Scale and the Test Anxiety Scale as a pretest-posttest assessment of student anxiety levels. The control group received no treatment; the experimental group listened to a certain musical selection during the examination period. Findings suggested that there was no significant difference in anxiety levels between the experimental and the control groups. The researchers were concerned that the single exposure was ineffective in reducing test anxiety. Additionally, the researchers questioned the effectiveness of the paper and pencil surveys as an "appropriate measure of the effect of music interventions" (Summers et al., 1990, p. 70).

Self-Efficacy

Self-efficacy "is the student's perceived confidence for learning or performing specific tasks or skills necessary to achieve a particular goal" (Jeffreys, 2012, p. 63). According to Bouffard-Bouchard, Parent, and Larivee (1991), students may not meet the standard for completion of a skill for two reasons: 1) they may lack knowledge of the skill, or 2) they may possess the ability to perform the skill but they may lack the self-efficacy necessary to appropriately meet competency requirements.

Bandura (1997) refers to elements contributing to perceptions of self-efficacy that increase academic anxiety. One such factor are the pressures instilled in the student by parents and teachers. As Bandura (1997) asserts, teachers and parents have a tendency to express rather stringent academic expectations to the children and "accomplishments that fall short of those standards are devalued and lead to unpleasantness at home" (p. 235).

Bandura (1997) states that as students advance their education into high school and college, self-efficacy is affected by more academic pressures. The pressures of performance at these levels can affect life "pursuits" (p. 235). Students with low self-efficacy regarding their ability to meet academic expectations "are especially vulnerable to achievement anxiety" (p. 235). These students have a tendency to lose focus on the content under study; rather, their thoughts tend to relate to "personal inadequacies, rumination about their past failures, and worry about the calamitous consequences of failing" (Bandura, 1997, p. 236). Bandura (1997) states that most of the research related to self-efficacy and its impact on anxiety and academic performance has been focused in the area of mathematics. For example, students with low efficacy in mathematics tend to have "high math anxiety" (p. 236). Anxiety is not necessarily impacted directly by "past

performance experiences with mathematics" (Bandura, 1997, p. 236); rather, these experiences tend to influence one's efficacious beliefs.

Yorra (2014) explored factors influencing pharmacy students' self-efficacy. The Rosenberg Self-Esteem Scale and the General Self-Efficacy Scale were completed by 399 pharmacy students. Conclusions of the study revealed that students who exceeded the number of clinical hours required experienced higher self-esteem and higher self-efficacy compared to students who completed only the requisite number of hours. These researchers did not make attempts to insinuate that self-efficacy is altered by self-esteem. This is an important distinction as Bandura (1997) states that the two terms represent entirely different things. Bandura (1997) states "perceived self-efficacy is concerned with judgments of personal capability, whereas self-esteem is concerned with judgments of self-worth" (p. 11).

Jameson and Fusco (2014) examined the math self-efficacy of 226 undergraduate students (60 traditional, 166 nontraditional). The focus of the study was to assess the mathematic self-efficacy of adult learners (nontraditional students) compared to the traditional students. Participants completed the Abbreviated Math Anxiety Scale and the Mathematics Self-Efficacy Scale. Researchers concluded that there was no significant difference in math self-efficacy or math anxiety between the two groups.

Cognitive Interference

Research has attempted to identify the types of thoughts that occur in highly anxious individuals. Interviews conducted concluded that individuals diagnosed with generalized anxiety disorder experienced frequent thoughts "concerning imminent danger" (Beck, Laude, & Bohnert, 1974; Sarason et al., 1996, p. 49). Similar conclusions

were drawn in studies conducted on patients diagnosed with agoraphobia (Chambless, Caputo, Bright, & Gallagher, 1984) as well as patients diagnosed with panic disorder (Ganellan, Matuzas, Uhlenhuth, Glass, & Easton, 1986).

Cognitive interference is not limited to "clinically anxious individuals;" it is also evident in individuals who "report high levels of anxiety" (Sarason et al., 1996, p. 49). Parkinson and Rachman (1981) conducted a study to explore the process recording thoughts of highly anxious women whose children were scheduled for surgery. These women recorded frequent, intensive negative thoughts focused on catastrophic injury that might befall their children during surgery (Parkinson & Rachman, 1981).

Studies have also been conducted to explore the association between intrusive thoughts and test anxiety. Researchers utilizing a cognitive interference questionnaire as well as process recording procedures determined that students who reported being highly test anxious tended to record more intrusive thoughts than low test anxious students (Blankenstein, Toner, and Flett, 1989). Evidence also supports the negative impact that the intrusive thoughts have on the performance of demanding tasks. Such studies observed that students with negative thoughts experienced under testing conditions tended to score lower than students who did not experience intrusive thoughts (Bruch, Kaflowitz, & Kuethe, 1986; Hunsley, 1987; Nichols-Hoppe & Beach, 1990; Sarason & Stoops, 1978).

Summary and Focus for this Study

The review of the literature was presented in a manner designed to provide the reader with a foundational understanding of the historical and situational factors causing test anxiety in nursing students. It should also be noted that, as Jeffreys (2012) points

out, there has been a shift over the years regarding the type of students that are enrolling in nursing programs. Jeffreys (2012) states "the nontraditional student is replacing the traditional student in nursing" (p. 4). These nontraditional undergraduate nursing students face retention issues and stress as a result of personal responsibilities (caring for dependent children; employment responsibilities necessitating part time status; commuting to school) (Jeffreys, 2012). The purpose of this study is to explore the lived experiences of nursing students with test anxiety and, as such, profile characteristics of the traditional and nontraditional nursing student will be explored.

Additionally, research identifying strategies to reduce test anxiety in undergraduate nursing students has been diverse to include: "test-taking workshops, hypnotherapy, and systematic desensitization with skills training" (Howell & Swanson, 1989, p. 215). However, there is a paucity of literature utilizing a mixed methods approach to explore student perceptions of test anxiety. While this study is focused on experiences of nursing students, it could contribute to promote further studies which could enhance retention for all students.

CHAPTER 3: RESEARCH METHODOLOGY

This study utilized an explanatory, sequential mixed methods design to investigate the lived experiences of a group of junior level baccalaureate nursing students and their perceptions regarding classical music as a means to reduce test anxiety and enhance self-efficacy. Previous studies were explored and this researcher determined that additional research needs to be conducted on test anxiety in nursing students utilizing a mixed methods approach.

Bradt et al., (2013) assert that mixed methods research provides multiple viewpoints to experience the world. Bradt et al., (2013) also affirm that both quantitative and qualitative research have their own inherent strengths individually; however, when combined, a greater depth of understanding is granted to the phenomenon under exploration. Utilizing a mixed methods approach with this study gained a greater understanding of students' experiences related to test anxiety and self-efficacy.

Research Questions

The primary quantitative research questions are:

1) What impact does listening to classical music in the junior level baccalaureate nursing course prior to the examinations have on students' level of test anxiety?
2) What impact does listening to classical music in the junior level baccalaureate nursing course prior to the examinations have on students' level of self-efficacy?

The primary qualitative research questions are:

1) What is the lived experience of junior level baccalaureate nursing students experiencing high test anxiety?

Sub-questions include the following:

a. What emotions do students experience prior to, during, and after taking an examination?

b. What actions do students take to reduce test anxiety?

c. What behavioral acts do students engage in to prepare for the examination?

This study employed a sequential, explanatory design (quant → qual). Each variable of the study was analyzed per the tools outlined in Figure 1.

Tool	Associated Variable in Study	Important Specifics about Tool
Westside Test Anxiety Scale (WTAS)	Test Anxiety (Dependent Variable)	Brief, ten question survey used to identify subjects with high test anxiety. Takes approximately eight minutes to complete.
General Self-Efficacy Scale (GSES) (Schwarzer & Jerusalem)	Self-Efficacy (Dependent Variable)	Brief, ten question survey created to assess perceived self-efficacy. Takes approximately five minutes to complete.

Figure 1. Depicts the measurement tools used in the study, the associated variables and important information about each tool.

Variables and Concepts Explored in the Study

The research approach for this study utilizes Bandura's Social Cognitive Theory as a framework. The major constructs that were the focus are: test anxiety, self-efficacy, and cognitive interference. According to Waltman (1997), Meichenbaum and Butler developed a comprehensive model of test anxiety using similar interdependent

components: “1) cognitive structures, 2) internal dialogue, 3) behavioral acts, and 4) behavioral outcomes” (p. 172).

1) “Cognitive structures” are representative of the meaning that academic evaluative situations hold for the individual (Sarason, 1980). The following are specific examples of issues that individuals in the testing environment encounter as attempts are made at assigning meaning to experiences:

> 1) concern over loss of control, fear of being overwhelmed by anxiety; 2) concern to gain the esteem of authority figures and/or peers; 3) concern by a student that high academic achievement might jeopardize social relationships with members of the opposite sex; 4) concern for job success or entry into graduate school. (Sarason, 1980, p. 198)

Exploring the meaning that individuals place on their academic environment can be difficult; however, according to Sarason (1980), an interesting way to explore meaning systems was developed. Sarason (1980) notes that the method developed by Pervin required that the researcher interview the participants and request from them a list of current life situations and ask them to describe and rate these situations. By analyzing the lists, the researcher is able to evaluate behaviors that are common in highly test anxious individuals. Thus, this aspect of the model will be explored as part of the interview process.

2) “Internal dialogue” refers to the individuals’ conscious thoughts about their inability to complete a task successfully (Sarason, 1980). Internal dialogue has been further explained through the Cognitive Interference Model. Cognitive interference refers to “thoughts that intrude and pop into one’s mind during exams, but have no functional value in solving the cognitive task at hand” (Zeidner, 1998, p. 39). This variable will be explored by means of the interview process.

3) “Behavioral acts” refer to observable behaviors such as effective study skills or communication with faculty to receive preparation assistance on examinations, etc. Another behavioral act that can influence ratings of test anxiety is test taking skills. According to Sarason (1980) test-taking skills in university students require higher cognitive strategies as students sort through a variety of examination types. The ability to sort through necessary skills may differ between high- and low-test-anxious students. According to Sarason (1980) this “is an important question for future research” (p. 193). This variable will be discussed during the interview process.

4) “Behavioral outcomes” subsume a variety of evaluative sources. According to Sarason (1980) outcomes may be measured by feedback from faculty regarding performance or a grade as determined by the score on an examination. Students will be asked to complete a brief demographic questionnaire to ascertain this information. Additionally, grades on each course examination will be obtained.

This study also utilized a self-efficacy questionnaire in order to determine the impact self-efficacy may have on intellectual performance and test anxiety (Bandura, 1997). Bandura (1997) states that students with a higher self-efficacy tend to discard perceptions of personal inability to complete tasks effectively and persevere through challenging problems with greater detail orientation.

Research Context

The research study took place during the 2015 spring semester at an independent, private, Catholic institution in the southeastern part of the United States. This institution was founded in 1923 as a nursing school and in 1990 received accreditation to become a college and expand allied health offerings. The college currently maintains a total

enrollment of approximately 1800 students. Of the 1800 students, approximately 400 are enrolled in the baccalaureate nursing program. The approximate demographic distribution of this five semester nursing program as of the Spring 2015 is as follows: 90% female, 10% male, 85% Caucasian, 15% African American, and 5% other (personal communication with the Director of Enrollment Management, October 13, 2014).

The demographic distribution of the nursing program where the study took place is similar to that of 13 statewide baccalaureate nursing programs. Figures 2 and 3 illustrate the following 2014 statewide demographic data: enrollment and retention data (Figure 2); and gender and race (Figure 3) (Retrieved from the 2014 Annual Report from the State Board of Nursing).

Total Students Admitted	1777
Total Students Graduated	1249
Number of Students Not Graduating	528
Attrition Rate	29.7%

Figure 2. 2014 Enrollment and Retention Data for Statewide Baccalaureate Nursing Programs as Reported by the Louisiana State Board of Nursing.

Gender	Male 13% Female 87%
Race	Asian 2% Hispanic 3% Black 27% White 65% Other 3%

Figure 3. 2014 Gender and Race Data for Statewide Baccalaureate Nursing Programs as Reported by the Louisiana State Board of Nursing.

The baccalaureate program at the center of this research study consists of 120 total hours; 66 of those hours comprise nursing courses and the remaining 56 hours include required arts and science courses. The majority of the courses in the nursing curriculum have a didactic and a clinical components. The requirements of the didactic and clinical components must both be met in order for the student to progress to the next course or level in the curriculum. The requirements for the didactic portion of the nursing courses in the baccalaureate program are that the student must achieve a minimum total percentage grade of 80, and the student must also receive a passing grade in the clinical portion.

If a student does not meet the requirement for one or the other portion of the course, the entire course (didactic and clinical) must be repeated. The research participants for this study are enrolled in two junior level nursing courses that are a total of 13 credit hours. One course (adult health nursing) contains eight total credit hours (four didactic credit hours and four clinical credit hours) and the other course (community health nursing) contains six total credit hours (three didactic credit hours and two clinical credit hours). The focus of this research study is the didactic portion of the adult health nursing course.

The adult health nursing course is designed to facilitate the students' ability to care for individuals holistically in a complex healthcare environment. A lifespan approach is utilized and includes content related to pediatric nursing care, obstetrical nursing care, adult health nursing care, and the nursing care specific to the older adult. This integrative approach is utilized in some nursing programs. Other programs have separate courses for specialty areas such as pediatrics and obstetrical nursing. Figure 4

presents the following: topic areas that are discussed in the particular course; sample content discussed associated with the topic area; and the examination date.

Topic Area	Sample Content	Examination Date
Unit 1: Peri-procedural Overview	Preoperative nursing concerns (consents, teaching), intraoperative nursing concerns, deep vein thrombosis, pulmonary embolism, post-op pain management, post-op complications	February 2, 2015
Unit 2: Regulation Metabolism	Electrolyte imbalance/arrhythmia review, thyroid disease, seizures, hydrocephalus, cystic fibrosis, and hemophilia	
Unit 3: Sexuality Reproductive	Postpartum nursing care, newborn nursing care, physical assessment of newborn, common cold, stress, hyperbilirubinemia	February 23, 2015
Unit 4: Cognition Perception	Mental health assessment, milieu therapy and group therapy, policy and laws, crisis intervention, restraints (physical and behavioral), suicide assessment, mood disorder (depression, bipolar), thought disorder (schizophrenia, psychosis), personality disorders. dementia/delirium, autism, substance abuse	March 16, 2015
Unit 5: Nutrition Elimination	Appendicitis, hernia repair pyloric stenosis, bowel obstruction cleft lip/palate, Crohn's/ulcerative colitis, colostomy, bariatric surgery, cholecystitis	April 13, 2015
Unit 6: Protection Adaptation	Crohn's/UC, colostomy, bariatric surgery, cholecystitis/ectomy	
Unit 7: Mobility	Cerebral palsy, spina bifida, multiple sclerosis, muscular dystrophy, Parkinson's Disease, amputations, joint replacements, spinal shock, laminectomies and fusion, autonomic dysreflexia	Comprehensive Final May 6, 2015

Figure 4. Adult Health Nursing course topic areas, sample content, and examination dates provided by the Adult Health Nursing course coordinator.

According to the course syllabus, the student must meet the following course requirements in order to progress to the senior level nursing courses: achieve 80% or better in the didactic portion of the course; and achieve a pass rating in the clinical

component of the course. The final course grade is based on the following: 13 quizzes (a total of 12% of the total course grade); course examinations 1 through 4 (worth 16.5% each); final comprehensive examination (19% of the total course grade); and the Health Education Systems, Incorporated (HESI) Mental Health examination (3% of the total course grade). The students receive full credit for the Mental Health examination if they achieve a benchmark score of 800. If the student does not achieve an 800 score, then the student must remediate and retake the Mental Health HESI examination. On the HESI retake examination the student receives a grade of 83.33% if a benchmark score of 800 is achieved. If the student does not receive a benchmark score of 800 on the retake examination, a grade of zero is recorded in the gradebook.

Research Participants

The target population for this study consisted of junior level baccalaureate nursing students enrolled in the adult health nursing course in the spring 2015. A convenience sample of 39 students enrolled in the adult health nursing course agreed to participate in the study. Figures 5 through 8 illustrate the following demographic information of the sample: gender (Figure 5) and racial distribution (Figure 6); total family income distribution (Figure 7); high school attendance (public, private, or homeschooled) (Figure 8).

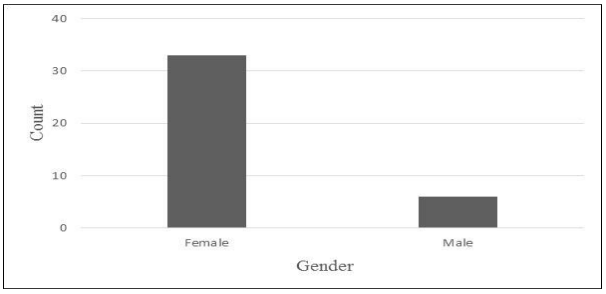

Figure 5. Gender distribution of the total sample (n=39).

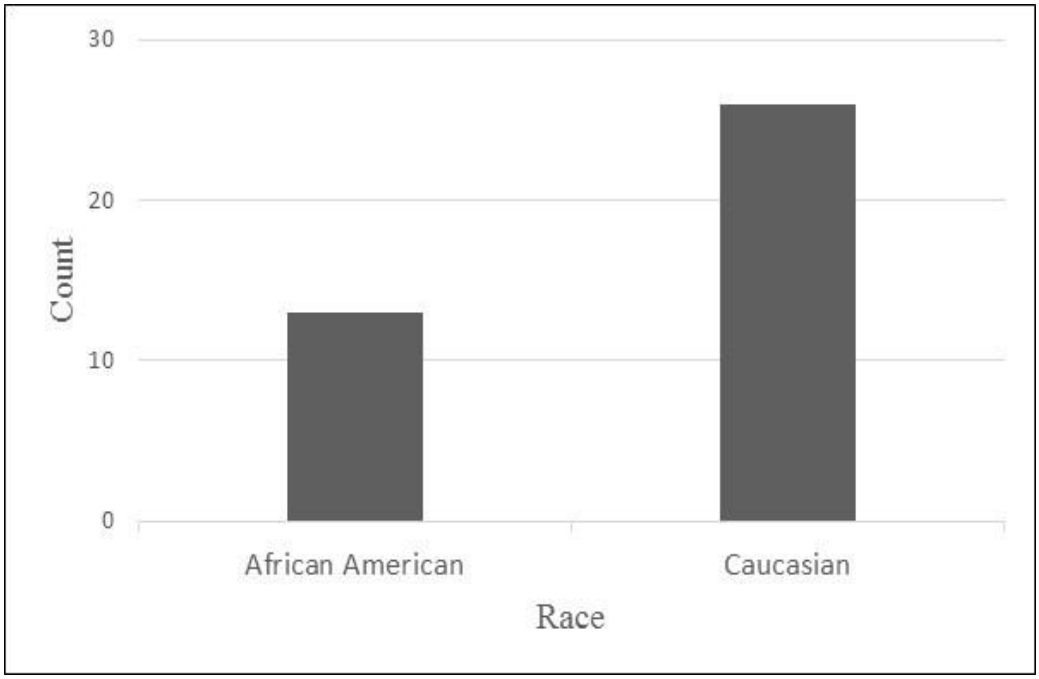

Figure 6. Racial distribution of the total sample (n=39).

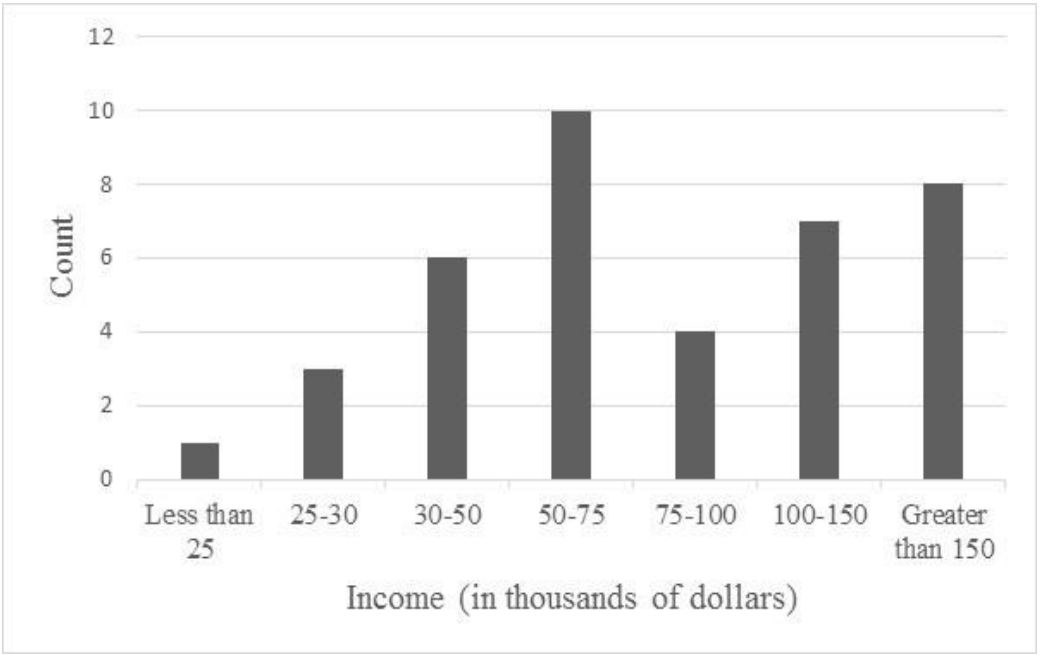

Figure 7. Total family income distribution (n=39).

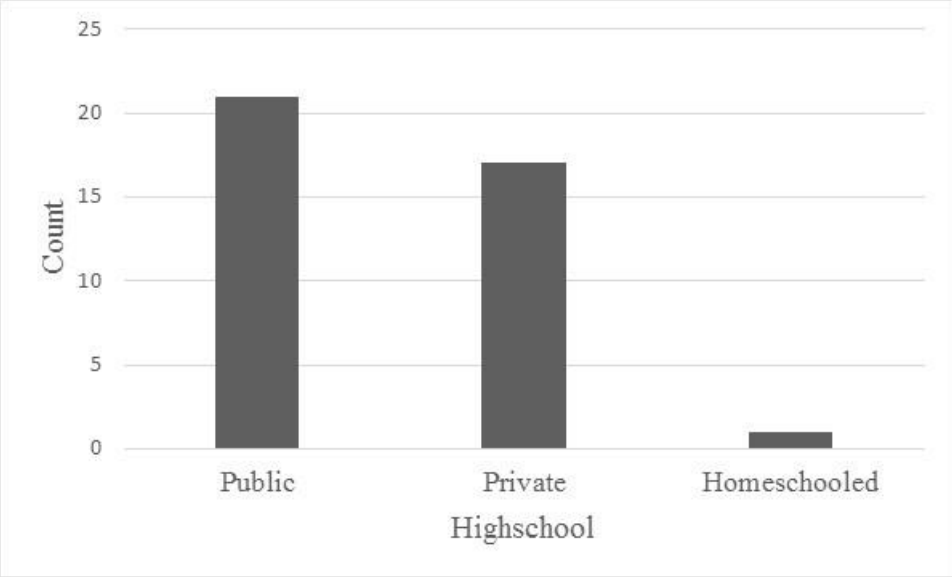

Figure 8. High school students attended (n=39).

The total sample included 33 females and 6 males; 13 African-Americans and 26 Caucasians. The histograms illustrate the distribution of gender and race separately. A histogram representing race and gender counts was not developed. Figure 7 illustrates the total family income distribution of the participants and is as follows: 11.1% between $25,000 and $30,000; 15.3% between $30,000 and $50,000; 25.6% between $50,000 and $75,000; 10.2% between $75,000 and $100,000; 17.6% between $100,000 and $150,000; and 20.2% greater than $150,000. Figure 8 presents the type of high school attended by the participants and is as follows: 53.8% attended public high school; 43.5% attended private high school; 2.7% received home schooling for their high school education.

A purposive sample of six students was selected for individual interviews. Originally, 25 students were solicited for participation in the interview phase; 10 responded and 6 ultimately agreed to participate. The criterion for interview selection

was a score of 3.0 or higher (out of a possible 5.0 score) on the Westside Test Anxiety Scale. A representative sample of both the experimental and the control groups was achieved during the interview phase (4 interview participants from Group 1 – experimental; 2 interview participants from Group 2 – control). The criterion for inclusion in the quantitative phase of the study was enrollment in the junior level adult health nursing course.

Data Collection Methods

Quantitative Phase

Prior to beginning the data collection process, the researcher obtained approval from the Institutional Review Board (Appendix A). Each participant agreeing to participate in the study signed an informed consent (Appendix B). Students who volunteered to participate were randomly assigned to one of the two following groups: 1) classical music group (n=18); and 2) no treatment group (n=21).

The study occurred in the following phases:

1) Phase 1: Prior to examination I, the researcher met with the junior class and discussed the research in order to recruit participants. Participants were assigned a unique identifier to utilize during the implementation of the study after they agreed to participate. During this phase of the study, 74 participants agreed to participate in the study; however, only 39 completed the study (this represents a 44.3% rate of withdrawal).
2) Phase 2: Prior to examination II, participants completed the General Self-Efficacy Scale (GSES) (Appendix D), Westside Test Anxiety Scale (WTAS) (Appendix E), and the Demographic Information (Appendix C). The highest possible score

on the GSE Scale is 40 total points (indicating high self-efficacy) and the lowest score is 0 (indicating low self-efficacy). The highest possible score on the WTAS is 4.0 (indicating the highest test anxiety) and 0 (indicating the lowest test anxiety).

3) Phase 3:
    a. Prior to examinations III, IV, and V, participants assigned to the classical music group (n=18) were asked to arrive 30 minutes early and meet in one of the classrooms in the school of nursing building. Guidelines were established prior to beginning the classical music segment to include: remaining seated in silence until the beginning of the examination; and keep cell phones and personal electronic devices out of reach. Participants listened to a nine minute and 27 second segment of Mozart Adagio in E for violin and orchestra. Upon completion of the musical selection, participants completed the GSES and the WTAS. Prior to each session, an acoustic check was performed to ensure equality of sound throughout the room.
    b. Prior to examinations III, IV, and V, participants assigned to the no treatment group (n=21) were asked to arrive 30 minutes early in a separate classroom down the hall from the experimental group. These participants had no restrictions and were asked to proceed as they normally would prior to an examination (this will be referred to as activities as usual). Participants in this group completed the GSES and WTAS 20 minutes after entering the room.

In order to analyze the quantitative data, the data obtained following Phase 2 and Phase 3 were entered into the Statistical Program for the Social Sciences (SPSS) in order to ascertain whether classical music reduced test anxiety and enhanced self-efficacy.

Classical music at 60 beats per minute was chosen as the medium for the experimental group primarily due to the support in the literature for its ability to promote calm and reduce needless thoughts (Lilley et al., 2014; Lin et al., 2011; Lozanov, 1978). Mozart was chosen as the selection as a result of the literature supporting the benefit of Mozart on the excitation of the "cortical firing patterns" in the brain (Jausovec et al., 2006, p. 2704).

The length of time that the participants were exposed to the music during the experimental phase was considered. Studies support the exposure to ten minutes of Mozart to enhance cortical firing patterns and promote improved performance on IQ tests (Jausovec et al., 2006; Lilley et al., 2014). Additionally, Lilley et al. (2014) reported the benefit of an exposure to a five minute segment of calm music as evidenced by lower systolic blood pressure and lower heart rates. Liu et al. (2010) suggested a music exposure time of 20 to 40 minutes in order to note a significant effect. This researcher chose a selection that was nine minutes and 27 seconds in length which is most consistent with the research completed by Jausovec et al. (2006) and Lilley et al. (2014). There is a high probability that a longer session might have resulted in withdrawal from the study.

Qualitative Phase

An interview is "a method of collecting data in which quantitative or qualitative questions can be asked" (Doody & Noonan, 2013, p. 28). In a structured interview the same questions are asked during each interview following the same interview schedule.

The advantage of this type of interview process is that it is time efficient and reduces researcher bias. The disadvantage of this type of interview is primarily that the process limits the potential richness of data as there is no room for elaboration (Doody & Noonan, 2013). The unstructured interview begins with a "broad, open question concerning the area of study, with subsequent questions dependent on the participant's responses (Doody & Noonan, 2013, p. 29). The interview has no definitive process and is flexible. This type of interview can produce data difficult to sort through and requires the involvement of an experienced interviewer who is a good communicator and facilitator (Doody & Noonan, 2013). Semi-structured interviews involve the use of "predetermined questions" but allow for clarification requests on the part of the researcher when necessary (Doody & Noonan, 2013, p. 30). The flexibility of the semi-structured interview and the ability to explore topics that arise during the interview provide an advantage for the collection of data.

This study utilized a semi-structured face-to-face interview style with a descriptive, phenomenological approach to capture the lived experiences of students with high levels of test anxiety (n = 6). A total of three interviews were conducted with each of the six participants in the qualitative phase for a total of 18 interviews. Each interview took place over a 45 minute period. Volunteers were solicited following Phase 2 from those participants who scored a 3.0 or higher on the Westside TAS, and interviews began directly following the solicitation. Driscoll et al., (2009) reported that students achieving a 3.0 or higher on the WTAS "tend to benefit from anxiety reduction therapy" (p. 1). Informed consent was obtained for each participant and each interview was audio recorded. The participants were informed that such recording and note taking by the

interviewer would take place. The participants were assured that all data collected remained secure and that pseudonyms would be utilized to protect their identity. The semi-structured interviews took place in various locations that were convenient to the participants. The interview protocol is located in Appendix G.

Demographic Data Regarding Interview Participants

Participants completed the Demographic Information form during Phase 2. Figure 9 illustrates the demographic information associated with the interviewees.

Data collected through the interview process was downloaded from a password protected IPhone to a password protected personal computer. Participant initials were utilized with each interviewee. Once the information was appropriately downloaded to the personal computer, all voice recorded interviews were deleted from the IPhone. Following the transcription of the interviews, member checking was conducted in order to ensure adequate transcription of the data (Creswell, 2014).

Participants	Race	Gender	Cumulative GPA	Score on WTAS	Score on GSES	Group
NP	Caucasian	Female	3.266	4.0/5.0	27/40	Control
OH	Caucasian	Female	3.5	3.9/5.0	28/40	Experimental
JW	African American	Female	3.0	4.0/5.0	31/40	Control
EO	African American	Female	2.5	3.5/5.0	24/40	Experimental
AH	Caucasian	Female	2.371	4.0/5.0	37/40	Experimental
HZ	Caucasian	Female	2.815	3.3/5.0	32/40	Experimental

Figure 9. Demographic Information Describing the Participants (N=6).

Description of Interview Participants

Interviewee Participant #1 (NP). NP is a 22-year-old Caucasian female who stated that she never noticed that she had test anxiety until she started nursing school. She did not recall experiencing high stakes standardized testing in high school. Each of the three interviews (March 17, 2015; March 30, 2015; and April 21, 2015) conducted were 45 minutes in length and NP was on time for each of them. The interviews took place in a quiet office in the school of nursing. NP attended a private high school and she is a first generation college student. Her family's income is in the $100,000 to $150,000 range. She repeated one nursing course and her grades in the current Adult Health course in her junior year are as follows: Examination I 82/100; Examination II 79/100; Examination III 78/100; Examination IV 86/100; Comprehensive Final Examination 76/100.

Interviewee Participant #2 (OH). OH is a 21-year-old Caucasian female who stated that she noticed that her test anxiety started after she failed a French class in high school. Her test anxiety has only increased since that time. She stated that she studies hard and "knows the material like the back of her hand." When she prepares to take the examinations she convinces herself that she will fail. She was not exposed to high stakes testing in her private high school education. Each of the three interviews (March 22, 2015; March 29, 2015; April 19, 2015) took place at a table outside of a local library and were each 45 minutes in length; OH was on time and engaged for each of them. Her family's income is in the $75,000 to $100,000 range. She has not repeated any nursing courses. Her current Adult Health course grades are as follows: Examination I 86/100; Examination II 80/100; Examination III 84/100; Examination IV 78/100; Comprehensive Final Examination 80/100.

Interviewee Participant #3 (JW). JW is a 30-year-old African American female who stated that she attended a public high school and she did notice that she had what she called "a little anxiety" toward the standardized testing in high school. She was concerned because of the fear of being held back if a certain score was not achieved. She stated that her real test anxiety began with the American College Testing (ACT) examination because she knew that the higher the score she received, the more scholarships would be awarded for her to attend college. Each of the three interviews (March 23, 2015; April 6, 2015; and April 27, 2015) took place at a coffee shop close to her home. Each interview lasted 45 minutes except for one. The interview on April 6, 2015 lasted approximately 30 minutes due to the fact that JW had to bring her two young children with her to the interview. We sat at a table outside the coffee shop for each interview. JW was on time and appeared engaged for each interview except for the interview on April 6, 2015 when she brought her children. Though she answered each question thoroughly, she seemed somewhat distracted. Her family's income is $50,000 to $75,000 range. She has repeated one first semester nursing course. Her current grades in the junior level Adult Health Nursing course are as follows: Examination I 86/100; Examination II 77/100; Examination III 90/100; Examination IV 82/100; Final Comprehensive Examination 82/100.

Interviewee Participant #4 (EO). EO is a 28-year-old African American female who stated that her experience with test anxiety began when she was in the 8th grade in a public school. She failed the math portion of the achievement test and was placed in the summer remediation program. Each of the three interviews (March 17, 2015; April 20, 2015; and May 9, 2015) took place at a coffee shop near her house and lasted 45 minutes

each. EO was engaged during the interviews and she was on time for each one of them. Her family's income is in the $50,000 to $75,000 range. She has not failed any nursing courses. She is a Licensed Practical Nurse who entered the program to obtain her Registered Nurse license. Her current grades in the Adult Health Nursing course are as follows: Examination I 90/100; Examination II 85/100; Examination III 76/100; Examination IV 88/100; Final Comprehensive Examination 76/100.

Interviewee Participant #5 (AH). AH is a 28-year-old Caucasian female who stated that test anxiety began during nursing school. She attended a public high school; however, there were no consequences for not meeting the benchmark on the standardized examinations. AH stated that these examinations did not cause her any test anxiety. Three interviews (March 24, 2015; April 6, 2015; and May 4, 2015) took place in a coffee shop. Two of the interviews lasted 45 minutes and the third interview lasted about 25 minutes as AH was running late. AH was engaged during the interviews and listened attentively to the questions. At times the coffee shop would get loud with noises associated with the workers making coffee; however, the researcher did not consider the noises to be distracting. Her family's income is in the $30,000 to $50,000 range. She is currently repeating the nursing course that she failed the previous semester. AH has the following grades on the examinations in the Adult Health Nursing course: Examination I 84/100; Examination II 75/100; Examination III 84/100; Examination IV 78/100; Final Comprehensive Examination 86/100.

Interviewee Participant #6 (HZ). HZ is a 24-year-old Caucasian female who stated that she has never experienced test anxiety prior to entering nursing school. She attended public schools and was exposed to achievement testing; however, she does not

recall that it was utilized in a high stakes manner (meaning that she would be forced to seek remediation and be held back a semester if she failed the tests). Three interviews (March 17, 2015; March 31, 2015; and April 21, 2015) lasting 45 minutes each took place in an office in the nursing building. HZ appeared relaxed during the interviews. Her family's income was greater than $150,000. She has not had to repeat any nursing courses. HZ has the following grades in the Adult Health Nursing course: Examination I 81/100; Examination II 75/100; Examination III 74/100; Examination IV 68/100; Final Comprehensive Examination 82/100.

Qualitative Data Analysis

In order to analyze the qualitative data, the essential steps in the "descriptive phenomenology method of inquiry were followed to include: a) bracketing, b) analyzing, c) intuiting, and d) describing" (Kumar, 2012, p. 796). Bracketing is a process where the researcher attempts to maintain neutrality by putting aside prior "preconceptions about the phenomenon under investigation" (Kumar, 2012, p. 797). One technique to facilitate bracketing is to keep a journal documenting observations or areas where clarification is needed. Analyzing is a process where data is rigorously assessed. This process consists of the following steps:

1) Reading and rereading the participants' descriptions of the phenomenon to acquire a feeling for their experience and make sense of their account.
2) Extracting significant statements that pertain directly to the phenomenon.
3) Formulating meanings for these significant statements. The formulations must discover and illuminate meaning hidden in the various contexts of the investigated phenomenon.
4) Categorizing the formulated meanings into clusters of themes that are common to all participants; referring these clusters to the original transcriptions for validation and confirming consistency between the investigators' emerging conclusions and the participants' original stories.
5) Integrating the findings into exhaustive description of the phenomenon being studied. Employing a self-imposed discipline and structure to bridge the gaps

between data collection, intuition and description of concepts. Describing includes coding segments of text for topics, comparing topics for consistent themes, and bridging themes for their conceptual meanings.
6) Validating the findings by returning to some participants to ask how it compares with their experiences.
7) Incorporating any changes offered by the participants into the final description of the essence of the phenomenon. (Kumar, 2012, p. 797)

Intuiting involves the researcher imagining what it might be like to exist as the participant. The end point of a particular descriptive phenomenological exploration involves providing a rich description such that others can "identify their own experience in the proposed description" (Kumar, 2012, p. 798).

The qualitative data derived through the face-to-face interviews was analyzed following transcription using hand coding. The researcher then utilized Colaizzi's process for phenomenological data analysis to examine the interviews (Creswell, 2009). As a phenomenologist, Colaizzi (1978) embraces the notion that understanding experience is integral to capturing what is "objectively real" for individuals (p. 52). He states that traditional psychologists cannot explore phenomenon in meaningful ways by resisting to "endorse Husserl's precept of returning to things themselves" (Colaizzi, 1978, p. 56). Simply put, in order to truly endorse the notion of "returning to the things themselves" (Colaizzi, 1978, p. 56), the desire for scientific control should be abandoned.

The steps to be followed with Colaizzi's process in order to explore the phenomenological data are as follows:

1. Each transcript should be read and re-read in order to obtain a general sense about the whole content.
2. For each transcript, significant statements that pertain to the phenomenon under study should be extracted. These statements must be recorded on a separate sheet noting their pages and line numbers.
3. Meanings should be formulated from these significant statements.
4. The formulated meanings should be sorted into categories, clusters of themes, and themes.

5. The findings of the study should be integrated into an exhaustive description of the phenomenon under study.
6. The fundamental structure of the phenomenon should be described.
7. Finally, validation of the findings should be sought from the research participants to compare the researcher's descriptive results with their experiences. (Shosha, G.A., 2012, p. 33)

In order to validate the integrity of the interview transcription, the researcher sent the transcription along with the formulated meanings to each participant for verification. Participants responded with a statement that they were in agreement with the findings. Additionally, the researcher collaborated with Dr. Marie Adorno who reviewed the transcribed interviews along with the theme clusters and emergent themes. The goal of the collaboration was to seek input regarding the theme clusters and emergent themes to ensure clarity.

Researcher's Role

The researcher's role in this mixed methods study is as a nurse educator. In this study the researcher has been involved in an ongoing experience with the participants. As Creswell (2009) points out, it is important that the researcher express any potential bias, values, or background that could have an impact on the results of the study. Though the researcher has been approached by many students over the years who express their concerns that high levels of test anxiety may influence their grades on the examinations, the researcher did not see that this would bias the research findings. The researcher kept a journal during the process to capture any potential biases.

Ethical Considerations

Creswell (2009) notes the importance of seeking Institutional Review Board (IRB) approval and institution support prior to initiating the data collection portion of the study. This process minimizes the risk posed to the participants and allows consideration

for special needs of "vulnerable populations, such as minors (under the age of 19), mentally incompetent participants, victims, persons with neurological impairments, [and] pregnant women . . . " (p. 89). This researcher ensured that vulnerable populations remained protected. Such means of protection include distribution of informed consent forms for volunteer participants to sign (Appendix B).

Protection of the participants' identity was upheld at all times. Participants were issued a unique identification that was utilized on any surveys, questionnaires, etc. and these numbers were the only identifiers of the participants. Initials were utilized to identify the participants for the qualitative portion of the study. Following the appropriate data analysis, any data obtained was stored in a secure location for the requisite five to ten years as outlined by Creswell (2009). Once it is deemed appropriate, all data will be shredded prior to discarding.

There are also special ethical considerations that should be maintained during the face-to-face interview portion of the qualitative data collection process. Participants previously signed the informed consent form during the quantitative data collection process; verification took place that a signed copy was on file for each participant. Specifics regarding the interview process were made clear to each participant prior to the beginning of the interview. Participants were informed that the researcher would audiotape the session for the purposes of ensuring accurate collection of the data. The audiotape remained in the possession of the researcher. Additionally, the researcher was the only individual transcribing all notes.

Summary

Throughout the review of the literature, it became evident that test anxiety is a factor throughout education which affects students of all ages and in all programs of study. Test anxiety interferes with the students' ability to successfully complete examinations and thereby affects their ability to succeed in their academic pursuits. Also, test anxiety, because it adversely affects student performance, has an impact on the academic program in a number of ways but most specifically by increasing student attrition rates. These factors suggest that dealing with test anxiety is essential not only to contribute to the students' ability to succeed, but also to increase the effectiveness of the academic program and to increase student retention rates.

A number of interventions to assist students in dealing with test anxiety have been identified. The purpose of this study is to explore test anxiety in nursing students and the use of music therapy as an intervention to reduce test anxiety and enhance self-efficacy. While this study focuses on nursing students, it is anticipated that the findings could be applicable for students throughout many education programs.

CHAPTER 4: RESULTS

Overview of the Study

This study utilized a mixed methods approach to serve a two-fold purpose: 1) To explore the lived experiences of junior level nursing students who received higher than a 3.0 score on the Westside Test Anxiety Scale (WTAS) in Phase 2; and 2) To determine whether listening to classical music prior to three course examinations reduces test anxiety and enhances self-efficacy. Chapter 4 will provide the results from data acquired through both the quantitative and the qualitative aspects of the study.

Quantitative Data Collection - Impact of Listening to Classical Music on Perceptions of Test Anxiety and Self-Efficacy

The primary quantitative research questions are:

1) What impact does listening to classical music in the junior level baccalaureate nursing course prior to the examinations have on students' level of test anxiety?
2) What impact does listening to classical music in the junior level baccalaureate nursing course prior to the examinations have on students' level of self-efficacy?

The first quantitative research question attempts to understand the impact that listening to classical music in the junior level baccalaureate nursing course prior to examinations III, IV, and V has on students' perceptions of test anxiety. The second quantitative research question attempts to understand the impact that listening to classical music in the junior level baccalaureate nursing course prior to examinations III, IV, and V has on students' perceptions of self-efficacy. In an effort to provide an understanding

of the research questions, data collected from the WTAS and the General Self-Efficacy Scale (GSES) were analyzed utilizing Statistical Package for Social Sciences (SPSS) software (Version 22).

Impact on Test Anxiety

Analyses. The WTAS utilizes a Likert-type scale with responses ranging from 1 to 5 (1 = *strongly disagree,* 2 = *disagree,* 3 = *neutral,* 4 = *agree,* 5 = *strongly agree).* All participants completed a baseline survey prior to the second course examination. Participants in both the experimental and the control groups completed the survey after each session (either listening to classical music in the experimental group or engaging in activities as usual in the control group). The sessions occurred prior to examinations III, IV, and V in the adult health nursing course. The Cronbach's alpha reliability for the 10 item WTAS used in this study is .94. In order to compare mean scores between the experimental and the control group on the post-test anxiety scale, an independent sample t-test was conducted.

Results. Table 1 reveals the descriptive statistics for the experimental group (music) and control group (activity as usual) for the baseline (prior to Examination II) WTAS. Tables 2 through 4 show the descriptive statistics for the experimental group (music) and control group (activity as usual) for examinations III, IV, and V.

Table 5 reveals that statistical significance was not reached with the independent sample t-test analysis using the scores from the WTAS. The scores were based on the following: Examination II WTAS; Examination III WTAS administered following the music session and the activity as usual session; Examination IV WTAS administered

following the music session and the activity as usual session; Examination V WTAS administered following the music session and the activity as usual session.

These results indicate that there was no statistical difference between the two groups (the participants who listened to classical music prior to the examinations and those who engaged in activity as usual) ($p > .05$). Therefore, this would indicate that classical music did not have a significant impact on the test anxiety of the participants in the experimental group. The effect size for the analysis of independent sample t-test for examination II ($d=.29$) exceeds Cohen's (1988) convention for a medium effect size. The effect size for the analysis of independent sample t-test for examinations III through V meets Cohen's (1988) convention for a small effect size.

Table 1 - Descriptive Statistics for Experimental and Control Groups- Baseline WTAS

Variable	*n*	*M*	*SD*
Music	18	3.2	.67
AAU	21	3.0	.93

Note. AAU= activity as usual.
Normal distribution assumption met.
Scores represent baseline scores without any intervention.

Table 2 - Descriptive Statistics for Experimental and Control Groups – Examination III – WTAS

Variable	*n*	M	SD
Music	15	2.83	.70
AAU	18	2.94	.88

Note. Normal distribution assumption met.
Mean scores represent survey scores following the intervention (experimental group – music and activity as usual (AAU) group engaging in their normal activity prior to an examination).

Table 3 - Descriptive Statistics for Experimental and Control Groups – Examination IV – WTAS

Variable	*n*	M	SD
Music	17	2.70	.87
AAU	15	2.94	1.11

Note. Normal distribution assumption met.
Mean scores represent survey scores following the intervention (experimental group – music and activity as usual (AAU) group engaging in their normal activity prior to an examination).

Table 4 - Descriptive Statistics for Experimental and Control Groups – Examination V – WTAS

Variable	*n*	M	SD
Music	15	2.90	.93
AAU	17	2.95	1.09

Note. Normal distribution assumption met.
Mean scores represent survey scores following the intervention (experimental group – music and activity as usual (AAU) group engaging in their normal activity prior to an examination).

An additional analysis was performed utilizing ANCOVA in order to determine whether the mean test anxiety scores following the sessions (classical music or activity as usual) of examinations III, IV, and V differed between groups while controlling for the baseline test anxiety scores. Independence of observation was met because students were randomly assigned to each of the groups (experimental and control). Homogeneity of variance was tested and satisfied using Levine's test on each of the dependent variables [examination III – $F(1, 31) = .49$, $p = .49$]; [examination IV – $F(1,30) = .03$, $p = .86$]; [examination V – $F(1,30) = .02$, $p = .88$]. Review of the skewness statistics suggested that there was a relatively normal distribution of data. Homogeneity of regression was assessed with simple scatterplots (Appendix F). This was accomplished by plotting each of the dependent variables (post WTAS scores for examinations III through V) on the y-

axis and the covariate (baseline WTAS) on the x-axis. The experimental and control groups were utilized as the grouping variable. In each scenario the scatterplot revealed a relatively linear positive relationship. The assumption for homogeneity of regression slopes upheld as well.

Table 5 - Independent Sample T-Test Comparing the Experimental and Control Groups

	Levene's Test for Equality of Variances		*t-test* for Equality of Means					
	F	Sig	t	df	Sig. (2-tailed)	Mean Difference	Std. Error of difference	Effect Size
ExII BWTAS								
Equal Variances Assumed	4.43	0.4	.89	37	.38	.23	.26	.29
Equal Variances Not Assumed								
ExIII PWTAS								
Equal Variances Assumed	.37	.55	- .4	31	.69	-.11	.28	.14
Equal Variances Not Assumed								
ExIV PWTAS	.77	.39	-.66	30	.51	-.23	.36	.24
Equal Variances Assumed								
Equal Variances Not Assumed								
ExV PWTAS	.37	.55	-.13	30	.9	-.05	.36	.05
Equal Variances Assumed								
Equal Variances Not Assumed								

Note. BWTAS = Baseline WTAS administered prior to Examination II; PWTAS = Post WTAS administered following the intervention group or control group sessions and prior to the respective examinations. alpha level = .05
Levine's test for equality of variances was met.

The results of the ANCOVA suggest that there is no statistically significant effect of the group variable (experimental versus control) on WTAS score, while controlling for the covariate, baseline WTAS. Given an alpha level of .05 the results are as follows: [examination III: $F_{baselineWTAS} = 1.49$; df = 1, 31; p = .23]; [examination IV: $F_{baselineWTAS} = 2.30$; df = 1, 32; p = .14]; [examination V: $F_{baselineWTAS} = .96$; df = 1, 32; p = .34].

Impact on Self-Efficacy

Analyses. The GSES utilizes a Likert-type scale with responses ranging from 1 to 5 (1 = *strongly disagree*, 2 = *disagree*, 3 = *neutral*, 4 = *agree*, 5 = *strongly agree).* All participants completed a baseline survey prior to the second course examination. Participants in both the experimental and the control groups completed the survey after each session (either listening to classical music in the experimental group or engaging in activities as usual in the control group). The sessions occurred prior to examinations III, IV, and V. Cronbach's alpha reliability for the 10 item GSES survey is .93. In order to compare mean scores between the experimental and the control groups on the post-self-efficacy scale, an independent sample t-test was performed.

Results. Table 6 reveals the descriptive statistics for the experimental group (music) and control group (activity as usual) for the baseline (prior to Examination 2) GSES.

Table 6 - Descriptive Statistics for Experimental and Control Groups- Baseline GSES

Variable	N	M	SD
Music	18	30.56	4.69
AAU	21	30.56	4.35

Note. Normal distribution assumption met.
Mean scores represent survey scores following the intervention (experimental group – music and activity as usual (AAU) group engaging in their normal activity prior to an examination).

Tables 7 through 9 reveal the descriptive statistics for the experimental group (music) and control group (activity as usual) for examinations III through V respectively. Table 10 shows that statistical significance was not reached with the independent sample t-test analysis using the scores from the GSES. The scores were based on the following: Examination II GSES; Examination III GSES administered following the music session

and the activity as usual session; Examination IV GSES administered following the music session and the activity as usual session; Examination V GSES administered following the music session and the activity as usual session.

Table 7 - Descriptive Statistics for Experimental and Control Groups- Examination III – GSES

Variable	N	M	SD
Music	15	32.33	5.31
AAU	18	31.44	4.91

Note. Normal distribution assumption met.
Mean scores represent survey scores following the intervention (experimental group – music and activity as usual (AAU) group engaging in their normal activity prior to an examination).

Table 8 - Descriptive Statistics for Experimental and Control Groups- Examination IV – GSES

Variable	N	M	SD
Music	15	31.93	4.65
AAU	17	30.82	4.75

Note. Normal distribution assumption met.
Mean scores represent survey scores following the intervention (experimental group – music and activity as usual (AAU) group engaging in their normal activity prior to an examination).

Table 9 - Descriptive Statistics for Experimental and Control Groups- Examination V – GSES

Variable	N	M	SD
Music	15	31.87	5.26
AAU	17	32.94	4.83

Note. Normal distribution assumption met.
Mean scores represent survey scores following the intervention (experimental group – music and activity as usual (AAU) group engaging in their normal activity prior to an examination).

Table 10 - Independent Sample T-Test Comparing the Experimental and Control Groups

	Levene's Test for Equality of Variances		*t-test* for Equality of Means					
	F	Sig	t	df	Sig.(2-tailed)	Mean Difference	Std. Error of difference	Effect Size
ExII BGSES								
Equal Variances Assumed	.47	0.5	-.21	37	.83	.30	1.45	.07
Equal Variances Not Assumed								
ExIII PGSES								
Equal Variances Assumed	.33	.57	- .4	31	.62	.89	1.78	.17
Equal Variances Not Assumed								
ExIV PGSES	.05	.82	.67	30	.51	1.11	1.67	.24
Equal Variances Assumed								
Equal Variances Not Assumed								
ExV PGSES	.20	.66	-.60	30	.55	-1.07	1.80	.21
Equal Variances Assumed								
Equal Variances Not Assumed								

Note. BGSES = Baseline GSES administered prior to Examination II; PGSES = Post GSES administered following the intervention group or control group sessions and prior to the respective examinations. alpha level = .05
Levine's test for equality of variances was met.

These results indicate that there is no statistically significant difference between the two groups (the participants who listened to classical music prior to the examinations and those who engaged in activity as usual). Therefore, this would indicate that classical music did not significantly enhance the self-efficacy of the participants in the experimental group. The effect size for the analysis of independent sample t-test for each examination [examination II (d = .07); examination III (d= .17); examination IV (d= .24); examination V (d= .21)] meets Cohen's (1988) convention for a small effect size.

An additional analysis was performed utilizing ANCOVA in order to determine whether the mean self-efficacy scores following the sessions (classical music or activity as usual) of examinations III, IV, and V differed between groups while controlling for the

baseline self-efficacy scores. Independence of observation was met because students were randomly assigned to each of the groups (experimental and control). Homogeneity of variance was tested and satisfied using Levine's test on each of the dependent variables [examination III – $F(1, 31) = .28$, $p = .60$]; [examination IV – $F(1,30) = 1.70$, $p = .20$]; [examination V – $F(1,30) = 1.61$, $p = .21$]. Review of the skewness statistics suggested that there was a relatively normal distribution of data. Homogeneity of regression was assessed with simple scatterplots (Appendix F). This was accomplished by plotting each of the dependent variables (post GSES scores for examinations III through V) on the y-axis and the covariate (baseline GSES) on the x-axis. The experimental and control groups were utilized as the grouping variable. In each scenario the scatterplot revealed a relatively linear positive relationship. The assumption for homogeneity of regression slopes upheld as well.

The results of the ANCOVA suggest that there is no statistically significant effect of the group variable (experimental versus control) on GSES score, while controlling for the covariate, baseline GSES. Given an alpha level of .05 the results are as follows: [examination III: $F_{baselineGSES} = .95$; $df = 1, 33$; $p = .23$]; [examination IV: $F_{baselineGSES} = .56$; $df = 1, 32$; $p = .46$]; [examination V: $F_{baselineGSES} = .26$; $df = 1, 31$; $p = .62$].

While the findings revealed a lack of statistical difference between the two group mean scores (experimental and control), the mean test anxiety and self-efficacy scores did indicate a slight difference between the two groups (Table 11). This difference in the mean scores did reflect the findings identified in the theoretical framework and review of the literature related to test anxiety and self-efficacy.

Summary of Quantitative Data Collection

In the quantitative phase of this study this researcher explored the following research questions:

1) What impact does listening to classical music in the junior level baccalaureate nursing course prior to the examinations have on students' level of test anxiety?
2) What impact does listening to classical music in the junior level baccalaureate nursing course prior to the examinations have on students' level of self-efficacy?

In order to answer both research questions, the participants completed the WTAS and GSES prior to examination II as a baseline measurement. The participants then completed the WTAS and GSES following the intervention (either listening to classical music for the experimental group or activity as usual for the control groups) prior to examinations III, IV, and V. The researcher then analyzed the data for both instruments using SPSS software version 22. The independent sample t-test and ANCOVA were both performed yielding results suggesting that there was no statistically significant difference between the experimental and control groups. However, the mean test anxiety and self-efficacy scores did indicate a slight decrease in test anxiety and increase in self-efficacy following the intervention as indicated by Table 11.

Qualitative Data Collection

Semi-structured individual interviews were conducted in order to gather qualitative data to explore the phenomenology of the students' lived experiences with test

anxiety. The following research questions guided the development of the interview protocol (Appendix G):

1. What are the lived experiences of junior level baccalaureate nursing students experiencing high test anxiety?

   Sub-questions include the following:

   a. What emotions do students experience prior to, during, and after taking an examination?
   b. What actions do students take to reduce test anxiety?
   c. What behavioral acts do the students engage in to prepare for the examination?

Additionally, for those interview participants who were also randomly assigned to the experimental group, the researcher discussed the impact that listening to classical music had on the levels of test anxiety and self-efficacy.

Students' Lived Experiences with Test Anxiety

In this portion of the study, 18 interviews were conducted (three interviews with each of the six participants) in order to explore the students' lived experiences with test anxiety. The six participants who agreed to participate in the interview process were among a total of 25 students who scored a 3.0 or higher on the baseline WTAS (prior to examination II). Table 12 shows the breakdown and meaning of scores on the WTAS along with the total number of students from both the experimental and the control groups who scored within those ranges.

Table 11 - Summary of Mean Scores of Experimental and Control Groups

Exam/Group	*n*	M	SD
Baseline WTAS			
Music	18	3.2	.67
AAU	21	3.0	.93
Examination III – WTAS			
Music	15	2.83	.70
AAU	18	2.94	.88
Examination IV – WTAS			
Music	17	2.7	.87
AAU	15	2.94	1.11
Examination V – WTAS			
Music	15	2.90	.93
AAU	17	2.95	1.09
Baseline GSES			
Music	18	30.56	4.69
AAU	21	30.56	4.35
Examination III – GSES			
Music	15	32.33	5.31
AAU	18	31.44	4.91
Examination IV – GSES			
Music	15	31.93	4.65
AAU	17	30.82	4.75
Examination V – GSES			
Music	15	31.87	5.26
AAU	17	32.94	4.83

Note. Survey scores on Examination III through V were acquired following the intervention [music for the experimental group and activity as usual (AAU) for the control group]. Normal distribution assumption met.

Qualitative Data Analysis

Colaizzi's (1978) process for phenomenological data analysis was used to extract significant statements from the 18 interview transcripts. Appendix H reveals the extracted significant statements from the interviews along with the formulated meanings. The formulated meanings are the underlying meanings of the statements. Appendix I reveals the theme clusters and the emergent themes based on the significant statements and formulated meanings.

Table 12 - Breakdown and Meaning of Scores on the WTAS and Total Number of Students from Both the Experimental and the Control Groups Who Scored Within the Ranges

WTAS Range	Meaning of Specified Range	Number of Students Scoring within the Range
1.0 – 1.9	Comfortably low test anxiety	3
2.0 – 2.5	Normal or average test anxiety	9
2.6 – 2.9	High normal test anxiety	2
3.0 – 3.4	Moderately high test anxiety	12
3.5 – 3.9	High test anxiety	6
4.0 – 5.0	Extremely high test anxiety	7

Note. n = 39 (scores taken from the baseline WTAS prior to examination II) Driscoll (2009) recommends that students who score a 3.0 or higher benefit from anxiety reduction techniques.

The emergent themes will be discussed in order to relate the qualitative findings to the qualitative research questions and theoretical framework.

The emergent themes presented in Appendix I provide an understanding of the qualitative research question and sub-questions and will be discussed in further detail: 1) Participant perceived self-efficacy; 2) Impact of academic environment on test anxiety; 3) Influence of family environment on test anxiety; 4) Manifestations of test anxiety; and 5) Cognitive interference.

Participant perceived self-efficacy. As previously stated, self-efficacy "is the student's perceived confidence for learning or performing specific tasks or skills necessary to achieve a particular goal" (Jeffreys, 2012, p. 63). All participants (100%) participating in the interview process referred to feelings of self-doubt regarding their abilities to be successful on the course examinations even though they felt as though they

had memorized the information necessary for the examination. Examples of statements made by the participants related to self-efficacy are:

> I wonder how I am going to do. I start asking myself if I studied enough. Should I have gone to bed earlier?
>
> I think a lot of times I am worried about whether or not I studied enough. Like do I know enough am I going to remember?
>
> When I am walking into the test I am thinking that I hope I studied enough.
>
> You know I always question my ability and ask if I am going to pass this test and ask do I know the information? Worrying about failing it and almost kind of like not measuring up and meeting certain expectations… so when I get into the test it makes it 10 times worse…

Despite feeling as though adequate knowledge attainment through memorization occurred in preparation for the examination, participants still verbalized concern about whether they studied enough and would be able to recall the information during the examination. This relates to the sub-question pertaining to the emotions the participants experienced prior to the examination.

In order to identify the participants in this study with low self-efficacy at baseline (prior to examination II), this researcher utilized the method recommended by the creators of the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1999). This approach required determining the median GSES score on the surveys distributed prior to examination II (prior to the intervention phase). The median baseline GSES score for this study was 30.25 and participants scoring below this score were classified as having low self-efficacy. Sixteen of the 39 participants (41%) were noted to have baseline GSES scores below 30.25 and 11 of those participants scored a 3.0 or higher (out of a possible 5.0) on the WTAS [scores equal to or greater than 3.0 necessitate further action to reduce the test anxiety (Driscoll, 2007)].

Impact of academic environment on test anxiety. Several theme clusters emerged that related to the academic environment as a contributor to participants' test anxiety: academic expectations; other factors; instructional and faculty specific factors; ability to answer the NCLEX type questions; and high stakes aspect of examinations. Representative quotations from participants are:

> This has something to do with test anxiety. You know how we have different teachers in the exam rooms. Ms. A is in our room and Ms. B is in the other testing room. I have been told Ms. B will answer questions in the other room if someone is confused about how something is worded. I have had personal experience asking Ms. A a question and she was not very nice about it.

> Ms. B is great but there are faculty that are intimidating. Ms. A is very intimidating and she does not seem to care about students' success. I don't want to go to her for help and that increases my anxiety.

All participants (100%) expressed concern regarding the perceived ability to manage the academic expectations to include: preparing for and studying for the examinations and quizzes required for the Adult Health course; preparing for clinical and completing the necessary nursing care plan paperwork required for the clinical component of the course; preparing for simulation by completing the reading assignments and quizzes; and preparing for and completing the requirements for the other nursing course in which students are concurrently enrolled. The other nursing community course does not require that students take examinations; rather, students must complete class presentations and research oriented assignments. Additionally, students attend a clinical portion of the community course. Figure 10 illustrates an example of a student's general schedule for the week (though depending on the group to which the student is assigned the schedule will differ). Additionally, two of the participants were employed part-time, posing an additional time constraint challenge. Participants stated that due to time limitations they

find it difficult to engage in activities such as exercise and relaxation to reduce the contributing factors to test anxiety.

Monday	Tuesday	Wednesday	Thursday	Friday
Free – except for examination days	Med/Surg Clinical 6:30 am to 3:00 pm	Med/Surg Clinical 6:30 am to 3:00 pm	Community Practicum all day	Class Day Adult Health: 8:00 am to 12:00 pm Community from 1:00 pm to 4:00 pm

Figure 10. Example of a junior level baccalaureate nursing student's academic schedule.

The qualitative research sub-question related to the behavioral acts that students engage in to prepare for the examinations was explored. All the participants expressed frustration and found it challenging to effectively prepare for the course examinations given the multitude of class, clinical, and practicum requirements. Additionally, all the participants expressed concern related to the amount of material covered on each examination; specifically, each examination assesses knowledge of material over approximately six to ten chapters that are approximately 60 pages in length. The participants also stated that faculty would tell students that they were responsible for all the material discussed in class as well as all the required readings. All the participants expressed concern that there were particular faculty with whom they did not feel comfortable meeting to clarify questions related to the content.

Participants discussed that an additional source of test anxiety was their perceived inability to effectively answer the NCLEX style examination questions. This type of examination questions contains distractors that all have a possibility of being correct. However, the participant must use critical thinking decision making to determine the

answer that is of the highest priority to provide the patient appropriate care. Seventy percent of the participants stated that they had no prior experience with these types of questions and were not provided resources to learn how to answer them. The high-stakes nature of the examinations contributes to this anxiety. As previously mentioned, examinations I through IV were worth 16.5% of the total course grade and the cumulative final examination was worth 19% of the final course grade. All participants also stated that when preparing to take the examinations, their test anxiety would increase if they heard other students discussing the content. This caused them concern especially if they discussed content that the participant neglected to study.

Participants expressed concern regarding other instructional related issues. First, the length of the class time, because participants found it difficult to remain focused for a full eight hour day of class. This increased the participants' anxiety because sometimes the content was more complicated and they needed to be able to focus during the class in order to maximize their learning opportunity. Participants also stated that it was difficult to learn in a class where multiple faculty presented content. These faculty used different pedagogical strategies and each faculty created his or her own examination questions. Participants stated that the difficulty level of the examination questions did not necessarily correlate with the instructional strategy. One participant cited the example of a faculty who read directly from the power point, yet the examination questions tested the students at an application level (Bloom's Taxonomy). According to the participant, this resulted in a dramatic increase in test anxiety.

Influence of Family Environment on Test Anxiety. Two of the six participants (12%) are nontraditional students as evidenced by the fact that they are over the age of 25

and they have families. As previously stated, a nontraditional undergraduate nursing student refers to a student who meets the following criteria: "(1) 25 years or older, (2) commuter, (3) enrolled part-time, (4) male, (5) member of an ethnic and/or racial minority group, (6) speaks English as a second (other) language, (7) has dependent children, (8) has a general equivalency diploma, and (9) required remedial classes" (Jeffreys, 2012, p. 9). Having families and attending nursing school with all the academic requirements contributed to test anxiety for each of these participants. Quotes from the interview participants that relate to the effect that the family environment has on test anxiety are:

> School now since I have my husband and my kids is a little more stressful now than it was then.
>
> Thursday is my off day and I try to do my studying on that day.
>
> I passed it but had I been in class I would have gotten much more information but my baby was sick.. I passed the exam but the anxiety was there… dealing with my son….it was too much.

Manifestations of Test Anxiety. Participants made references to several manifestations related to the cognitive and physical components of test anxiety:

> Some people get heart palpitations or they are racing. I am not… I am completely calm and I feel completely confident but when I am answering those questions I will read those questions wrong.
>
> I can't focus during the test…I blank out really really easily… I started wearing hats because I would glance up and look around and get distracted during the test… I wanted to see what the teacher was doing… I wanted to see how much time was left.. I would get off topic…
>
> The racing of my heart, palpitations… a little sweaty…a little jittery…nervous…

They referred to the following as cognitive manifestations of test anxiety: reading the questions incorrectly during the examination; difficulty focusing during the examination;

a feeling of going blank during the examination; and recognition of the high-stakes nature of the test increased the aforementioned issues. These cognitive manifestations relate to the qualitative sub-question pertaining to the emotions experienced by students during the examination. Participants recalled feeling as though the focus during the examination was strongly influenced by the level of test anxiety (higher test anxiety resulted in a decreased ability to focus). The physical manifestations of test anxiety were discussed by the participants as: racing heart/palpitations; sweating; jitteriness/nervousness; nausea; and shortness of breath. The qualitative sub-question related to the actions that participants take to reduce the manifestations of test anxiety was explored. The participants stated that it was difficult to take time away from school and relax due to the time constraints. This lack of relaxation further escalated their test anxiety. Two of the interview participants stated that they attempt to exercise in order to relax; again, these participants stated that the time constraints precluded them from being able to consistently participate in exercise.

Cognitive Interference. As previously stated, cognitive interference refers to those negative intrusive thoughts that distract the student while engaged in an examination. These negative thoughts provide no intuitive insight that will enhance performance in the examination (Zeidner, 1998). All participants suggested that they have thoughts during the examination that emerge regarding concern that they will not pass the examination as evidenced by the following statements:

> Honestly like during the test I knew I wasn't going to pass it because I was getting super nervous about it because it counted for a grade. So about halfway through it I was saying this isn't going well. I understand the material – I was just getting nervous because it was part of my grade.
>
> The benchmark on HESI is 800. That is all I could think about when I was taking

this test. Oh my god if I don't pass this I am going to have to retake it and if I don't pass it then I get a zero percent on that portion of a grade.

Impact of Classical Music on the Level of Test Anxiety

Four of the six (67%) interview participants were also in the experimental group and listened to classical music during the quantitative portion of the study (the remaining two of the six participants were in the control group). The interviewer posed questions to the participants during the interview process in an effort to gain a better understanding regarding the effect that classical music may have had on test anxiety and self-efficacy. EO (anonymous identification of participant) stated that she liked the classical music selected and found it relaxing. On the way to school she started listening to classical music instead of her usual musical selection because it offered her more relaxation. She stated that it reduced her "beginning" anxiety at the start of the examination. Classical music helped EO stop the repetition of thoughts related to her feeling of unpreparedness. OH (anonymous identification of the participant) also stated that classical music helped provide relaxation prior to the examination. It helped her forget about her own anxiety prior to the examination and distracted her from the negative thoughts related to the feeling of unpreparedness.

AH (anonymous identification of the participant) stated "I think the classical music is good for – like I said distraction… you are distracted before so you are not giving your anxiety time to build up." This distraction helped prevent the anxiety from building up. It did not leave enough time for the negative thoughts to begin. NP (anonymous identification of the participant) stated that she comes from a musically inclined family so she was comfortable with listening to classical music prior to the examination. It helped lower her heart rate and respiration. She expressed that it would

help her anxiety if classical music were played while she was taking the examination. Additionally, when she listened to classical music prior to the examinations she noticed that she did not have problems during the examination losing her focus and she did not misread examination questions like she does when she does not listen to classical music. She stated that classical music put her "in the zone."

Summary of Qualitative Data Collection

The qualitative portion of this study provided insight into the lived experiences of junior level nursing students with high levels of test anxiety (as identified by the WTAS scores). The face-to-face semi structured interviews provided this researcher the opportunity to explore how factors within the students' academic and family environment contributed to the overall experience of test anxiety. Factors were also explored that related to the students' self-efficacy and cognitive interference as well as specific manifestations of test anxiety.

Summary of Mixed Methods Data Collection

Bradt et al. (2013) mentioned that conducting a mixed methods study provides a greater depth of understanding of the phenomenon under investigation. The quantitative aspect of this study aimed to assess how listening to classical music prior to a course examination influenced the junior level baccalaureate nursing students' perception of test anxiety and self-efficacy. Utilizing the WTAS and GSES as the measurement tools, the analyses revealed that there was no statistically significant difference between the experimental and the control groups. In summary, listening to classical music did not statistically have an effect on the students' test anxiety or self-efficacy; however, the

mean survey scores (WTAS and GSES) revealed a slight difference between the two groups.

Even though the quantitative portion of the study yielded no statistically significant results, the qualitative portion revealed themes that further supported the theoretical framework and afforded the opportunity to explore the qualitative research questions to provide a better understanding of the phenomenon of test anxiety. The results of the quantitative research questions were not found to be statistically significant; however, the participants in the qualitative portion of the study revealed that classical music did facilitate a certain degree of distraction from the negative thoughts that typically occurred prior to the examination and contributed to low self-efficacy. Additionally, the participants reported that music had a calming effect and may have facilitated their ability to focus during the examination. Though these results are limited in their generalizability, future research should be considered to further explore the emergent themes and the benefits of music therapy to test anxious students.

CHAPTER 5: DISCUSSION AND CONCLUSIONS

Chapter 5 summarizes the findings and limitations of this mixed methods study and provides recommendations for future research. The purpose of this mixed methods research was to explore junior level baccalaureate nursing students' lived experiences related to test anxiety and determine their perceptions regarding music as a means to reduce test anxiety and enhance self-efficacy. The sequential mixed methods approach included the use of quantitative and qualitative data to answer the following research questions:

The primary quantitative research questions are:

1) What impact does listening to classical music in the junior level baccalaureate nursing course prior to the examinations have on students' level of test anxiety?
2) What impact does listening to classical music in the junior level baccalaureate nursing course prior to the examinations have on students' level of self-efficacy?

The primary qualitative research questions are:

1) What is the lived experience of junior level baccalaureate nursing students experiencing high test anxiety?

   Sub-questions include the following:

   a. What emotions do students experience prior to, during, and after taking an examination?

   b. What actions do students take to reduce test anxiety?

c. What behavioral acts do students engage in to prepare for the examination?

The use of the mixed methods approach provided a holistic perspective regarding the students' experiences with test anxiety as well as an understanding regarding the role that music played relative to the reduction of test anxiety and enhancement of self-efficacy.

The sample consisted of 39 participants (18 in the experimental group, 21 in the control group). Six of the 39 participants who scored 3.0 or higher on the baseline WTAS (total score of 5.0) agreed to participate in three face-to-face semi-structured interviews (total of 18 interviews). Data analyses during the phases of the quantitative and qualitative portions of this mixed methods study design provided results for both of the research questions.

Discussion of Quantitative Findings

This section will discuss the quantitative findings and the relationship of these findings to the theoretical framework and review of the literature. In the quantitative phase of this study the researcher explored the following quantitative research questions:

1) What impact does listening to classical music in the junior level baccalaureate nursing course prior to the examinations has on students' level of test anxiety?
2) What impact does listening to classical music in the junior level baccalaureate nursing course prior to the examinations has on students' level of self-efficacy?

The independent sample t-test and the ANCOVA analysis conducted in the quantitative phase of this study suggested that there was no statistical difference when comparing the mean survey scores for both the WTAS and GSES between the two groups (following the

music session for the experimental group and following activity as usual for the control group). While the findings revealed a lack of statistical difference between the two group mean scores (experimental and control), the mean test anxiety and self-efficacy scores did indicate a slight difference between the two groups.

The experimental group's (participants listening to classical music) mean WTAS scores were slightly lower for examinations III, IV, and V as compared to the control group's (participants engaged in activity as usual) mean WTAS scores. The GSES scores were inversely related to the WTAS scores for examinations III and IV (lower test anxiety scores and higher self-efficacy scores). Baseline GSES and WTAS scores, however, revealed that sixteen of the 39 participants (41%) were noted to have baseline GSES scores below the median GSES score indicating a lower self-efficacy and 11 of those participants scored a 3.0 or higher (out of a possible 5.0) on the WTAS [scores equal to or greater than 3.0 necessitate further action to reduce test anxiety (Driscoll, 2007)]. This is consistent with Bandura's (1997) perspective that individuals who report low levels of self-efficacy tend to possess high levels of "achievement anxiety" (p. 235).

This researcher utilized a research methodology different from those used in previous studies, and although statistical significance was not achieved, similar findings were reached in some respects. For example, comparable to the findings by Goldenberg et al., (2013) and Labbe et al., (2007), participants reported that they preferred to listen to classical music rather than sit in silence. Additionally, similar to the findings by Lilley et al., (2014) participants self-reported that listening to classical music facilitated a decrease in heart rate and respiratory rate consistent with a lower anxiety state.

Previous research (Goldenberg et al., 2013; Labbe et al., 2007; Lilley et al., 2014; Summers et al., 1990) used a variety of measurement strategies to explore the potential effect of classical music on test anxiety. Their findings indicated the following results: lack of statistical significance of reduction in test anxiety (Goldenberg et al., 2013; Summers et al., 1990); and listening to classical music provided calming results (both physiologic as evidenced by decreased systolic blood pressure and respiratory rate and as evidenced by self-reported reduction per survey scores) (Labbe et al., 2013; Lilley et al., 2014).

In summary, previous research supports the use of music as a means to promote relaxation (Blum, 2013; Jausovec et al., 2006; Lilley et al., 2014). Several of the studies discussed in the review of the literature utilized different strategies to explore the impact that music could have on test anxiety level. While most revealed results that were not statistically significant, the findings suggest that further research in this area should be considered. Additionally, further research is recommended to explore the impact that perceived self-efficacy has on test anxiety and general academic performance.

Discussion of Qualitative Findings

This section will discuss the qualitative findings and the relationship of these findings to the theoretical framework and review of the literature. In the qualitative phase of this study the researcher explored the following qualitative research questions:

1) What are the lived experiences of junior level baccalaureate nursing students experiencing high test anxiety?

Sub-questions include the following:

a) What emotions do students experience prior to, during, and after taking an examination?

b) What actions do students take to reduce test anxiety?

c) What behavioral acts do the students engage in to prepare for the examination?

Analysis of the qualitative findings revealed emergent themes. Each emergent theme will be presented as it relates to the theoretical framework and review of the literature.

Participant Perceived Self-Efficacy

All the participants interviewed in the qualitative aspect of this study questioned themselves regarding their readiness and ability to take the examination and they were all concerned with whether or not they studied enough. This is consistent with Bandura's Social Learning Theory (1997) which postulates that participants with low self-efficacy feel incapable of performing skills necessary to meet course objectives (Jeffreys, 2012). Damer and Melendres (2011) pointed out that these feelings often coincide with self-defeating thoughts that leave the test-anxious individual with scant resources for the task at hand.

Impact of Academic Environment on Test Anxiety

All interview participants reported significant challenges finding enough time to study the material given that each examination covered approximately eight to ten chapters (approximately 60 to 80 pages each). This perception of a high workload contributed to the increased test anxiety in the students interviewed in the qualitative phase. Sansgiry and Sail (2006) discussed similar findings in their exploration of the impact that course load has on students' perceptions of test anxiety.

Additionally, participants interviewed in the qualitative phase expressed concern regarding such issues as: ambiguity of examination items and material that was tested was not covered in class. According to the NLN Fair Testing Guidelines (2010), nurse educators are implored to assess the reliability, content, and predictive validity for all examinations. It is also recommended that more than one evaluative strategy be utilized when making high stakes decisions.

Influence of Family Environment on Test Anxiety

Interview participants expressed the challenges related to managing the school work load while caring for their family. The stress related to ensuring that the participants' families were properly cared for while in the nursing program increased the participants reported test anxiety. The literature was replete as it relates to the influence of students' caring for families while in the nursing program and its impact on test anxiety.

Manifestations of Test Anxiety

Study participants discussed cognitive and physical manifestations of test anxiety such as the inability to focus during the examination; misreading the examination questions; physiologic symptoms such as increased heart rate, increased respirations, and sweating. These findings are consistent with those of Edelman and Ficorelli (2005); specifically related to participant statements regarding the inability to focus and properly answer the examination questions as well as feelings of physiologic instability.

Cognitive Interference

Cognitive interference occurs as a result of the negative, distracting thoughts that can occur during an examination (Zeidner, 1998). All interview participants with high

test anxiety (greater than a 3.0 on the WTAS) discussed the negative thoughts that occurred during the examination. Such negative internal thoughts decreased the ability of the participants to effectively answer examination questions. Blankenstein et al. (1989) discussed similar findings in their study. Results revealed that students who self-report having high levels of test anxiety tend to have more intrusive thoughts than individuals with low test anxiety.

In summary, the qualitative findings support the concepts within the theoretical framework and review of the literature. Specifically, participants discussed having feelings of low self-efficacy as evidenced by questioning their ability to be successful on the examinations. Additionally, all the participants stated that they felt symptoms associated with high test anxiety as well as self-doubt during the examination. Future studies would be beneficial to continue to explore the holistic experience of nursing students with high levels of test anxiety.

Limitations of the Study

There are a number of potential limitations associated with this study. The first limitation is that this study reflects the experiences of students with test anxiety in only one nursing program. Inclusion of multiple programs across the country could offer a variety of results and perspectives.

A second limitation to this study was the small sample size. Additionally, prior to examinations III, IV, and V a few participants from both groups did not attend the sessions resulting in missing data (not attending: Examination III – 6 out of 39; examination IV - 7 out of 39; examination V - 7 out of 39). Other participants in the interviews mentioned anecdotally that participants did not attend certain sessions because

they wanted to have the opportunity to study for the examination during the time that they would have been engaged in the study.

A third limitation is the course enrollment status of some of the participants as noted from the demographic information (Appendix C). Though the researcher did not have access to student transcripts to verify enrollment status, on the demographic information survey at least two of the participants noted that they were retaking the adult health nursing course. Thus these participants were enrolled in only one nursing course during the study rather than maintaining concurrent enrollment in adult health nursing and community health nursing like the other participants. The reason that this is a noteworthy limitation is that due to the varying workload issues associated with being in one versus two courses, different levels of stress and test anxiety could be present.

A fourth limitation is the effectiveness of the length of time during which the participants listened to the classical music selection prior to completing the WTAS and the GSES surveys. Participants listened to a nine minute and 27 second segment of Mozart Adagio in E for violin and orchestra (60 beats per minute). This musical selection was chosen for this study as a result of the review of literature which suggests that music at a 60 beat per minute tempo has a calming effect and can reduce anxiety (Labbe et al., 2007; Lin et al., 2011; Liu, Chang, & Chen, 2010; Lozanov, 1978). Classical music was chosen as the medium for this research due to the studies suggesting that listening to this type of music even for 10 minutes can excite "cortical firing patterns" and may have an effect on "human performance" (Jausovec et al., 2006, p. 2704). According to Liu et al. (2010), the duration of music therapy is different depending on the design of the study; however, these researchers suggest that a duration

of 20 to 40 minutes is most common in many studies. This researcher was concerned regarding the potential disengagement of the participants with a longer classical music selection. However, given the lack of statistical significance in the quantitative portion of this study, it is recommended that future research be conducted with a classical music selection that is longer in duration.

A fifth limitation is that the survey tools, WTAS and GSES, were administered following the experimental session (either listening to music for the experimental group or activity as usual for the control group). Neither tool addressed the impact that listening to the music had on test anxiety and self-efficacy. For example, a survey question assessing the participants' test anxiety and self-efficacy following the specific intervention may have been an important aspect and should be considered for future research in this area.

The sixth limitation during the qualitative phase of this study is the relative dearth of information derived regarding stereotype threats. Of the participants in the interview portion of the study, two were African American and four were Caucasian. During the interview phase, one of the two African American participants stated that she was previously involved in high stakes testing in her K through 12 education which presented a challenge to her, and her current test anxiety was influenced by this experience. During this interview, the researcher did not ask the participant to reflect on her previous experience with high stakes testing in order to ascertain whether feelings associated with a stereotype threat were experienced. For example, an additional interview protocol question such as "How do you feel others judge you based on your race as it relates to

your ability to perform well on these types of examinations?" could contribute to an understanding of test anxiety related to stereotype threats.

The seventh limitation is the physical environment for the quantitative aspect of the study. The experimental group and the control group were both in separate classrooms down the hall from each other. The researcher remained in the classroom with the participants in the experimental phase and another faculty member (same faculty for each examination) remained in the classroom with the control group. After the students completed the WTAS and the GSES surveys, the students who did not participate in the study were allowed into the room in order to take the examination. Students entering were asked to remain quiet while being seated; however, in many cases students engaged in conversation waiting for the examination to be distributed. This atmosphere had the potential to increase test anxiety and reduce the efficacy of classical music.

The eighth potential limitation relates to the experimental approach used with the participants listening to classical music. One of the interview participants reported that she viewed the orchestra on the audiovisual screen. Therefore, it is difficult to surmise the impact that viewing the orchestra had on participants' test anxiety compared to the auditory effect.

Conclusions

In this sequential mixed methods study, the following research questions were explored:

The primary quantitative research questions are:

1) What impact does listening to classical music in the junior level baccalaureate nursing course prior to the examinations have on students' level of test anxiety?
2) What impact does listening to classical music in the junior level baccalaureate nursing course prior to the examinations have on students' level of self-efficacy?

The primary qualitative research questions are:

1) What is the lived experience of junior level baccalaureate nursing students experiencing high test anxiety?

   Sub-questions include the following:

   a. What emotions do students experience prior to, during, and after taking an examination?
   b. What actions do students take to reduce test anxiety?
   c. What behavioral acts do students engage in to prepare for the examination?

In the quantitative phase of the study, participants were randomly assigned to either the experimental or the control group. The experimental group listened to a nine minute and 27 second segment of Mozart Adagio in E for violin and orchestra (60 beats per minute) prior to examinations III, IV, and V. After listening to the segment, the participants completed both the WTAS and the GSES. An independent sample t-test and ANCOVA analysis were performed using SPSS in order to determine whether listening to classical music reduced test anxiety and enhanced self-efficacy for the participants in the

experimental group. Though the findings did not reveal statistically significant results, when looking at the mean scores there was a slight reduction in the mean WTAS survey scores for the experimental group compared to those of the control group. Additionally, there was a slight increase in the GSES mean survey scores for the experimental group as compared to those of the control group.

The qualitative aspect of the study revealed emergent themes for consideration that were consistently evident in the review of the literature: participants' perceived self-efficacy; impact of academic environment on test anxiety; influence of family environment on test anxiety; manifestations of test anxiety; and cognitive interference. These emergent themes present a myriad of implications for nurse educators as they are in a strategic position to identify students with low self-efficacy and high test anxiety in order to develop possible strategies to promote student success. Such strategies might include test taking workshops, anxiety reduction techniques, and effective studying methods.

Additionally, it is recommended that nurse educators utilize effective methods to evaluate student learning. As previously stated, the National League for Nurses made several recommendations for nurse educators regarding evaluation strategies in the NLN Fair Testing Guidelines (2010). Specifically, the NLN recommends that the evaluation practices are fair to all students; multiple strategies are utilized to assess student learning; and faculty review examinations for reliability, content, and predictive validity. Many faculty employed in nursing programs have limited education and experience related to teaching in nursing programs (many have more experience in the practice setting). This may translate to an unfamiliarity with the processes related to effective test construction

and may increase the likelihood that inexperienced faculty create test items that are pulled from a test bank. Therefore, it may be difficult to ensure that there is alignment between the pedagogy and the evaluation methodology. Participants confirmed in the qualitative phase that there was concern regarding the manner that they were taught in class versus the evaluation strategies utilized.

Considerations should also be given to ensuring that caring behavior is exhibited. Lastly, nurse educators should consider a work study related to students' schedules and their course requirements. Assignments should be developed strategically to facilitate the attainment of program outcomes and provide students with an optimal learning environment.

Implications for Future Research

In order to explore this type of phenomenon, a mixed methods approach is considered the most appropriate. The pre/post model of quantitative research does not adequately capture the lived experiences of nursing students with test anxiety. Though the mixed methods findings are limited in terms of generalizability to the larger population, the themes that emerged in the qualitative aspect of the study have implications for future research. Such research may help students like Kim who was presented in Chapter 1 of this dissertation. This student struggled with her test anxiety and self-doubt and was eventually dismissed from the program although she was an excellent, caring student in the clinical and laboratory settings performing in accordance with all practice standards. Future mixed methods studies employing a larger sample size to explore key strategies to facilitate a reduction in test anxiety and enhance self-efficacy (such as but not limited to listening to classical music) may assist nurse educators in

developing key interventions that can be integral in reducing attrition and help students such as Kim reach optimal success.

Future research exploring the impact of stereotype threats as it relates to test anxiety and achievement gaps in nursing education should be considered. In the present study, the literature review focused on stereotype threats related to the African American population. A descriptive analysis of gender and racial counts was not created as this researcher postulates that there may be a variety of stereotype threats to consider and to limit the potential threats to gender and race may reduce the understanding of the phenomenon.

Additional research is recommended to assess the potential benefit of music as a medium to reduce test anxiety and enhance self-efficacy. The length of exposure of the participants to the music should be considered based on the current and previous research. Further, a survey instrument should be utilized that assesses the effectiveness of the music on test anxiety and self-efficacy.

While this study did not reveal statistically significant quantitative findings, some of the emergent themes from the qualitative aspect were consistent with studies identified in the literature review. The interview process did identify several other factors for consideration which are worthy of future research. Future research is also recommended to explore the impact that nurse educators' behavior may have on influencing nursing students' levels of test anxiety. Participants in the interview phase made statements regarding negative interactions with faculty and interactions leading to a perception by the participants that the faculty were not concerned with student success. It is recommended

that future research exploring the manner in which faculty caring impacts student test anxiety be conducted.

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APPENDIX A – INSTITUTIONAL REVIEW BOARD LETTER OF APPROVAL – OLOLC

OUR LADY OF THE LAKE COLLEGE

Franciscan Missionaries of Our Lady Health System

Date: January 13, 2015

Study Number: 1440
Study Title: *Junior Level Baccalaureate Nursing Students' Lived Experience with Test Anxiety: Can Music Serve as a Means to Reduce Test Anxiety and Increase Self-Efficacy?*
Primary Investigator: Keeley Dupuy, Ph.D(c), Ed.S, MSN, RN
Secondary Investigator: None
Primary Reviewer: Riaz Ferdaus
Secondary Reviewer: Lindsay Bratton-Mullins
Approval Designation: Expedited
Approval Date: January 13, 2015
Expiration Date: January 13, 2016

Dear Dr. Dupuy,

I am pleased to inform you that Riaz Ferdaus and Lindsay Bratton-Mullins of the Our Lady of the Lake College Institutional Review Board have reviewed and approved your proposed study entitled *Junior Level Baccalaureate Nursing Students' Lived Experience with Test Anxiety: Can Music Serve as a Means to Reduce Test Anxiety and Increase Self-Efficacy?* conducted by Keeley Dupuy.

Please be aware that this approval is only valid for one year. If your research extends past that time, you will need to submit a Reapplication form no later than two weeks before the end of the approval period.

Thank you for your submission and I would like to wish you success with your study.

Best regards,

Dr. Michael T. Dreznick,
Associate Professor and OLOL College IRB Chair

5414 Brittany Drive, BATON ROUGE, LA 70808 · PHONE (225) 768-1700 · FAX (225) 768-1726

APPENDIX B – INSTITUTIONAL REVIEW BOARD LETTER OF APPROVAL – LSU

ACTION ON EXEMPTION APPROVAL REQUEST

TO: Keeley Dupuy
Nursing
FROM: Dennis Landin
Chair, Institutional Review Board
DATE: December 9, 2014
RE: IRB# E9112
TITLE: Junior Level Baccalaureate Nursing Students' Lived Experiences with Test Anxiety: Can Music Serve as Meant to Reduce Test Anxiety and Increase Self-Efficacy?

New Protocol/Modification/Continuation: New Protocol
Review Date: 12/8/2014
Approved X **Disapproved**_____
Approval Date: 12/8/2014 **Approval Expiration Date:** 12/7/2017
Exemption Category/Paragraph: 1, 2a
Signed Consent Waived?: No
Re-review frequency: (three years unless otherwise stated)
LSU Proposal Number (if applicable):
Protocol Matches Scope of Work in Grant proposal: (if applicable)
By: Dennis Landin, Chairman
PRINCIPAL INVESTIGATOR: PLEASE READ THE FOLLOWING –
Continuing approval is CONDITIONAL on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants, including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
7. Notification of the IRB of a serious compliance failure.

8. SPECIAL NOTE:
**All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS*
(45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at http://www.lsu.edu/irb

APPENDIX C – INFORMED CONSENT

Sample Consent Form for a Non-Clinical Study

1. **Study Title**: Junior Level Baccalaureate Nursing Students' Lived Experiences with test anxiety: Can music serve as a means to reduce test anxiety and increase self-efficacy?
2. **Performance Site**: Our Lady of the Lake College School of Nursing: Baton Rouge, Louisiana
3. **Investigators:** The following investigators are available for questions about this study: Keeley Dupuy: 225-247-3756 (M-F, 8:00 a.m. - 4:30p.m.)
4. **Purpose of the Study**: The purpose of this study is to explore nursing students' lived experiences regarding test anxiety and determine whether music can impact test anxiety and self-efficacy.
5. **Subject Inclusion**: Individuals between the ages of 18 and 65 who are enrolled in the junior level of the baccalaureate program.
6. **Number of subjects**: 75
7. **Study Procedures**: The study will be conducted in three phases. In the first phase, students will complete the designated surveys prior to Examination I. In the second phase, subjects will listen to classical music for 10 minutes prior to exams III, IV, and V and will complete the surveys prior to the examinations. Following the quantitative data collection phase, volunteers will participate in face-to- face interviews.
8. **Benefits**: Subjects will be entering a drawing to win two $100 visa gift cards. All participants will be provided a $5 gift card to a local coffee shop. Additionally, the subjects may learn valuable personal knowledge regarding their test anxiety.
9. **Risks**: The only study risk is the inadvertent release of sensitive information (the participants will be made aware of such). However, every effort will be made to maintain the confidentiality of records. Files will be kept in secure cabinets to which only the investigator has access. Additionally, any electronic files will be kept password protect. The participants will utilize a unique identifier when completing the surveys. No identifiable information will be listed on the surveys.
10. **Right to Refuse**: Subjects may choose not to participate or to withdraw from the study at any time without penalty or loss of any benefit to which they might otherwise be entitled.
11. **Privacy:** Results of the study may be published, but no names or identifying information will be included in the publication. Subject identity will remain confidential unless disclosure is required by law.
12. **Signatures:**

The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigators. If I have questions about subjects' rights or other concerns, I can contact Dennis Landin, Institutional Review Board, (225) 578-8692, irb@lsu.edu, www.lsu.edu/irb. I agree to participate in the study described above and acknowledge the investigator's obligation to provide me with a signed copy of this consent form.

Subject Signature:_____ Date:_____

Researcher Signature: _____Date: _____

APPENDIX D – DEMOGRAPHIC INFORMATION

Unique Identifier: _____

Instructions: Please do not write your name on this form. This information will be kept in a secured, locked location.

1. What is your gender? (Place an "X" where appropriate)

Female _____

Male _____

2. What is your age? _____

3. What is your race? (examples: African-American, American Indian, Asian, Caucasian, etc.). _____

4. What is your ethnicity? (examples: Irish, German, Hispanic, Latino, etc.) _____

5. Are you a first generation college student? (are you the first in your family to attend college?) _____ (yes/no)

6. Did you attend public or private high school? _____ Public _____ Private

7. Which of the following ranges accounts for your family's total annual income? Please circle.

a. less than $25,000
b. $25,000 to $30,000
c. $30,000 to $50,000
d. $50,000 to $75,000
e. $75,000 to $100,000
f. $100,000 to $150,000
g. greater than $150,000

8. What is your cumulative grade point average? (can be located in Webservices) _____

9. Please indicate below your final grade in the following nursing courses:

NURS 1730 _____ (Introduction to Nursing Concepts)
NURS 2310 _____ (Pathophysiology)
NURS 2730 _____ (Pharmacology)
NURS 2740 _____ (Health Assessment)
NURS 3710 _____ (Nursing Concepts I)
NURS 3720 _____ (Nursing Concepts II)

Did you retake any classes? If so, which course(s)? ____Grade(s) after retake? ____/____

APPENDIX E – GENERAL SELF-EFFICACY SURVEY

Unique Identifier: _____

Please answer the following questions by placing the number from the ranking below that corresponds to your answer.

1 = Strongly disagree
2 = Disagree
3 = Agree
4 = Strongly agree

1. I can always manage to solve difficult problems if I try hard enough. _____

2. If someone opposes me, I can find the means and ways to get what I want. _____

3. It is easy for me to stick to my aims and accomplish my goals. _____

4. I am confident that I could deal efficiently with unexpected events. _____

5. Thanks to my resourcefulness, I know how to handle unforeseen situations. _____

6. I can solve most problems if I invest the necessary effort. _____

7. I can remain calm when facing difficulties because I can rely on my coping abilities. _____

8. When I am confronted with a problem, I can usually find several solutions. _____

9. If I am in trouble, I can usually think of a solution. _____

10. I can usually handle whatever comes my way. _____

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APPENDIX F – WESTSIDE TEST ANXIETY SCALE

Unique Identifier_____

Rate how true each of the following is of you, from extremely or always true, to not at all or never true. Use the following 5 point scale. Circle your answers.

5	4	3	2	1
Extremely always true	Highly usually true	Moderately sometimes true	Slightly seldom true	Not at all never true

__ 1) The closer I am to a major exam, the harder it is for me to concentrate on the material.
5 4 3 2 1

__2) When I study for my exams, I worry that I will not remember the material on the exam.
5 4 3 2 1

__3) During important exams, I think that I am doing awful or that I may fail.
5 4 3 2 1

__4) I lose focus on important exams, and I cannot remember material that I knew before the exam.
5 4 3 2 1

__5) I finally remember the answer to exam questions after the exam is already over.
5 4 3 2 1

__6) I worry so much before a major exam that I am too worn out to do my best on the exam.
5 4 3 2 1

__7) I feel out of sorts or not really myself when I take important exams.
5 4 3 2 1

__8) I find that my mind sometimes wanders when I am taking important exams.
5 4 3 2 1

__9) After an exam, I worry about whether I did well enough.
5 4 3 2 1

__10) I struggle with written assignments, or avoid doing them, because I feel that whatever I do will not be good enough. I want to be perfect.
5 4 3 2 1

_____Sum of the 10 questions. Divide the sum by 10. This is your Test Anxiety Score.

APPENDIX G - SCATTERPLOTS

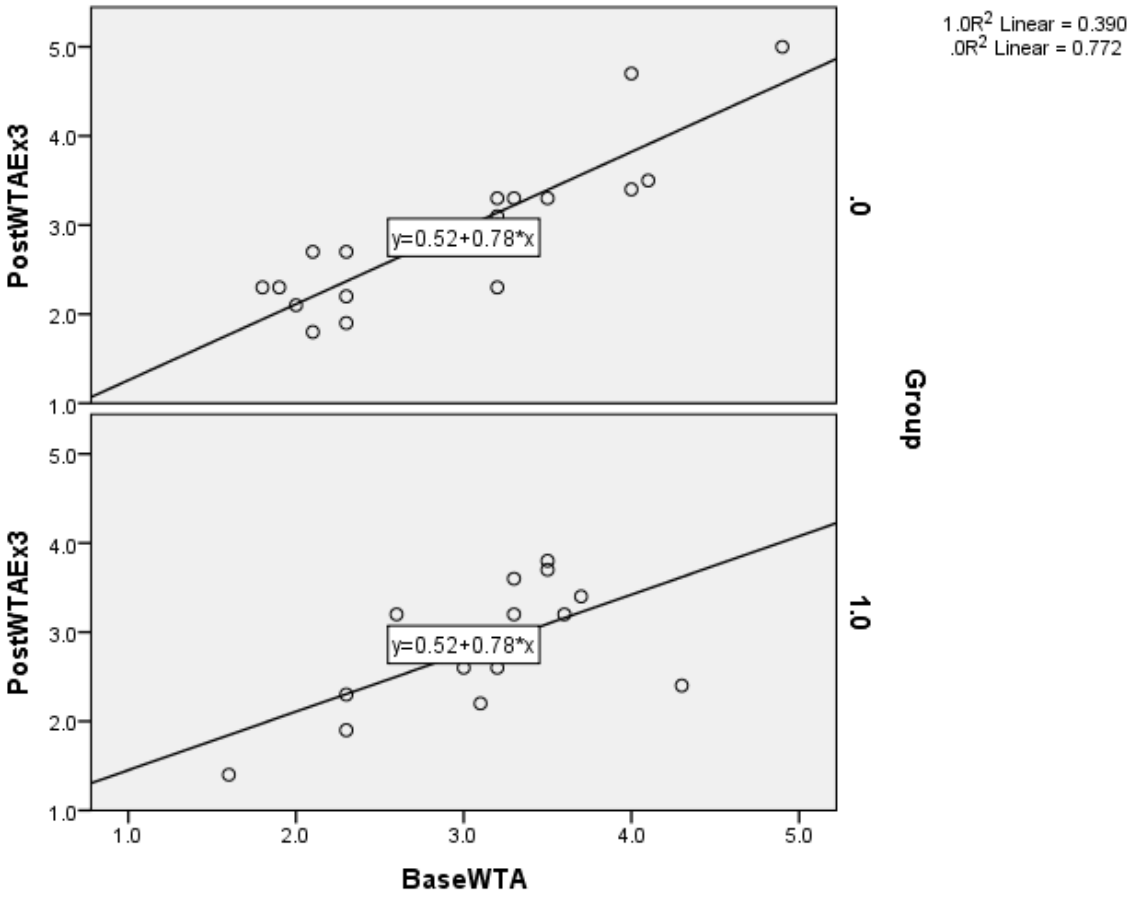

Figure F1. Scatterplot to illustrate test of homogenous slopes for WTAS examination III.

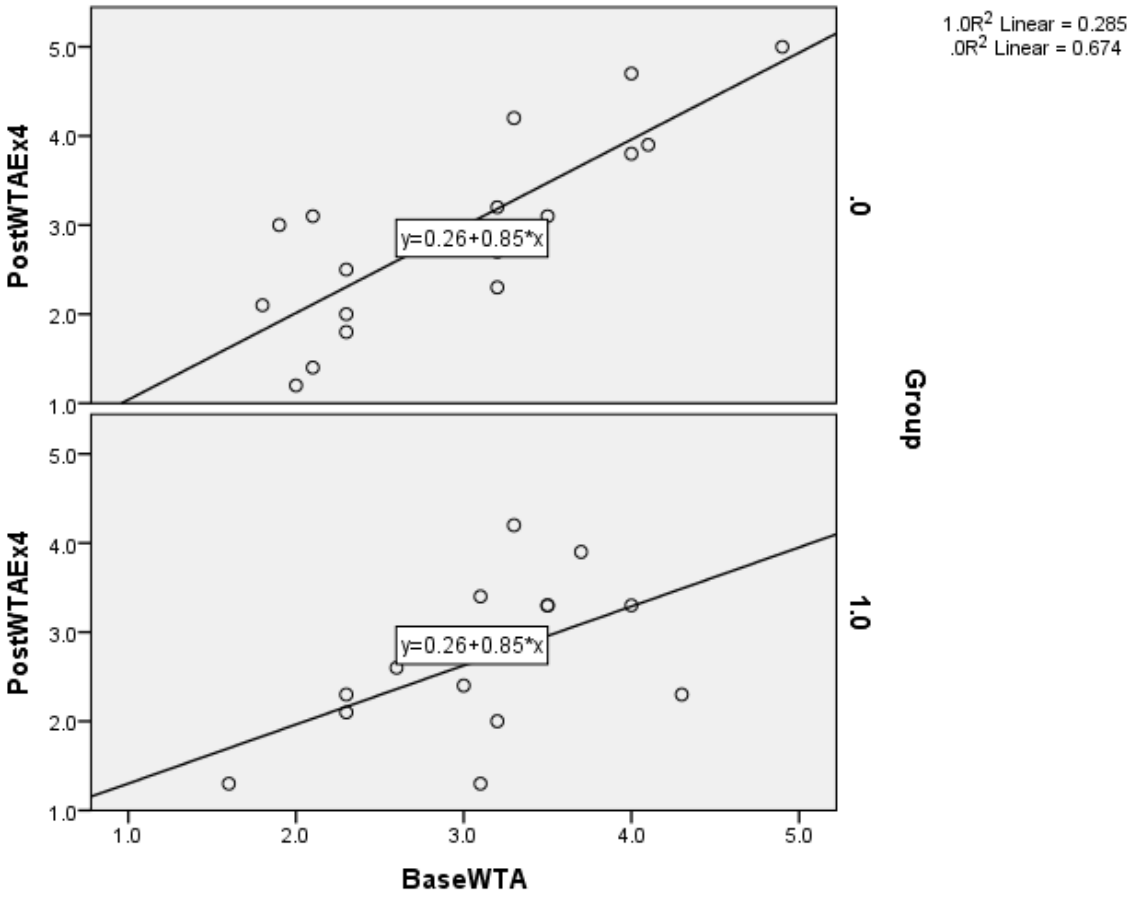

Figure F2. Scatterplot to illustrate test of homogenous slopes for WTAS examination IV.

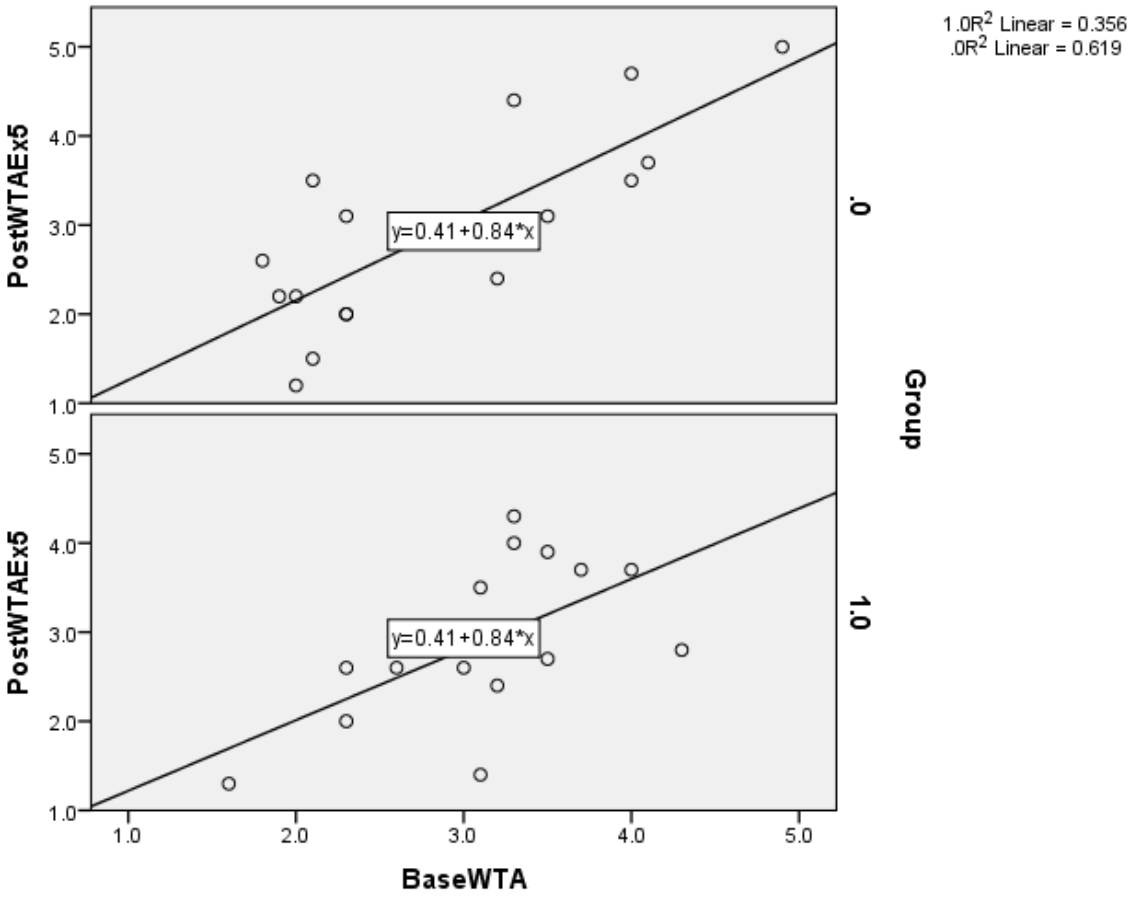

Figure F3. Scatterplot to illustrate test of homogenous slopes for WTAS examination V.

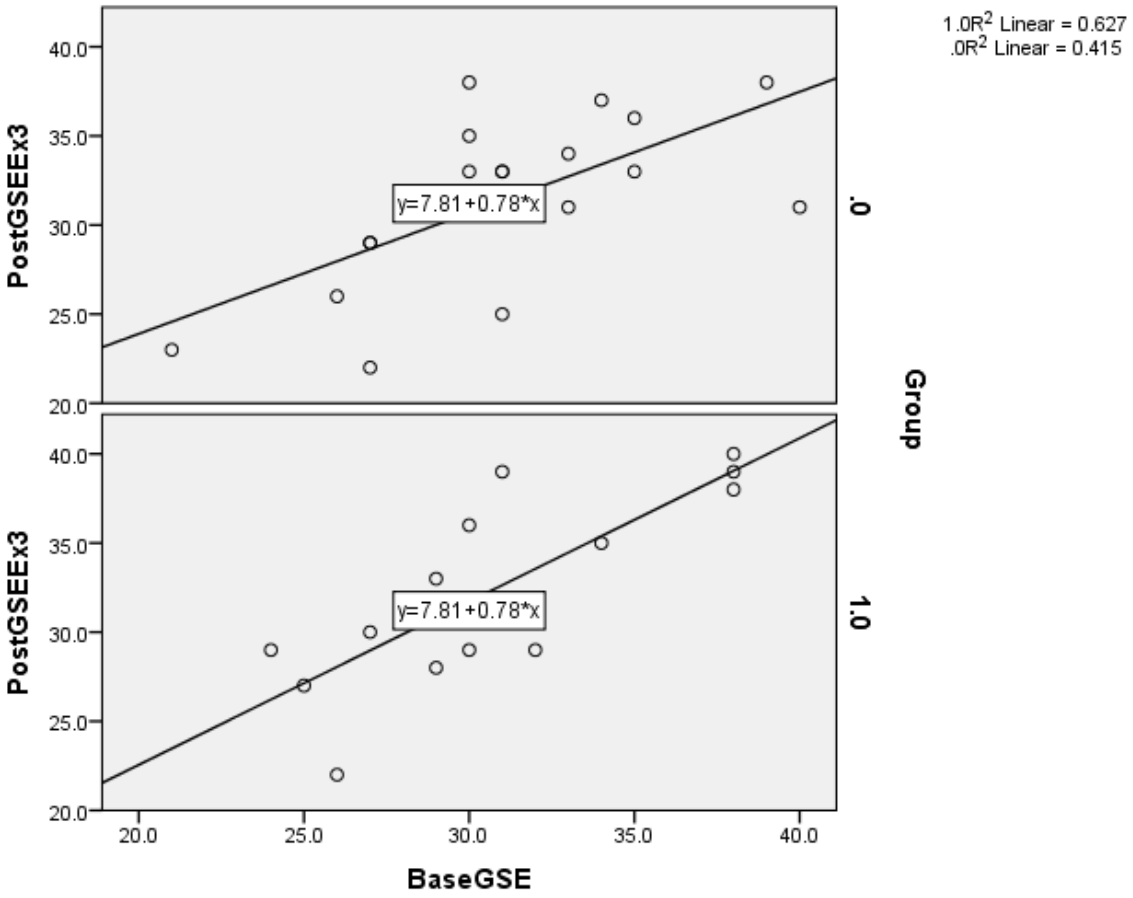

Figure F4. Scatterplot to illustrate test of homogenous slopes for GSES examination III.

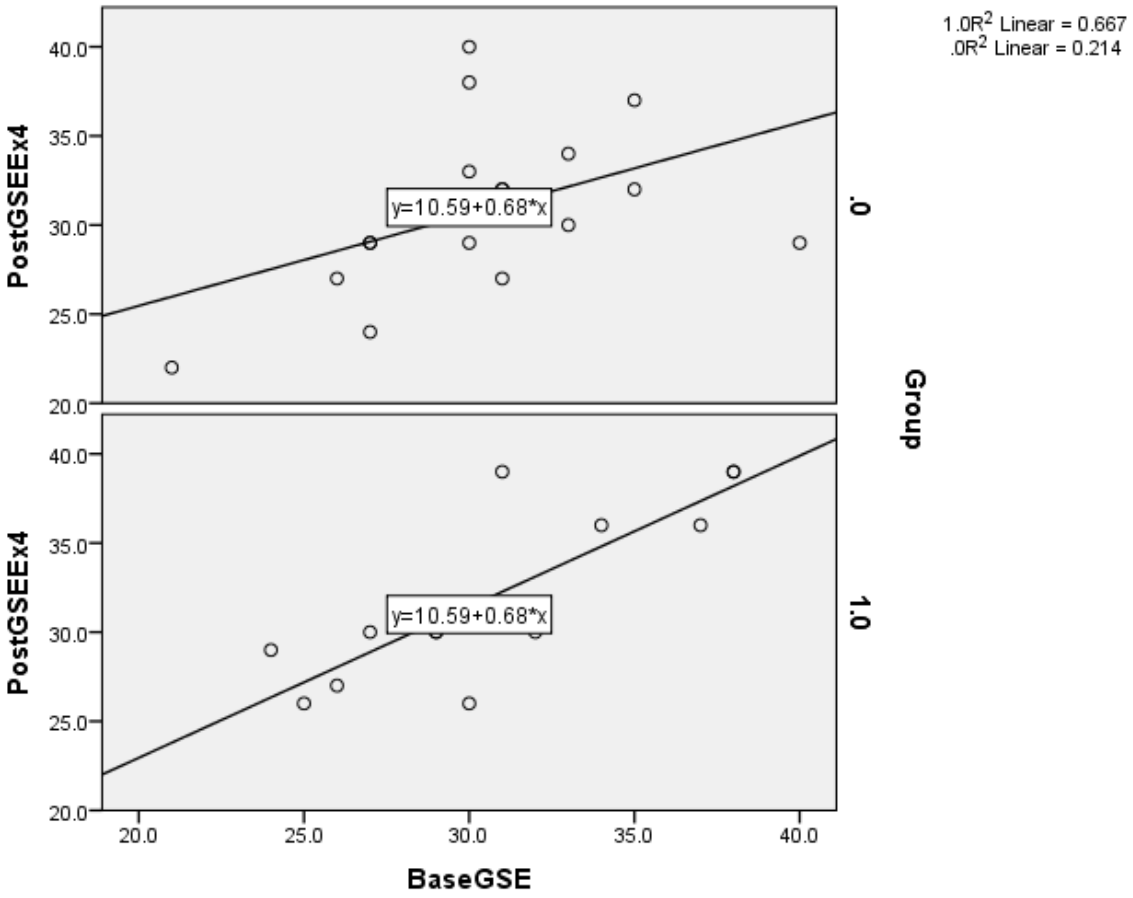

Figure F5. Scatterplot to illustrate test of homogenous slopes for GSES examination IV.

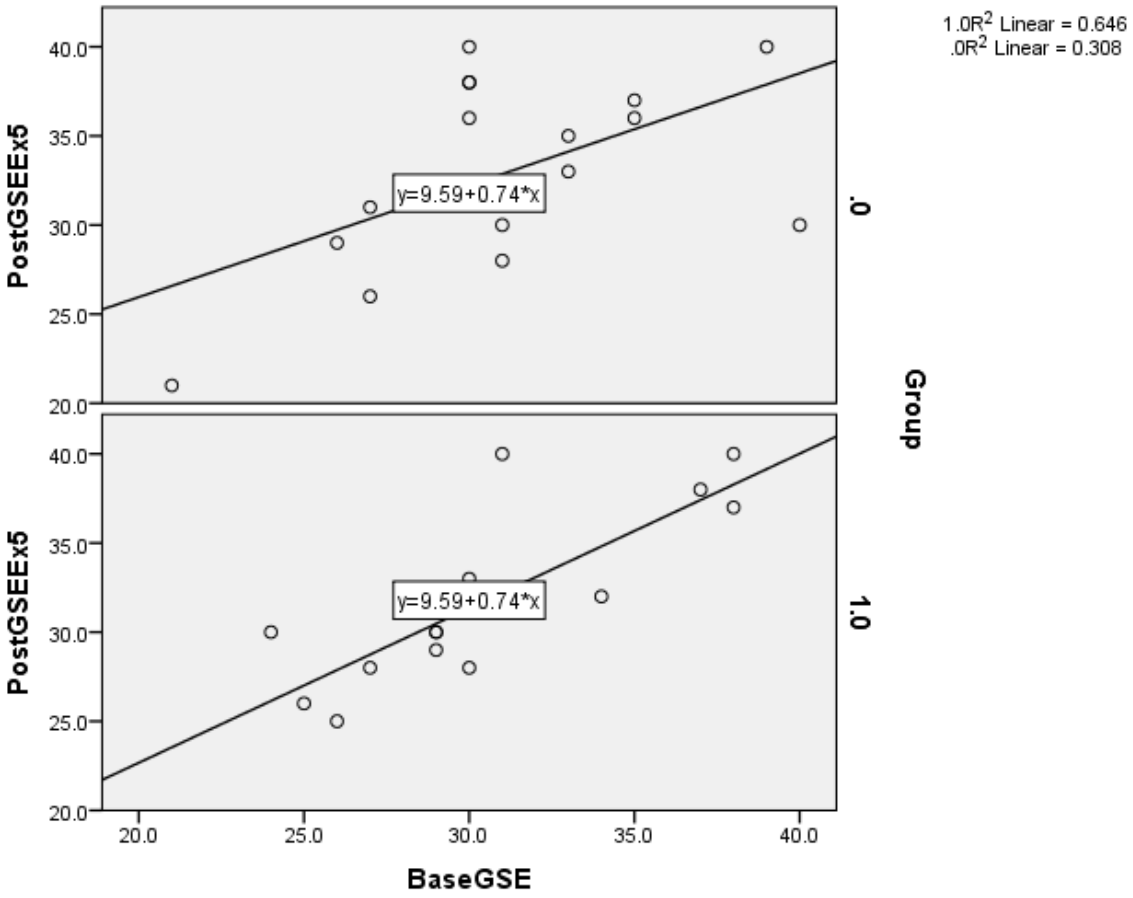

Figure F6. Scatterplot to illustrate test of homogenous slopes for GSES examination V.

APPENDIX H – INTERVIEW PROTOCOL

1) Tell me about yourself.

2) Did you have high stakes testing in your K-12 education?

3) Do you recall having this type of anxiety in your previous education? What's the difference? Have you always experienced test anxiety?

4) What does test anxiety mean to you?

5) How does test anxiety make you feel? When you entered the testing environment, what thoughts can you recall that were going through your mind?

6) How do you experience test anxiety? What physiologic reactions do you have in the testing environment? Before the test/during the test/after the test?

7) Which group were you assigned to? How did this impact your perception of test anxiety?

8) How do you prepare for the exams? How long did you study before the exam? How did you study? What resources do you utilize?

9) What fears and concerns do you experience as a student in the nursing program? What about negative thoughts?

APPENDIX I – FORMULATED MEANINGS OF INTERVIEW TEXT

Significant Statement	Formulated Meaning
OH-1 "I failed French class in high school… I would say my anxiety started after that. For every test or even quiz (in college) I freak out. I could know the information like the back of my hand but I don't think I do. I can't believe them (my friends who tell me I will do just fine) and I am like I am going to fail this test."	Student does not believe in her ability to perform well even when others tell her she is prepared.
EO-5 "I wonder how I am going to do. I start asking myself if I studied enough? Should I have gone to bed earlier?"	Student wonders if she studied enough and if she received enough sleep.
AH-3 "I think a lot of times I am worried about whether or not I studied enough. Like do I know enough am I going to remember."	Student states that she feels worried before the examination about whether she studied enough and will be able to remember the material while she is testing.
NP-13 "When I am walking into the test I am thinking that I hope I studied enough."	Student states that she feels worried before the exam about whether she studied enough.
JW-6 "You know I always question my ability and ask if I am going to pass this test and ask do I know the information? Worrying about failing it and almost kind of like not measuring up and meeting certain expectations… so when I get into the test it makes it 10 times worse…"	Student questions her ability and questions whether she will pass the test. She is concerned about whether or not she knows the material well enough and she worries about failing.
HZ-2 "I doubt myself…. And I wonder if I prepared enough and during the test the anxiety can kick in as well."	Student states that before the examination she wonders whether she prepared enough and she doubts herself.
OH-2 "I have always known that test anxiety is bad and having this extra course is not easy. This semester I seem to have 2 tests the same week. Time is very limited to prepare. I have those escalation of thoughts that I say that I won't do okay and that I am going to fail."	Negative thoughts increase given that she is in an additional required elective course that she is taking concurrently with her nursing courses. Keeping up with the course requirements increases her anxiety and negative thoughts about her performance.
OH-3 "This semester I study when I can. The other stress is not knowing if you are going to have enough time. And I am working."	The student is concerned that she will not have enough time to study.
OH-6 "We took the pharm HESI 2 weeks ago – because of the timing I didn't have time to use the resources – it didn't bother me much because I knew it was only bonus points and not a portion of my grade."	Student perceived that she did not have time to use the resources to study for the standardized examination; however, it did not cause her any concern because the standardized test did not influence her grade.
OH-5 "I don't like to hear other people freak out because it makes me freak out- for one they could have read something wrong and are saying it wrong and then it puts the wrong think in my mind."	The student does not like to listen to other students discuss the material prior to the examination because it increases her anxiety and she is concerned that they may be discussing the material incorrectly.

JW-8 “I sit in my car prior to the exam because I cannot listen to students study prior to the test. That is what happened on the last test.. the two girls were sitting behind me asking what is this and what is that. It is very distracting.”	When she hears other students studying, she feels stressed as it is very distracting.
AH-4 “I don’t like hearing people talk about the content before the exam – I don’t like that because to me that is disrupting your process so a lot of times I wait until it is time to take the test. And then during the test I am really focused so I am not one of those people that hears conversations or tapping, etc.”	Student finds it disruptive when she hears other students talk about the content prior to the test. However, during the examination the student can maintain focus.
EO-9 “I don’t like to listen to other students talk prior to the exam. They can really be talking about anything and it throws me off. It really makes me more anxious.”	Student gets more anxious when listening to other students speak prior to an examination.
OH-9 “With the exception of obstetrics we only had one instructor teaching us and she was the only one that made the test. For everything else it is 2 different people who are collaborating to make the exam. We experienced a couple of times in class where you ask a question and the teachers kind of contradict each other. So for them to both be making the test concerns me.”	Student expressing concern because multiple faculty are teaching and making the examination questions. There have been a couple of times when the faculty in the classroom have contradicted each other when discussing the content. This leads to confusion and ambiguity.
NP-17 “Having the same teachers helps a lot…. Because when you have a different teacher they will teach differently and their tests are different. Whereas if you have the same teachers you know what to focus on…I pay attention in class…with new teachers I don’t know what to expect and I don’t pay attention as well because I am not used to them.”	Having the same faculty throughout the course helps the students learn.
OH-12 “This has something to do with test anxiety. You know how we have different teachers in the exam rooms. Ms. A is in our room and Ms. B is in the other testing room. I have been told Ms. B will answer questions in the other room if someone is confused about how something is worded. I have had personal experience asking Ms. A a question and she was not very nice about it.”	Student perceives that the way faculty respond to the students can have an impact on anxiety.
JW-9 “Ms. B is great but there are faculty that are intimidating. Ms. A is very intimidating and she does not seem to care about students’ success. I don’t want to go to her for help and that increases my anxiety.”	Student feels that there are intimidating faculty with whom she does not feel comfortable meeting to seek assistance.
JW-10 “We talked about teachers and how they make things difficult and I don’t know this teacher but I hear about her a lot and she influences students because they seem to feel a lot of anxiety when they talk to her.”	Student perceives that other students are having difficulty dealing with anxiety because of how a faculty behave around them.

HZ-15 “I guess be more open and approachable.. because some faculty are very intimidating.”	Student feels that some faculty are very intimidating.
AH-7 “This semester they added a third and fourth teacher and there is one that really seems to be our advocate and it seems she is telling that that they really need to give us some direction. She is not about being tricky – she is more like they need more guidance – you are not telling them what is on the exam.. but it helps guide them.”	Student perceives that the faculty who was added to the course is supportive of the students and she wants them to succeed.
NP-5 “I don’t like that it is different teaching styles every time. Ms. C got us involved… and she asked us questions and she wrote on the board…Ms D just read off the power point and she went so fast.”	Student is frustrated by the different teaching styles and the number of faculty who teach the content. Student learned better in class when the faculty involved the students in the learning.
OH-13 “All of our concepts courses are 4 hours long. I get into class and for the first 2 hours I am good… being there 8 to 12 – the last 2 hours no one is listening. Our brain is tired… My anxiety does increase because of all those things. We get our lunch break and then we have to come back and sit in class for another 4 hours. I think that contributes to students not getting the most out of class.”	Student perceives that the length of class contributes to students’ anxiety because they must sit in the classroom for 8 hours in one day. The student feels that they do not get the most out of the classroom experience because it is difficult to pay attention for that long.
HZ-3 “Each week I really only get to study 12 hours. Four hours on Monday, Tuesday, and Wednesday.”	Student has 12 hours each week to prepare for the classroom and clinical.
NP-8 “So, like right now Mondays I am pretty free (to study) and I can do like 4 to 5 hours. I am free Tuesdays for the most part now that I finished my med/surg rotation. It takes a while to read because it is like 5 to 6 chapters per class. Wednesdays I have clinical all day and Thursday we have class all day.”	Student states that there are about 4 to 5 chapters per week to study. Clinical is one day per week and class is all day on one day per week. Student has 2 days to study and read plus the weekend, which is not enough time.
AH-5 “It is so difficult understanding how to do this but when I get in the test it is a different story. It is so difficult understanding how to know how to prioritize when answering the test question.”	Student finds it difficult to understand how to answer examination questions that require the student to prioritize the correct nursing action.
HZ-16 “The mental health exam we didn’t talk about interventions in class but the exam was all about interventions and nursing priorities… it would be nice to discuss in class.. even the book doesn’t go into nursing interventions.”	Student feels that there is a certain degree of ambiguity with what is tested on the examination. Sometimes questions are focused around what is discussed in class. Sometimes it comes more from the textbook. Sometimes test material is not covered in class or the textbook
NP-6 “I know a particular teacher’s question is always confusing so when you get to a question that is hers you start to get really worried and scared. That teacher usually just reads off the power point in lecture and does not engage us at all…they mostly read off the power point.. Those teachers make questions that don’t translate to how we are taught..”	Student gets anxious when taking an examination because she can tell when she gets to a particular teacher’s questions. Usually the teacher who just reads off the power point has very confusing test questions. Those questions don’t necessarily translate to how they were taught.

AH-6 “These lectures don’t seem to necessarily focus on what is tested so it is difficult to focus and the faculty can pull questions from so much material and it is difficult to know what to focus on. No one can remember all of this. I just hope that what I study is pulled for the exam.”	Student perceives that there is so much material to study it is difficult to know what to focus on to study.
OH-10 “When we get to the test and see a question a lot of times we have to think what the instructor said because they both contradicted themselves. And then the textbook says something completely different. They tell us a lot to use your textbook; however, our power point says something completely different and they will say don’t go by your book and then sometimes they say go by your book. It gets so confusing. That gives me anxiety.”	Student takes the examination and sometimes has trouble answering the question because of the way the faculty contradicted each other when discussing it. Additionally, the book may say something completely different. The faculty tell students to go with the book and then sometimes say go with the power point.
HZ-8 “There were questions that I thought I was between 2 answers – I did not know what I did – after this test there were a lot of questions that I did not know which way they could go.. we did not really discuss that material in class so I did not feel I could make an informed decision.”	Student felt that there were questions with two possible answers. She was concerned because some of the questions were about material that was not covered in class.
HZ-7 “The amount of information was a lot and being crammed on to a little test.”	Student feels overwhelmed by the amount of material being tested on.
EO-11 “I don’t have time to read 5 or 6 chapters on top of all of the work we have for community and for clinicals.”	Student feels overwhelmed by the amount of material on which they are being tested.
NP-2 “that is when I get distracted is when I try to read the content…It’s like I can read a normal book no problem. But when I am reviewing school books it is do different and I am easily distracted because it is so different from what I am used to reading. So I mean it is more intense and you want to take notes but it is like you are highlighting the whole page.”	Student is frustrated because reading the textbooks is overwhelming. There is so much content to know and she feels like she has to know it all.
HZ-13 “Because I mean on the mental health test there was like 12 chapters and there was just so much information that it was like information overload for one test and that does not even touch on 90% of the information that you learned.”	Student states that there is so much content on the exam and that makes it difficult to study and prepare for the examinations.
EO-7 “here there is so much information on each test. It is scary. I have a big clip of notes to study for one exam and it is a lot of information for one test and I think that is what causes the anxiety because there is no way they can put everything they taught into 50 questions. It is like what do I need to focus on because it is all important.”	Student states that there is so much content on the examination and that makes it difficult to study and prepare for the examinations. All of this contributes to the test anxiety.
NP-3 “I studied a lot for this and I was not as doubtful about myself…I like this material much better than OB..I felt like I studied more and I could relate to this but I could not relate to the OB content.”	Student was able to relate to the content and studied more, and she was not as doubtful about herself.

HZ-12 “Mainly when I came here I started to get anxious with test taking – I don’t know what to expect. The anxiety really kicked in with the NCLEX style questions. Prior to that I had no anxiety and I didn’t have to study this hard.”	Student just began to have test anxiety for the first time last semester in the nursing program. Some of the anxiety was due to the fact that she did not know what to expect.
EO-12 “I think the students have trouble with the test questions.. They don’t really know how to answer them because one of my classmates.. well I think she may have failed the class.. But she was bombing the majority of the tests.. and when we studied she knew the stuff better than me like off the top of her head without looking at the notes.”	Student is concerned that students have difficulty with the type of test questions that they are required to answer.
NP-11 “Those tests didn’t give me anxiety because I knew what those tests would be like. They were like my old tests.. they were cut and dry and I could study them with note cards.. These tests you cannot do that anymore. You never know what to expect.”	Student states that the examinations she is taking in nursing school have a certain degree of ambiguity and she does not know how to prepare. She is concerned about the tests because she does not know what to expect.
NP-2 “I got them down to two possible answers and I picked the wrong one.”	Student had difficulty with the NCLEX style questions. She was able to get it down to 2 possible answers and chose the wrong answer.
JW-1 “When I took the ACT that is when I noticed I had a little more anxiety. The better you score the more grants or scholarships you get.. I had a little anxiety there.”	Thinking about needing to make a good score on the ACT to receive grants and scholarships increased the anxiety.
HZ-14 “I think something that would help would be to reduce the amount that each test is worth and then supplement the grade with weekly assignments that is what is the focus for the week. Between that it would reduce test anxiety all around. And to drop to a 10 point grading scale. To so oh I got an 85 on the test – that sounds like a B but it is actually a C.”	Student feels like in order to reduce test anxiety each examination should be worth less in terms of grade weighting. There should be more supplementation with additional assignments.
EO-6 “To me the tests here are more like a standardized test because you take 5 and it is like you have to like at least for the first 2 or 3 you have to kind of score high because if you score low you can still be in the range. In LPN school the program was set up a little differently and you had plenty of opportunity to pull your grade up.”	Student perceives that the pressure is higher in the beginning of the semester because a student must perform well in the beginning so that it alleviates the pressure toward the end of the semester. She was in the LPN program and states there were more opportunities to pull the grade up.
JW-11 “That day was just a bad day. I had anxiety from the beginning. We had OB simulation in the morning from 8:30 to 12:30, and then HESI at 1:00. That is so hard because we are already tired and having to focus on this exam that is 3% of our grade. This can make or break you and I did not pass it last semester.”	Student had to take this high stakes examination on a day when she had a simulation experience. This student perceives that this examination could make or break her.
NP-15 “These tests are like 16% of your grade. So HESI is like 3%. So I am obviously a little more freaked out about the 16% because that is a high percentage.”	Student is more concerned about the examinations because they are worth a high percentage of her total course grade.

HZ-11 “I was pretty anxious about it because the actual HESI is worth 3% of your grade and I did not do well on the mental health exam in the course and this HESI is the mental health content.”	Student felt anxious about the HESI because she did not do well on the unit exam that covered similar content. Also the increased anxiety comes from the fact that this exam is worth 3% of the course grade.
EO-2 “When I have to take a test that means that whether I pass or fail I get really nervous and notice that I get the test anxiety symptoms.”	Student perceives that when a test she takes is high stakes she gets the physiologic symptoms of test anxiety.
JW-2 “School now since I have my husband and my kids is a little more stressful now than it was then.”	Student perceives that trying to raise a family and go to school increases anxiety.
JW-7 “Thursday is my off day and I try to do my studying on that day.”	Students states that her only real day of uninterrupted study is on Thursdays.
JW-12 “I passed it but had I been in class I would have gotten much more information.. but my baby was sick.. I passed the exam but the anxiety was there… dealing with my son….it was too much.”	Student had many factors increasing her anxiety. One was the fact that she missed class and the other was because her son was sick.
EO-3 “I do think that nursing school has the potential to tear your family apart because me and my husband were having problems with me in school.”	Student perceives that the fast pace of nursing school can be challenging with a family.
NP-16 “I think it is pretty much all in my head and I am not used to failing and I am not used to that. It is just in nursing school. Like I did awesome throughout my prerequisite courses but I am not used to Ds and Fs – that is not like me – It is more like I do not want to disappoint my mom and my dad and I don’t want to disappoint myself. I want to be the first one to graduate college.”	Student wants parents to be proud and she wants to be the first person in her family to graduate from college.
EO 8 “Because of my family and school obligations, Thursday is my only day to study.”	Student perceives that she has a limited time during the week to study because of her family and school obligations.
OH-4 “Before the test honestly I don’t think I have experienced physical manifestations like I don’t get panic attacks – I don’t really freak out -it’s more mental for me than anything. For me it’s more emotional like me telling myself I am going to fail and do horrible.”	Student perceives that her symptoms of test anxiety are more mental than physical symptoms.
AH-1 “I go into the tests and sometimes I read the question wrong. Different words will be there and I remember being like I remember being in the test and it did not say that. That’s when I talked to the teachers and they thought I had test anxiety.”	During test review, student realizes that during the test she misread the question.
NP-14 “I am generally good about circling important words but when I get nervous I see words that aren’t there and see options for answers that make total sense in my head but the second I turn in that test I know that answer is wrong because it had nothing to do with it. “	Student recalls that she tries to circle important words during the test but she sees words that are not there.
HZ-9 “A couple of times I will misread the question. I will go to test review and see that there are questions that I did not see it read that way during the test.”	Student has misread questions on examinations.

NP-4 "I don't feel it (the medicine) helps me concentrate – it numbs me..my hands don't shake..my heart does not beat as fast…but it does not help me focus…"	Student takes medication for the test anxiety and she perceives that it helps with the physiologic symptoms but it does not help her to concentrate during the examination.
EO-4 "I have difficulty focusing during the test. My mind is everywhere. I find myself trying to feel out the instructor who taught the material and see if that helps me answer the question."	Student has difficulty focusing during the examination. She thinks about the instructor who taught the material and tries to figure out the answer to the question.
JW-5 "In nursing school it is almost like pass or fail because sometimes it gets so bad to where I blank out… well not blank out but I am just blank and I have been studying this material and know it backwards and forwards.."	Student perceives that the pressure of passing or failing in nursing school increases test anxiety. With test anxiety the student loses the ability to concentrate.
AH-2 "Some people get heart palpitations or they are racing. I am not… I am completely calm and I feel completely confident but when I am answering those questions I will read those questions wrong."	Student describes experience with test anxiety. She does not experience heart palpitations. Rather, she is quite confident going into the exam; however, while answering the questions, she reads them incorrectly.
NP-10 "I can't focus during the test…I blank out really really easily… I started wearing hats because I would glance up and look around and get distracted during the test… I wanted to see what the teacher was doing… I wanted to see how much time was left.. I would get off topic…"	Student describes her cognitive symptoms of test anxiety including the fact that she cannot focus during the examination and gets distracted.
JW-4 "reading the questions I kind of went blank. I kind of had to guess my way through."	She felt like she lost focus when reading the questions.
NP-7 "I never really had test anxiety until I started nursing school."	Student perceives that her test anxiety just started since she has been in nursing school.
JW-3 "The racing of my heart, palpitations… a little sweaty…a little jittery…nervous…"	Student recalls that test anxiety in her high school years was associated with heart palpitations, sweatiness, feeling jittery and nervous.
EO-1 "When I was in 8th grade I failed the math part of the GE and had to retake it. This was my first experience with test anxiety because I got sweaty palms and a racing heart."	Student recalls the physical symptoms of test anxiety associated with her 8th grade math test – standardized examination.
NP-1 "My anxiety was horrible this last test because I knew – I thought I had a good handle on it but it is a different type of question. So I knew that it would be different and that was just freaking me out. Normally my medicine works on the heart beat – I could feel my heart beating…not sweating.. it is mainly my heart beating…"	Student states that her anxiety was higher due to concern over the last test. She took her medicine the night before but she still had the fast heart rate.
NP-9 "I noticed that my anxiety started in this nursing class. My anxiety was fine in the other classes because they were just like regular classes. In this class I started noticing that my hands were shaking…"	Student noticing her physical symptoms of test anxiety.
HZ-10 "My test anxiety usually just leads up to and after the exam. I usually don't have physiologic symptoms during the exam."	Student does not experience physiologic symptoms during the examination. The physiologic symptoms appear before and after the examination. Student experiences cognitive symptoms of test anxiety where she reads questions incorrectly during the examination.

HZ-1 “With test anxiety my stomach turns and sometimes I get really nauseous and sometimes I get really sweaty and short of breath. I can be kind of scary at times.”	Student describes her physiologic symptoms of test anxiety.
OH-7 “honestly like during the test I knew I wasn’t going to pass it because I was getting super nervous about it because it counted for a grade. So about halfway through it I was saying this isn’t going well. I understand the material – I was just getting nervous because it was part of my grade.”	Student was expressing to herself during the test that she would not pass when her anxiety was increasing.
OH-8 “The benchmark on HESI is 800. That is all I could think about when I was taking this test. Oh my god if I don’t pass this I am going to have to retake it and if I don’t pass it then I get a zero percent on that portion of a grade.”	Student thinking about consequences of not passing the standardized examination as she was taking it.
OH-11 “The first page I was fine but then I turned the page and got to the first question on the second page and I like had no clue. So I am sitting there thinking…and you know how you see one question and you are like alright..maybe that will be the only question and there were more and more questions and I think I started to doubt myself through the test.”	Student became discouraged and doubted herself during the test because she didn’t know the answer to several questions.
NP-12 “During the test I don’t tell myself I can’t do it but in the back of my mind it is there.”	Student has a consistent feeling in the back of her mind that holds negative thoughts about the examination.

Figure H1. Significant statements of students’ description of the lived experiences of the nursing student with high test anxiety.

Note. Initials represent anonymous identification of participants.

APPENDIX J – THEME CLUSTERS AND EMERGENT THEMES

Theme Cluster	Emergent Theme
Thoughts about abilities to perform well prior to the examination: 1) internal dialogue regarding feeling like going to fail prior to the examination. 2) worries about whether studied enough 3) concerned about remembering material for exam 4) questions ability	Participant Perceived Self-Efficacy
Perceived factors influencing test anxiety – academic expectations: 1) two tests the same week 2) limited time to prepare 3) difficult to find time to study with work schedule 4) did not have time to use resources that were available 5) decreased anxiety noted if there was no grade attached to the examination 6) each examination covers at least eight to ten chapters and each chapter is about 60 to 80 pages 7) try to engage in activities such as exercise to help anxiety. 8) hard to even take a day off to rest and relax – that heightens the stress Perceived factors influencing test anxiety – other students: 1) listening to other students studying prior to the examination 2) other students studying prior to the examination – what if they do not have their facts correct and I get the wrong fact in my mind? Perceived factors influencing test anxiety – instructional and faculty specific factors: 1) multiple faculty teaching and creating exam questions 2) faculty contradict each other when asked questions 3) same faculty throughout the course helps focus on the material to study for the examination 4) one faculty will answer questions during the examination but one does not and is rude 5) some faculty are very intimidating and don't seem to care about student success 6) faculty support important with reducing test anxiety 7) when faculty read off of the power point in class it does not help us learn the material 8) class for eight hours in one day does not facilitate learning 9) difficult to focus for long days of class Perceived factors influencing test anxiety – ability to answer examination questions: 1) difficulty to answer NCLEX style questions 2) the way faculty teach in the classroom does not match the level of test questions 3) ambiguity of examination items 4) material that we were tested on was not covered in class Perceived factors influencing test anxiety – high stakes aspect of examinations: 1) the better the score, the more scholarships and grants 2) HESI counts for 3% of the final course grade. 3) each examination is worth 16% of the grade and the final examination is comprehensive and worth 19%	Impact of Academic Environment on Test Anxiety

Factors for the nontraditional student influencing test anxiety: 1) having a family makes school more stressful 2) can only study one day during the week. 3) difficult to care for a family and attend school 4) school causes stress for the family	Influence of Family Environment on Test Anxiety
Cognitive symptoms: 1) negative internal dialogue increases before the examination 2) read the questions incorrectly during the examination 3) medication helps physiologic symptoms but does not increase focus during the examination 4) difficulty focusing during the examination 5) goes blank 6) knowledge that the tests are either a pass or fail makes it more difficult to focus Physical Symptoms: 1) racing heart/palpitations 2) sweating 3) jitteriness/nervousness 4) nausea 5) shortness of breath	Manifestations of Test Anxiety
Internal dialogue during the testing experience: 1) feeling like not going to pass 2) worrying about needing to retake the test because of not meeting the required benchmark 3) worrying about getting a failing grade on the examination 4) when reaching a question with which one is not familiar start to doubt ability and start thinking about failing examination 5) negative thoughts exist in the back of the mind	Cognitive Interference

Figure I1. Contains the theme clusters and emergent themes derived from the significant statements and formulated meanings from the interview text.

VITAE

Keeley Clark Harmon, a native of Baton Rouge, Louisiana, received her bachelor's degree in nursing at the Louisiana State University Medical Center School of Nursing in 1993. She practiced as a registered nurse in the following areas: telemetry unit, heart transplant team member, congestive heart failure nurse, occupational health, home health, and oncology. She attended Southeastern Louisiana University and received her master's in nursing education in 2004. She served as a faculty member at Our Lady of the Lake College in Baton Rouge, Louisiana from January, 2005 until August, 2014. She served in a variety of roles at this academic institution including: adult health faculty and course coordinator, primary faculty in the accelerated nursing program, and Associate Dean. Additionally, she served as the Chair of the Task Force that facilitated the transition from the associate degree program in nursing to the baccalaureate program in nursing.

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