

Stress-Management for Undergraduate Nursing Students to Increase Success Rates

Melissa Romaneschi

University of Missouri-Kansas City

Abstract

Stress and anxiety among nursing students can interfere with learning and academic performance. Anxiety is predominantly caused by school and personal life imbalance, financial difficulty, as well as exams and issues in the clinical setting. Undergraduate nursing programs are implementing ways to decrease stress in the student. The project focused on minimizing stress and anxiety in the undergraduate nursing student by implementing a stress-management program so that students have better academic success compared to students who have not received the techniques in semesters one through four. The project included 97 students with reported stress and low exam scores before the implementation of the stress-management program. The Perceived Stress Scale survey was completed by the nursing students before the implementation of the program at a private university in Kansas. Findings indicated that stress-management techniques have a positive effect on overall exam scores. The development and implementation of a stress-management program resulted in higher exam scores and decreased stress and anxiety in the nursing program.

Keywords: nursing students, exam scores, student success, student anxiety, stress, clinical, simulation

Stress-Management for the Undergraduate Nursing Students to Increase Success Rates

Nursing is rated one of the most stressful careers with high burn out rates. In 2014, the American Nurses Association Health Risk Appraisal found that 82% of nurses surveyed agreed that there is a significant level of stress and anxiety in the workplace (Walker, 2017). Stress and anxiety are a particular factor in life, identifying and learning coping methods can decrease the high burn out rate, thus increasing work productivity (Walker, 2017). Stress and anxiety coping methods should be taught and implemented in nursing programs. Introducing students early in the program to coping strategies through a stress-management program will benefit them as they progress throughout the curriculum and later. The descriptive analysis identified nursing students are at the highest risk of suffering stress and anxiety and supports program content that faculty can implement to minimize poor outcomes. With nearly 300,000 nursing students in the United States (AACN, 2019), it is essential that faculty address stress and anxiety early in the student's academic career to enhance coping mechanism skills for progression through the curriculum.

The literature reports that anxiety among college students is as high as 23.4%, and stress negatively impacts academic performance (Bowles & Candela, 2005). Studies show anxiety and stress among nursing majors are higher compared to other college programs (Beck, Hackett, Srivastava, McKim, & Rockwell, 2007). Levels of stress and anxiety affecting nursing students have grown exponentially as the program has become more difficult, and preparation for the national council licensure exam (NCLEX) is more rigorous (see Appendix A for Definition of Terms); (Beck et al., 2007).

Local Issue

Nursing students have been identified to be at the highest risk for stress compared to other students in an undergraduate program (Deasy, Coughlan, Pironom, Jourdan, & McNamara,

2014). Stress generally arises from the new clinical experiences that students endure, as well as the challenging academic workload that is offered concurrently with clinical and personal stressors the students faces in their everyday life (Hamaideh, Al-Omari, & Al-Modallal, 2015). Increased levels of stress can lead to the student's inability to assimilate and learn within the classroom and clinical settings, thus causing a decrease in understanding concepts taught in didactic and low exam scores (Hamaideh et al., 2015). Additionally, stress has a direct correlation to academic performance and well-being of nursing students (Sawatzky, 1998). Students have reported that the amount of course work, as well as faculty, are the highest sources of stress in clinical training (Hamaideh et al., 2015).

In the undergraduate program in Wichita, is apparent that students are under an extreme amount of stress and anxiety. It is reflected in the students' exam scores, clinical practice, as well as the overall retention rates. Currently, NU has approximately 97 nursing students in semesters one through four of the nursing program. The data shows that the majority of students that fail or drop out of the nursing program are in semesters one or three (personal communication, February 2019).

Diversity Considerations

The evidence-based quality improvement (EBQI) project took place at a private university in Wichita, Kansas. The program enrolls thirty-two students each fall and spring. Current enrollment at N.U. is about 90% female, 10% male, approximately 80% identify as Caucasian, with the remainder identifying as various other races or ethnicity. The university works closely with admissions and international advisors to enroll international students. Socioeconomic factors were excluded; however, socioeconomic data was considered if the student reported diagnosed mental health issues as a causative factor of stress and anxiety.

Exclusion to data collection for the EBQI project was cultural or religious reasons. Otherwise, students were included in the stress-management program.

Problem and Purpose

Problem

Stress and anxiety in undergraduate nursing students lead to poor academic outcomes and performance throughout the program. Early identification and coping strategies helps students be more successful in the program.

Intended Improvement with Purpose

The intended improvement was to use a de-stressing program that was implemented in each semester to help all students cope with their stress and anxiety. The rigors of the nursing program may cause the reported stress and anxiety to be from external factors such as finances, work, and life balance. Students have difficulty coping with stress and anxiety, and stress and anxiety have been known to interfere with a student's ability to learn and be successful in the academic setting (Beck, Hackett, Srivastava, McKim, & Rockwell, 2007). The aim of the inquiry is to determine if the implementation of a de-stressing program throughout each semester increases exam scores overall success in the nursing program.

Facilitators and Barriers

The main facilitators for the project were the dean of nursing for overseeing project implementation and assisting with data collection and budget changes, the assistant director of nursing to aid in the transition of program implementation, all nursing faculty teaching in semesters one through four, and the students. All facilitators agreed and supported the implementation of the stress-management program, and were proactive in helping students with coping mechanisms for greater success in the classroom. Limitations and barriers of the evidence reported by students

was a misrepresentation of answers provided on the stress analysis survey. Students who participated in the stress-lowering techniques reported a decrease in stress. The actual reduction of stress could be related to environmental factors such as content in the exam, the amount of time spent studying, student perception of the difficulty of the day. Truthfulness is also a limitation that was not to be excluded or overlooked. Students often feel obligated to report results based on what they think the instructor expects from them. Stress is experienced subjectively and varies among individuals.

Additionally, barriers that could have affected the results included faculty that were not ready to make changes in their curriculum, therefore chose not to participate or utilize the stress-management program to the fullest potential. Due to the Covid-19 pandemic and the closure of the university, all nursing courses became online. With the changes to the nursing program to accommodate mandated policies, student stress and anxiety were unavoidable. This barrier and limitation of the results had a direct impact on survey data and exam scores. Financial barriers were not excluded. There were no changes to student fees or costs associated with the program. However, future costs may incur, and at that time, costs will be analyzed, and decisions will be made on how to integrate cost into student fees.

Inquiry

Do minimizing stress and anxiety in the undergraduate nursing student by utilizing stress-management techniques before exams improve success in didactic courses in semesters one through four?

Search Strategies

The literature search included the search engines of the UMKC and Newman University online library and Google Scholar. Databases included CINAHL, EBSCOhost, and PubMed.

Keywords were nursing students, exam scores, student success, student anxiety, stress, clinical, and simulation. Criteria for the searches were screened and only accepted if they represented baccalaureate level nursing, included all semesters in the nursing program, and conducted in the United States between 2012 and 2019.

The results of the search included 28 studies that discussed stress and anxiety in current nursing students in the United States and the coping and de-stressing techniques successfully used in nursing programs. The evidence in the studies is reliable, valuable, and support the inquiry. After reviewing the studies, six directly aligned with the search criteria and served as direct evidence for the inquiry and project. Three studies represented level II evidence, which included a systematic review of stress and anxiety. Eight had level IV evidence, which included evidence from designed case-control and cohort studies, and six had level V which included a mix of qualitative and quantitative descriptive systematic reviews. Five had level VI, which consisted of evidence from a single descriptive and qualitative study.

Evidence by Theme

The literature search resulted in three key themes: coping, stress-management, and self-efficacy. Each theme interrelates, as coping focuses on how the individual deals with stressful stimuli, stress-management takes those coping mechanisms, and enables the student to manage their stress in various situations. Self-efficacy is how the student will effectively progress through their stressful situation.

Coping

Coping can best be defined as a specific approach to stress management that is task-relevant (“Constructive Coping,” n.d.). Coping is a necessary behavioral and cognitive effort in

controlling intrinsic and extrinsic stress. There are at least two types of coping strategies, problem-focused, and emotion-focused (Alzayyat, 2015). Problem-focused coping

In a study reviewing coping in nursing education, nursing students in the clinical setting experience an increased level of stress and anxiety. Students in nursing programs perform better with integrated coping techniques, which are highly crucial for overall success (Alzayyat, 2015). Crucial coping techniques that would be beneficial are the inclusion of meditation and deep breathing. These techniques would be particularly helpful before exams.

A qualitative study was conducted utilizing 18 nursing students at a public university for over ten months (Alzayyat, 2015). Data collection using face to face interviews and the Graneheim and Lundman's qualitative content analysis method was used to evaluate the narratives. The inclusion criteria were the completion of at least the first semester of nursing with clinical experience. The study collected data until additional participants were identified for inclusion, and 18 interviews were completed and analyzed. The interview content addressed surrounding clinical stressors, as well as coping strategies that were used to decrease negative emotions. Results showed that males and females were between the ages of 18 to 35 (Alzayyat, 2015). One common theme throughout the interview process was that students primarily utilize active confrontation when confronted with stress. Active confrontation is the development of professional competence with the focus on correcting a wrong intervention. Students also reported that reflecting on the stressful situation and enabling effective communication was imperative to control the stressful situation.

According to Reeve (2014), students report high levels of anxiety, coupled with worry and depression, as a result of feeling inadequate in the clinical setting. Effective coping mechanisms, such as the utilization of family and social support, promote well-being in the

nursing student (Reeve, 2014). Additionally, faculty have a role in supporting the student by understanding and identifying the emotional status of the student. When faculty perceive and understand student anxiety and stress, it has a direct correlation to the perception of the student regarding their educational environment, making it more conducive to learning (Reeve, 2014).

The objective of the study by Reeve (2014) was to identify stressful experiences and the use of social support as an effective coping mechanism. The mixed-method study was conducted in an undergraduate nursing program at a private university. The study included 107 baccalaureate nursing students enrolled in a traditional nursing program (Reeve, 2014). Data collection used qualitative and quantitative questions in an online survey. Nursing students who reported high levels of anxiety and stress and traditional students turned to alcohol as a coping mechanism. Furthermore, it was reported that the younger traditional nursing students acknowledged using fellow nursing students or friends for support in coping with stress and anxiety caused by the rigors of the nursing program (Reeve, 2014).

Maladaptive coping to stress results in lower retention rates and reduced student outcomes (Gonzalez, 2017). Educators must learn how to identify stress and anxiety in the students, mainly at-risk students. Educators need to encourage students to find positive coping strategies, and the literature reports that faculty have a significant impact on students and their progression throughout the program (Gonzalez, 2017).

A study by Gibbons (2012) explored stress and coping as well as burn-out in nursing students. This study addressed the correlation between primary sources of stress and burn-out in nursing students. This study addressed the correlation between primary sources of stress and burn-out. This study included 171 final year nursing students and provided them with a questionnaire. The questionnaire asked them to identify their sources of stress, rate the sources,

and state aids likely to decrease stress (Gibbons, 2012). There was a 93% response rate to the surveys yielding 12 students did not participate. Results reported that placement experience in the clinical setting was a sizeable causative factor of stress (Gibbons, 2012). Fear of the unknown and the acuity of the patients was a primary factor for increasing stress. Avoidance coping was one of the most reliable reported predictors of burn-out and caused students to perform poorly in the program (Gibbons, 2012).

Coping mechanisms are vital to student nurses' overall academic performance and success. A cross-sectional exploratory study investigated stress, depression, and anxiety in nursing students by an online survey that included 437 participants (Chernomas & Shapiro, 2013). Results showed that the student view of the clinical settings and the ability of the student to cope effectively and to balance work, school, and personal life played a significant role in students' success (Chernomas & Shapiro, 2013). The recommendation was for curriculum change that enhanced or integrated mental health and support available to the students (Chernomas & Shapiro, 2013). Additionally, providing education to faculty is essential in the implementation of the stress-management program. Faculty were educated and versed in identifying potential at-risk students and strategies to ensure the student gets additional help as needed.

Coping with stress and anxiety in the clinical setting is one of the most fundamental factors influencing student success. An integrative literature review evaluated qualitative and quantitative studies on coping strategies used by nursing students to accomplish their tasks. The finding revealed that students primarily used problem-focused coping strategies, which include problem-solving, self-confidence, and evaluation (Labrague, McEnroe, Almri, Fronda, & Obeidat, 2018).

Stress-Management

Stress-Management can be defined as the effective management of stress and anxiety to perform the duties of a nursing student better. According to the American Nurses Association (ANA), nursing students face many challenges, and their health is not a priority. The juggling of school, life, and family, as well as students, are experiencing performance anxiety and a fear of failure, which leads to decreasing student retention rates (Weston, 2019). The *patient comes first*, and it is with this mindset that students fail to give themselves grace and the necessities for proper mental health. One need includes an adequate amount of sleep. The majority of students report a lack of sleep due to studying for exams and completing clinical paperwork, which is known to raise cortisol levels, making them more susceptible to illness (Weston, 2019).

A nursing program in Columbus, Ohio, implemented a stress-management initiative with nursing students. The program focused on the importance of self-care and managing stress at the beginning of the nursing program (Weston, 2019). Students learned specific relaxation techniques, including meditation and deep breathing. Students asked to focus on a particular relaxation technique in the clinical setting, such as slow deep breathing, guided imagery, and visualization (Watson, 2019). The findings support stress-management programs and student health promotion in nursing programs. Educators need to facilitate and suggest management techniques, as many activities are beneficial to students. According to Weston (2019), actions that have reduced stress are music therapy, yoga, and tai chi.

Actions reducing stress are integral for nursing students' overall success in undergraduate nursing programs. Lo (2002) investigated the perception and sources of stress and stress management techniques used among nursing students over three years of their undergraduate nursing program. The correlational study consisted of the General Health Questionnaire (GHQ-

12) and a self-esteem scale, and data were analyzed using frequency distribution, content analysis, and measures of correlation (Lo, 2002). Results indicated that in the first year of the nursing program, students experienced less stress and had better stress-management skills than those in their second year of nursing (Lo, 2012). Students did not specify any difference in stress levels regarding chronic stress, avoidance stress, and negative stress (Lo, 2012).

In a cross-sectional study conducted by Senturk (2018) with 318 nursing students, the stress experienced during the students' nursing education was explored by the investigators. Each student received a student information form and levels of stress in the nursing education questionnaire (SINE: Senturk, 2018). The results revealed a strong correlation between the mean of the academic stress subscale and the scores obtained on student's stress in the nursing education questionnaire. Senturk (2018) also reported that students equally experience stress in both the academic and clinical practice arena. Similarly, questionnaires will be provided to undergraduate nursing students for evaluation, and specific coping methods will be implemented.

In 2013, qualitative research focusing on stress in an undergraduate nursing course and stress-management techniques addressed the primary causes of stress and anxiety (Binotto, 2013). Data were collected from 30 undergraduate nursing students in a private university. Questionnaires were given with a total of 10 questions and using content analysis; the data synthesis revealed that factors responsible for stress in the students were due to the number of exams, mental and physical fatigue, work, family imbalance, and amount of time allotted for academic tasks (Binotto, 2013). Stress-management techniques were reported to have a positive outcome, as expressed by the 30 undergraduate nursing students.

Eighty-nine participants from a public university were asked to complete pre- and post-intervention surveys that investigated the efficacy of intervention programs for students that

focused on biofeedback and mediation (Rantanasiripong, Park, Rantanasiripong, & Kathalae, 2015). The surveys were given to students as they began their clinical experience. Findings indicated that meditation and biofeedback, as independent interventions, reduced anxiety levels in nursing students (Rantanasiripong et al., 2015). The surveys used in the study included the State-Trait Anxiety Inventory and the Perceived Stress Scale (see Appendix B).

Stress produces a barrier that impedes learning and concentration, as well as problem-solving (Yazdani, Rezaei, & Pahlavanzadeh, 2010). A study by Yazdani, Rezaei, and Pahlavanzadeh (2010) aimed to determine if a stress management training program would be beneficial in decreasing stress, anxiety, and depression in the nursing student (Yazdani et al., 2010). The study included 68 nursing students who completed the Depression, Anxiety, and Stress Scale (DASS-42). Students that did not receive the stress management program reported no change in stress; the students who did get the stress management program reported a significant reduction in anxiety and stress (Yazdani et al., 2010). The study concluded that holding stress-management workshops in various courses aided in the overall mental health of the student (Yazdani et al., 2010).

Self-Efficacy

According to Bandura, self-efficacy is defined as how well an individual adapts to specific stressors and the actions in which they utilize to best deal with them (Bandura, 1997). Self-Efficacy focuses on those consistently faced with extremely stressful situations during their everyday activity, such as life-changing events (Prati, Pietrantoni, & Cicognani, 2010). The literature discusses self-efficacy and how nursing students adapt to their stressors. One study involved nursing students in their final semester and provided them with a questionnaire evaluating students' abilities to believe in their capabilities and self-esteem. Furthermore, for the

student to overcome a stressful situation, they must see some success on a task they had expected to do poorly on (Alavi, 2014). Self-efficacy aids in confidence and independence (Alavi, 2014); however, to have better self-efficacy, a few guidelines identified methods for better morale and autonomy.

Students report higher self-efficacy when they have an opportunity to practice clinical skills under direct supervision before actually entering the clinical site so they can receive continuous positive feedback from faculty, which fosters self-confidence and (Alavi, 2014). The literature supports increasing confidence in students as there is a correlation between confidence and academic performance (Alavi, 2014).

A study published in the *Journal of Nursing Education* affirmed that there is a significant nursing shortage in the United States and that declining nursing programs contribute significantly to ensuring quality candidates are entering nursing programs (Peterson- Graziose, Bryer, & Nikolaidou, 2013). The purpose of the study was to determine if attrition rates had a direct correlation to self-esteem and self-efficacy of the student (Peterson-Graziose et al., 2013). A descriptive correlational design and convenience sample gathered data using the Rosenberg Self-Esteem Scale, the General Self-Efficacy Scale, and the Holmes and Rahe Social Readjustment Rating Scale. Results found that self-esteem had a significant association with attrition rates and increased self-efficacy was reported to decrease attrition rates among nursing programs (Peterson-Graziose et al., 2013).

In a content analysis, qualitative study, seventeen nursing student and three instructors were asked to participate and attend a semi-structured interview and focus group on identifying reasons behind poor communications, lack of readiness, and emotional reactions when faced with stressful situations in the clinical setting (Jamshidi, Molazem, Sharif, Torabizdeh, &

Kalyani, 2016). The results showed that most students reported high-stress levels in the clinical setting, and the recommendation was for instructors to prepare students for situations that may occur in the clinical setting via simulation, as well as focusing on student communication and psychological needs (Jamshidi et al., 2016).

Self-efficacy is a recurring theme throughout the literature. Furthermore, a study was conducted to determine whether a preceptorship course had an impact on learning outcomes and if those outcomes had an association with self-efficacy (Rambod, Sharif, & Khademian, 2018). The quasi-experimental study involved 112 participants who were selected through convenience sampling. A general self-efficacy scale and a learning outcome scale were used to measure students perceived level of self-efficacy and their level of achievement and learning outcome goals, respectively (Rambod et al., 2018). Results revealed that self- efficacy, and outcomes increased after participating in the preceptorship course. Students identified that confidence building and positive feedback aided in their ability to manage the clinical setting

When identifying stress levels and student ability to cope and self-manage, verification of the presence of stress is the first step in ensuring the student will be most successful in coping mechanisms. One study involved 86 students in semesters 6-9 of the nursing program and used a cross-sectional design that included an assessment developed by Costa and Polak (Pereira, Caldini, Miranda, & Costano, 2014). The study found that stressors are intensified when students are faced with direct patient care. The recommendation is for faculty involvement in the implementation of self-care (Pereira et al., 2014).

Llapa-Rodriguez, (2016) conducted a cross-sectional study with 116 undergraduate nursing students to assess the risk factors associated with reported stress and the self-help methods that were integrated to aid the students. A KEZAK questionnaire with results indicated

that lack of competence and fear of failure were the primary factors that affected performance (Llapa-Rodriguez, Marques, Neto, Lopez, & Oliveira, 2016).

In discussing competence and self-confidence, a quantitative study with 303 undergraduate students used a twenty-seven-item nursing anxiety and confidence with the clinical decision-making scale (White, 2014). Data showed that many students did not feel prepared to care for patients as acuity level increased, and the recommendation was that nurse educators provide more hands-on help in the clinical setting to decrease anxiety in novice clinicians (White, 2014).

Self-efficacy can determine the effect on how the student copes and how they decide to progress through stressful situations. A study on self-efficacy and coping strategies involved undergraduate nursing students and explored their coping strategies and effects of self-efficacy with stressful situations in the clinical setting (Zhao, Lei, Wei, Yan-Hong, & Li, 2014). Self-reporting questionnaires, including the Perceived Stress Scale, coping behavior inventory, and Generalized Self Efficacy Scales were administered. The results indicated that assignments and workload were the primary cause of stress, and students used transference as a coping strategy (Zhao et al., 2014; see Appendix B). Furthermore, self-efficacy showed a positive effect on the students and as well as how they were able to positively cope with stress during clinical practice (Zhao et al., 2014; see Appendix C for themes linked to literature).

Theory

The Theory of the Adaptation Model focuses on how an individual can effectively cope with their stress and anxiety (Bliese, Edwards, & Sonnetag, 2017). In comparison, constructive coping can best be defined as a specific approach to stress management that is task-relevant ("Constructive Coping," n.d.). Similarly, the main goal and ideology between the middle-range

theory and concept are not only cohesive and serves as the theoretical foundation for the project. Understanding where the stress and anxiety are derived and how to facilitate the undergraduate in the best coping mechanisms to be successful in the nursing program is vital to the student's success (see Appendix D). The application of the adaptation model to the project topic is repeated several times throughout the literature. The common theme in the literature is the identification of stress and exploring whether coping mechanisms are effective and conducive to success in the classroom and throughout the nursing program (see Appendix E).

Methods

IRB Approval

The university requires IRB approval for any research or quality improvement project with human subjects. The institution requires informed consent letters to be signed by all students participating in the study. The application for IRB approval was submitted and approved by the university as exempt research (see Appendix F). Confidential records such as grades and exam scores, as well as data containing demographics, were all significant risk factors that were addressed in the project. All gathered records were kept confidential using secure files and lock down programs, and all identifiers such as student names were excluded to decrease risk to the student. The vulnerable population included students that are being treated for mental health issues and wished not to be identified.

Ethical Considerations

Ethical consideration for the project was fear of identification and potential bias from faculty. Additionally, students who reported stressors and anxiety factors may have falsified information, potentially skewing results. All students, regardless of reported stress and anxiety,

participated in the de-stressing class and utilized techniques, and the course was only open to students in the program.

Conflict identified by the student investigator was fear from the student of being identified and treated differently or unfairly in the classroom and clinical setting due to bias. Management of the ethical concerns was based on ensuring anonymous surveys, as well as engaging all students to take part in the stress-management program so that every student was treated the same and given the same techniques for de-stressing if the need arose.

Funding

At the time of the study, there were no direct costs. If any cost occurred, application for a scholarship or use of professional development funds would have been requested (see Appendix G).

Setting and Participants

Setting

The EBQI project interventions were held in the nursing conference room at the university. The setting was informal with all nursing students in semesters 1-4 present. An informational meeting explained the purpose, types of stress, and coping mechanisms, and was held at the start of the semester.

Inclusion and Exclusion Criteria

The inclusion criteria for the project was a currently enrolled nursing student. All students were required to participate in the project. The only exclusion was the student's choice to exclude themselves due to cultural or religious reasons.

EBP Intervention

The students consented to participation and were given a questionnaire asking specific questions regarding causative factors of stress and anxiety. Baseline data was collected after six months, the course of one semester before the implementation of the de-stressing program. Data were collected regarding the total number of students reporting stress directly related to the rigors of the nursing program, as well as stressors from external factors such as work-life balance. Data was collected and analyzed for another semester after the implementation of the stress-management program. The analysis included exam scores from one semester to another (see Appendix H).

Recruitment. Recruitment of students for participation in the stress-management program was mandatory, as the initiative was considered a component of the nursing program. Faculty participation was mandatory after a summer in-service before the start of the fall semester. Faculty learned coping strategies and how to identify at-risk students.

Steps. Steps necessary for the stress-management program included faculty participation at the in-service before the semester and identification of at-risk students to foster an increase in the program retention rates. The first step in implementation was ensuring faculty were all in agreement with the program. The second step was gathering all nursing students at the beginning of the semester, providing them with questionnaires and information on the implementation of the stress-management program and the reasons for the project. Questionnaires were evaluated at the end of the semester, and techniques were specific to reported results. Methods included quiet-time before exams, dimly lit rooms, aromatherapy, and a therapy dog. The program was evaluated over six months and will continue for further analysis.

Change Process

Stress is a primary determinant in academic success, and coping factors are imperative to student progression throughout the nursing program. Coping factors are directly related to how the student can adapt to environmental stressors and navigate through courses and clinical success. Lazarus and Folkman state that learning and stress are inversely related and that learning decreases as stress increases (Lazarus & Folkman, 1984). The stress theory of a change and the proposal aligns appropriately as a student must identify the primary cause of stress and implement methods in which they can use for coping. Effective coping is essential to students' overall success in the nursing program.

Evidence-based Practice Model

The evidence-based practice model that aligned with the project was the Advancing Research and Clinical Practice through Close Collaboration Model (ARCC). The evidence-based model's conceptual framework guides project implementation and sustainability to achieve desired outcomes (Melnik, 2013). The model is used to guide behavioral changes (coping strategies) that directly influences behavior, emotions and learning (Beck, et.al., 1979). By teaching students stress-management and coping skills, students have the ability to overcome learning barriers and have increased academic success (see Appendix D).

Sustainability

With low overall costs for implementation of the stress-management program, sustainability was achieved. After a full year of implementation, exam scores will be analyzed to ensure students utilized the techniques taught and positive outcomes are evident. Sustainability was also reliant on new faculty who completed the necessary training to identify at-risk students and applicable methods for constructive coping.

Study Design

The EBQI project used a quantitative pre-and post-test design, one cohort, with 97 undergraduate nursing students. Evaluation of exam scores was descriptive as no comparisons were made. Pre and post scores of the Perceived Stress Scale were compared for changes (see Appendix I).

Internal and External Validity

Two methods were identified and built into the EBQI project to ensure that internal validity was secure. Identification of students that reported increased stress and anxiety was kept confidential as bias and subjectivity could have been an issue for data reporting. Second, the implementation of the stress-management program needed to be attended by all students. Excluding students that do not report stress and anxiety defeated the purpose of keeping all student questionnaires confidential, and students who had difficulty coping were identified not only by other students but faculty as well. A threat to internal validity was students who did not accurately report stress and anxiety.

Additionally, students who did not complete the survey and questionnaire also posed an issue. The last threat to the internal validity of the EBQI project was bias from faculty who identified students who struggled with stress and anxiety and failed to implement de-stressing techniques in the classroom. The number of participants was anticipated at 97, and this was one factor that positively affected external validity. Furthermore, the required participation by all students decreased the ability to gain insightful data for use in similar populations due to the inclusion of a student with low or high stress. A threat was the unequal ratio of male to female students in the nursing program, which made it difficult to generalize results across a larger population. Additionally, with the only site being the nursing program instead of all allied health, the sample was relatively small compared to participation from all the allied health programs.

Outcomes

The primary outcomes measured were exam scores, which had an anticipated increase after implementation of the stress-management program at the university in Wichita. All students were required to attend since the program was integrated into one of their existing didactic courses. The goals were to facilitate methods in which students could de-stress and perform higher in the classroom and clinical settings. Decreasing stress and anxiety and facilitating coping mechanisms for the student fostered reduced failure in the program.

Instruments

Students were given the Perceived Stress Scale (PSS) before starting the stress-management program (see Appendix B). The faculty also evaluated exam scores and clinical performance. Dr. Kenneth Matheny, Ph.D., developed the PSS to help identify those at risk for maladaptive coping (“Write Your Own Prescription for Stress,” 2000). Permission to use the PSS tool was not required per the authors of the tool (Cosner, n.d.).

A study reported that the validity of the PSS after being given to 479 undergraduate students indicated a neutral role in the relationships between what students perceived as social support and stress. A positive effect did not have a similar report (Civitci, 2015). As the negative effect increases, the positive effect of perceived stress decreases (Civitci, 2015). The validity and reliability of the Stress Coping Resources Inventory were converged, with validity testing and construct reporting that the scales offer promising research as a clinical tool to study coping (Matheny, Aycock, Curlette, & Junker, 2003).

Quality of Data

The student investigator collected the perceived stress survey once all undergraduate nursing students completed the necessary information. With 97 participants, a post-hoc power

analysis was conducted. All reported data was securely stored, transcribed, transferred into electronic format, and entered into a statistical program for further analysis after one month of data collection. Pre and post-test validity were analyzed as a one-group pretest, post-test design. One-group design focuses on one large group with the same predicted outcomes.

Similar to the literature, the project will identify correlations between the student's identified stressors, integrate effective coping methods through the stress-management program, and provide a post-survey to report efficacy of the program. The project utilized similar data collection by using qualitative and quantitative surveys, that was distributed to all 97 undergraduate nursing students to identify what social support the students seek, and the methods in which they use coping techniques.

Benchmark studies for comparison for the current project included the effects of essential oils on test days, and dim lights and quiet time before the exam (Gonzalez, 2014). Similar to the literature, the project identified correlations between the student's identified stressors, integrated effective coping methods through the stress-management program, and provided a post-survey to report the efficacy of the program (Hamaideh, 2015).

Analysis Plan

Descriptive statistics delineated the participants' demographics, including sex, age, marital status, and current semester. Demographics for the EBQI were all undergraduate nursing students entering semester one, and students currently in semesters one through four (see Appendix J). Wilcoxon Signed-Rank non-parametric paired test was used to analyze pre and post-exam PSS scores. Exam score comparisons were based on evaluating the test scores of students on days each method was used.

Results

Settings and Participants

The study took place over one year at a university in Wichita, Kansas. Ninety-seven undergraduate baccalaureate nursing students participated, no exclusions to the data were needed. Of the participants, 8% were male, 92% female, 9% of students reported being married. 26% of the reported data were from 1st-semester students, 29% from 2nd semester, 18% reported from the 3rd semester, and 24% of students were in their final semester of nursing school. All students participated in the stress-management informational meeting, responded to the PSS, and answered questions about primary sources of stress via SurveyMonkey.

Intervention Course

Central components to the intervention over the year included ensuring all exam scores were uploaded and reflected 100% of students in the class, as well as extending the timeline to receive survey results back for data analysis. Other significant components included identifying the stress-management techniques instructors were using and reminders to continue implementing throughout the semester. The number of participants varied from the initial start of the project, as students chose to leave the nursing program for personal reasons and or failed before the implementation of the project. It did not negatively impact the study as the numbers decreased before data collection.

Outcome Data

The perceived-stress scale was provided to students through a web link. It was sent to all the students by email, and the link was activated over one week, during which time only one reminder was sent. The questionnaire included a request for student demographic information (gender, semester). Among the 97 surveys sent, all surveys were returned, and there were no missing answers.

Perceived-Stress Scale

Developed in 1988 by Cohen and Williamson, this scale is used to measure psychological stress. Ten sample item questions were analyzed, and respondents rated each question on a 5-point Likert scale ranging from 0 (never) to 4 (very often). Scores were analyzed and calculated on a 0-40 scale. According to Cohen and Williamson (1988), the higher the score, the higher level of perceived stress. Of the participants (n=97), 67% reported a score of 4, which indicates that in the last month, they have felt nervous and stressed very often, where 22% reported a score of 3 that they were on top of things fairly often. About 68% of students reported that their primary cause of stress and anxiety was the number of exams. Missing data for the PSS was the post-survey results. Post-surveys were sent out at the time of the Covid-19 closures, and after two email reminders, only 14 surveys were returned, which failed to yield sufficient data for comparison. Data for initial surveys were analyzed using SPSS descriptive analysis.

Exam Score Analysis

Mean exam scores of all undergraduate nursing students in semesters 1-4 were analyzed using the Wilcoxon Signed-Rank non-parametric paired test over two semesters (1 year, n=16). Mean exam scores were analyzed pre- and post-stress management implementation ($p = 0.451569$, $p(x \leq Z) = 0.225784$). Results indicated that the chance of a type I error, rejecting a correct H_0 , was high at 0.4516 (45.16%). The mean exam scores (n=16) for one year resulted in a sample average of 0.815, with skewness of 1.227656 and a W score of 53. The test statistic Z equaled -0.752802, which is in the 95% region of acceptance, therefore indicating that there is a slight positive correlation that implementation of the stress-management techniques increased overall exam means. At the time of data reporting, there were no missing data for exam scores.

Discussion

Successes

The most important success of the project was the participation of all undergraduate nursing students and the 100% survey return rate. Additionally, successful completion of data analysis and the positive correlation, a 1.9% increase in exam score means after the implementation of the stress-management program. Decreasing student stress before exams was imperative to their success in the nursing program as well as overall mental health and moral.

Study Strengths

The strength of the study was a direct effect of the faculty support. Faculty ensured students were provided stress-management techniques, which primarily were lights dim, and quiet time before exams. Students had time to gather their thoughts, sit for a few minutes, and begin the exams in a calm environment. Prior to implementation, students gathered in the hallway, and tried to quiz each other, and discuss content up to the time the exam started. With the quiet-time, there was no loitering in front of the computer lab, nor talking upon entering the room. The director was highly supportive of the program, and the nursing program was small enough that no additional resources were needed. After implementing the stress-management program, and data reporting a positive correlation, minor changes can be made, and the program can be utilized again.

Results Compared to Evidence in the Literature

The results of the project yielded similar correlations, as the literature reported. Data reported that the majority of nursing students in semesters 1-4 identified the number of exams as their primary cause of stress and anxiety. Exams are high stake, and students are aware that failure to perform satisfactorily can potentially be detrimental to their success in the program. Similarly, a study at a private college with 30 undergraduate nursing students reported that the

number of exams students took was the primary source of stress and anxiety (Binotto, 2013).

After the implementation of stress-management techniques, 100% of students reported decreased stress, and improvement in overall exam scores (Binotto, 2013). The literature reports that nursing programs are one of the most difficult and stressful programs over all other majors (Beck et al., 2007). Of the 97 nursing students surveyed, 92% reported the nursing program was significantly more stressful and difficult than pre-nursing courses. Evidence supports the use of stress-reducing techniques prior to exams, and exam scores over the last semester support the data.

Limitations

Internal Validity Effects

Confounding factors potentially affecting the project data was a misrepresentation of students' stress, due to embarrassment, inability to identify true underlying stressors, and causative factors. Inaccurate reporting by the students would result in inaccurate data reflecting the 92% reporting nursing school as being significantly more difficult than previous courses, as well as the 68% reporting that the number of exams is a causative factor. At-risk students present with a pre-disposed amount of stress, knowing they must work harder, and exams are higher-stake.

External Validity Effects

External validity factors that affected the data was the Covid-19 pandemic and the transition to online courses. Students in the nursing program faced significant challenges with the change, as many students have never taken online courses. The inability to attend clinical and utilize content learned in didactic and implement in practice was significantly difficult. Furthermore, student participation in returning post-surveys was 14 and had a significant

detrimental impact on data reporting. The inability to compare surveys and information on program success played a significant factor in project outcomes.

Sustainability and Plan to Maintain Effects

A plan to maintain the positive effects of the stress-management program is the continuation of faculty support. Without faculty support and implementation in courses, the program will weaken and essentially end. The program was facing a faculty turnover for the upcoming semester, and ensuring they will be educated and knowledgeable of the program and provide support will have a direct result of continued program success.

Efforts to Minimize Study Limitations

Efforts to minimize study limitations included expanding the length of the study over two years so that data would reflect mean exam scores of cohorts throughout the nursing program. Additionally, increasing the length of the study might allow for more concise identification of the most stressful semester, as well as retention rates. The ability to gather such data would allow faculty the opportunity to evaluate the curriculum and adjust courses or formatting to aid overall student success. Furthermore, gathering and analyzing nursing interview scores for program entry, which includes math and writing, as well as collecting exam scores and identifying if there is a correlation between lower-scoring interviewees and exam scores, influences program success.

Because of the impacts and limitations of the Covid-19 pandemic and the change to online courses, data outcomes may have been influenced, and a post-survey related to the situation would have been beneficial if completion was deemed mandatory. The potential adverse effect of Covid-19 post-survey would be skewed data as the primary causative factors of

the program would be a direct correlation to students' discontent and sudden change to their routines, not the number of exams and coursework.

Interpretation

Expected and Actual Outcomes

Expected outcomes were met, as the goal was to see an increase in exam scores (1.9%) and a decrease in stress and anxiety. Another expected result was the participation of all students in the post-survey to analyze specifically the stress-management techniques identified that were most beneficial. The actual outcome was only 14 students participated in the post-survey due to the pandemic and school closures, which was not sufficient to provide pertinent data.

Intervention Effectiveness

Inferences consistent with the strength of the study were faculty participation and implementation of stress-management techniques throughout the semester. Without consistency, data would be insignificant and invalid. With positive outcomes, the study can now potentially include other programs in the school of nursing and allied health.

Intervention Revision

Intervention modifications that may improve the attainment of the outcomes would be to begin stress-management techniques and coping mechanism education when the students enroll for the first time at the university. Giving them the necessary skills to cope with stress and anxiety before admission to the nursing program may be beneficial in preparing them for the rigors of the nursing program.

Expected and Actual Impact to Health System

The expected and actual impact on the health system was accurately projected prior to implementation. It was anticipated that exam scores would increase, and the actual effect on the health system is new graduates that have the skills and ability to cope with the stress and anxiety

that they will face throughout their nursing career. Nurses that can cope with their stress can minimize nurse burn-out rates, and units will have lower turnover rates.

Costs and policy. The expected cost was projected to be minimal, and the expected outcome was met. No unexpected costs were incurred. The cost of economic sustainability is very realistic as a budget can now be projected and significantly increased with the positive results the data reported. The student investigator privately funded the project.

Conclusion

The practical use of the intervention would greatly benefit all undergraduate nursing students. Teaching constructive coping techniques and de-stressing methods have shown to be beneficial for the students' overall mental health, as well as their academic success. Implementation of a program to teach constructive coping methods to de-stress can lead to lifelong skills that will benefit the student well beyond graduation. With little to no upfront costs, the budget was not an immediate concern.

Further Studies

Additional studies can be done to analyze if stress-management programs are beneficial throughout the allied health department, and in other nursing programs within the local area. Information can be shared with other schools of nursing through presentations and reporting of the found data.

Dissemination

The student investigator would like to educate nursing faculty throughout the local area that has nursing programs on the importance of constructive coping and the prevalence of stress, anxiety, and depression in undergraduate nursing students. Educating faculty on interventions to

facilitate a better learning environment, and as the data reports a positive correlation to higher exam scores, the overall success and retention rate would also increase. Stress-management techniques would be a beneficial method to implement for all nursing programs in the surrounding area.

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Appendix A.

Definition of Terms

Stress: demands that are derived from any internal or external stimuli that directly affect homeostasis (natural balance), thus affecting an individual's psychological and or physical well-being (Lazarus & Cohen, 1977).

Coping: Coping can best be defined as a specific approach to stress management that is relevant ("Constructive Coping," n.d.).

Stress-management: defined as a focus on how individuals interact, and the external environment in which they are placed (Lazarus & Cohen, 1977).

Simulation: simulation-based clinical education is a useful pedagogical approach that provides nursing students with opportunities to practice their clinical and decision-making skills through varied real-life situational experiences, without compromising the patient's well-being.

Appendix B.

Measurement Tools

Perceived Stress Scale

PERCEIVED STRESS SCALE

The questions in this scale ask you about your feelings and thoughts during the last month.

In each case, you will be asked to indicate by circling how often you felt or thought a certain

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

1. In the last month, how often have you been upset because of something that happened unexpectedly? **0 1 2 3 4**

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

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

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

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

6. In the last month, how often have you found that you could not cope with all the things that you had to do? **0 1 2 3 4**

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

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

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

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? **0 1 2 3 4**

Appendix C.

Review of Evidence Table

PICOT: Do minimizing stress and anxiety in the undergraduate nursing student by utilizing stress-management techniques before exams and clinical, compared to students who have not received the techniques, improve success in didactic and clinical courses in semesters one through four?

First author, Year, Title, Journal	Purpose	Research Design ¹ , Evidence Level ² & Variables	Sample & Sampling, Setting	Measures & Reliability (if reported)	Results & Analysis Used	Limitations & Usefulness
THEME: COPING Alzayyat, A., (2015) Stress and Coping Among Nursing Students During Their Practical Education in Psychiatric Settings: A Literature Review <i>Global Advanced Research Journal of Medicine and Medical Science</i>	The article was to review studies about stress and coping among nursing students during their clinical education, utilizing various databases such as CINAHL, MEDLINE, and PUBMED to identify causative factors of stress.	The review included studies published between 2004-2014; reported in English, and about psychiatric nursing clinical education. Only five studies met the criteria. S.R. Level V, descriptive, quantitative	Undergraduate nursing students in the U.S. in their clinical portion of education.	Review of studies, not reliability reported	The current analysis revealed that students coping experiences in psychiatric settings had received inadequate attention, and further research to be completed.	Limitations: Only focused on psychiatric rotation in clinical education. Usefulness: Provided several additional article reviews that pertain to undergraduate nursing stress, so identifying further studies was useful.

THEME: COPING Chernomas, W., & Shapiro, C. (2013, November 7). Stress, Depression, and Anxiety among Undergraduate Nursing Students	The purpose was to identify stress, anxiety, and depression in students and effective coping mechanisms for success in the nursing program	Cross-sectional descriptive Level IV	437 Nursing students at a public university	Survey Reliability not reported	Students reported that clinical caused more stress and anxiety, and implementation of health services might be beneficial	Limitations; Potential bias Usefulness: Large group of nursing students in all semesters of nursing reliable feedback
THEME: COPING Gibbons, C., (2012). Stress, coping, and burn-out in nursing students. <i>Nurse Education Today</i>	To explore the relationship between sources of stress and psychological burn-out and to consider the moderating and mediating role-played sources of stress and different coping resources on burn-out.	A questionnaire administered to 171 final year nursing students; questions asked which measured sources of stress when rated as likely to contribute to distress and rated as possible to help one achieve. Support, control, self-efficacy, and coping style were also measured, along with their potential moderating and mediating effect on burn-out. Non-experimental quantitative. Level IV	171 final year nursing students in a public baccalaureate program.	A survey, questionnaire, and Stress level Likert scale were used for data collection. No reliability reported	93% response rate to surveys. Results indicated that placement experience was an important source of stress likely to lead to eustress.. Avoidance coping was the strongest predictor of burn-out.	Limitations: Subjective, small study. Only one nursing program surveyed. Usefulness: Results do show the need for faculty involvement and knowledge to identify and work with students feeling stressed and or anxious.

THEME: COPING Hamaideh, H., Al-Omari, H., & Al-Modallal, H. (2015, August 11). Nursing students' perceived stress and coping behaviors in clinical training. <i>Journal of Mental Health</i> , 26(3), 197-203. https://doi.org/https://doi.org/10.3109/09638237.2016.1139067	This study aimed to identify levels and types of stressors among nursing students during their clinical training and their coping behaviors;	Purposive sampling method from 100 nursing students using a self-reported questionnaire composed of the Perceived Stress Scale and Coping Behavior Inventory. Level VI	Nursing students in a public university, all semesters No reliability reported	Questionnaire perceived stress, and coping scale, and coping behavior inventory	Results showed that "assignments and workload" as well as "teachers and nursing staff" were the highest sources of stress in clinical training. Coping behaviors used were "problem-solving" and "staying optimistic."	Limitations: Small sample size, subjective Usefulness: Incorporates the need for faculty to implement coping skills in the nursing program.
THEME: COPING Labrague, L., McEnroe, D., Almri, A., Fronda, D., & Obeidat, A. (2018, June). An integrative review on coping skills in nursing students: implications for policymaking. <i>Journal of Nursing</i> , 65(2), 279-291. https://doi.org/doi: 10.1111/inr.12393	Identify positive coping mechanisms to aid in student attrition and success	Qualitative and Quantitative study/literature review Level IV	Lit review keywords: coping, nursing students, stress, anxiety	The survey reported 27 articles compiling data supporting that students use problem-focused coping rather than emotion-focused	Reports show that the primary source of concern is from the clinical setting	Limitations: None Usefulness: resources for additional literature

<p>THEME: COPING</p> <p>Reeve, K., (April 2014). Perceived stress and social support in undergraduate nursing students' educational experiences. <i>Nurse Education Today</i></p>	<p>To identify the stress experience and use of social support as a coping mechanism in traditional and second-degree nursing students' educational experiences</p>	<p>A mixed-method study. Five instruments were combined to develop the quantitative and qualitative questions for an online survey. Level VI, descriptive and Level VI qualitative</p>	<p>Nursing students at a private university, using 107 baccalaureate nursing students enrolled in either a traditional ($n = 49$) or second degree ($n = 58$) program during Fall 2011 semester.</p>	<p>The consolidated criteria for reporting qualitative studies (COREQ)</p> <p>No reliability reported</p>	<p>The survey reported that nursing students feel high levels of anxiety, worry, and depression, in response to stress resulting in feelings of rejection and inadequacy. Respondents used faculty members for support less frequently than they used their peers, significant other, or parents.</p>	<p>Limitations: Small sample size, questionnaire subjective, small sample size, one program studied.</p> <p>Usefulness: Of the small number in the study, a need for education on coping and faculty involvement was shown</p>
<p>THEME: STRESS-MANAGEMENT</p> <p>Binotto, M., (2013)., Stress in an undergraduate nursing course: a qualitative approach <i>Journal of Nursing</i></p>	<p>Identify the presence of stressful situations in the life of nursing university students</p>	<p>Qualitative research Level IV</p>	<p>Thirty students from a private higher education institution;</p>	<p>performed with data were collected through a questionnaire with ten questions using content analysis technique for data analysis after the Ethics Committee has approved project</p>	<p>The factors responsible for the stress in university students comprised the final semester periods, number of exams and assignments, mental and physical tiredness, the combination of work, study and family, health problems in the family and the multiple tasks with a short time to fulfill them</p>	<p>Limitations: A very small study</p> <p>Usefulness: Data identified causative factors of stress and anxiety.</p>

<p>THEME: STRESS-MANAGEMENT</p> <p>Lo, Ruth., (2002). A longitudinal study of the perceived level of stress, coping and self-esteem of undergraduate nursing students: an Australian case study <i>Journal of Advanced Nursing</i></p>	<p>This study aimed to investigate the perception and sources of stress, coping mechanisms used, and self-esteem in nursing students over 3years of their undergraduate nursing program.</p>	<p>A cohort of nursing students going through 3 years of a nursing program. Thirty-nine students in the group. Level IV</p>	<p>38 undergraduate nursing students in the cohort</p>	<p>In a longitudinal study, the method was a descriptive correlational design. The questionnaire consisted of demographic data, the General Health Questionnaire (GHQ-12), Self-esteem Scale, and the modified Ways of Coping Scale. Data were analyzed using frequency distributions, content analysis, and measures of correlation</p>	<p>Results indicated that students in year 1 experienced significantly less transient stress as compared with year 2; students in year 3 had more positive self - esteem than year two students. There were no significant differences concerning chronic stress, avoidance, and proactive coping, and negative self - esteem.</p>	<p>Limitations: Very small cohort, however, gained insightful information.</p> <p>Usefulness: Identified four main stressors of three years, and coping mechanisms used.</p>
<p>THEME: STRESS-MANAGEMENT</p> <p>Rantanasiroping, P., Park, J., Ranasasiroping, N., & Kathalae, D. (2015, August 25). Stress and anxiety management in nursing students: biofeedback and mindfulness meditation. <i>Journal of Nursing Education</i>, 54(9), 520-524. https://doi.org/https://doi.org/10.3928/01484834-20150814-07</p>	<p>To identify if reflection or mediation, and or biofeedback decreased anxiety and stress</p>	<p>Quantitative Level IV</p>	<p>89 nursing students in undergraduate program public university</p>	<p>State-Trait inventory anxiety inventory and Perceived stress scale</p>	<p>Results showed that student stress and anxiety significantly decreased with meditation and biofeedback, implementation suggested</p>	<p>Limitations: very small study, 1 University</p> <p>Usefulness: meditation and biofeedback are efficacious in other programs</p>

<p>THEME: STRESS-MANAGEMENT</p> <p>Senturk, S. (2018). Determination of the Stress Experienced by Nursing Students' During Nursing Education <i>International Journal of Caring Sciences</i></p>	<p>This study was carried out to determine the stress experienced by nursing students' during their nursing education.</p>	<p>A descriptive and cross-sectional type of study carried out with 318 nursing students. Level IV</p>	<p>318 undergraduate nursing student's public university</p>	<p>Student Information Form' and 'Stress in Nurse Education Questionnaires (SINE)' were used.</p> <p>No reliability reported</p>	<p>The significance level $p < 0.05$ for all statistical tests. Results: 52.2% of the students who participated in the questionnaire were male, and the average age was 21.86 ± 1.97. 47.2% of the students who participated in the study were the second-year students, 84.0% received a traditional education, 98.4% were single, 51.9% did not select the profession willingly, and 64.8% were not satisfied with school life.</p>	<p>Limitations: potential recall bias, subjective</p> <p>Usefulness: identified stress in nursing students in comparison to those not in a nursing program</p>
<p>THEME: STRESS-MANAGEMENT</p> <p>Weston, M. (2019). A study in de-stressing. Retrieved from http://www.theamericannurse.org/2013/07/02/a-study-in-de-stressing/</p>	<p>Program out of Columbus, Ohio, implemented a stress-management program focused on nursing students. The program focuses on the importance of self-care, and managing stress at the beginning of the nursing program</p>	<p>Descriptive qualitative Level VI</p>	<p>219 undergraduate nursing student's public university in the U. S</p>	<p>Classes held on stress-management focusing on breathing, music, self-help</p> <p>No reliability reported</p>	<p>Results reported that students felt a decrease in overall stress and anxiety and felt better with the ability and methods to cope with future stress. Additionally, results suggested implementing a self-help course/module in each nursing program</p>	<p>Limitations: Availability of funds to perform and enforce a self-help course</p> <p>Usefulness; Very useful, as students reported good results.</p>

THEME: STRESS-MANAGEMENT Yazdani, M., Rezaei, S., & Pahlavanzadeh, S. (2010). The effectiveness of a stress-management training program on depression, anxiety, and stress of the nursing student. <i>Journal of Nursing Education</i> , 15(4), 208-215. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3203278/	The study is to evaluate if a stress-management program would decrease student stress and anxiety	Descriptive Quantitative Level V	68 undergraduate nursing students in a public university	Stress-management training program implemented over two 8-hour days	Results reported a significant decrease in stress and anxiety in the students (control group) that participated	Limitations: Small sample size Usefulness: Very helpful regarding implementing a training program for students
THEME: SELF-EFFICACY Alavi, N. (2014). Self-Efficacy in Nursing Students. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4348730	The aim is to increase self-efficacy in students to improve retention rates and overall satisfaction	Cross-sectional Level IV	Undergraduate nursing students in final semester public university	Self-efficacy and stress coping identified. Correlation to good self-esteem and performance in the program	Students who scored high in self-esteem performed better in the academic and clinical settings. Points of how to increase self-esteem, self-efficacy were identified and reported.	Limitations: Focused on only last semester of nursing students Usefulness: Lists what would help students and how to implement.
THEME: SELF-EFFICACY Jamshidi, N. (2016). The Challenges of Nursing Students in the Clinical Learning Environment: A Qualitative Study <i>Scientific World Journal</i>	Identifying challenges of nursing students in the clinical learning environment could improve training and enhance the quality of its planning and promotion of the students. Explore nursing students' difficulties in the clinical learning environment	Seventeen nursing students and three nursing instructors. The participants were selected through purposive sampling method and attended semi-structured interviews and focus groups. Qualitative single study level VI	17 undergraduate nursing student's public baccalaureate university.	A qualitative study using the content analysis approach (N=17)	Results: nursing students faced many challenges in the clinical learning environment. All problems identified in this study affected the students' learning in the clinical setting. Recommendation: instructors prepare students to focus on specific communication and on psych needs.	Limitations: Very small study, almost ineffective Usefulness: Showed that instructors need to be more involved and aware of stressors and help students more in identifying stressors and self-efficacy strategies.

THEMES: SELF-EFFICACY Llapa-Rodriguez EO, Marques DA, Neto DL, López-Montesinos MJ, Oliveira ASA. (2016)., Stressful situations and factors in students of nursing in clinical practice. <i>Invest Educ Enferm.</i> 2016; 34(1): 211-220	To assess the risk factors for stress in undergraduate students of nursing in clinical practice in a public university and evaluate self-help methods	A cross-sectional descriptive study, Level IV.	One hundred sixteen students in public university in years 1-3	KEZKAK questionnaire No reliability reported	Students with stress in clinical practice were 18 to 22 years old women married, and who were permanent contracted employees. The factors which were most associated with anxiety were: Lack of competence and uncertainty); and Patients seeking a closer relationship. The students of the sixth period were the most vulnerable to stress	Limitations : Descriptive study conducted in a Brazilian university. Usefulness: Data identified a wide range of factors that students most associated with stress, self-efficacy, and management techniques used.
THEMES: SELF-EFFICACY Pereira FGF, Caldini LN, Miranda MC, Caetano JA. (2014). Assessment of stress in the inclusion of nursing students in hospital practice. <i>Invest Educ Enferm.</i> 2014; 32(3): 430 - 437.	To verify the presence of stress among undergraduate nursing students in different stages of hospital practice.	Descriptive, cross-sectional study. Level IV	86 nursing students in their 6th, 7th, and 9th semesters	An instrument developed by Costa and Polak for the Assessment of Stress Among Nursing Students. It is composed of six domains: performance of practical activities, professional communication, time management, environment, vocational training, and theoretical activity	Most participants were women (95%), and the average age was 23 years old. A total of 84% of students passed the program's courses, and 91% participated in extracurricular activities. Stressors are present during the entire program but intensify when students are introduced to care practice with an emphasis on the domain of professional training; related stress was high in all the semesters.	Limitations: Descriptive, cross-sectional study conducted outside the U.S. Subjective Usefulness: Delineated stress factors for each semester and causes reported by students, and stress management techniques

THEME: SELF-EFFICACY Peterson-Graziose, V., Bryer, J., & Nikolaidou, M. (2013, May 20). Self-Esteem and Self-Efficacy as Predictors of Attrition in Associate Degree Nursing Students. <i>Journal of Nursing Education</i> , 6(52), 351-354. https://doi.org/https://doi.org/10.3928/01484834-20130520-01	A descriptive correlational design and a nonprobability convenience sample of first-semester associate degree nursing students.	Cross-sectional Correlational Study. Level IV.	75 undergraduate nursing student's public university	Rosenberg Self-Esteem Scale, the General Self-Efficacy Scale, and the Holmes and Rahe Social Readjustment Rating Scale	Results from this study provide the basis for targeted interventions designed to decrease student attrition rates	Limitations: Potentially subjective Usefulness: Tool effective in rating a student's perception of self.
THEME: SELF-EFFICACY Rambod, M., Sharif, F., & Khademian, Z. (2018, December). The Impact of the Preceptorship Program on Self-efficacy and Learning Outcomes in Nursing Students. <i>Journal of Midwifery</i> , 23(6), 444-469. https://doi.org/doi: 10.4103/ijnmr.IJNMR_67_17	convenience sampling to identify if the preceptorship course had a direct correlation to self-efficacy in students	Quasi-Experimental Level III	112 nursing student's public university	Self-efficacy scale	Results revealed that self-efficacy increased after preceptorship course	Limitations: Bias regarding course, student's confidence before course Usefulness: Identifies specific courses to increase confidence
THEME: SELF-EFFICACY White, K., (2014). Development and Validation of a Tool to Measure Self-Confidence and Anxiety in Nursing Students During Clinical Decision-Making <i>Journal of Nursing Education</i> 53(1):14-22	The study aimed to develop and test a quantitative tool to assess undergraduate nursing students' self-confidence and anxiety during CDM.	Quantitative Study Level IV	303 undergraduate nursing students, public university	27-item Nursing Anxiety and Self-Confidence with Clinical Decision Making (NASC-CDM) the scale is a 6-point, Likert-type tool with two subscales	Two samples of prelicensure associate and baccalaureate nursing students participated in the pilot ($n = 303$) and nuclear testing ($n = 242$) phases of the study. Construct validity assessment, using exploratory factor analysis, produced a stable three-dimensional scale.	Limitations: Potential subjectivity. Usefulness: Useful assessment tool for nurse educators to help novice clinicians improve

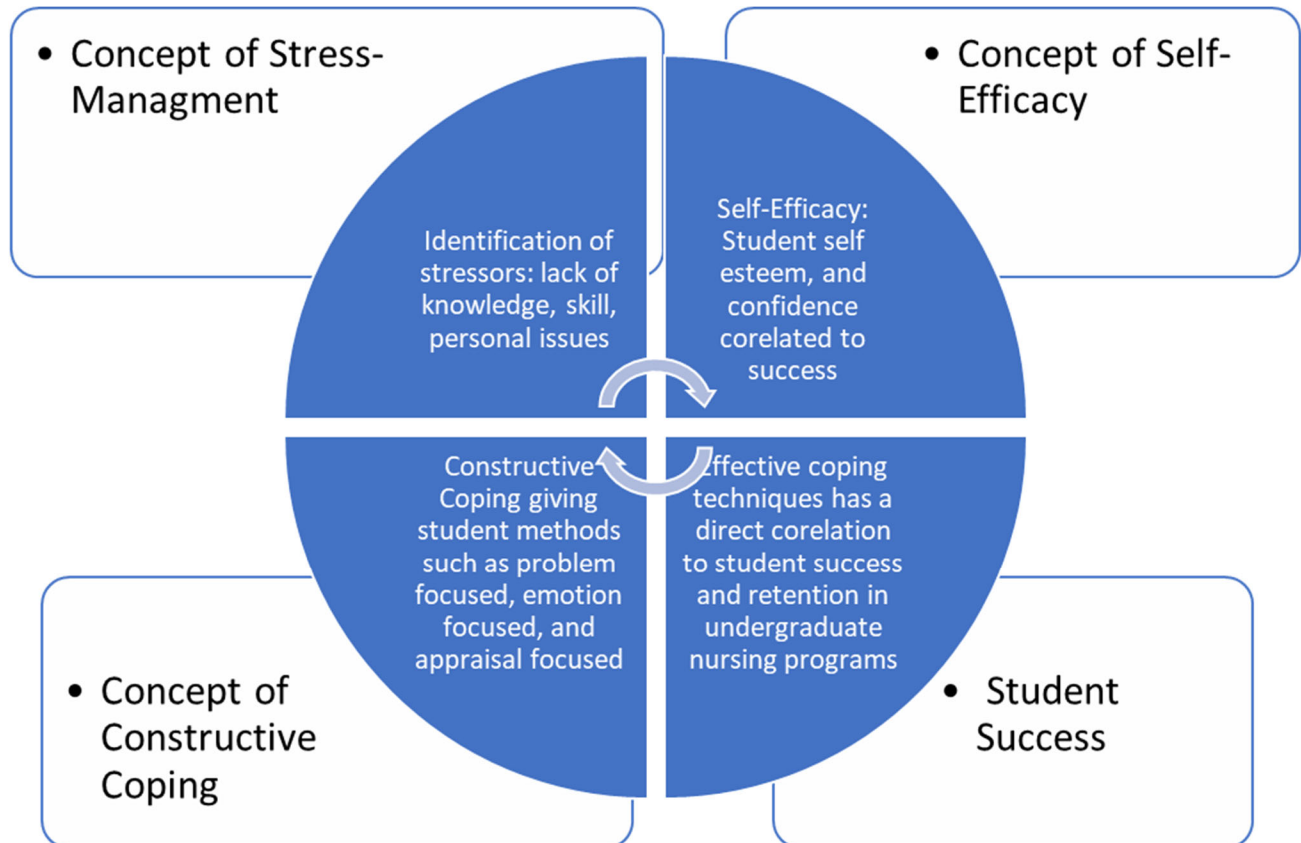
THEME: SELF-EFFICACY Zhao, F., Lei, X., Wei, M., Yan-Hong, G., & Li, D. (2014). The study of perceived stress, coping strategy, and self-efficacy in undergraduate nursing students in clinical practice. Retrieved from https://onlinelibrary.wiley.com/doi/full/10.1111/ijn.12273	The study aimed to review coping strategies and the effects of self-efficacy on nursing students in clinical practice	Quantitative Level IV	Nursing students in their final year of school, in public university	Self-report questionnaires including demographics, Perceived Stress Scale, coping behavior inventory and Generalized Self-Efficacy Scale	During clinical, students reported workload and assignments as primary factors of stress, and students used transference to deal with stress. Self-efficacy had a positive main effect on students affect.	Limitations: Reliability and subjectivity Usefulness: Helpful in identifying coping mechanisms and what effects effect.
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Appendix D.

Theory Diagram

Diagram of stress-management and student success based on Theory of Lazarus, Stress, and

Coping: Adaptation Model (Constructive Coping)



Student: Melissa Romaneschi

Appendix E.

PICOT Question: Does minimizing stress and anxiety in the undergraduate nursing student by utilizing stress-management techniques before exams and clinical compared to students who do not utilize techniques have better outcomes and success in didactic and clinical in semesters one through four at a four-year university?

Inputs	Intervention(s) Outputs		Outcomes -- Impact		
	Activities	Participation	Short	Medium	Long
Evidence, sub-topics 1) Outcomes and Success 2) Undergraduate nursing students 3) Stress-management techniques Major Facilitators or Contributors 1) Jane Weilert; dean of nursing 2) Undergraduate nursing students 3) Undergraduate nursing faculty Major Barriers or Challenges 1) Student participation 2) Subjectivity 3) Faculty participation	The EBP intervention which is supported by the evidence in the Input column Implementation of stress-management techniques or programs Major steps of the intervention 1. Administrators should be introduced to the idea of de-stressing techniques 2. Faculty should be educated on stress and anxiety in undergraduate nursing students 3. Approving and developing stress management program with specific guidelines. 4. Introduction of formal program of stress-management techniques. 5. Setting timeline for implementation with all faculty on board. 6. Continuous evaluation and re-evaluation of program and student success rates.	The participants (subjects) All undergraduate nursing students. Site Undergraduate nursing program at a private liberal arts university in Wichita, Kansas. Time Frame Two Semesters or One Full School year, beginning in August of 2019 to May 2020. Contract Needed No Person(s) collecting data Nursing faculty Others directly involved. Administration and Faculty. Consent needed No	(Completed during DNP project). Outcome(s) to be measured with reliable measurement tool(s) Prior to stress-management program and after. 1) Retention rates 2) Student success rates Statistical analysis to be used. -Survey Data Collection -Likert Scales -Descriptive analysis	Outcomes to be measured (past DNP student time). 1) Student success rates throughout each semester. 2) Student didactic and clinical grades higher post implementation	Outcomes that are potentials (past DNP student) 1) Students perform at higher levels and score higher on exams 2) Of 32 admitted, 32 complete cohort, and successfully graduate

Rev. 7/09, 1/2015
http://www.uwex.edu/ces/lmcourse/interface/coop_M1_Overview.htm
 Logic-Model Worksheet content revisions by Lyla Lindholm, Applied to DNP EBP Project. Not to be placed on web for public used. For UMKC DNP coursework only.

Appendix F.

IRB Approval

June 20, 2019

Dear Ms. Romaneschi:

I have reviewed your proposed research project “Does implementing stress-management techniques prior to exams and clinical increase overall exam scores and retention rates?” and believe it to be exempt from further review by the Institutional Review Board under the Code of Federal Regulations, Title 45 HHS Part 46, Section 46.101(b)(2). Please keep a copy of this document with your records for at least 3 years following the conclusion of your proposed research project. Additionally, you agreed to maintain raw data for a minimum of three years beyond the completion of the study.

Thank you for your help in this matter, and please do not hesitate to contact me (please reference the code MR061919A) if you have any further questions

Sincerely yours,

Lori Steiner, Ph.D.

Chair

Faculty Approval



July 30, 2019

DNP Project Proposal Approval
UMKC DNP Student

This letter serves to provide documentation regarding Melissa Romaneschi's Doctor of Nursing Practice (DNP) project proposal. Ms. Romaneschi obtained approval for her proposal, *Stress-Management for Undergraduate Nursing Students to Increase Success Rates*, from the School of Nursing and Health Studies DNP faculty on July 30, 2019.

If we can provide further information, please feel free to contact us.
Sincerely,

A handwritten signature in black ink, appearing to read "Cheri Barber".

Cheri Barber, DNP, RN, PPCNP-BC, FAANP
Clinical Assistant Professor
DNP Program Director
UMKC School of Nursing and Health Studies
barberch@umkc.edu

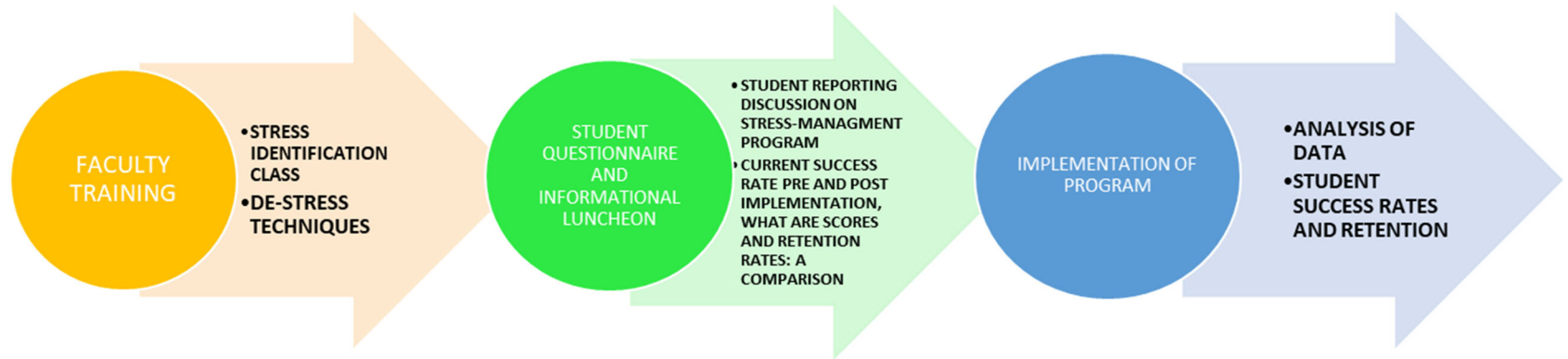
Lyla Lindholm, DNP, ACNS-BC
UMKC MSN-DNP Program Coordinator
Clinical Assistant Professor
DNP Faculty

Appendix G.

Cost Table

Item	Item Description	Quantity	Unit Cost	Anticipated Cost
Materials	Handouts for class	150	0.10	1.50
Miscellaneous	Luncheon for program information	10 pizzas and 10 1 L drinks	12.00/pizza 1.00/drink	130.00
Faculty prep	Project implementation and data analysis	200 hours	0	0
Total				\$131.50

Appendix H. Intervention Flow Chart



Appendix I.

Data Collection Template

Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure
Gender	Numeric	8	0	Gender	{0, Male}...	None	8	Right	Nominal
Semester_1...	Numeric	8	0	1st semester e...	{1, Exam 1}...	None	8	Right	Scale
Semester_1...	Numeric	8	0	1st semester e...	{1, Exam 1}...	None	8	Right	Scale
Semester_2...	Numeric	8	0	2nd semester e...	{1, Exam 1}...	None	8	Right	Scale
Semester_2...	Numeric	8	0	2nd semester e...	{1, Exam 1}...	None	8	Right	Scale
Semester_3...	Numeric	8	0	3rd semester e...	{1, Exam 1}...	None	8	Right	Scale
Semester_3...	Numeric	8	0	3rd semester e...	{1, Exam 1}...	None	8	Right	Scale
Semester_4...	Numeric	8	0	4th semester e...	{1, Exam 1}...	None	8	Right	Scale
Semester_4...	Numeric	8	0	4th semester e...	{1, Exam 1}...	None	8	Right	Scale
Retention_R...	Numeric	8	0	Retention rate ...	{1, 1st sem...	None	8	Right	Ordinal
Retention_R...	Numeric	8	0	Retention rate ...	{1, 1st sem...	None	8	Right	Ordinal
Stressors_s...	Numeric	8	0	Reported cause...	{1, Exams}...	None	8	Right	Ordinal
Stressors_s...	Numeric	8	0	Reported decre...	{1, Yes-decr...	None	8	Right	Scale

Appendix J.

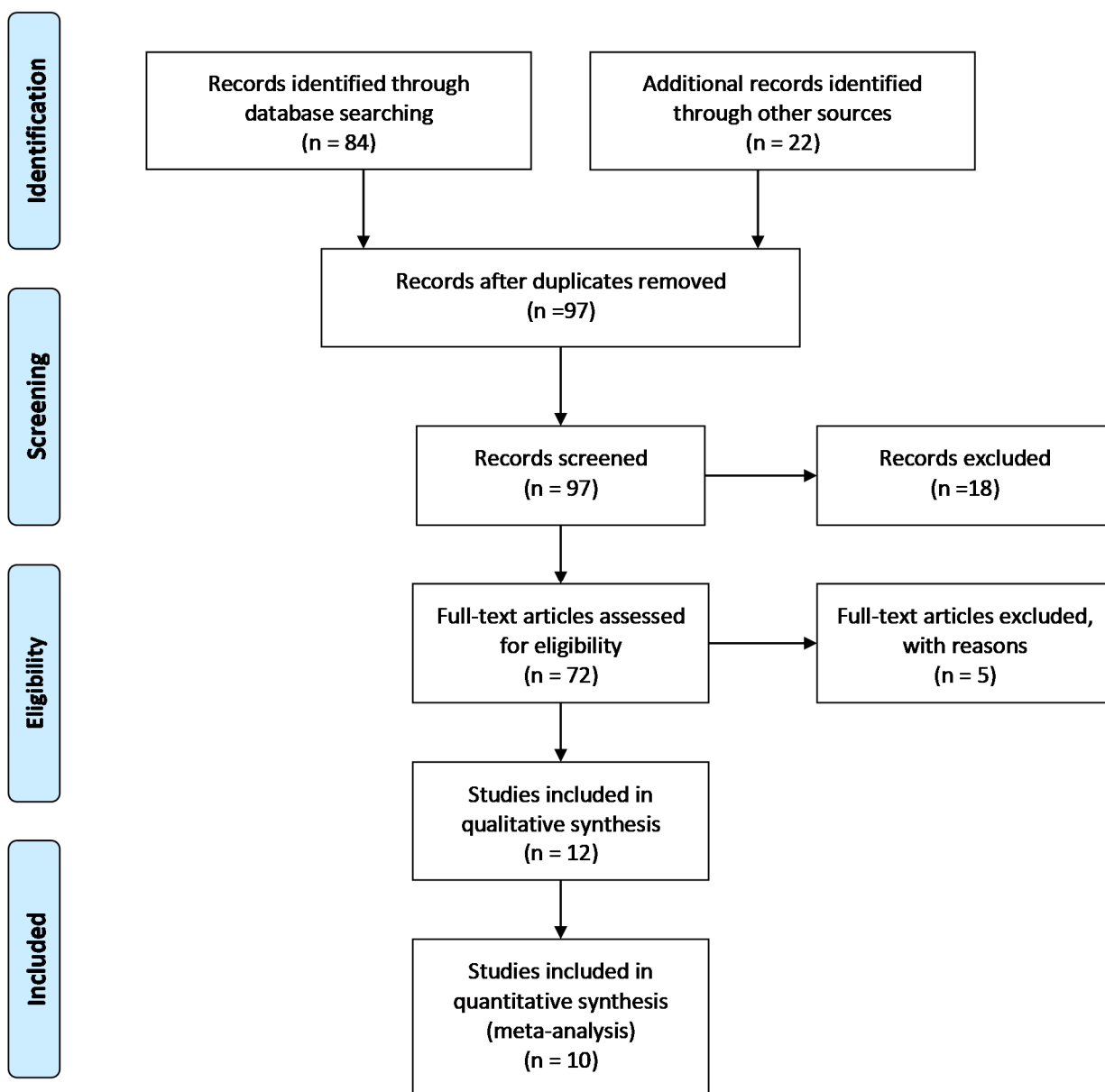
Priori Power Analysis

Results

The highlighted field denotes which variable has been calculated.

Reset

Statistical Test	Sample Size	Power	Effect size	Significance Level	Sample Type	Alternative
T-Test	128.000	0.9786	0.5	0.05	twoSample	twoSided

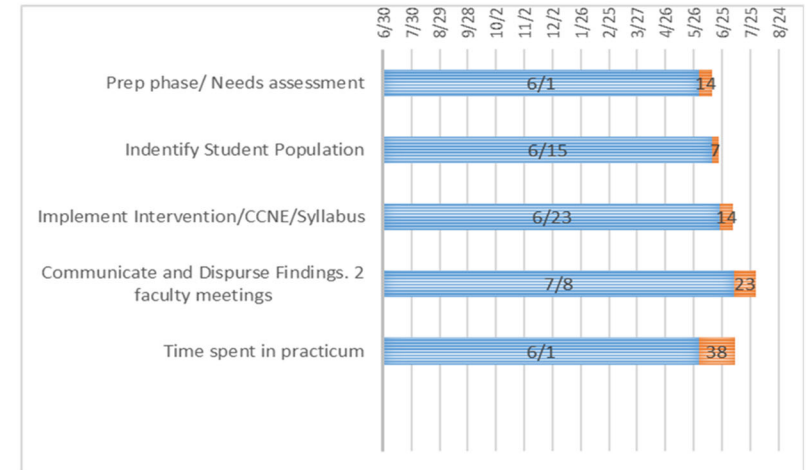
Figure 1.**PRISMA 2009 Flow Diagram**

Appendix K.

Timeline

Timeline

Start Date	End Date	Description	Duration (days)
6/1	6/14	Prep phase/ Needs assessment	14
6/15	6/22	Identify Student Population	7
6/23	7/7	Implement Intervention/CCNE/Syllabus	14
7/8	7/21	Communicate and Disperse Findings. 2 faculty meetings	23
7/22	7/22	Time spent in practicum	38



Outcomes

	State	Measurement Instrument Name	Tool validity and reliability	Permission Need	Statistical Analysis
Primary Outcome	Participation in Stress-management program will increase exam scores and retention rates	Exam grades from ExamSoft and final grades from faculty Attendance sheet to document participation Stress Coping Resources Inventory: A Self-Assessment, and the Perceived Stress Scale (PSS)	Not applicable Not applicable	No Yes. Student agreement to take a survey	Descriptive statistics
Secondary Outcome	Students who participate in the de-stressing activities will perform better in the clinical setting due to decreased anxiety, and ability to cope better with new coping techniques.	Stress Coping Resources Inventory: A Self-Assessment, and the Perceived Stress Scale (PSS) Final course grade from the university's LMS. Spreadsheet to document reported causative factors of stress and participation in the program	Not applicable Not applicable	No No	Descriptive statistics
Demographics	Will describe all students participating in the EBQI project.	Not applicable	Not applicable	Not Applicable	Descriptive statistics
Participant Completion of the Measurement Tool (Procedure): All students will be required to attend the stress-management course as it will be integrated into their existing courses. All students will be given surveys and instructed to not put any identifiable information on them. Data will be analyzed and put into an excel spreadsheet to identify causative factors of students' stress and anxiety in each semester. Stress-management course will then be catered to those factors so that students will have the ability to learn coping strategies to ensure higher exam scores, but overall success in the nursing program.					

Summary Analysis Table

Perceived Stress Scale SPSS

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
In the last month, how often have you been upset because of something that happened unexpectedly?	97	1	5	3.25	.902
In the last month, how often have you felt nervous and stressed?	97	1	5	2.64	1.082
In the last month, how often have you felt confident about your ability to handle your personal problems?	97	1	5	2.76	.987
In the last month, how often have you found that you could not cope with all the things you had to do?	97	1	5	2.81	1.121
In the last month, how often have you been able to control irritations in your life?	97	1	5	2.74	1.063
In the last month, how often have you felt that things were going your way?	97	1	5	2.94	1.049
In the last month, how often have you felt that you were on top of things?	97	1	5	3.01	1.094
In the last month, how often have you been angered because of things that happened outside your control?	97	1	5	2.77	1.095
In the last month, how often have felt difficulties were piling up so high that you could not overcome them?	96	1	5	2.64	.996
Valid N (listwise)	96				

Wilcoxon Data Analysis

Exam Score Means

