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Annette Marie Keller

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EXPLORING TEST ANXIETY IN BSN NURSING STUDENTS

A Masters Thesis

Presented to

The Graduate College of

Missouri State University

In Partial Fulfillment

Of the Requirements for the Degree

Master of Science, Nursing

By

Annette Keller

July 2016

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EXPLORING TEST ANXIETY IN BSN NURSING STUDENTS

Nursing

Missouri State University, July 2016

Master of Science

Annette Keller

ABSTRACT

Test anxiety is a phenomenon that was identified through research in the domains of education and psychology during the 1950s – 1960s. As test anxiety and its effects have been identified and addressed in nursing programs, the same treatment modalities have been applied without evidence that nursing students experience test anxiety in the same manner as other students. The purpose of this study was to describe test anxiety as experienced by BSN nursing students using the sequential explanatory mixed methods design in an effort to gain insight into the anxiety experience of nursing students. A sample of 73 junior and senior nursing students was surveyed about their test anxiety experience. Survey results support that the test anxiety experience of nursing students is similar to other students based upon symptoms exhibited during testing (physical symptoms 71%, behavioral symptoms 62%, and cognitive symptoms 81%). High stakes testing was identified by 98% ($n=72$) of the students as the major trigger of test anxiety. All surveyed students ($n=73$) reported experiencing some level of test anxiety. From the survey's sample population, a subset of BSN students ($n=7$) volunteered and completed individual interpretive phenomenology meetings. The Parse Phenomenological Hermeneutic Research Method was used for data analysis. Reoccurring themes extrapolated from the research included: navigating a nursing program is not intuitive, consistency and organization within a nursing program is necessary to decrease student anxiety, and the volume of information in a nursing course contributes to test anxiety. This study concludes that the test anxiety experience in BSN nursing students presents identifiable triggers and characteristics that affect program retention and progression.

KEYWORDS: test anxiety, nursing students, high stakes testing, program retention and progression, program anxiety, and capacity

This abstract is approved as to form and content

Rose Utley, PhD, RN, CNE
Chairperson, Advisory Committee
Missouri State University

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Submitted to the Graduate College
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Approved:

Rose Utley, PhD, RN, CNE

Rhea F. Felicilda, EdD, RN

Jan Atwell, MSN, RN

Julie Masterson, PhD: Dean, Graduate College

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I dedicate this thesis to the students who exposed the phenomenon of test anxiety to me and allowed me to enter their world in hopes of exploring and interpreting the phenomenon within nursing education. Your insights and courage have inspired me to seek not only an understanding of test anxiety, but assessment and treatment modalities that will allow future students to maximize their academic performance.

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INTRODUCTION

Test anxiety is a type of state anxiety that can be triggered by any number of events including low self-esteem, previous poor test performance, negative thoughts, timed tests, lack of motivation, and procrastination (Salend, 2011). State anxiety is the amount of anxiety one is experiencing at any moment and is characterized by an episodic nature, situational response, and an evident, clear trigger to initiate the anxiety (Gadberry, 2011; Huberty, 2010; Moscaritolo, 2009). Testing encompasses all of these characteristics. Cohen, Ben-Zur, and Rosenfeld (2008) state that tests are important tools in determining the level of success in both the student's academic and professional future and that testing can contribute to higher levels of anxiety throughout the process. The high-stakes testing utilized in nursing programs maximizes the effects of test anxiety on test performance (Spurlock, 2006).

The nursing shortage has caused nursing leaders globally to assess the causative factors of attrition and retention in the nursing profession (Crow & Hartman, 2005). Nursing leaders are seeking answers to the question, "Why are students not successfully completing nursing programs once admitted into the program?" The answers to this question are varied and complex. One factor known to impede student success is the use of high stakes testing in nursing (Spurlock, 2006). To successfully complete a nursing program, most nursing programs require the completion of tests at a grade of 75% or higher and the completion of pre-licensure standardized testing at a predetermined benchmark score. In addition, the nursing profession requires licensure to practice in all fifty states. The National Council Licensure Examination (NCLEX) is used to determine

if a candidate is qualified to practice nursing at the entry level, and the performance of graduates on the NCLEX is a marketable indicator of success for nursing programs (McDowell, 2008; Spurlock, 2006). This presents a conundrum for many students. The very tool designed to secure their success and ensure their licensure can cause their downfall. Testing and the anxiety it produces often interfere with student performance and can result in test failure (Cohen et al., 2008; Rana & Mahmood, 2010). Nursing students who struggle with test anxiety are often able to verbally communicate concepts and information that validate their comprehension and knowledge of course content. In spite of this, the inability of students to successfully complete tests during the nursing program results in a lack of progression in the nursing program and ultimately can result in dismissal from a nursing program. Thus, by failing to address the effect of test anxiety on test performance, nursing as a profession may be losing knowledgeable nursing students without fully attempting to retain them, thereby adding to the nursing shortage.

Management of test anxiety is necessary to protect not only the investment of the nursing student, but also the investment of nursing programs. The ever-increasing cost of health care and college education make it imperative for nursing programs to identify students experiencing test anxiety very early in the program and ensure that these students receive the assessment and subsequent interventions necessary to promote success.

Background

In the 1950s, researchers began to address the many aspects of test anxiety. Initially, this research was conducted in the disciplines of psychology and education and

dealt with patients rather than students (Putwain, 2008). The focus of the research was to determine the extent to which anxiety responses are evoked and the effect of these responses on learning and performance (Mandler & Sarason, 1952). Mandler and Sarason concluded that the patient's state of anxiety was able to generate both relevant and irrelevant responses. In the conclusions of the study, Mandler and Sarason determined that anxiety was a significant variable in test performance. Research over the past several decades has addressed numerous variables either individually or in tandem to determine their effect if any on the testing process. This multidimensional approach to test anxiety research has become a common approach for test anxiety research and has provided many avenues for exploration in regards to the dynamic experience of test anxiety.

During the 1980's, research in the area of test anxiety began to evolve in the nursing profession. As a result of the nursing shortage and the need to decrease attrition rates to meet the demand for nurses, research regarding factors contributing to high attrition rates was examined. One factor identified was test anxiety in the academic setting (Spurlock, 2006). The influx of non-traditional students into nursing schools was initially believed to be the root cause of high attrition rates (Home, 1997). However, recent research has identified several additional factors that can exist individually or in tandem within a student to initiate a test anxiety response (Cambell et al., 1996; Carrick, 2011; Cohen et al., 2008; Greenburg, Paisley, & Pyszczynski, 1984; Thomas & Gadbois, 2007). These additional factors are academic self-handicapping, low self-esteem, lack of concept clarity, surface learning, and lack of coping strategies and sense of coherence. Each of these will be discussed in relation to test anxiety.

Academic self-handicapping is defined by Thomas & Gadbois (2007) as a conscious decision to engage in behavioral or verbal strategies that produce an excuse for performance prior to, during, or after completing a task. These behaviors are motivated by an effort to protect or enhance the self-concept. For example, students may state that they were unsuccessful on a test because they were ill the night before the test and could not concentrate on studying. Some students, though they may state they want to succeed in their studies, may be motivated to give only the appearance of wanting to achieve, but are unwilling to exert the effort necessary to be successful. Academic self-handicapping is tied to student confidence and self-esteem.

Low self-esteem (Greenburg et al., 1984) and lack of self-concept clarity (Thomas & Gadbois, 2007) are additional factors that can affect test anxiety experience. Cambell et al. (1996) clarify and delineate the definitions of self-esteem, self-concept and self-concept clarity (as cited in Thomas & Gadbois, 2007). Self-esteem is the global evaluation of oneself. Self-concept involves both evaluation of and knowledge about oneself. Within the self-concept, students determine for themselves those attributes, both positive and negative, they believe exist within themselves. For example, the student may believe he/she is a poor test taker because of poor test performance in the past. With each test the student reinforces this belief and resorts to self-handicapping behaviors to support this belief. As the poor test results continue, the student cements the belief within the psyche that he/she is a poor test-taker. Self-concept clarity is defined as the degree to which a student's self-concept is consistent and stable regardless of circumstances.

Surface learning, as opposed to deep learning, is identified as another factor that affects test anxiety (Carrick, 2011; Thomas & Gadbois, 2007). Surface learning is

equivalent to the primary level of learning and is characterized by memorization and recall. Surface learning does not incorporate application and synthesis of information which is necessary in nursing programs. Students who rely on surface learning in nursing programs find that they are unsuccessful on nursing exams because nursing exams are often testing at the application, analysis, synthesis, and evaluation levels of Bloom's Taxonomy (1956). As students attempt to self-correct for this by studying more at the knowledge level, they experience little change in the outcome of their exams. Test anxiety results when the students continue to perform poorly on tests while incorporating the study strategies that have previously resulted in satisfactory academic performance.

Cohen et al. (2008) recognized a lack of coping strategies and sense of coherence as factors impacting test anxiety. They tested the effects of coping strategies and sense of coherence on test anxiety and test performance. In this study, test performance was predicted by two types of coping: problem-focused coping and avoidance coping. Students who used problem-focused coping showed better test performance than those utilizing avoidance coping. In addition, students who used emotion-focused coping and avoidance coping, as opposed to problem-focused coping, demonstrated a greater level of test anxiety. This supports the belief that students who experience high levels of test anxiety bring certain behaviors, such as avoidance coping, to the learning process. In addition to avoidance coping, Carrick (2011) states that learning outcomes were affected by the student's approach to learning, personal factors such as motivation and preferred learning styles, and by the student's personality, locus of control, ability, academic background, as well as situational factors. Any concept listed, alone or in combination, can promote student failure. This leads to a repetitive cycle as the failure feeds into low

self-esteem and encourages academic self-handicapping. In other words, the effects of both personal characteristics and situational factors can create a vicious cycle of failure that negatively impacts the student's approach to learning (Carrick, 2011).

Currently, nursing students enrolled in nursing programs and recent graduates from nursing programs are reporting that test anxiety is negatively affecting their performance on tests within the nursing program and on the NCLEX-RN exam. Therefore, for these students, test results are often not measuring the student's knowledge level, but the student's ability or inability to manage their level of test anxiety. The inability to manage test anxiety results in higher attrition rates for the wrong reasons. If nursing students cannot demonstrate a command of nursing knowledge either in a nursing program or on the NCLEX-RN, they should be barred from the nursing profession to protect society at large. However, if nursing students are able to demonstrate a command of nursing knowledge, but perform poorly on tests due to test anxiety issues, they should not be barred from the nursing profession. Instead, they should be guided to develop self-awareness of the dynamics involved in test anxiety and adopt test anxiety management strategies that will allow them to succeed in the nursing program and on the NCLEX-RN.

Purpose, Objectives, and Significance

The purpose of this research is to explore the experience of test anxiety in nursing students and discover common traits and themes of the test anxiety experience. Thus far, it has been assumed that nursing students experience test anxiety in much the same way as other college students without consideration for the high-stakes testing, the required

75% pass rate on both nursing exams and standardized pre-licensure examinations, and the large influx of non-traditional students into nursing programs. Data collection for this research will focus on the experience of test anxiety from the student's perspective and will rely on self-report in the survey to determine the prevalence, dynamic, and degree of test anxiety in this cohort. Attention will be directed toward any findings that cause the experience of test anxiety in nursing students to be unique. By exposing the common traits and themes of test anxiety in nursing students, insight into the needs and assessment of nursing students experiencing test anxiety will be obtained. Long-term objectives and potential outcomes of this research include the development of programs to assist nursing students in managing test anxiety, lower attrition rates, an increase in NCLEX-RN pass rates, and transference of the ability to manage anxiety to other areas of the student's life. A short term objective of this research for the participating nursing students is a greater self-awareness of their anxiety triggers and self-handicapping behaviors. Because attrition and NCLEX-RN pass rates are tied to the accreditation process for nursing programs, an additional outcome for nursing programs would be gaining insight into factors that contribute to the preservation of accreditation.

The nursing profession represents a unique mixture of art and science. Through nursing education programs, the nursing profession is tasked with meeting the supply-and-demand quota of nurses to satisfy the health care needs of society. Nursing shortages throughout recent history have caused disillusionment within the profession which has produced nursing fatigue, a high rate of nurse turnover, and poor retention of licensed professionals (Boyle, 2011; MacKusick & Minick, 2010). This trifecta of results has nursing leaders and educators searching for strategies to recruit, retain, and promote

students into the profession. Once a student has completed the pre-requisite courses for a nursing program and has successfully been admitted into a nursing program, all effort needs to be focused on assisting the student to successfully complete the program. One area to be addressed would be the impact of test anxiety on the student's academic performance. The goal should be for test anxiety to have a zero impact on progression, retention, and attrition rates in nursing programs. Other factors will continue to impact progression, retention, and attrition rates, but with proper attention paid to minimizing the effects of test anxiety, students can develop self-awareness of their anxiety response that will see them through the academic process and into the profession of nursing.

Research Questions

To better understand the test anxiety experience in BSN programs and the effect of it on the progression and retention of nursing students, an awareness of the student's experience is necessary. This study will address the following research questions. First, what physical, behavioral, and cognitive manifestations constitute the test anxiety experience for BSN students? Second, what test anxiety triggers do BSN students in a four-year nursing program independently identify? Third, does the use of high-stakes testing affect test anxiety in BSN students in a four-year nursing program? Fourth, does a significant difference in the lived test anxiety experience exist between junior and senior BSN students? Lastly, what is the structure of the lived experience of test anxiety in BSN students?

Theoretical Framework

The multi-dimensional nature of test anxiety necessitates the need for a multi-theoretical framework. Each nursing student brings a unique life history, academic history, and emotional history to a nursing program that impacts the anxiety response. The theoretical framework concepts of motivation (Maslow, 1968), adult learning (Knowles, 1980), and stress and coping (Lazarus & Folkman, 1984) interweave to illustrate the complexity of the test anxiety experience in nursing students. Although the anxiety experience is unique for each student, commonalities that emerge can be used to formulate a framework to explain the dynamics of the test anxiety phenomena experienced by nursing students. The goal is not to eradicate test anxiety, but to promote its positive effects and limit its negative effects.

Andragogy, also known as the Adult Learning Theory, developed by Malcolm Knowles is one of the theories used to address test anxiety in nursing students. Andragogy is the art and science of teaching adults and recognizes the teacher as a facilitator and the student as the director of their education (Knowles, 1980). Andragogy acknowledges that adult learners have different needs than children. This theory was developed from organizational development theories that focused on the development of tools needed to perform better in the workplace. Andragogy has both humanist and behavioral qualities. The humanist qualities of adult learning encompass personal development and self-actualization. In humanism, the school experience is student-centered, student-driven, and reflective of the student's needs. Behaviorism is evident in the Adult Learning Theory when new behaviors are acquired to ensure success in the learning environment (Merriam, 2001; Utley, 2011).

Andragogy was developed based on six key assumptions which act as the foundation for the theory. They are self-concept, experience, readiness to learn, orientation to learn, motivation to learn, and the need to know. Self-concept develops as a person matures. The student becomes a self-directed learner rather than a dependent personality. This can be evidenced by the student taking control of their learning and being resistant to the traditional classroom setting. Life experiences act as a resource for learning. Previous experiences can enhance learning while impacting critical thinking and analysis. Adult learning differs from childhood learning in that it is not compulsory. Therefore, an adult chooses to pursue higher education and in doing so commits himself/herself to learning. Because the adult chooses to return to school, readiness to learn is dependent upon the relevance of the topic to the student. Orientation to learn is indicative of the student shifting from subject-centeredness to problem-centeredness. Students want to know that the subject matter being covered is immediately useful rather than learning it for future use. Motivation to learn stems from the understanding that the student will need this information. As a person matures, motivation changes from external to internal motivation. Self-esteem and goal-attainment are chief motivators for adult learners. The need to know is the final assumption. Adults need to know that the material being learned is pertinent and necessary. In adult learning, the teacher, in addition to being the facilitator of the class, must relay to the student the importance of the content covered in class (Woodard, 2007).

Knowles recognized the need to differentiate adult learning from childhood learning. To do this, he developed two definitions of adulthood: a psychological definition and a social definition. The psychological definition deems the person to be

an adult if he/she takes responsibility for life decisions. The social definition requires the person to take on roles that the society attributes to adults such as worker, spouse, parent, citizen, soldier, etc. These definitions are not bound by chronological age which suits nursing programs well due to the influx of non-traditional students. Because chronological age does not necessarily reflect maturation, student variations in aptitude, readiness for learning, and commitment to the learning process can be seen within the adult learning environment. Students in nursing programs are typically categorized as traditional or non-traditional students (Kenner & Weinerman, 2011). Traditional students are defined as students under the age of 25. Non-traditional students are students over the age of 25 with a time gap noted between completion of high school and entering college.

Non-traditional students generally have four common characteristics: financial independence, full-time employment, dependents, and part-time enrollment. According to Kenner and Weinerman (2011) higher attrition rates are a characteristic of non-traditional students. In addition, due to practical life experiences which have trained them to think linearly, non-traditional students may also struggle with critical thinking skills that require the student to evaluate several answers before choosing the best answer. This occurs because the student has been trained in the workplace to do things the right way. Since there is one way to complete the task assigned to them in the workplace, the non-traditional student may not routinely utilize critical thinking skills. Once in college, it becomes evident that the critical thinking skills are rusty. Although the characteristics listed vary with the individual student, overall, non-traditional students tend to display these characteristics more frequently than traditional students (Kenner & Weinerman).

Maslow's Theory of Motivation provides the second component of the theoretical framework. The hierarchical levels of the theory include three deprivation needs: physical, safety, and love/belonging. Self-esteem and self-actualization are considered growth needs. This theory will be used to address the motivation of the nursing student as well as unmet needs that may inhibit learning. Meeting unmet needs, especially the deprivation needs, requires time on the part of the student. This can cause a conflict within the student and adversely impact their self-esteem, progression toward self-actualization, time management, and level of motivation (Utley, 2011).

The final theory to serve as a framework for this study is the Theory of Stress and Coping by Lazarus and Folkman (1984). This theory identifies the connectedness of the two processes of cognitive appraisal and coping as mediators of stress. Stress is defined as a "relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and as endangering his or her well-being" (Folkman, 1984, p. 840). To clarify the concept of stress, Folkman elaborates by stating that stress is not a characteristic of the person or the environment and it is not a stimulus or response; it is a relationship between the person and the environment. A dynamic relationship exists between the person and the environment that is ever-changing and interactive.

Each person uses a cognitive appraisal process consisting of both primary and secondary appraisals to define the meaning of an event. The primary appraisal includes judgments in relation to whether an event is irrelevant, benign-positive, or stressful. Irrelevant appraisals hold no significance for the person experiencing the event. Benign-positive appraisals reflect that the person experiencing an event is not over-taxed and has

resources to meet the challenge of the event. Positive outcomes result from benign-positive appraisals. A stressful appraisal indicates the potential for negative results and incorporates three levels: harm/loss, threat, and challenge. In the context of test anxiety, harm/loss represents damage to or loss of self-esteem. Threat represents a potential for harm or loss (poor test grade or denial of program progression). Challenge represents the opportunity for growth, mastery, or gain (Folkman, 1984). The primary appraisal, whether harm/loss, threat, or challenge is influenced by personal and situational factors including beliefs, locus of control, commitments, type of threat, how likely the threat is to occur and expected outcomes. Secondary appraisal encompasses coping resources and responsive options. There are four types of coping resources: physical, social, psychological, and material assets. Physical coping resources include the health, energy, and stamina of the individual. Social coping resources are the support groups of the individual. Psychological resources include problem-solving abilities, self-esteem, and morale. Lastly, material assets refer to tangible items such as money, equipment, and tools (Folkman).

Coping resources and self-reported characteristics of adult learners who experience test anxiety will drive and direct the research study by identifying the unique triggers, responses, and coping strategies of test anxiety experienced by BSN nursing students. To understand test anxiety in BSN nursing students, variables that need to be considered are self-motivation, self-concept, and coping. The interdependent nature of these three theories demonstrates the complexity of studying the phenomena of test anxiety (see Appendix A).

Conceptual and Operational Definitions

Anxiety is defined by Lazarus and Folkman (1984) as “a vague, uncomfortable feeling exacerbated by prolonged stress and the presence of multiple stressors” (p.4). Anxiety results from internal stimuli impacting our perception or performance. Feelings associated with it would include fear, unease, and worry. There are two categories of anxiety encountered in the learning environment. These categories are trait and state anxiety. Trait anxiety is chronic in nature and is pervasive across situations. It is not triggered by specific events but exists to varying degrees continuously within the individual. State anxiety is episodic in nature and occurs in specific situations. It is characterized as having a clear trigger that begins the cycle of state anxiety (Kilpatrick & McLeod, 1973; Moscaritolo, 2009). Test anxiety is classified as an example of state anxiety. The anxiety experienced by nursing students in the clinical setting would also be an example of state anxiety.

Test anxiety is often defined in relation to the characteristics it evokes. Test anxiety is a multidimensional psychological disorder characterized by state anxiety and is elicited during times of testing whether in the academic or clinical setting. The manifestations of test anxiety can include physical, behavioral, and cognitive symptoms. Physical symptoms include headache, increased respirations, increased heart rate, muscle tension, diaphoresis, and gastrointestinal disorders including nausea (Salend, 2011). Behavioral symptoms as documented in the literature include nervousness, apprehension, role strain, unrealistic role demands, inadequate social support, personality traits, and previous academic performance (Home, 1997; Salend, 2011). Cognitive symptoms include the inability to recall information during the testing experience, inability to

master the content when studying, forgetfulness, the inability to be self-reflective, the inability to focus, and the inability to concentrate (Salend). For the purposes of this study, test anxiety is defined as a self-reported episodic occurrence of anxiety that negatively affects the outcome of a test. Test anxiety management refers to the interventions utilized to negate the negative effects of test anxiety on test performance. The interventions utilized are unique to each individual and for the purpose of this study, will be self-reported by the participants.

Personal and situational factors can impact the degree of test anxiety a student experiences. Personal factors include personality, motivation, conceptions of learning, attitudes, and general experience including previous test performance. Situational factors include time pressures, teaching methods, assessment requirements, and academic program requirements. Self-report will be used to determine the use of personal and situational factors for the purpose of this study.

Triggers are defined conceptually as any stimulus, physical, emotional, cognitive, or environmental that initiates a test anxiety response. Within this study, triggers will be those factors identified by the sample population as the initiating cause of the test anxiety experience. Triggers can include lack of preparedness, poor compensatory anxiety regulation, and a history of employing academic self-handicapping strategies. Poor compensatory anxiety regulation involves the inability of an individual to modify or control anxiety producing stimuli in an effort to contain the negative effects of anxiety and enhance the positive effects of anxiety. Self-handicapping strategies are those behaviors initiated by the student that, either consciously or unconsciously, result in a negative effect on academic performance (Spurlock, 2006). Self-handicapping behaviors

are a negative response to test anxiety. These behaviors can include procrastination, academic laziness, negative thoughts, lack of self-awareness and lack of self-reflection (Thomas & Gadbois, 2007). Self-awareness is the ability to assess personal behaviors and emotions both cognitively and affectively to increase understanding and self-evaluation. Self-reflection is the ability of the student to evaluate his/her own performance and utilize the data from this evaluation to promote learning and application in future educational and professional endeavors.

Students experiencing test anxiety may employ numerous strategies as coping methods. Coping methods are those interventions utilized by nursing students to offset the negative impact of test anxiety and heighten the positive effects test anxiety. There are three main categories of coping methods including self-help strategies, behavioral modification, and pharmaceutical intervention which can be used individually or in combination to achieve the desired result. Self-help strategies include study skill improvement, self-awareness exercises, relaxation methods, and test-taking strategies. Behavioral modification employs the use of academic or psychological counseling to achieve desired results. Pharmaceutical intervention requires the participation of a health care provider to prescribe medications that manage anxiety or preexisting conditions that impact the student's ability to concentrate.

High-stakes testing is defined as testing that culminates with high stakes for the students (Spurlock, 2006). In high-stakes testing, students must meet a predetermined benchmark score to ensure retention and progression within a nursing program. In this study, all nursing exams will be considered high-stakes testing with the benchmark score set at 75%. Salend (2011) lists high-stakes testing as a trigger for test anxiety.

A four-year BSN program is defined both operationally and conceptually as an entry-level college or university based program that prepares students to sit for the NCLEX-RN examination. Students in four-year BSN programs complete both didactic and clinical curriculum components to graduate.

Traditional students are defined as students under the age of 25 who progressed directly from high school to college. Non-traditional students are students over the age of 25 with a time gap noted between completion of high school and entering college. (Kenner & Weinerman, 2011). For the purposes of this study, traditional students are those students who self-report being under the age of 25 and who have progressed directly from high school into college including those students who may have taken pre-nursing courses on a part-time basis. Non-traditional students are those students regardless of age who self-report a gap of one semester or more between high school graduation and their enrollment in the BSN program. Therefore, students with previous degrees or certifications are considered non-traditional students regardless of age or the time lapse between their first and second degrees.

Progression is the movement from one semester to the next in a nursing program. Retention encompasses maintaining students in the nursing program until their expected graduation date. Attrition is the premature loss of students in a nursing program due to unsatisfactory academic performance and/or nonacademic life events.

Assumptions

Several assumptions related to test anxiety including its characteristics, impact on academic performance, and triggering events underlie this study. Test anxiety is

considered a universal phenomenon that impacts all students to some degree. Test anxiety affects nursing students physiologically, behaviorally, and cognitively (Huberty, 2010). Huberty states that test anxiety can initiate a positive or negative effect on learning and is multi-dimensional and dynamic in nature. All students experience a measurable level of test anxiety ranging from beneficial test anxiety that heightens performance to incapacitating test anxiety that diminishes academic performance. The characteristics and intensity of test anxiety are believed to be unique to each nursing student. Test anxiety is predominately a learned behavior; it follows that students should be able to unlearn these behaviors once the student is aware of the physical, behavioral and cognitive effects of test anxiety on academic performance. Test anxiety affects the attrition, progression, and retention rates of students in nursing programs. Because nursing students have a common goal of completing nursing programs and passing the NCLEX-RN exam, nursing students, once aware of the impact test anxiety has on their academic performance, will employ the means necessary to alter either the environment or their self-efficacy to be successful in the nursing program and on the NCLEX-RN exam.

Summary

The forecast for nursing shortages by the year 2020 due to high retirement rates, the aging nursing workforce, and relatively low interest in nursing as a career motivates nursing programs to retain all students that are admitted. Test anxiety has a significant impact on academic performance, clinical performance, and attrition rates. The incidence of test anxiety is on the rise and therefore, needs to be addressed.

Areas to address in the assessment of test anxiety include previous test performance, personal factors influencing test anxiety including the student's personality, motivation, conceptions of learning, attitudes and general experience. Situational factors would also need to be addressed including the learning context, time pressures, teaching methods, assessment and perception of institutional requirements (Carrick, 2011). Interpretive phenomenology has the ability to address each of these areas during the data collection process, and therefore should produce data that will aid in developing a better understanding of test anxiety in BSN students.

Test anxiety is a multi-dimensional and complex issue that requires coordination of time and resources to treat. The treatment of test anxiety in nursing students has been based on research conducted in the domains of education and psychology which has not taken into account the unique characteristics of nursing students' experiences in a nursing program. Once the experience of test anxiety in nursing students has been examined, nursing educators and administrators can ensure the availability of treatment modalities that will promote the success of nursing students in the nursing programs.

LITERATURE REVIEW

Research has indicated that test anxiety is a multidimensional phenomenon (Salend, 2011). The bulk of research conducted regarding test anxiety has emerged from the educational and psychological domains. In general, empirical data regarding test anxiety specific to nursing students is quite sparse. According to Salend (2011), the research regarding test anxiety has been conducted with adolescents in middle school and high school as the test subjects. The results of this research have been generalized to college students believing that all students experience test anxiety in much the same way as adolescents in middle and high school. Furthermore, results have been generalized to high-stakes testing situations like those found in nursing. Therefore, interventions to manage test anxiety in nursing students have been patterned to parallel management of test anxiety in the general middle and high school population without consideration for the unique attributes of nursing students and their testing situations. Factors such as high-stakes testing, large numbers of non-traditional students, and a required passing grade on the NCLEX-RN test of 75% or above, converge to present a unique challenge for nursing students. The aim of this literature review is to explore, define, and differentiate the research conducted regarding the nursing student's test anxiety experience.

Summary of Methods

To accomplish the purpose and aims of this study, a literature review was conducted to survey existing information regarding test anxiety within the nursing

population. The initial search was defined by utilizing the key words test anxiety and nursing students within the databases of CINAHL, MEDLINE, PsychINFO, and Education Full Text. This search produced 168 articles. Additional search criteria were used to search within the same databases and included the limitations of full-text, English, peer-reviewed, and published prior to the year 2014. The keywords were test anxiety, high-stakes testing, and the effect of anxiety on learning. The search terms of retention, attrition, NCLEX pass rates and test anxiety management and sense of coherence were also explored due to the repeated use of these terms in regards to test anxiety in nursing students. This search yielded 221 results. Articles that pertained to stress rather than anxiety were omitted as were studies that reflected “anxiety” rather than “test anxiety.” Additionally, articles were omitted unless they specifically referred to college or adult learning situations. As a result of these exclusion criteria, 36 articles were reviewed and 16 articles were selected as appropriate to test anxiety. These articles were then categorized into common themes including the experience of test anxiety on individual learning and academic achievement, interventions to decrease test anxiety, and the effects of high-stakes testing on test anxiety.

Themes in the Literature

The Experience of Test Anxiety. Four studies addressed the test anxiety experience of nursing students and were included in the literature review. Kilpatrick and McLeod (1973) focused on the correlation between trait anxiety and fearfulness. They completed a quantitative study utilizing two 5-point Likert scale surveys to determine situations that would induce fear or provoke anxiety in 36 female sophomore nursing

students. The sample population included both traditional and nontraditional students with an age range of 19 to 30 years. This study repeated the methodology utilized by Grossberg and Wilson in 1965, but changed the independent variable from female college students to female nursing students. Findings pertinent to this literature review reflect that fear of failure in a nursing program is anxiety provoking and can impact student progress. Limitations of this study were not explicitly discussed by the authors. However, because the subjects were all from the same nursing program and because of the relatively low number of nursing students in the study ($n=36$), the generalizability of the study could be impacted. Another limitation of this study was the eight-year time gap between these two studies and its effect on the comparison of the two subject groups ($n^1=302$ vs. $n^2=36$). Cultural and social changes within the timeframe of the research studies could explain the finding that 34.4% of the non-nursing female students reported a fear of failure, while 13.9% of the nursing students reported a fear of failure. The study did support that the fears identified by nursing students represented social or interpersonal fears such as feeling rejected by others, fear of failure, and losing control.

A second study by Khalaila (2015) explored the relationship between academic self-concept, intrinsic motivation, test anxiety and academic achievement among nursing students. In this descriptive quantitative study, a convenience sample of 170 undergraduate nursing students at a 4-year bachelor degree nursing program in Israel was utilized. Three separate self-administered questionnaires were used to collect data on each of the following variables: academic self-concept was measured by the 40-item Academic Self-Concept Scale, test anxiety was measured by the 20-item Test Anxiety Inventory, and intrinsic academic motivation was measured by the 28-item Academic

Motivation Scale. Descriptive statistics and the Pearson correlation test were used to analyze the data. Bootstrapping, a method of resampling that allows for repeated sampling of a population of interest, was used for testing the multiple mediators' model and examining the moderator effect. Results demonstrate that a higher self-concept was directly related to greater academic achievement. The results further indicate that self-concept can be directly or indirectly affected by intrinsic motivation and/or test anxiety. Positive intrinsic motivation will positively affect self-concept while negative intrinsic motivation will negatively affect self-concept. The degree of test anxiety experienced by the nursing student will affect the student's self-concept proportionally. Khalaila (2015) states, "These findings emphasize the importance of the motivational and situational factors for students' success via different mechanisms, particularly in nursing students, because nursing education is a highly intensive field of study, with stressful situations, comprising exams, clinical training at a simulation laboratory and work in a hospital setting" (p. 437). Limitations noted by the author include the inability to confirm causal relationships due to the cross-sectional design of the study, and the use of a convenience sample rather than a randomized sample. Geographic and cultural limitations would also need to be considered regarding this study.

A third study compared the level of test anxiety and related factors among 110 baccalaureate traditional and nontraditional students from two large state universities (Waltman, 1997). The students were in their first semester of a nursing program. When the admission rate of nontraditional students began to rise in nursing programs, it was believed that nontraditional students would experience a greater degree of test anxiety than traditional students due to their additional responsibilities. Research conducted by

Waltman (1997) does not support this supposition. Four separate tools and a biographical data questionnaire were used to conduct a time-series qualitative study. The data provided did not detect a significant difference in the occurrence of or in the degree of test anxiety among the two groups of students. Through the use of Pearson correlations, it was determined that cognitive interference was the strongest variable associated with test anxiety. Cognitive interference refers to the unwanted thoughts and reflections that impair learning. These thoughts are often negative in nature and impact the brain's ability to process and store new knowledge (Moorjani, Sexena, & Gupta, 2007). Other independent variables tested in the study included self-concept, self-control, age, grade point average (GPA), and study skills. Although the causative factors of test anxiety were significantly different for the traditional and non-traditional students, the data did not support an overall difference in the level of test anxiety among the two groups of students. Limitations reported by the researchers of the study included a relatively small sample size ($n=110$), a predominately female sample and the restricted range of GPA scores. This study also listed the use of instruments designed for use with traditional students as a possible limitation and admits that instruments designed generically for adult learners or specifically for nursing students may affect data collection in the future.

Lastly, a study by Edelman and Ficarelli (2005) utilized a phenomenological approach with open-ended questions to provide a view of the reality of nursing students who experience test anxiety. A purposive sample of eight female nursing students who ranged in age from 19 to 36 years was used for the study. The age range of the students suggests that the sample included both traditional and nontraditional students although this is not specified in the article. Male subjects were not used based on the

unavailability of students at the time of the study. Interviews were conducted in the student lounge to provide a relaxed, non-threatening environment and were audiotaped and transcribed verbatim. Questions utilized for the study included open-ended, unstructured questions such as, “What comes to mind when you are taking a nursing examination?” and “When you are in class and the examination is being handed out, how do you feel?” Data analysis of the transcripts utilized Colaizzi’s Phenomenologic Analytic Method (Polit & Beck, 2012). Validation of the data collected took place when the data was organized into clusters or themes and again as a final step by asking participants about the findings. Three themes emerged from the interview: (a) the reality of an anxiety episode, (b) the academic implications of test anxiety, and (c) effective measures of managing test anxiety. The results of the study support the findings that test anxiety is an unpleasant emotional state that is unique to each individual; that the discomfort and unpleasantness of test anxiety have a reciprocal effect on test performance; and that test anxiety is enhanced by the fear of not being successful in the nursing program. The researchers noted that although the sample size was small, the knowledge gleaned from the study can be transferred to the classroom setting to reduce the experience of test anxiety for nursing students.

Interventions to Decrease Test Anxiety. Numerous studies have been completed in general college populations that address specific interventions to deal with the multiple dimensions of test anxiety, but few have been completed within the discipline of nursing. These studies can be divided loosely into two categories: internal interventions and external interventions. Internal interventions are those strategies that attempt to alter or compensate for cognitive, motivational, and emotional causes of test

anxiety. External interventions address environmental factors including the testing site, type of test, and the timeframe of the test.

Six studies reviewed address internal interventions. Nelson & Knight (2010) and Shobe, Brewin & Carmack (2005) explored the use of positive thinking and visualization respectively, to minimize the effect and impact of test anxiety on college students.

Nelson and Knight used 118 college students in an introductory psychology course. The students were randomly divided into two groups. One group completed a positive writing task focused on a challenge they had successfully navigated in the past. The other group served as the control group and completed a writing task about their morning routines. Once the writing task was completed, the students responded to several questionnaires measuring their mood and affect. Through the use of two independent raters and a series of ANOVA statistical analyses, the results indicated that students in the positive writing task experienced more positive emotions and optimism than the students in the control group. The study did not measure the students' threat appraisal or sense of coherence which is a limitation of the study.

Application of visualization to the academic setting has met with measured success. Visualization became popular among amateur and professional athletes as a means of calming anxiety while preparing for an impending sporting event. In an effort to determine if visualization is effective in reducing test anxiety, Shobe et al. (2005) conducted a visualization study utilizing twenty college math students. The students were assigned to either the visualization group or the control group. Two math tests of differing difficulty, one easy and one challenging, were completed by both the visualization group and the control group. A simple visualization exercise was used prior

to the administration of each test for the visualization group. Shobe et al. utilized the Test Anxiety Inventory to allow students to self-report the results of the use of a visualization task immediately preceding both easy and difficult ten-question math tests. Shobe et al. hypothesized that results would only be measurable on the difficult test. MANOVA statistical analysis was conducted to compare the control group to the visualization group. The results of the study imply that although visualization can be a benefit when completing both easy and difficult tests, the benefits of visualization are most notable when completing difficult tasks. According to Shobe et al., although visualization may reduce anxiety, a positive outcome effect was noted only with the difficult test. No difference was noted on the easy test between the groups. This would indicate that the more difficult the test, the greater impact visualization may have on test anxiety and improving test scores. Because nursing tests are written with the degree of difficulty to test the student at the application, analysis and evaluation levels, findings from this study indicate that visualization may allow nursing students to improve their testing scores. The benefits of visualization as noted by Shobe et al. are the ease of use and the sustainability of the method for reducing test anxiety. Students can be taught visualization exercises that can be completed independently by the student before each testing episode.

Counseling is another internal intervention that has been tested by Sharif & Armitage (2004) and by Markman, Balik, Bruanstein-Bercovitz & Ehrenfled (2011). Sharif & Armitage utilized a quasi-experimental study to investigate the effect of psychological and educational counseling in reducing test anxiety in one hundred nursing students. A 12-week intervention program was provided for the experimental group

($n=50$) while no intervention was provided for the control group ($n=50$). A pre-test/post-test experiment was used. Analysis of the descriptive data using t-tests indicated that the students in the experimental group showed a significant drop in test anxiety from pre- to post-test. The control group did not show a significant reduction in test anxiety. When analysis of variance was applied to the data of both groups, no significant reduction in test anxiety was found. The data did indicate that self-esteem among the experimental group was increased significantly from pre- to post-test.

Markman et al. (2011) conducted a quantitative study utilizing questionnaires to determine if the student's health beliefs impacted their willingness to seek assistance and/or treatment for test anxiety. This study focused on determining the factors that prevent students from seeking treatment, whether self-help, peer, or professional, when afflicted with test anxiety. The study utilized two tools: the Test Anxiety Questionnaire developed by Bandes and Freidman and the Health Belief Model developed by Rosenstock (as cited in Markman et al., 2011). The researchers hypothesized that the decision to seek treatment for test anxiety by nursing students would be influenced by the five components of the Health Belief Model: (a) level of threat the condition imposes upon the individual, (b) perceived benefit if change is implemented, (c) motivation and desire to be healthy, (d) obstacles to treatment, and (e) perceived effectiveness of available treatments. Two stages were utilized to complete the sampling process. Initially, 246 students completed the Test Anxiety Questionnaire, and those scoring in the top quartile ($n=87$) then completed the Health Belief Model. A six-point Likert scale was used to rate responses. Pearson correlation coefficients and linear regression were utilized to analyze the relationship between health beliefs about test anxiety and the

willingness to seek professional treatment(s). An unexpected finding was that 57% of the respondents refused to join a therapy program based not on health beliefs, but on physical obstacles including lack of time, cost, and inaccessible meeting place. This finding aligns with practical experience. Nursing students frequently have multiple demands on their time such as work, study, and family making therapies for test anxiety a low priority. In addition to the physical obstacles, 23% of the respondents did not feel comfortable participating in professional therapy. Participating in any mental health program suggested to the respondents a level of character weakness and resulted in poor adherence rates. In this article, the authors created a concise synopsis of recent research regarding various causative factors associated with test anxiety. The researchers summarized the impact of the individual student's level of performance, lack of study skills and/or organizational skills, and therapies ranging from relaxation techniques to professional counseling sessions on test anxiety. The results of the study stressed that treatment for test anxiety is often avoided or refused based on a stigma of weakness that accompanies test anxiety.

Cognitive therapy to reduce test anxiety is another internal intervention that has been studied by Dundas, Anderssen, Wormnes & Hauge (2009). Cognitive therapy involves the use of positive self-statements to reflect expectations regarding both the current and future situation and resources. After the participants completed an intervention which preceded their first test, thematic analysis was utilized to interpret data obtained from interviews. Thirty-two adult students participated in this study. These students had independently sought help at the university welfare agency in relation to test anxiety prior to inclusion in the study. To participate in the study, students

completed training sessions in cognitive therapy that emphasized exchanging negative self-statements with positive self-statements. The authors hypothesized that negative self-thoughts and statements are anxiety provoking and dysfunctional. In conjunction with the interview, participants also completed the Revised Test Anxiety Scale which consists of 20 items utilizing a Likert scale. The results showed a significant ($t=2.54$, $df=26$, $p<0.005$) reduction in self-reported test anxiety. From the interviews, the authors identified four common reservations expressed by the participants. First, positive statements may be a method of self-deception if the participant is using positive statements that they do not believe to be truthful. Second, positive statements can be meaningless if the level of test anxiety supersedes the effectiveness of positive statements. Third, positive statements can contradict the participants' true feelings, and lastly, the use of positive statements might imply a level of superiority in regards to the participants' peers. The extent to which each participant experienced these reservations was unique to each participant.

In the limitations of the study, the authors indicated that as the open-ended interviews progressed, questions were adjusted so that the students being interviewed initially were not asked the exact same questions as those interviewed later. The authors also acknowledged that, as with all interview-driven research, the participants' willingness to answer questions thoroughly can impact results. In the conclusion, the authors stated that although positive self-thoughts can be effective, the degree of effectiveness is dependent on the student and the student's willingness to make changes to their mental processes either on their own or in conjunction with a therapist's input.

Sense of coherence is a concept developed by Antonovsky (1987, 1993) and researched in the literature by Cohen et al. (2008) in conjunction with coping strategies and test anxiety. Sense of coherence (SOC) is a “personal resource that facilitates efficient coping with negative life events and life stressors, buffering their negative effect on psychological well-being,” and therefore shapes an individual’s reaction to a stressful encounter (Cohen et al., 2008; p.291). Life experiences from childhood to young adulthood shape an individual’s SOC. The development of SOC is impacted by financial security, religion, cultural stability, and social support. SOC is directly related to how an individual perceives the world as comprehensive, manageable, and meaningful. Students with a high degree of SOC are able to view life’s challenges as worthy of the investment, believe they have the personal resources to meet these challenges and have confidence in their assessment of the challenge. Students with a low degree of sense of coherence struggle to adapt.

To study the effect of SOC on test anxiety, Cohen et al. (2008) developed four hypotheses. The first hypothesis established a relationship between SOC, test anxiety, and test performance. The authors formulated that as the SOC increased, the level of test anxiety would decrease, and the higher the SOC, the better the test performance. Secondly, they hypothesized that increasing the use of problem-focused coping would decrease the effect of test anxiety on test performance. Conversely, the use of emotion-focused coping or avoidance would increase the effect of test anxiety. Cohen et al. also hypothesized that high test anxiety would predict low test performance. Lastly, they predicted that coping strategies would partially mediate the effects of SOC on test anxiety

and test performance. In conjunction with this, they also predicted that test anxiety would partially mediate the effects of SOC and coping on test performance.

To test their hypotheses, Cohen et al. chose a quantitative research design utilizing self-report questionnaires and multivariate statistical analysis. The sampling consisted of 216 first-year undergraduates enrolled in one of three courses that required a passing grade for progression to the next course. The instruments used for the study included the SOC Scale, the Short COPE Scale, and the Test Anxiety Inventory. In addition, test scores of the end-of-term examination were also collected for analysis. Results showed that test performance was predicted by problem-focused coping, emotion-focused coping, and avoidance. Problem-focused coping positively correlated with SOC and was found to result in better performance on examinations. Emotion-focused coping and avoidance were positively related to test anxiety. Avoidance was negatively associated with performance. These results suggest that determining the coping strategy a student is using, problem-focused coping, emotion-focused coping, or avoidance, can add insight into the student's ability to overcome test anxiety.

A study addressing external interventions was conducted by Drake, Freed & Hunter (1998). This study sought to alter the test taking environment to minimize test anxiety. Drake et al. conducted a descriptive qualitative study utilizing reference sheets created by the students for use during testing. The authors reported that 80% of the students produced and utilized a crib sheet for use during testing, but the number of students tested was not stated in the article. In this situation, the student was permitted to place any information regarding the content covered in a mental health nursing course for the test onto an 8.5 X 11 inch sheet of paper. This sheet could be accessed throughout the

testing period. Once finished, the reference sheet was turned in with the test. Drake et al. found that the reference sheets provided a degree of security while testing which also facilitated a perceived sense of empowerment and control within the testing situation. Other benefits identified when using the reference sheet were freedom from excessive memorization which allowed the student to focus on application and evaluation, the ability to self-assess learning as the reference sheet was created, and the reference sheets were considered a simple, cost-effective, and readily available strategy for reducing anxiety.

Mitchell & Melton (2003) utilized collaborative testing to increase student comprehension while reducing test anxiety. A second year Associate of Science of Nursing (ASN) class was given the option of participating in the experiment. Collaborative testing was utilized for a unit test covering fluid and electrolytes. All students in the class chose to participate. Partners for the collaborative learning test were drawn upon entrance to the classroom. Students worked individually for the first 50 minutes on a 50 item multiple-choice exam. Each student submitted their Scantron. A second Scantron was distributed, and students were able to collaborate for ten minutes. Students were able to change answers and record their new answers on the second Scantron. Modified answers on the second Scantron were considered to be the student's final answer. During the collaborative testing, faculty observed an immediate decrease in student anxiety, and after the collaborative testing, student comments about the test questions were positive, rather than defensive or negative. Results from the collaboration showed an average increase in test scores from 1-3 points on the 50-point exam. The authors noted one student experienced a 10-point increase in the raw score which raised

her grade from a D to a C. As a result, a recommendation for a maximum 3-point gain or loss was implemented by the program. In addition to lowering test anxiety, collaborative testing also validated student knowledge, clarified content misconceptions, and resulted in the unexpected advantage of increasing the student's motivation to study. An additional benefit of collaborative testing was the modeling of collaboration among health care team members in the work setting.

Effects of High Stakes Testing on Test Anxiety. As Spurlock (2006) noted in his review of the practice of high-stakes testing in education, little research has been conducted regarding high-stakes testing in nursing education. In his article, Spurlock consulted the American Educational Research Association (AERA), the American Psychological Association (APA), and the National Council on Measurement in Education (NCME). He linked high-stakes testing with progression policies and questioned the efficacy of a progression policy that utilizes a single test score to determine whether a student will graduate. He noted in his conclusions that nursing schools are under pressure to produce more graduates with fewer resources. As a result, some schools are adopting progression policies that may negatively impact the student's ability to successfully complete a nursing program. Spurlock cautions nursing educators and administrators of nursing programs to carefully consider the validity and weight of tests utilized in progression policies.

Greenberg, Paisley, & Pyszczynski (1984) conducted an experiment to measure the anticipatory attributional defense of students in relation to test anxiety. Anticipatory attributional defense refers to students using self-handicapping behaviors in an effort to preserve their self-esteem. Greenberg et al. state, "Thus people may sometimes reduce

their chances of success if by so doing they can reduce or eliminate the loss of self-esteem that would result from failure....For example, an individual may exaggerate the amount of anxiety she or he experiences in a testing situation so as to provide a ready excuse for anticipated failure” (p. 1136-1137). To test the hypotheses regarding anticipatory attributional defense, 84 male introductory psychology students participated in a 2 x 2 x 2 factorial design study that utilized a series of questionnaires and a cognitive complexity test. Initially, the participants were divided into low and high test anxiety groups based on results of the Test Anxiety Scale developed by Sarason (as cited in Greenberg et al., 1984). Next, a cognitive complexity test was administered to all participants, but the directions were randomly manipulated to purposely include or exclude information regarding the effect of test anxiety on performance during the cognitive complexity test. Participants were either told in the directions that test anxiety would not impact the test results or they were told nothing in regards to the effect of test anxiety on the test performance. A monetary incentive was promised to the student who scored the highest on the cognitive complexity test to add the dimension of high stakes to the testing situation. Two distinct sets of data were analyzed. The initial impressions questionnaire and the primary dependent measures (test anxiety, cognitive interference, and test performance) were analyzed by using ANOVA statistics. The trait test anxiety variable yielded a highly significant main effect, but did not involve any significant or near significant interactions (all $F_s < 1$). As a result, trait test anxiety was used as a covariate in the final analysis of the test anxiety dependent measure rather than a third independent variable.

Greenburg et al. (1984) summarized their findings by stating that they replicated

the results of a previous study by Smith et al. (1982). Greenburg et al. found that (a) perceived test anxiety elevates when it can serve a self-handicapping function, (b) extrinsic incentives can disrupt the use of defensive self-handicapping strategies for protecting self-esteem, (c) anticipatory attributional defenses are employed by students to manage the potential effects of test anxiety, and (d) the use of test anxiety as a self-handicapping strategy can provide a less threatening attribution than an anticipated failure. They emphasize that the effects, both physiological and psychological, of a high level of perceived anxiety are not the significant issue. If a subject “believes that experiencing a high level of anxiety causes poor performance on tests, selectively searching for and labeling bodily symptoms as anxiety serves a useful defensive function” (p.1143). They concluded that subjects would use high levels of perceived anxiety as an excuse for failure or poor academic performance.

Implications

Introducing strategies to manage or reduce the variables believed to influence test anxiety presents a conundrum within research. The uniqueness of each student’s experience of test anxiety impacts the strategies chosen to manage test anxiety. When faced with research studies that address strategies to control and/or manage test anxiety, it becomes apparent that test anxiety serves different purposes among students and that a universal solution to test anxiety does not currently exist. A plan to manage or reduce test anxiety must be specifically tailored to each individual student. To accomplish this, a greater emphasis must be placed on understanding the experience of test anxiety in individual BSN students and the role test anxiety fulfills within their academic endeavors.

Historically, test anxiety management strategies have been adopted with a trial and error approach to determine if the strategy worked for the student. Without proper assessment of the student's anxiety experience, efforts to manage test anxiety will remain "hit or miss." Until nursing faculty are able to assist students with articulating how test anxiety is manifested in their lives and identify the role test anxiety plays within their academic endeavors, efforts to manage test anxiety may not result in better academic outcomes for the students affected by test anxiety. This study was designed to assist students with articulating the lived experience of test anxiety.

Once a greater understanding of the experience of test anxiety in BSN students is obtained, the efficacy of using coping strategies can be tailored to the individual student. A drop in attrition and higher NCLEX pass rates should be expected outcomes. Students who have developed test anxiety management skills will be able to transfer these strategies into other areas of their personal and professional life including the clinical setting. The development of educational programs to assist nursing students with managing their test anxiety will need to emerge to meet the goal of increasing progression and retention in nursing programs.

Summary

Test anxiety is a multidimensional learned behavior. Research to date has assumed that nursing students experience test anxiety in much the same way as other students regardless of academic level and academic program (Putwain, 2008). Additional research is needed to determine if nursing students present unique dimensions to the phenomena of test anxiety. To identify these dimensions in nursing students, a research

study utilizing an explanatory sequential mixed methods interpretive phenomenological design is proposed.

While reviewing articles meeting search criteria, it was noted that references to empirical studies pertaining to the attributes and causes of test anxiety were conducted in the 1950s-1960s and were mainly completed in the domains of psychology and education (Putwain, 2008). Much of what is known about test anxiety has been applied to nursing students with little evidence to support or contradict its validity. Research regarding test anxiety in nursing during the 1980s and 1990s focused on the effect of test anxiety rather than the cause(s) (Putwain, 2008). Themes in the literature focused on the experience of test anxiety in relation to individual learning and academic achievement, interventions to decrease test anxiety, and the effects of high stakes testing on test anxiety.

METHODS

Design

An explanatory sequential mixed methods design using both quantitative and qualitative data collection was used to complete this research study. All participants completed an online survey (see Appendix B) designed to provide descriptive statistics of the sample population of nursing students as well as quantitative data regarding the test anxiety experience of the sample population. In addition to the survey, an interpretive phenomenological design was used to collect qualitative data regarding the test anxiety phenomenon in nursing students. Parse's Phenomenological-Hermeneutic research model (1987, 1990) was used for the qualitative data analysis. Parse's research method consists of four processes: participant selection, dialogical engagement, extraction synthesis, and heuristic interpretation.

Participant selection for the interpretive phenomenology interviews is an invitational construct that assumes the person who agrees to participate has lived the experience to be studied and therefore can provide an authentic description of the experience. Dialogical engagement is a data gathering process utilizing a one-on-one dialogue technique rather than an interview process. In dialogical engagement, the researcher exhibits true presence while the participant is asked to talk about the topic of the study, in this case, test anxiety. The extraction-synthesis process analyzes transcribed descriptions obtained from the participants using a five-step process to move the data into the language of science. The five steps include: (a) extracting essences (core ideas from the transcribed descriptions); (b) synthesizing essences (conceptualization of the core

ideas); (c) formulating a proposition; (d) extracting concepts from the formulated propositions; and (e) synthesizing a structure of the lived experience from the extracted concepts. A proposition is a non-directional statement that allows the researcher to join core ideas from each of the participants together. The fourth and final process of the method, heuristic interpretation, includes structural integration and conceptual interpretation. Structural integration is the process of moving descriptions of experiences to a higher level of abstraction. Structural integration allows the data to be connected with the theoretical framework design and conceptual interpretation to be completed. Heuristic interpretation does not lead to causal relationships, but allows the phenomenon to be explored in relation to the lived experience of the participants.

The study took place within a four-year BSN nursing program at a Midwestern university. The university is the second largest university in Missouri and has a population of approximately 24,000 students. The Department of Nursing offers BSN programs (4-year and BSN completion options), a Master of Science in Nursing (MSN), and a Doctorate of Nursing Practice (DNP).

Sample

The sample for this study consisted of volunteers from a four-year BSN nursing program. One hundred and one junior and senior students from the BSN program were invited to participate in the study. All students were encouraged to complete the online survey. Of these students, 73 started the survey and 69 completed the survey for a 68% rate of completion. Eleven students of the 69 completing the survey expressed an interest in completing the qualitative research interviews. Seven of these students participated in

the interviews for a 63.6% rate of completion. Respondents of the survey were predominately female (97.2%) and respondents volunteering for the interviews were all female (100%). Only four non-traditional students were represented in the study rendering any statistics in relation to traditional versus non-traditional students insignificant. The program levels of respondents were evenly distributed with 37 juniors (50.68%) and 36 seniors (49.32%) so creating randomized subgroups was not necessary. Because completion of the survey was voluntary, it cannot be inferred that the 32% who did not complete the survey do not experience test anxiety. No course credit or extra credit incentives were given to the participants. Demographic data including gender, educational level, marital status, child and/or family care responsibilities, employment, financial support and traditional vs. nontraditional status were correlated.

Procedures

Each participant completed an online survey, including demographic data and baseline questions regarding their test anxiety experience (see Appendix B). Both open-ended questions and closed-ended questions utilizing a Likert scale were included in the survey. The data obtained from the survey was used to direct the discussion during individual meetings scheduled with the participants (see Appendix C). These meetings took place in a quiet meeting room with audio recording capability. Each scheduled meeting lasted approximately one hour. At the conclusion of the meeting, an email address was provided to each student to allow the student to contribute any additional information they deemed important after they had time to reflect following the meeting. No additional data was received by email.

Topics addressed on the survey included: demographic data, GPA, self-reported test anxiety triggers and the testing experience including physical, behavioral, and cognitive manifestations. The interviews began with an overview of previous academic history including barriers (if any) to learning. In addition, the cycle of the test anxiety experience was explored with the participant (including initiation, influential factors, manifestations of the test anxiety experience, and cessation of the cycle). Participants were encouraged to share strategies employed to reduce test anxiety and the degree of success the strategies provided. Both the survey and the interviews addressed the topics of high-stakes testing and the participant's perception of the cause of the test anxiety they experience. To promote full disclosure during the interviews, each subject was allowed to seek clarification of the questions, and a dialogue format rather than interview format was utilized as dictated by the Parse Phenomenological-Hermeneutic Research Method (Polit & Beck, 2012).

Reliability, Validity, and Trustworthiness

To support the measure of content and construct validity and reliability of the quantitative data produced by this study, well-documented themes regarding test anxiety gleaned from the literature were used to develop the survey questionnaire. The subjective nature of the test anxiety experience and the desire to expose the participants' subjective description of test anxiety drove the development of the questions. Likert Scales and open-ended questions were used rather than close-ended questions to allow the participants to individualize their responses. Attention was directed toward the sensitivity and specificity of the survey questionnaire during development.

To support trustworthiness of the qualitative data and findings of this research study, intensive listening and audiotaping of the interviews was conducted. Verbatim transcription of the meetings was used to promote credibility of the data. Confirmability was addressed with investigator triangulation. Investigator triangulation was used to enhance coding and analysis of the data and reduce bias. Transferability of this study is supported by the commonalities of the entry-level nursing program construct and the use of high-stakes testing at all levels of the entry-level nursing programs. Program specific policies will limit transferability to some degree, however, these results can be applied to any program that requires benchmark testing and uses any form of high-stakes testing.

Data Analysis

Quantitative data analysis was completed using both QuestionPro online survey reports and IBM SPSS-19 statistical software. Quantitative data analysis focused on the demographic data and survey results utilizing descriptive statistics and independent sample t-tests. The grouping variables were defined as the junior class and senior class to explore the effect that program level has on the testing experience and the anxiety response of nursing students. Comparison of the two cohorts included data that reflected the student's time management skills, self-concept, finances, support system, level of self-reported test anxiety and self-control over test anxiety.

Qualitative data analysis focused on transcribing the interviews and seeking paradigm cases, thematic analysis, and exemplars utilizing Parse's research methodology (Parse, 1990). Dialogical engagement consisted of the data-gathering process during the one-on-one interviews with the participants. The extraction-synthesis process followed

and included five steps. First, the raw data transcribed from each subjects' interviews was used to construct core ideas regarding the subjects' experiences of test anxiety. This data was then analyzed to discover and extract essences from the descriptions. Polit & Beck (2012) state, "Essences are succinct expressions of the core ideas about the phenomenon" (p. 497). Next, to develop a higher level of abstraction, the language of the synthesized and extracted essences was conceptualized by the researcher. A proposition was formulated from each participant's essences. A proposition is "a nondirectional statement conceptualized by joining core ideas of the essences that arise from the participant's description in the researcher's language" (p. 497). Core concepts, or ideas that capture the central meaning of the proposition, were then extracted from the propositions. The fifth step involved using the core concepts to synthesize a structure of the lived experience of the participants. Heuristic interpretation followed by completing structural integration and conceptual interpretation of the data. Structural integration allowed the synthesized concepts of test anxiety from each of the participants to be organized so a cohesive understanding of the test anxiety experience was obtained. Lastly, to accomplish conceptual interpretation, the data was connected to the theoretical framework utilized for this study by identifying common principles within the framework and the propositions.

Human Subjects

In accordance with Missouri State University policy and the Federal Policy for the Protection of Human Subjects 45CFR 46, this research project was approved by the university Institutional Review Board (IRB) (see Appendix D: #16-0243: Dec. 15, 2015).

All pertinent paperwork regarding the completion of the Privacy Rule of the Human Insurance Portability and Accountability Act (HIPAA) training was completed and submitted (see Appendix E). Missouri State University CITI research training was completed (see Appendix F).

Directions included with the online survey and completion of the survey constituted informed consent for the quantitative portion of the study. For the qualitative portion of the study, each student signed an informed consent (see Appendix G) prior to the individual meetings. No foreseeable risks to the subjects were anticipated. Participation in this study was voluntary. Students were under no obligation to participate and were able to withdraw at any time. Students were informed that participation or withdrawal from the study would not affect their course grades either positively or negatively. To maintain anonymity a subject number was assigned to each student's survey and to the recordings of the audio-taped meetings. All data was reported in aggregate.

Limitations

The subjective nature of the interpretive phenomenology research design and the surveying process can limit the applicability of and the identification of generalizations regarding the results. Contacting the volunteers to schedule the interviews was the most challenging aspect of the study. Although 11 students volunteered for the meetings, only seven students completed the interviews. Four of the students did not respond to emails to both their student and personal accounts requesting they schedule a meeting time. Personal time constraints may have deterred some students from volunteering for the study. The personal nature of the data collected during the survey and the audio

recording of the interviews may have inhibited total honesty during the data collection process. Lastly, the completion of the study utilizing one geographic location and one nursing program setting limited the transferability of the study results. The uniqueness of nursing programs may also limit the transferability of the findings to other disciplines.

Summary

An explanatory sequential mixed methods design using both quantitative and qualitative data collection was used to complete this research study. The online survey provided descriptive statistics and demographics. The qualitative data collected during the interview meetings utilized an interpretive phenomenological design. Keeping the overall purpose of the study in mind allowed the researcher to guard against prejudices that could have influenced the interpretation of data. Understanding the philosophical and methodologic foundation of interpretive phenomenology studies allowed the researcher to experience the participant's world of test anxiety in an effort to understand and interpret it.

Data analysis required the extrapolation of common themes from within the data provided by the subjects. The Parse Phenomenological-Hermeneutic Research Method was utilized to analyze the qualitative data. Descriptive statistics were used to analyze the quantitative data. Through the use of both qualitative and quantitative data, a greater understanding of the test anxiety experience of nursing students in BSN nursing programs was achieved.

RESULTS

A sample of 73 junior and senior BSN students was surveyed about their experience with test anxiety (see Appendix B). From this group a subsample of seven students with high self-reported test anxiety was interviewed for more in-depth data. Of the 73 students who completed the survey, 71 were female and 2 were male. The mean GPA of these students was 3.68 with a standard deviation of 0.21. Thirty-six students were seniors (49.32%) and 37 students were juniors (50.68%). Four of the 73 students (5.48%) defined themselves as non-traditional students either because they reported they had completed a previous degree ($n=3$) or because they had delayed entry into college after high school by at least one semester ($n=1$). The demographic data of both groups are shown in Appendix H.

To consider the demands on the student's time, questions regarding employment, personal responsibilities, support system, and financial status were addressed. None of the students reported attempting to work full time (≥ 40 hours per week) while attending nursing school. Five students (6.8%) worked 30 hours per week in addition to completing the nursing program. The rest of the students were evenly divided among hours worked. Seventeen students (23.3%) worked 1-10 hours per week. Eighteen students (24.7%) worked 11-20 hours per week, and 11 students (15%) worked 21-29 hours per week. Two students (2.74%) reported having one child each. Two students (2.74%) also reported responsibility for the care of either aging parents or grandparents.

Twenty students (24.7%) rated their support systems as strong. All but two students (97.26%) rated their support systems as moderate or higher. Two students

reported that their support systems were over 8 hours away from the college campus. All other students reported support systems within a 4-hour radius of the campus. Of these, 31.5% of the students had their support system within an hour of campus.

In regards to their financial situations, 35.6% of the students rated themselves a 5 on a 1-10 Likert Scale with a rating of 1 being weak and a rating of 10 being strong. Fifty-two percent rated their financial situation >5 , while 9.59% reported their financial situation as strong. The number of hours worked per week did not directly correlate with the self-reported financial situation. Of the students who reported their financial situation as strong ($n=7$), three of these students (43%) were not employed. Four of the nine students (44%) who report their financial situation as weak were not employed. For this population of students, financial need does not appear to act as the sole determinant for employment.

The subsample of students ($n=7$) initially completed the online survey, but in addition, they volunteered to be interviewed for the interpretive phenomenology (IP) portion of the study. All 7 of the students were female. Four of the seven students (57%) were juniors and three students (43%) were seniors. None of these students were non-traditional. None were responsible for the care of aging parents or grandparents, and none had children. One student was not employed at the time of the interview. The other six students worked on average 8-30 hours per week. Two of the students (29%) had two jobs. One student had an internship in a city three hours from campus. In addition to the hours she worked, she also had a minimum of a six hour commute each week.

During the meetings, these seven students were very forthright with their thoughts and feelings regarding the various topics discussed (see Appendix C). Each student was

asked to provide a historical overview of their test anxiety experience. One student acknowledged that her anxiety began in high school. Two others stated they recognized their test anxiety during the science pre-requisite courses prior to the nursing program. Four of the students stated that their anxiety began in the nursing program, and one of these students stated that it had begun within the last month prior to our meeting. Once the students had identified the timeframe in which their anxiety had initiated, questions regarding the manifestations of their anxiety were addressed.

Manifestations of Test Anxiety

The first research question concerning manifestations of the test anxiety experience of BSN students yielded reports by both the survey and the IP participants of

physical, behavioral, and cognitive symptoms of test anxiety. The survey ($n=73$) utilized a select-all-that-apply format for this question. Fifty-two students (71%) chose physical symptoms as part of their test anxiety experience. Forty-five students (62%) included behavioral symptoms, and 59 students (81%) reported cognitive symptoms as manifestations of their test anxiety experience. Although this data demonstrates the frequency of the three types of clinical manifestations of test anxiety, the students completing the IP meetings were able to demonstrate the uniqueness of the test anxiety experience through their descriptions.

Physical symptoms reported by six of the IP students (86%) included tachycardia, light-headedness, a heightened sense of arousal (fight or flight), a heightened sense of anxiety, an overwhelming sense of fatigue, compromised immune systems, and gastrointestinal disturbances including the development of stomach ulcers. The report of the compromised immune system was described as an extended time of illness. One student noted that she was sick with various ailments for “most of the summer” and felt this was directly related to the anxiety she was experiencing as she started the nursing program. Another student stated she experienced tachycardia, but also an aching feeling in her chest that was similar to the aching she felt when she was very sad. Within the survey sample ($n=73$), tachycardia (22.4%), sweatiness (14.17%), neck/muscle tension (11.02%), and nausea (9.45%) were the most predominant physical manifestations reported.

The behavioral manifestations reported by the IP respondents ($n=7$) were issues with personal space, including the need to sit in the same desk to take their exam as a means of anxiety reduction, and crowding in the test venue which was reported to cause

difficulty concentrating while testing. Procrastination, the inability to maintain a balance in life, mood swings, and self-esteem issues also characterized behavioral manifestations of test anxiety. Emotions reported by two of the IP students as emanating from test anxiety were a feeling of foreboding and anger. The feeling of foreboding elicited itself prior to the test as a desire to avoid taking the test. During the interview process, one student commented that, “usually I almost get like more angry than anything else when I get anxious because I’m like, it shouldn’t be this difficult. I just like want to be a nurse and help people.”

Cognitive manifestations of test anxiety included poor retention of course content and lack of confidence in achieving adequate test preparation due to the volume of course content. Four of the IP students reported never feeling adequately prepared regardless of the amount of time invested in studying due to the volume of content covered per exam. All seven students had an issue with managing the amount of information presented in the nursing program. Two students mentioned that test questions often did not reflect topics that were either covered in class or assigned in the syllabus. From the students’ perspective, a disconnect existed between the classroom content presented and the tested material. This induced cognitive manifestations of test anxiety for the students because they were never sure what to study or how to study for the test. When plying the faculty for direction in prioritizing the test content, they were told to study everything because it was all important. Students did not find this advice helpful, and they desired additional strategies to process the content to improve test preparation.

Different formats of tests across the nursing classes also induced cognitive test anxiety. Four IP students stated that online tests were challenging because only one

question could be addressed at a time, and it was not possible to revisit a question once it was submitted. Students preferred paper and pencil tests which allowed them to have a sense of the entire test during the examination process and change answers throughout the test as needed. It was notable that one student who reported a tendency to overthink questions and second-guess her original answers, stated that the online tests prevented her from doing so since she could not review her test before submitting it. One student mentioned that online testing promoted failure because it was not possible to change answers once submitted. She stated there had been instances when she marked the incorrect answer and was aware of it as soon as she submitted the answer, but changing the answer was not possible. She had to submit her test knowing that an answer was wrong and that it may be the reason she scored below 75% and failed the exam.

Test Anxiety Triggers

Test anxiety triggers identified by the IP students during the interviews were organized into three general categories: personal pressure, the volume of information to be covered on the test, and the high-stakes testing policy. Students also identified that anxiety triggers can occur prior to the exam, during the exam, and after the exam. For example, two triggers, self-imposed personal pressure and negative thoughts, were identified as test anxiety triggers that occurred both before and during the test. These triggers impacted both the students' preparation for the test and their performance on the test. Personal pressure included a perfectionistic attitude, the fear of poor performance on the exam, and the desire of the student to perform at an 'A' grading level which had been achievable prior to the nursing program. Negative thoughts experienced by 52% of

the survey respondents ($n=38$) required the students to direct attention and time to self-promotion both while studying and while testing. To overcome the effects of the negativism which included feeling like they had failed the test even prior to completing the test, students need to develop self-promoting behaviors. Self-promoting behaviors included self-pep talks, redirection from negative thoughts to positive thoughts, and avoidance of considering the outcome of the test during preparation and completion of the test.

Survey students also recognized the inability to regulate their anxiety (19.2%) and lack of test preparation (22%) as anxiety triggers. The volume of information was cited by all IP students ($n=7$) as a major trigger of test anxiety. The common adjective to describe the volume of information was overwhelming. Feeling ill-equipped to organize and separate the information into manageable topics to study was a common theme. As a result, the IP students were unable to feel adequately prepared for the test. Inadequate test preparation may have been confounded by the length of time students reported studying for a nursing exam. The survey showed that although 39.7% of the students ($n=29$) reported studying more than 10 hours for a nursing exam, some students ($n=2$) were studying as little at 2-3 hours. On the survey, no question directly addressed the volume of information as a trigger for test anxiety, but three students provided write-in answers that noted the volume of information as a trigger for test anxiety.

Results of the survey demonstrated that 98.6% of the students ($n=72$) identified high- stakes testing as the predominant test anxiety trigger. In conjunction with this, the format of the exam produced high levels of anxiety. One student reported that she would get anxious thinking about the way the questions would be presented and what the

content on the test would be. She believed some teachers based questions on their opinions on what should be done, and sometimes this was in direct opposition to what the student read in the text. Another student cited “ridiculous” questions as an anxiety trigger. Students struggled with NCLEX style questions. They had difficulty discerning the important information in the question and applying nursing judgment to the questions. Students considered a question ridiculous if they had not focused their study on the content represented in the question. Because of the amount of information to study, three IP students reported that they would randomly predetermine what they believed were the most important topics and studied those topics. Randomly studying content was a reoccurring theme. Students would attempt to anticipate the instructor’s questions rather than studying the material in such a way that would develop a body of knowledge they could pull from to answer test questions.

In addition to the triggers already listed, pre-test triggers included the fear of not doing well on the test, too little time set aside for preparation, lack of confidence in test preparation skills, lack of resources, and unexpected demands on the student’s time. During the test, environmental factors were listed as possible triggers, but only impacted testing if they were extreme. Noise was tolerable in small amounts, but if construction noise was present, it was considered distracting. The instructor walking around in the room was considered a major distraction for one student. Movement by other students was also noted to be distracting. The degree of success in answering the first five to ten questions was also considered a trigger. If the student was able to work through the early questions in the test with ease, a sense of calm and confidence resulted. If, however, the student struggled with the first several questions, tension and anxiety resulted.

Post-test triggers included listening to the other students discuss their answers to the test questions. One student reported combating this by listening to music with headphones to avoid hearing the students debate the test question answers. One student also reported self-deprecation as a post-test trigger. She spent time admonishing herself for not studying more, for not prioritizing her study well, and for not identifying key concepts in the content. As a result, her anxiety continued to increase even after completing the test.

High-Stakes Testing

The third research question addressed high-stakes testing. In addition to acting as a trigger for test anxiety, high-stakes testing was also recognized as the most significant factor affecting the level of test anxiety. On the survey, all students self-reported experiencing test anxiety at some level. In addition to test anxiety, they also reported generalized program anxiety. Program anxiety resulted from the progression and retention policy of the nursing program as well as the rigor of the nursing program. The seven students who completed the interview process each identified that the 75% pass rate, although believed to be necessary for the nursing program to maintain patient safety, was indeed the major contributor of test anxiety. In addition, the students were very vocal concerning the one failure policy employed by the nursing program. Students stated that the one failure policy added anxiety that was counter-productive to student success. Students exhibited signs of mourning for the students who had been dismissed as a result of this policy. They cited the investment the dismissed students had made into their education and the nursing program as a reason they should be given a second

chance. It is not the scope of this study to debate the efficacy of a one-failure policy, but it is important to consider the degree of anxiety that such a policy can add to a nursing program.

Comparison of Class Cohort Characteristics

The fourth research question addressed the difference in the lived test anxiety experience within the junior and senior cohorts. The differences in the distribution of the effect of the 75% pass rate on test anxiety reported on the survey by juniors and seniors is consistent with reports from the students completing the interviews (see Appendix I). Although the juniors have more cases of extremely intense anxiety levels, the seniors have more incidences at the moderate level. This represents the self-report that the junior year is more challenging because of the need to adjust to the nursing program and the rigor of the courses taken at the junior level. Having adapted to the nursing program, it would follow that the seniors would experience less anxiety, but the comments made by the seniors interviewed did not support this. Because the seniors had more invested in the nursing program, but were still susceptible to the one failure policy, they reported a high level of program anxiety.

Comparing the class cohorts demonstrated several interesting findings (see Appendix J). Time management, in regards to the number of hours worked and the number of hours spent studying for a test, reflects the most prominent difference between the two groups. The seniors work on average twice as many hours per week as the juniors. The standard deviations in relation to the number of hours worked are also consistent across the junior and senior classes. When analyzing the number of hours the

participants studied for a test, little difference was noted when the mean and standard deviations were compared across the junior ($M=8.62/SD=2.0$) and senior ($M=6.81/SD=2.1$) classes.

The Lived Experience of Test Anxiety in BSN Students

During the extraction-synthesis phase of the interpretive phenomenological data analysis, essences pertaining to the final research question, “What is the structure of the lived experience of test anxiety?” were extracted from the transcribed data (see Appendix K). The reoccurring themes from the synthesized essences lead to the three core concepts extracted from the formulated propositions. First, navigating a nursing program is not intuitive; it is learned. This concept was evidenced in all seven of the participant’s interviews. One student stated, “You’re talking about meds and you’re also adding in nursing interventions which I had no idea what that was at first. Like care plans and all that was very like, what are we...what is our teacher talking about? I remember feeling really confused in the summer.” Also, each participant related that additional information regarding the testing process in the nursing program was needed and that the lack of specific instruction on the process for navigating NCLEX questions was anxiety provoking. One participant stated, “...at that point in my nursing career, I guess, I didn’t quite understand the whole 75% test average thing.” Another participant stated, “Because everything is...the books and notes are so knowledge based and the (test) questions are so application based, so that’s what’s so difficult...” The students reported that with little instruction other than a reference book they purchased in regards to NCLEX questions, they were expected to be fluent on the first test. In addition, the IP

students ($n=7$) related a need for defining the difference between testing at the recall level versus the application level. They also reported that utilizing NCLEX questions while in class to visualize the transformation of course content into NCLEX questions would be very helpful. Their descriptions provided evidence that test anxiety was proportional to their comfort level whether prepping for class, studying for the test, or juggling the demands upon their time, but was also exacerbated by the 75% test grade requirement and the one failure progression policy. All seven students indicated that although the 75% pass rate produced anxiety, it was a reasonable policy in light of the need to assure patient safety. However, all of the students felt the “one and done” progression policy in the nursing program was harsh and did not account for the complexity of life events that can affect academic performance. The descriptions also indicated that the students lacked information regarding the scope and sequence of courses. Students independently weighted the nursing courses, i.e. pharmacology and med-surgical adult as more important than mental health and believed that the progression policy should be amended to allow the “less important” courses to be exempt from the one failure policy. One student stated, “So I get things like pharmacology. You need to know pharmacology. You know you need to know med-surg. You need to know your skills. You need to know critical thinking. You need to be able to look at labs and understand why labs are the way they are. So I understand all that. I really do understand that, and I feel like even though the tests are hard, I’ve learned a lot from it, but there’s some things like Family Health Nursing that people get dismissed from the program, and it’s like, why? That’s like turning their whole world upside down over a class that doesn’t, to me, really matter.”

The second core concept was consistency and organization of courses affects the students' level of anxiety. Three of the seven participants (43%) completing the IP meetings stated that they could only be as organized as the course would allow them to be. The students interviewed had a history of academic success. Only one student stated that her test anxiety began in high school. All other students ($n=6$) stated that they did not need to study to be successful at the high school level or at the general education level in college. This finding could indicate that test anxiety began once the students were academically challenged. The descriptions by the students support that the nursing program was their first experience being academically challenged. One participant stated, "I have not previously had any difficulty with test anxiety. I have always done very well in school, honor roll, and whatnot. I went to private schools. Like studying and things like that...I didn't need to study a whole lot. Things came very easily to me. I'm also very good at just memorizing things, so if I was paying attention in class, I knew the material enough that I could do well on the test because I was paying attention." Test anxiety may result when natural academic ability is exhausted and the student must work diligently to earn his or her grade. The student's descriptions demonstrated that the students felt unequal to the task of learning study strategies, testing strategies, and the course content in tandem. A student shared, "It's different how it's applied in a test and so I don't feel like I'm prepared in that sense to take a test. I feel like I am almost never, I never have felt confident going into a test and even with reading the content, even with like studying for hours." The descriptions also gave a sense that the students felt slightly entitled by their previous academic successes, and as a result, they predetermined the level of investment in regards to time and effort they were willing to contribute to the

nursing program. All the students agreed that they would like to see a better return (higher grades) on their investment in the nursing program.

In their descriptions, three students (43%, $n=7$) cited that the number of faculty teaching in a course increased the level of anxiety due to the inconsistency of course content presented and the testing process. One participant stated, “Over the summer in one of our classes we had like over five teachers I think. It was one of the first classes we take so it just felt like every teacher had a different style...I don’t know who wrote the test...It was just a little bit overwhelming for me at least.” Standardization of content presentation in both the learning management system and in the classroom was suggested as a means of lessening program and test anxiety. A participant shared, “It just felt like it’s an adjustment phase already. It’s good to keep things consistent because we are...everybody is so nervous about everything and we’re new. Now that we’ve been here longer, I’ve adjusted to more of it, and I’m trying to do better adjusting to that...it’s now always, it changes a lot. This program, it changes all the time.”

The inconsistency in the testing process was aggravated by having several testing modes including computerized testing, pencil and paper, and standardized testing. The students were aware that the computerized tests were used to prepare them for the NCLEX. The problem cited regarding computerized tests was the inability to review and change your answer once it was submitted. The greatest challenge for the students in regard to testing was the quality of the test questions. They stated that often the questions were worded so poorly they were unable to determine the point of the question.

The third core concept extracted from the data is the volume of information in the nursing program challenges both the student and the faculty. All seven students stated

that they were in need of additional resources to assist them with managing the overwhelming amount of information presented in the courses. In their descriptions, the students identified the inability to discern important information from incidental information often led them to study information that was not represented on the tests. Students stated that study guides, if they were specific in scope, assisted them in learning the material because it gave the student a means for organizing and focusing their study.

In the academic setting, the faculty is challenged to provide assignments and instruction that will prepare the students for entry into the nursing profession and successful completion of the NCLEX exam. Students noted that tests can cover 4-10 chapters of content. One student expressed frustration when, as part of her preparation for the test, she was able to discuss test topics and provide conceptual information, but because she did not know the one piece of information the test question addressed, she was not successful in earning those test points. She stated, “I understand the reasoning for it (the 75% pass rate), but it’s also just so hard to understand that you only get one chance even though I can know all the other information but the small information you asked me on a test. You can have a 50-question test, but you cover six chapters and each chapter is 45 pages long. How do I know what you’re going to ask from all those pages? That’s hard. Even though I can know most of the information, what if the information I thought was important, they didn’t think was important (enough to test on it)?” Another student indicated that she did not feel her test scores were a true reflection of her knowledge base. All interviewed students felt it was necessary for the faculty to provide more direction into the process of acquiring nursing judgment and the process of discerning the important conceptual information.

Summary

Test anxiety is a continuously evolving process that challenges the capacity of the student on many levels and is exacerbated by input from the students, faculty and nursing program policies. The test anxiety experience is unique to each student but has common characteristics that include physical, behavioral and cognitive manifestations. Anxiety triggers are varied and specific to the student, but the data showed that the 75% pass rate initiated the episodic occurrence of test anxiety. Participants admitted that although the 75% test pass rate did cause test anxiety, it was necessary to maintain patient safety. They reported that consistency and organization would assist them in reducing both testing and program anxiety. Program anxiety was identified by one student during the meetings as being the “constant state of anxiety in nursing school.” In this study, program anxiety was most closely related to the one-failure progression policy used in the nursing program.

The three core concepts were extracted during the qualitative data analysis. First, navigating a nursing program is not intuitive, it is learned. Second, consistency and organization of courses affects the students’ level of anxiety. Third, the volume of information in the nursing program challenges both the student and the faculty. These core concepts encompass the reoccurring themes of the research study (see Appendix K). A sample of these themes include: a) academic rigor in the nursing program represents a challenge to the participants study skills and testing skills; b) self-assessment and self-adjustments are necessary for success in the nursing program; c) program anxiety can be reduced through course organization and consistency; d) standardization of tests would

reduce test anxiety by removing the unknown in regards to test presentation; e) the application format of nursing exams is not intuitive for the participant and therefore requires structured instructions; f) testing confidence is not proportional to testing preparation; and g) negativity and negative thoughts impact the degree of test and program anxiety. The multi-dimensional nature of test anxiety is demonstrated in these reoccurring themes.

DISCUSSION

The purpose of this study was to explore the experience of test anxiety in BSN nursing students and discover common traits and themes within the test anxiety experience of nursing students. This study postulated that characteristics unique to nursing programs may impact the occurrence and nature of the test anxiety experience in nursing students. The actual experiences of test anxiety described by the participants of this study support previous research by Edelman & Ficarelli (2005), Huberty (2009), and Salend (2011). In each of these studies, the test anxiety experience was characterized as having a combination of physical, behavioral and cognitive manifestations. Although the actual test anxiety experience described by participants in this study was unique to each individual, common traits including physical, behavioral, and cognitive symptoms were reported. The characteristics of the nursing students' test anxiety experience were found to be similar to test anxiety experiences of other college students and adolescents.

High-stakes testing was reported as both a common trigger of test anxiety and a common cause of program anxiety in this study. These results support findings in the study by Spurlock (2006), which states that test anxiety is considered a negative consequence of high-stakes testing. In his article, Spurlock notes that careful attention must be paid to the accuracy and technical quality of tests being utilized in high-stakes testing. This assertion is consistent with the data gathered during the IP interviews of this research study. Based on student reports, it is necessary for the faculty to provide the students with a well-written test that can be navigated without confusion if nursing programs are using the results of high-stakes testing as a component of the progression policy in the nursing program.

Consistent with expectations and prior research (Carrick, 20011), test anxiety can affect learning outcomes which are impacted by the student's approach to learning, personal factors (finances, support system, number of hours worked, etc.), locus of control, academic ability and academic background, as well as situational factors. Participants of this study shared numerous factors and situations that they believed had impacted their level of test anxiety. The volume of information covered on a test, the variable formats of the tests, and the progression policy of the nursing program were the most cited causes of test anxiety in this study.

Data Limitations

The utilization of a survey with voluntary completion limited the ability to determine the true prevalence of test anxiety in this cohort. Students who did not respond may or may not experience test anxiety, so the design of the study did not support the definitive determination of the prevalence of test anxiety within a cohort. However, with 68% of the cohort reporting some level of test anxiety, it can be extrapolated that test anxiety does require attention and resources dedicated to alleviating its impact on academic performance in nursing programs.

The use of select-all-that-apply (SATA) questions on the survey was another limitation of the study. Due to the highly individualistic nature of test anxiety, no less than twenty-two combination responses to some of the SATA questions were obtained. This greatly limited the ability to determine the statistical significance of the concepts covered by the SATA questions. These questions were useful when utilized in the one-on-one meetings with the seven students. The ability to dialogue with the student in

regards to their answers on the SATA questions provided insight into the test anxiety experience of the student.

Another limitation often cited in qualitative research is the use of a small sample size. However, according to Parse (1987), two to ten participants are adequate for qualitative research using her method. Ideally, the participant number is established by reaching a level of saturation regarding the data collected. Once the researcher hears repeated themes from the participants regarding the lived experience, the data collection can be considered complete. This criterion was satisfied by this research study.

Areas for further study include the differentiation between test anxiety versus program anxiety. Program anxiety was identified as emanating from program policies and impacting overall academic performance. One student stated that she was surprised by the undercurrent of negativism in the nursing program. She stated, “You just feel this pressure all the time because everything is always, if you don’t pass then you’re kicked out. If you don’t do this then you’re out of the program. It’s a very negatively structured program. It works. Negative reinforcement, but it’s not very encouraging so that was difficult for me.” Exploring program anxiety may add additional information to the anxiety process of nursing students and delineate those students experiencing test anxiety from those students experiencing program anxiety. Lastly, a longitudinal study to research whether test anxiety initiates when students exhaust their natural academic ability would add an interesting dimension to the multi-dimensional nature of test anxiety. If a causational connection between academic ability and test anxiety could be identified, treatment modalities for test anxiety could be tailored to meet academic goals.

Applications

This research study has revealed three factors that impact the experience of test anxiety in nursing students: the students, the faculty, and nursing program policies. Historically, research has focused on the identification and alleviation of student behaviors that contribute to test anxiety. The review of both the quantitative and qualitative data of this study revealed that test anxiety was not just a student problem. Faculty and nursing programs, either purposely or inadvertently can augment both the test and program anxiety of the nursing students' experience. To address these issues, a three-pronged approach must be considered and the concept of capacity can be applied.

First, nurse educators should expect that test and program anxiety will be experienced by students, especially those students who have reached the capacity of their natural academic ability. Students being admitted into nursing programs are the upper echelon of the students graduating from high school. Because of their innate academic ability, these students often have not learned the art of studying. As one student mentioned, everything came easily to her so there was no need to develop study skills. Once a student has reached his/her natural academic capacity, the reality of the situation becomes evident to the student. Students reported that they cannot effectively study the highly technical and detailed material found in the nursing courses. They have not learned to be discerning in their studies. Everything they read and hear seems important, so these students do not know how to parse the material into manageable learning modules as they study for the test. When superimposing the volume of course information upon these underdeveloped study skills, adaptive capacity is exceeded, thus test and program anxiety result. As previously mentioned, this can be exacerbated by

numerous factors specific to the student's life as well as the mindset of the student.

Adaptation is dependent upon the student's willingness to seek assistance and invest the necessary time to develop both study skills and test taking strategies. The development of introductory courses to assist students in the transition from general education courses to nursing courses may be very beneficial in alleviating program and testing anxiety (Williams, 2010). The introductory course could highlight the differences in study skills and test taking strategies for NCLEX style questions prior to beginning the nursing program.

Capacity is also evident when considering the scope and sequence of courses within nursing programs. Many programs utilize nursing instructors who are experts in their fields to present course content. This resource is an excellent benefit, but because these nursing instructors are experts, the tendency is to thoroughly teach the content to the point of saturation, and more importantly, to a degree that exceeds entry-level nursing. Therefore, we are adding volumes of expert level information that the students are responsible for on the nursing exam, but will not be tested for on the NCLEX. Nursing faculty must find the balance that allows course content to be taught at the level of learning for entry into the profession without exhausting the topics with the understanding that as the student progresses from novice to expert, additional nursing knowledge will be added. Through collaborative efforts, nursing faculty can develop a checks-and-balance system that will assure the courses are taught at a level that is both conducive to student learning for entry-level admittance into the profession and also meets the nursing program outcomes.

Nursing faculty must also be acutely aware of their ability to develop and organize a course. Mentoring programs can be utilized to assist new nursing faculty in acclimating to their new role. Mentoring programs are especially important as nurse practitioners and registered nurses move into both the classroom and clinical education roles. Without benefit of course development and curriculum development preparation, nurse practitioners and registered nurses taking on clinical instructing roles may need additional assistance with the transition to the academic setting (Baker, 2010; Schoening, 2013; Thorpe & Kalischuk, 2003). Also, to promote testing that is consistent throughout the nursing program, a test review committee designed to verify test structure, content, and accuracy is recommended (AERA et al., 1999). When progression and retention are determined by benchmark test scores, it is incumbent upon the faculty and administration of the nursing program to provide adequate instruction in regards to the testing process. In nursing programs, faculty and administrators need to recognize that NCLEX style questions are initially foreign to nursing students.

Lastly, the findings of this research should encourage nursing programs to reevaluate their retention and progression policies. Weighing the benefit of a one or two failure progression policy against the increased program anxiety it elicits is significant. Although this is a standard practice for many nursing programs, its relevance and efficacy should be revisited and measured against the current program outcomes. A change in a policy of this magnitude will impact numerous processes within the nursing program including, but not limited to, remediation programs, admission rates, attrition rates, and by extension, accreditation. A general review of nursing program policies may reveal additional policies that are adding to student anxiety. Each nursing program must

determine if the benefits of the policy warrant the additional anxiety and its negative effects.

Summary

The lived experience of test anxiety in BSN students is multi-dimensional. The complexity of a nursing program can add anxiety that a student must manage to be successful in the nursing program. Because managing this anxiety is not intuitive, it is understandable that a student will require assistance to navigate the nursing program. Faculty can assist in this process by providing introductory nursing courses that orient the student to the nursing program. Faculty can also assist by providing well-organized and consistent courses that control the volume of information based on entry-level expectations and program outcomes. Nursing programs can address attrition rates by reviewing program policies to determine if they are currently relevant. Lastly, students must be willing to honestly assess both their performance and anxiety levels seeking assistance when necessary.

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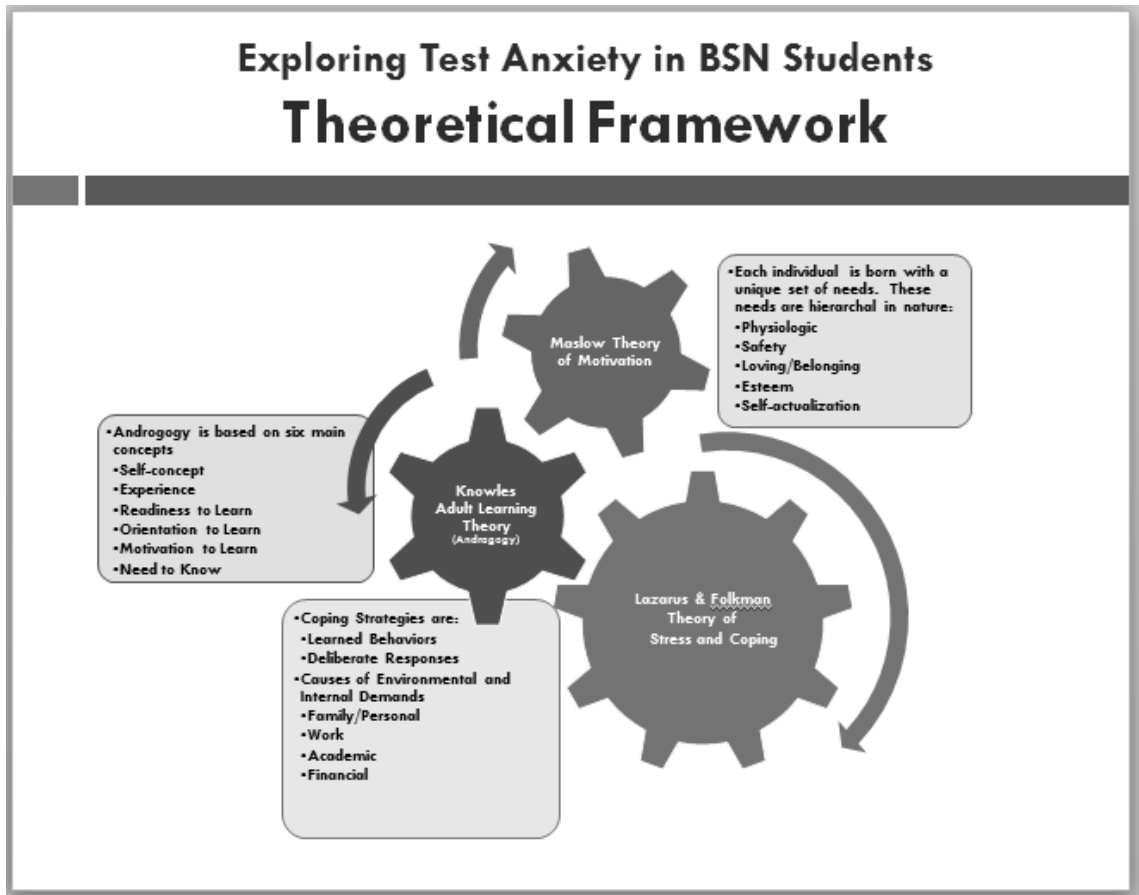
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APPENDICES

Appendix A: Theoretical Framework



Appendix B: Online Student Survey

1. I am male / female.
2. I am a junior / senior in the nursing program.
3. My current cumulative GPA is _____.
4. I am between the ages of 18-24 and entered college within 6 months of completing high school (Y/N).
5. I have a previous college degree (AA, AS, BA, BS, MA, MS, etc.) (Y/N).
6. I am in a committed relationship (Y/N).
7. I have children (Y #___/N).
8. I am responsible for the care of elderly parents/grandparents (Y/N).
9. I am employed outside of the home in addition to attending college (Y/N).
10. I work _____ hours/week outside of the home.

11. I experience anxiety

- ☐ Only when testing
- ☐ Only in the clinical setting
- ☐ Both in testing and the clinical setting to varying degrees
- ☐ Constantly to varying degrees
- ☐ Other _____

12. My support system is

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8-----9-----10

Weak

Moderate

Strong

13. My support system is located within _____hours of the college.

1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8-----9-----10 or more
hours

14. My financial situation is

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8-----9-----10

Weak

Moderate

Strong

15. I spend, on average, _____ hours studying for a nursing test.

1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8-----9-----10 or more hours

16. I would describe my test anxiety experience as

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8-----9-----10

Mild/Weak

Moderate

Extremely Intense

17. The emotion that best describes my test anxiety experience is

- ☐ Fear
- ☐ Anxiety
- ☐ Depression
- ☐ Panic
- ☐ Other _____

18. My test anxiety experience consists of (select all that apply)

- ☐ Physical symptoms (such as any of the following: nausea, headache, rapid heart rate, palpitations, muscle tension, etc.)
- ☐ Behavioral symptoms (such as any of the following: irritability to sounds or distraction, personality traits, nervousness, unrealistic role demands, inadequate social support, previous academic performance, etc.)
- ☐ Cognitive symptoms (such as any of the following: inability to concentrate, inability to recall information, inability to focus, forgetfulness, inability to master content when studying, the inability to be self-reflective, etc.)

19. When taking a nursing exam, I feel my anxiety is triggered by (select all that apply)

- ☐ High-stakes testing (75% needed to pass the test)
- ☐ Lack of preparation
- ☐ An inability to regulate my anxiety
- ☐ None of the above
- ☐ Other _____

20. When studying for a test or taking a test, I experience which of the following (select all that apply)

- ☐ Procrastination (delay studying or cram for a test)
- ☐ Academic apathy
- ☐ Negative thoughts

- ☐ Lack of self-awareness (underestimate or overestimate understanding of the test content)
- ☐ Lack of self-reflection (inability to use prior testing experiences to improve test preparation)
- ☐ None of the above

21. The 75% pass rate on nursing exams affects my test anxiety

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8-----9-----10

Very Little

Somewhat

Very Much

22. I believe that my test anxiety

- ☐ Raises my test score (makes me study harder and improves test performance)
- ☐ Lowers my test score (decreases the effectiveness of my study and hinders test performance)
- ☐ Has no effect on my test score

23. Which of the following do you believe would reduce your test anxiety the most?

- ☐ I need to study harder
- ☐ I need to study differently
- ☐ I need to think positive thoughts
- ☐ I need to improve my coping skills

24. Of the following coping mechanisms, which have you used in the past and/or are you currently using? (Select all that apply)

- ☐ Self-help strategies (study skill improvement, test taking strategy improvement, visualization, journaling, tutoring, etc.)
- ☐ Behavioral modification (academic or psychological counseling)
- ☐ Pharmaceutical intervention (prescription anti-anxiety medications, attention deficit disorder medications, mood elevating medications, etc.)
- ☐ Over-the-counter interventions (herbal and vitamin supplements, anti-inflammatory medications, headache medications, etc.)

25. I believe that my test anxiety is most related to

- ☐ Internal factors (cognitive, motivational and emotional causes)
- ☐ Environmental factors (the testing site, type of test and the timeframe for the test)

26. I believe test anxiety impacts my self-concept

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8-----9-----10

Very little

Somewhat

Very much

27. I believe that I have control over my test anxiety

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8-----9-----10

Very little

Somewhat

Very much

28. I believe _____ is the major cause of my test anxiety.

29. Which of the following physical sensations do you experience when testing? (select all that apply)

- ☐ Dizziness
- ☐ Breathlessness
- ☐ Fast heartbeat
- ☐ Blurred vision
- ☐ Numbness/tingling
- ☐ Sweatiness
- ☐ Hot/cold flashes
- ☐ Chest tightness/pain
- ☐ Trembling/shaking
- ☐ Feeling of choking
- ☐ Nausea
- ☐ Neck/muscle tension
- ☐ Detached from self
- ☐ Other _____

30. I am interested in completing a one-hour interview with the researcher regarding test anxiety on the Missouri State campus as part of this research project. I am providing my telephone number and/or email address so that the interview date, time and place can be arranged.

☐ _____

Appendix C: Guide for Student Meetings

1. Please describe your test anxiety experience in detail.

- What initiates (triggers) the test anxiety experience for you?
- What exacerbates the test anxiety experience for you?
- What decreases the test anxiety experience for you?
- What physical manifestations do you experience?
- What behavioral manifestations do you experience?
- What cognitive manifestations do you experience?
- What do you feel is the root cause of your test anxiety?

2. Did you experience test anxiety prior to beginning the nursing program (high school, pre-requisites)?

- Describe your previous test anxiety experiences.
- How does the test anxiety you experience in the nursing program compare to previous experiences?
- How does your previous test performance compare to your nursing test performance?
- How does your previous test performance on nursing tests impact your test anxiety experience?

3. Research has shown that personal factors and situational factors can contribute to test anxiety.

- Personal factors can include personality, motivation, conceptions of learning, attitudes and general experience.
 - Please describe for me your personality.
 - Please describe for me your motivation in regards to nursing.
 - Please describe for me your beliefs regarding the learning process in nursing.
 - Please describe your attitude in regard to test anxiety.
 - Please describe any general experiences that contribute to test anxiety.
- Situational factors can include time pressures, teaching methods, the learning context, and the assessment and perception of institutional requirements.
 - Please describe time pressures currently in your life.
 - Please describe the teaching methods utilized and their impact on your test anxiety.
 - Please describe the study methods utilized and their impact on your test anxiety.

- What is your perception of the institutional requirements for the nursing program?
- 4. How does high stakes testing impact the test anxiety experience for you?
- 5. What coping mechanisms have you used in the past to alleviate test anxiety?
 - How would you rate the effectiveness of these coping mechanisms?
 - What do you think would ensure your success in the nursing program?

Appendix D: Missouri State IRB Documentation

From: IRB [mailto:irb_no_reply@cayuse.com]
Sent: Wednesday, January 6, 2016 10:55 AM
To: Utley, Rose A <RoseUtley@MissouriState.edu>
Cc: Keller, Annette M <Keller718@live.missouristate.edu>
Subject: IRB Notice

To: Rose Utley
Nursing
PROF 310 901 S National Ave Springfield MO 65897-0027

Approval Date: 12/15/2015
Expiration Date of Approval: 12/14/2016

RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)
Submission Type: Initial
Expedited Category: 6.Voice/image research recordings
Study #: 16-0243

Study Title: Exploring Test Anxiety in BSN Nursing Students

This submission has been approved by the above IRB for the period indicated. It has been determined that the risk involved in this research is no more than minimal.

Investigator's Responsibilities:

Federal regulations require that all research be reviewed at least annually. It is the Principal Investigator's responsibility to submit for renewal and obtain approval before the expiration date. You may not continue any research activity beyond the expiration date without IRB approval. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.

You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented (use the procedures found at <http://orc.missouristate.edu>). Should any adverse event or unanticipated problem involving risks to subjects or others occur it must be reported immediately to the IRB following the adverse event procedures at the same website.

This study was reviewed in accordance with federal regulations governing human subjects research, including those found at 45 CFR 46 (Common Rule), 45 CFR 164 (HIPAA), 21 CFR 50 & 56 (FDA), and 40 CFR 26 (EPA), where applicable.

CC:
Annette Keller, Nursing

Appendix E: HIPAA Training Certificate

Missouri State University HIPAA Security Training - Student Version Certificate of Completion

This certificate has been awarded to

Annette Keller, BSN, RN

for completing the online HIPAA Security Training - Student Version.

Completed on 1/25/2013 for Missouri State University College of Nursing

Annette Keller

Participant's Signature

**This certificate verifies that the bearer has completed the training
program in its entirety and understands their responsibility for
following the procedures outlined in this program.**

Please print this page for your records.

Thank you for your participation.

Appendix F: CITI Training Certificate

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM) COURSEWORK REQUIREMENTS REPORT*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details.

See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Annette Keller (ID: 3311343)
- **Email:** keller718@live.missouristate.edu
- **Institution Affiliation:** Missouri State University (ID: 750)
- **Institution Unit:** Nursing
- **Phone:** 417-725-1618
- **Curriculum Group:** Human Research
- **Course Learner Group:** Social & Behavioral Research
- **Stage:** Stage 1 - Basic Course
- **Report ID:** 9565995
- **Completion Date:** 11/10/2015
- **Expiration Date:** 11/09/2018
- **Minimum Passing:** 80
- **Reported Score*:** 90

REQUIRED AND ELECTIVE MODULES ONLY DATE COMPLETED

Belmont Report and CITI Course Introduction (ID: 1127) 10/12/15
History and Ethical Principles - SBE (ID: 490) 10/12/15
The Federal Regulations - SBE (ID: 502) 10/12/15
Assessing Risk - SBE (ID: 503) 10/12/15
Informed Consent - SBE (ID: 504) 10/12/15
Privacy and Confidentiality - SBE (ID: 505) 10/15/15
Research with Prisoners - SBE (ID: 506) 10/15/15
Research with Children - SBE (ID: 507) 11/10/15
Research in Public Elementary and Secondary Schools - SBE (ID: 508) 10/16/15
International Research - SBE (ID: 509) 10/16/15
Internet-Based Research - SBE (ID: 510) 10/29/15
Avoiding Group Harms - U.S. Research Perspectives (ID: 14080) 11/09/15
Research and HIPAA Privacy Protections (ID: 14) 11/10/15
Vulnerable Subjects - Research Involving Workers/Employees (ID: 483) 11/10/15
Conflicts of Interest in Research Involving Human Subjects (ID: 488) 11/10/15
Missouri State University (ID: 1169) 11/10/15

**For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program
subscribing institution identified above or have been a paid Independent Learner.**

CITI Program

Email: citisupport@miami.edu

Phone: 305-243-7970

Web: <https://www.citiprogram.org>

Appendix G: Letter of Consent

Consent to Participate in Research *Exploring Test Anxiety in BSN Students*

Introduction and Purpose

Hello, my name is Annette Keller. I am a graduate student at Missouri State University, working with my committee chairperson, Dr. Rose Utley, PhD, RN in the Department of Nursing. I would like to invite you to take part in my research study, which concerns the experience of test anxiety in nursing students and the effect of test anxiety on academic performance in nursing programs.

Procedures

If you agree to participate in my research, I will conduct an interview with you at a time of your choice at Meyer Library on Missouri State University campus. The interview will involve questions about your personal experiences of test anxiety, what interventions you have used to decrease test anxiety and the triggers that initiate the test anxiety process for you. It will last approximately one hour. With your permission, I will audiotape and take notes during the interview. The purpose of the recording is to accurately record the information you provide, and will be used for transcription purposes only. If you agree to being audiotaped but feel uncomfortable at any time during the interview, I will turn off the recorder at your request. You may also stop the interview at any time.

I will conduct only one interview with you, but at the end of the interview, I will provide you with an email address that you may use to add additional information or provide clarification to statements you made during the interview if you wish.

Benefits

There is no direct benefit to you from taking part in this study. You may gain a greater self-awareness of how test anxiety is impacting your academic progression. I will also be providing resources for test anxiety that may be beneficial to you. It is hoped that the research will provide nursing educators with a greater understanding of the test anxiety experience in nursing students so that appropriate interventions can be provided to students experiencing test anxiety.

Risks/Discomforts

Some of the research questions may make you uncomfortable or upset. You are free to decline to answer any questions you don't wish to, or to stop the interview at any time. As with all research, there is a chance that confidentiality could be compromised; however, we are taking precautions to minimize this risk.

Confidentiality

Your study data will be handled as confidentially as possible. If results of this study are published or presented, individual names and other personal information will not be used. To minimize the risks to confidentiality, we will be assigning subject numbers to the data and eliminating personal identifiers.

When the research is completed, I may save the tapes and notes for use in future research done by myself or others. I will retain these records for up to three years after the study is completed. The same measures described above will be taken to protect confidentiality of this study data.

Compensation

You will not be paid for taking part in this study. Your course grades will not be affected by participation in this study. Resources for managing test anxiety will be made available to you.

Rights

Participation in research is completely voluntary. You are free to decline to take part in the project. You can decline to answer any questions and are free to stop taking part in the project at any time. Whether or not you choose to participate in the research and whether or not you choose to answer a question or continue participating in the project, there will be no penalty to you.

Questions

If you have any questions about this research, please feel free to contact me or my research chairperson at: keller718@live.missouristate.edu or roseutley@missouristate.edu.

CONSENT

You will be given a copy of this consent form to keep for your own records.

If you wish to participate in this study, please sign and date below.

Participant's Name (*please print*)

Participant's Signature

Date

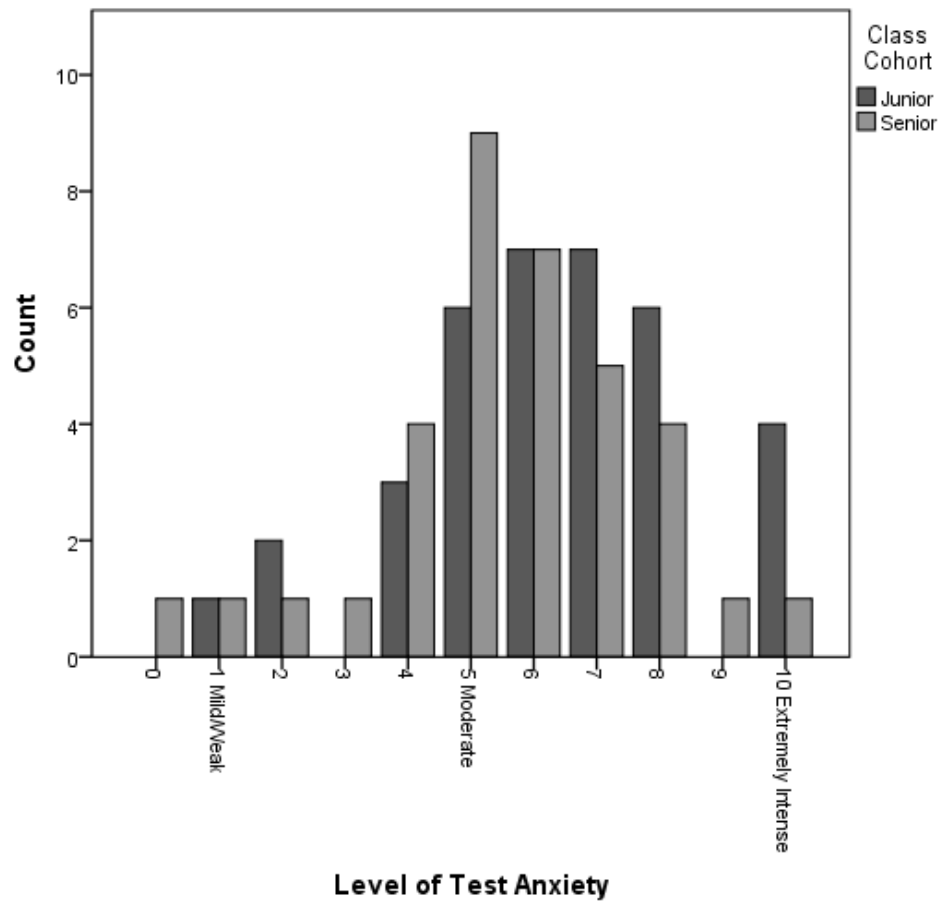
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Appendix H: Demographic Data of Survey Respondents

Characteristic	Survey Respondents		Interview Respondent	
	Number (n=73)	Percent	Number (n=7)	Percent
Gender				
Male	2	2.74	0	---
Female	71	97.26	7	100
Program Level				
Junior	37	50.68	4	57.1
Senior	36	49.32	3	42.9
Type of Student				
Traditional	69	94.52	7	100
Non-traditional	4	5.48	0	---
Previous College Degree	3	4.11	0	---
Committed Relationship	39	53.42	5	71.4
Children	2	2.74	0	---
Care of parent/grandparent	2	2.74	0	---
Work outside of the home	51	69.86	6	85.7
1-10 hours/week	17	23.3	2	28.6
11-20 hours/week	18	24.7	1	14.3
> 20 hours/week	16	21.9	3	42.9

Appendix I: Level of Test Anxiety by Class Cohort

Level of Test Anxiety by Class Cohort



Participants self-reported the level of test anxiety they experienced on a ten-point Likert Scale.

Appendix J: Comparison of Cohort Characteristics

Characteristic	Junior (n=37) M(SD)	Senior (n=36) M(SD)
GPA	3.67 (.25)	3.69 (.17)
Hours worked/week	7.54 (8.3)	14.67 (10.3)
Hours study for test	8.62 (2.0)	6.81 (2.1)
Support system	7.89 (1.6)	8.33 (1.8)
Financial situation	6.51 (1.9)	6.22 (2.2)
Impact on self-concept	6.54 (2.8)	6.33 (2.7)
Self-control over test anxiety	6.03 (1.9)	6.44 (2.4)

Appendix K: Parse Methodology Extraction Synthesis Phase

Participant 1

Extracted essences: (participant's language)

1. The participant lists excessive noise while testing and questions with unfamiliar content as triggers for test anxiety. She states, "Noise doesn't usually (bother me). If it's excessive, yes, but small amount of noise doesn't usually bother me. I can focus without ear plugs or anything, but sometimes if like I am...if I do have a lot of anxiety about a test, noise can affect me." The inability to decide between two answers on a test question also produces test anxiety. She states, "So it's questions like that, and you can have reasons for both but it's those questions that when you get to that point you're like, well, I know it's down between these two, but I don't know which one. Then you kind of start thinking oh well, will this point decide between a 76% or a 74%? You kind of get to there and then you're like, no I can't...I can't think of that. I have to just try to think it through, answer the question, and move on, and hope like I can answer most of them right." The participant's test anxiety began in high school and resulted from a general fear of not doing well on exams. As a result, she began to study compulsively and excessively. This strategy was successful until entering the nursing program when the amount of course content to be learned became overwhelming.

2. Unexpected demands on time cause anxiety and rob time away from planned study. A constant state of catch up exists because the participant states she is not managing assignments and the demands of the program well. As a result, she crams to meet the demands of the nursing courses. Cramming for tests concerns her because she worries that poor retention of material may result and prevent recall later in the clinical

setting. Also, the challenge to manage the amount of course content and sufficiently prepare for a test leaves the student overwhelmed.

3. The 75% test average requirement adds pressure to the studying phase. The first exam of the semester is the worst because she doesn't know what to expect. The 75% test average is distracting even though she understands the need for it, but she feels the one failure policy is unfair in light of the amount of content on each test. She states, "Even though I can know most of the information, what if the information I thought was important, they (instructors) didn't think was important?"

Synthesized essences: (researcher's language)

1. Environmental factors play a role in the degree of test anxiety. Tests are seen as an obstacle because they test not only knowledge but nursing judgment which the participant feels is not consistently represented by the instructors or in the textbooks.

2. Time management and the rigor of the nursing program place pressure on her ability to be successful both on the tests and in the courses.

3. Although necessary, the 75% test average requirement adds anxiety to the learning process. The participant wants both familiarity of the testing format and the testing content prior to taking the test.

Proposition – participant one

The lived experience of test anxiety is navigating a maze of demands and unknowns with limited resources while continually striving for success.

Participant 2

Extracted essences:

1. So much is on the line for one test. It shouldn't be this difficult. The participant has worked so hard to be in the nursing program. Students in other programs do not experience the same amount of stress that students in the nursing program experience. She believes the courses in the nursing program should be weighted so that some of the courses can be passed with a 70% rather than a 75%.

2. The participant has never really had to study much at all. The participant never feels prepared enough. She feels it is unrealistic to read every page of the assignments. She prefers to use a study guide and participate in a study group to learn. The amount of information is overwhelming and she doesn't know where to focus her study. She over-analyzes the test questions.

3. You never know what the instructors are thinking. Some of them think differently than the other ones so it's like the first test is the worst because you don't know anything about this new instructor. Instructors develop patterns to their testing so it is possible to learn these patterns so that you know what they are looking for in a test question. The participant also relies on her gut instinct to help her answer test questions.

Synthesized essences:

1. The progression and retention policies of a nursing program add anxiety to both the learning and testing processes.

2. The participant is facing new academic challenges within the nursing program and is attempting to meet these challenges by learning how to focus her study.

3. The way in which an instructor constructs a test impacts the ability of the student to be successful on the test.

Proposition – participant two

The lived experience of test anxiety requires adaptation in regards to following policies, recognizing the demands of the course, and the ability to focus energy on academic challenges including testing.

Participant 3

Extracted essences:

1. Anxiety is produced by the number of assignments. “There are so many things you can miss and the consistency (of directions) is all over the place.” Changes to assignments need to be written down or emailed to the students for clarity. Organization and consistency are the two factors most appreciated in a course. Consistency and organization in the course reduces anxiety. “It’s good to keep things consistent because we are....everybody is so nervous about everything and we’re new.” Organization on the part of the instructors is very important because students can only be as organized as the instructors allow them to be. Having more than one instructor in a course makes it difficult to know how to study for the course.

2. The participant did not need to study much while in high school. She was very good at memorizing and things came easily to her. Once in the nursing program, changes to her study habits were necessary. She states that the progression and retention policy is very negatively structured. “It works. Negative reinforcement, but it’s not very encouraging so that was difficult for me to just like be in a place where I’ve always done well in school. Now like 75 is passing and that’s good. Some of those nursing tests, it

was like I got lower. I got like a D or I got like right at 75 and that's like really great. And that's a really weird mindset to move into...A's is what I'm aiming for which is not stopping me from that, but it is very hard to attain now. So I think that attributed to the anxiety." NCLEX questions are difficult to understand because they require more than memorization. If the concepts from the content of the course are not understood, then the test questions will not be understood. The instructors style in the classroom and on the tests impacts how the participant studies for the class.

3. Anxiety is produced by more than the tests. All the students are worried about their test average. A group mentality exists and causes additional anxiety. After the tests, in the hallways, students go over questions so even if you aren't worried when you come out of the test, you are by the time you have listened to them talk about the questions. The participant uses music with headphones after tests to avoid listening to the other students debate the answers to the test questions. Anxiety is also caused when the student believes the course or test is not going well.

Synthesized essences:

1. Program anxiety can be reduced through course organization and consistency.
2. Self-assessment and self-adjustments are necessary for success in the nursing program.
3. Anxiety is produced by more than just the tests in nursing programs.

Proposition – participant 3

The lived experience of test anxiety is affected by program anxiety as well as test anxiety and requires students and instructors to work in tandem to produce organization and consistency in the courses.

Participant 4

Extracted essences:

1. Studying requires a methodical approach. “I tried studying like gradually throughout, and I think when I do that I don't...it's not as productive for me because I don't have a deadline.” Studying reaches a saturation level. The participant states, “I have to do one subject at a time and then check it off, and then do the next one and then check it off. I can't multi-task all the information.” She states, “You just kind of got sick of studying so it was like kind of counterproductive...I just got burnout of studying.”

2. Time management is multi-factorial. The participant states, “I think that's one thing that kind of hurt me. I like procrastinate a lot. I'm good at managing my time but I'm also good at putting things off if I have too much time.” The participant was also on the swim team for the first four years of college which forced her to be organized.

3. Testing format is important to student success and standardization of the testing format would clarify expectations. The participant states, “...all the teachers give their test differently. I think having more of a like same format for all the tests would help a lot because we've had some tests online, some test online where you only see one question which is how the NCLEX is, and then somewhere you can see all of them (the questions), and some on paper, and I think that kind of throws people off, too. Like it'd probably be better if from the beginning, we just had tests where it was online with just one question because then once we get to the classes where they're like that, we're not as thrown off. You know what to expect.”

Synthesized essences:

1. The participant determines how, how much, and what she will study. She attempts to “pick out” the important content to study. She prefers if the instructors tell her, either throughout the lecture or through the use of a study guide, the information on which to focus her study.

2. Time management skills and practices impact both program and test anxiety. The participant is the master of her time and is aware of productive and non-productive use of her time management skills.

3. Standardization of tests would reduce test anxiety by removing the unknown in regards to the test presentation.

Proposition – participant 4

The lived experience of test anxiety is a sense of balance in all aspects of life which is controlled by the participant and results either in achievement or consequences.

Participant 5

Extracted essences:

1. Classroom format of nursing courses greatly impacts the degree of anxiety. General education courses are seen as easier courses because there is the ability to “over study” for them, but the participant does not see over studying as an option for nursing courses due to the amount of content. The participant views flipped classes as students teaching students. This is anxiety-invoking for the student because the information is not viewed as reliable as lecture content from the instructor. “I think that idea alone (flipped classes) has contributed more to my test anxiety in nursing school than I think anything else.” The participant states, “I am totally for what flip-style classrooms are promoting as

far as like coming to class prepared... I think that's great, but I think that we can't completely substitute it from lecture, and I feel like that's what's been happening...when nursing school hits and you have to hear about that 75% test average and everything that goes with it, and really coming to that realization that everything you've worked for prior to that point is resting on you passing the classes that you are currently in. I think that added to it (test anxiety). And I think that right now there's like that point where I have to take ownership for like maybe I didn't study for that test as well. Maybe I didn't understand that material, but I think there also has to like be ownership of faculty and staff with, in particular, flip-style classrooms."

2. Nursing exams are very different. The participant states, "I miss the questions because I'm not understanding what the question's asking." She relates this to, "that idea of perfectionism that I have." There is a learning process required to successfully take nursing exams. The participant states she needs an instructor to teach her how to understand questions, for example, "here's the rationale behind like why that's not correct. Here's how you need to be picking out important information...This is the way you're thinking about it and this is why it is not correct." The participant states that being taught how to address nursing test questions was, "like...that was monumental for me because that was...I didn't know I was taking the test wrong and that was half the problem." Because the nursing exams cover large amounts of content, the participant states she had difficulty discerning the "important" material. She states, "I was already feeling anxious for this test because it's one of those classes I feel I have to walk in blind a lot to what I'm going to be tested over." The participant also mentions NCLEX preparation courses as helpful. "I'm pretty sure...I'm pretty sure my first test was awful.

I think it was like a critical thinking Kaplan. I remember my first nursing test in summer and that...it was just a whole new level. And then you take that first Kaplan, and that was like, 'Holy Moly.' I think it's just getting more comfortable with the idea that things aren't going to be recall. They shouldn't be in nursing. They really shouldn't be, but I think...I think we just all experienced such a radical change between being more comfortable with recall and then having to just do like application questions, and so I think it for me it was just taking as many Kaplan questions as I could. I mean I did well on mid-curricular last May and it was probably because I took so many Kaplan questions, and I didn't even know until the Kaplan rep came and talked to us probably in November that there was a way to like actually like rationalize the question before you even like tried to...like I didn't even know you were supposed to like you know look is it "assess" or is it "implement"? Do your ABCs. Use Maslow's hierarchy you know. And I was like, 'Man, should have...' It made me think of all the ways that like I could have been answering questions differently."

3. Self-imposed expectations increase the level of anxiety. The participant states, "if I'm not the first one done taking the test, which I never am the first one done, and people are already rustling around, or getting their backpacks, or moving out, like I'm like...I'm automatically like starting to feel like, 'Well, I should be done soon. I still have ten more questions left, but I need to speed through this because I can't focus with all this stuff going around.'" To address these self-imposed expectations, the student uses self-talk. For example, in response to the example given, the participant tells herself, "Well, I need to be done, but just like making that conscious effort to be like, 'No, I need to slow down. This is how I need to take my test.' And I think just being more aware that I don't

do better when I speed up and so just like when I can, just being aware and like slowing it down.”

Synthesized essences:

1. Innovative classroom styles (flipped classrooms) are viewed as unreliable sources of information and therefore produce anxiety for the student.
2. The application format of nursing exams is not intuitive for the participant, and therefore requires structured instructions.
3. Self-imposed expectations confound the test anxiety experience.

Proposition – participant 5

The lived experience of test anxiety is individualized and is impacted by the self-imposed expectations, the learning environment and the mechanics of the nursing program and nursing exams.

Participant 6

Extracted essences:

1. The participant states that testing confidence is not proportional to testing preparation. “My anxiety comes now. I feel anxious now preparing for it (the test) because I feel like I’m not preparing adequately or have enough preparation to where I’m going to succeed. Once I get to the actual test, taking the test, I’m like, I’ve just accepted that it’s already here, I’m about to take it; it’s going to happen so I’m not really nervous about it.” She adds, “I know the content and like I can read all the chapters... say there is a quiz over 4 chapters. I can read front to back all four of those chapters and understand maybe not like 100% but like retain a decent amount to where I feel like I can have a conversation with someone, explain something to someone, but then like the questions

(on the test) are just not what the content is over. It's different how it's applied in a test and so I don't feel like I'm prepared in that sense to take a test. I feel like I am almost never, I never have felt confident going into a test and even with reading the content, even with like studying for hours."

2. Honest self-evaluation allows the participant to modify study and testing strategies. "I'm not the best test taker. I'm really not the best test taker and that's for time. It's time. For me it's time. I would say it's specifically like I would say I do not as well on for the ACTs specifically it was because of time. I just read slower so that was that. I've never felt rushed in a nursing exam and never felt like I didn't have enough time to finish it that they've allowed us..." The participant is also aware of the demands of the nursing program. "(The 75% test average requirement) makes me give more time cause there's like I... if a friend asks me to go see a movie tonight, I would love to do it. I love seeing movies; I love hanging out with my friends and that's only like a two-hour commitment, you know but I couldn't do it. I would have to say no. Because I know that if I don't get... I have a test tomorrow, and if I don't do well on this test or like feel like I've prepared enough then, I won't think I could fail that means, it's higher stakes so it makes me I guess, it makes me have to say no to things and say yes to more studying. So it does make me study more. It does make me like give more time and commitment. It makes me more committed with that but it also then does give me way more anxiety."

3. The participant views negativity among the students as something she must avoid to maintain a positive outlook. "Like it's kind of like I have to mentally motivate and tell myself like and keep telling myself positive things and not being negative. Cause that's just, it's very frustrating...I try to like stay away when I see that start happening

between the groups like in between classes. It's very, uh, it's very frustrating. And it's just so easy. It would be almost easier just to like to, 'Okay I'm just going to conform to this and like be in that (negativity),' but I try not to do that."

Synthesized essences:

1. Testing confidence is not proportional to testing preparation.
2. Continuous self-evaluation allows the participant to be aware of academic needs.
3. Negativity and negative thoughts impact the degree of test and program anxiety.

Proposition – participant 6

The lived experience of test anxiety is in constant flux.

Participant 7

Extracted essences:

1. The participant is unaccustomed to studying upon entrance to college because her natural academic ability made studying unnecessary in high school. She states, "In high school I was fine . . . I never really had to study and I kind of think that is part of my problem now. I was so used to just kind of getting by, you know reading my notes the night before and getting A's on tests. Now I don't have that routine of studying down so it stresses me out because I don't do as well as I used to, and I still have that perfectionist aspect of my, you know, of how I am, but I don't do as well. So then that adds on stress, and I don't really feel I know how to study and every class is different so I can...one class I'll get down. I can study by outlining the chapters, and I've found that helps for some classes. But other classes, I haven't figured out how to study for that class

and do well. Then just the actual taking of the test. I always...there's just that anxiety that you're there and you're taking this test and you have this pressure on you. You have to get a 75 to pass and the questions are just different than anything you see before nursing school so it's getting used to those. The way (the nursing program) structures their questions is they make them where they get, not necessarily harder, but they go from being knowledge-based to the application as the program progresses so now we're starting to get into the application and it's just, they're constantly different types of questions and so you never really get used to them."

2. The participant struggles with the amount of information to process and feels her retention is affected by the volume of information to be learned. The participant states, "...there's just so much information that you have to learn at one time, that I feel like I just try to take in the bits and pieces that I can," and, "because I always feel, like even when I'm done, I always have this feeling like, I didn't learn that information enough, like I know I need to know that for like, we have a mid-curricular exam coming up and then for the NCLEX. I don't ever feel like I've learned it enough to feel prepared for these upcoming exams."

3. The participant identifies that as a student entering the nursing program, there is no previous exposure to NCLEX style questions. The knowledge needed to answer NCLEX questions must be learned and needs to be provided early on in the nursing program. "But we had a couple assignments in that class that were...you had to create NCLEX style questions, but that wasn't until the end of the semester when we already had two...tests that were NCLEX style, and I had no idea what NCLEX style questions were you know, and I was taking that class, so that was new and I think had I understood

those styles of question, I think they should have sat down with us...the pre-nursing students and been like okay...you're going to have this new style of questions. This is what they're like. Here are some examples and then maybe like, I know...I know there's a book they had us buy when we got into the program that was about the NCLEX style questions that kind of teaches you...you know this is what you should look for to kind of help you through those questions. I think they...if they would have talked to us and said something like, okay here are the...you know this is what it's like, that would have helped. I think in general like when you're even thinking about nursing, I feel like they should you know be like, here's this book. Look at this beforehand so you, you know, know what's coming."

Synthesized essences:

1. Academic success at the high school level does not necessarily prepare students to meet academic challenges at the college level and may inadvertently increase test and program anxiety.

2. The volume of information for nursing courses is overwhelming. This is confounded by instructors who are experts in their area of content teaching the entry-level courses at an expert level.

3. Students cannot be expected to intuitively know how to navigate NCLEX test questions. Additional instruction regarding NCLEX questions needs to be presented to students at the pre-nursing level.

Proposition 7

The lived experience of test anxiety can be positively impacted by adequate preparation for the nursing program.

Core Concepts

1. Navigating a nursing program is not intuitive; it is learned.
2. Consistency and organization of courses affects the students' level of anxiety.
3. The volume of information in the nursing program challenges both the student and the faculty.

Structure of the lived experience:

Test anxiety is a continuously evolving process that challenges the capacity of the student on many levels and is exacerbated by input from students, faculty, and nursing program policies.