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Mindfulness and Meditation to Reduce Test and Evaluation Anxiety in Doctoral Nurse
Anesthesia Students

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Executive Summary

Introduction of the Problem

The American Psychological Association (n.d.) defines anxiety as an emotional state, characterized by tension and worry, which may result in physical symptoms, such as increased heart rate and blood pressure. Anxiety is comprised of both worry regarding negative results or consequences and a heightened emotional state with an activated autonomic nervous system (Kavakci, Semiz, Kartal, Dikici, & Kugu, 2014). High levels of anxiety in the presence of an exam or performance evaluation in an educational setting is referred to as test anxiety in current literature. Approximately 15-40% of university students report experiencing test anxiety. Of those students, 15-29% reported extreme anxiety being the reason for withdrawal from the university (Gerwing, Rash, Allen-Gerwing, Bamble & Landine, 2015). Half of all students taking a high-stakes exam, such as an entrance exam, reported having severe anxiety requiring professional intervention (Kavakci, Semiz, Kartal, Dikici, & Kugu, 2014).

Anxiety is increased if the examination uncovers a deficiency in knowledge that the student was previously unaware of while studying. Kavakci, Semiz, Kartal, Dikici, & Kugu (2014), stated increased anxiety would occur for students taking examinations in which there was a consequence to future opportunities. An example of this type of examination is a board certifying exam for nursing professionals. Throughout the nursing curriculum, students are continually asked to perform to high expectations through written, verbal, and skills performance evaluations. Gibson (2014) describes nursing students to be under more stress than other

disciplines related to the various forms of evaluation within the curriculum. It was also noted that the strict nature in which attrition rates are related to academic success led to increased anxiety.

Certified Registered Nurse Anesthetists (CRNAs) are required to complete either a Master's in Science of Nursing or a Doctoral of Nursing Practice (DNP) prior to passing a national board certifying exam. This curriculum is intense over approximately three years and consists of several evaluation methods through written and skill performance evaluations. Currently, this author is unaware of research regarding test and evaluation anxiety or interventions for alleviating anxiety for this specific group; however, several studies have been performed to evaluate mindfulness and meditation practices in nursing students and medical school students to alleviate anxiety. The stress felt by the DNP anesthesia student is not unlike the stress felt by medical school students.

Literature Review

Varying methods may be used to alleviate stress and anxiety, and treatment options are often individualized. Mindfulness and meditation techniques have been utilized to successfully alleviate anxiety and stress. In a study performed by Hoge et al. (2018), individuals who practiced mindfulness meditation were found to have improved resilience to stress measured through biological stress markers while those who did not practice had heightened biological stress markers and responses. Mindfulness is described as “a mental state achieved by focusing one's awareness on the present moment, while calmly acknowledging and accepting one's feelings, thoughts, and bodily sensations, used as a therapeutic technique” (Mindfulness, 2021). Meditation is defined as “to engage in mental exercise (such as concentration on one's breathing or repetition of a [mantra](#)) for the purpose of reaching a heightened level of spiritual awareness” (Meditation, 2021).

Paul, Elam, and Verhulst (2007) found that following deep breathing meditation, nursing students reported feeling less anxiety, nervousness, and self-doubt while having an increase in concentration. Hull et al. correlated higher self-efficacy with decreased anxiety. The implication of this research is the possibility that mindfulness and meditation practices have the potential to decrease test and evaluation anxiety through increased self-efficacy in DNP students.

Project Methods

This project was performed as a non-experimental design to assess knowledge and provide mindfulness intervention information to the Doctor of Nursing Practice (DNP) student at Southern Illinois University- Edwardsville (SIUE), and to evaluate and alleviate test and evaluation anxiety. The primary objective of this project was to provide mindfulness intervention information that could be utilized by the DNP students throughout their program progression, while taking their board certifying exam, and throughout their careers. A questionnaire was given to the students to assess their anxiety levels prior to exams and skills evaluations, their knowledge regarding the effects of anxiety on performance, and to assess their desire to have a mindfulness or medication practice to alleviate academic anxiety. Following the pre-test, students were presented with an educational lecture covering the effects of anxiety on academic performance, definitions of mindfulness and meditation practices, and the usefulness of a mindfulness and meditation practice for alleviating academic anxiety. Students were re-assessed with a post-test following the module, which mirrored the pre-test questions; all questions were assessed using a five-point Likert scale. Students' anxiety levels and likelihood of utilizing mindfulness interventions were also assessed using a 5-point Likert scale. The proposed project was approved by SIUE and International Review Board approval was obtained. Participant identifiers were confidential. There were no conflicts of interest.

Evaluation

A convenience sample was obtained using three cohorts in varying progressions of the DNP anesthesia program at SIUE. All students were SIUE DNP candidates. Inclusion criteria were first-, second-, and third-year anesthesia students, which totaled approximately 80 students. First-year students were not required to attend and resulted in limited attendance. There were no specific exclusion criteria for these students. Students gained access to the module through an organized Wellness Event via a link to a Qualtrics survey.

Fifty-two students were present at the Wellness Event and took part in the pre- and post-presentation surveys. From the cohort expected to graduate in May of 2022 (third-year students), eighteen students completed the pre-presentation survey and nineteen completed the post-presentation survey. From the cohort expected to graduate in May of 2023 (second-year students), twenty-eight students completed the pre-presentation survey and thirty completed the post-presentation survey. Only three students from the cohort expected to graduate in May of 2024 (first-year students) were in attendance. All three students completed the pre- and post-presentation survey. The discrepancy in completed pre- and post- presentation surveys in the second- and third-year students is likely due to late arrivals to the presentation. This conclusion was made because more students completed the post-presentation survey than the pre-presentation survey.

The first question in the survey was a multiple-choice question to determine the expected graduation date for each student. This was followed by a free text which allowed students to express their top three stressors while enrolled in the DNP program. One question was answered with 'yes' or 'no' in response to if the student had previously been introduced to or had knowledge of mindfulness practices. The remaining five questions were assessed using a five-

point Likert scale. To evaluate the anxiety levels students experienced prior to examinations and skills assessment the students could choose from 'not at all', 'somewhat', 'neutral', 'mildly anxious', 'very anxious'. Students were asked how interested they were in mindfulness and meditation practices to help alleviate examination and skills evaluation anxiety. On five-point Likert scale students could select 'not interested', 'somewhat interested', 'neutral', 'interested', and 'very interested'. Finally, students were asked how likely they were to begin a mindfulness meditation practice. On a five-point Likert scale the students could answer 'very likely', 'likely', 'neutral', 'somewhat likely', and 'not likely'.

All third-year students reported having prior knowledge of mindfulness meditation practices, except for one student. These students reported feeling 'very anxious' (n=8) or 'mildly anxious' (n=9). One student reported feeling 'somewhat anxious'. Results were the same when third-year students were asked how anxious they became prior to skills evaluations. Several third-year students had prior experience with mindfulness meditation practices and reported practicing 'a few times a week' (n=3), 'a few times a month' (n=6), 'a few times a year' (n=7), and one student reported having never practiced mindfulness meditation. Pre-presentation, third-year students reported that they were 'interested' in using mindfulness meditation to alleviate test and skills evaluation anxiety (n=14). One student was 'somewhat interested', one was 'very interested', and a third was 'neutral'. Following the presentation, the 'very interested' group increased from one student to eight students, while the 'interested' group decreased to ten students from fourteen. This decrease could be accounted for some students who were interested prior to the presentation reporting they were very interested following the presentation. This same trend was expressed when students were asked how likely they were to use mindfulness meditation practices to alleviate anxiety. Second-year students reported similar results and trends

in their pre- and post-presentation answers. Five second-year students reported already having a daily mindfulness meditation practice. The total number of first-year students present was three. Two of the three students reported an increased interest in mindfulness meditation following the presentation.

Students were asked to rate the anxiety they feel prior to an examination and prior to skills evaluations. These are not the only stressors or anxiety-provoking events students face while in the DNP program. Students were asked to list their top three causes of stress prior to answering other questions. Several trends presented in these stressors which included: financial/expenses, relationships, balance, workload, time away from home, clinical preceptors, failure, tests, skills evaluations, scheduling, time management, grades, lack of support, and sleep deprivation.

Impact on Practice

Benefits to mindfulness occurred following brief but consistent practices. DNP students have limited time and varied schedules based on clinical and didactic responsibilities. Utilization of a virtual tool that is easily accessible when the student desires mindfulness practices would be the most beneficial. Supplying students with a wellness presentation that discusses the physiological and mental implications of stress and anxiety, followed by access to a brief (less than 10 minute) guided meditation may result in positive implications. The student population would be more likely to buy-in to a practice that is short and easily accessible. Providing a motivational guided meditation would speak to the perfectionist side of the DNP anesthesia student.

Additional benefit may come in the form of two short, guided meditations which would focus on breath awareness, body scan, and mindfulness of thought, which are the foundation to

mindfulness practices. One session could be motivational to be used first thing in the morning. The second could be reflective to quiet the body and mind prior to sleep. Addressing test and evaluation anxiety is paramount to the success of the students, their well-being, and university community.

Conclusion

The evidence presented in the literature review and data obtained from this project implementation supports the use of mindfulness meditation practices to alleviate anxiety in students. Managing anxiety results in better examination performance and better overall mental health. Mindfulness meditation practices are not financially draining to educational institutions and the cost to benefit ratio supports the use of practices at university. There is currently no mindfulness meditation practice assistance, program, or resource within the DNP program. Developing a mindfulness meditation program within the DNP curriculum, given the expressed student interest, could allow for a reduction in anxiety for the students, improved exam scores, increased student satisfaction, and improved mental health for the students. Providing a mindfulness meditation practice and additional surveys for pre- and post-practice anxiety levels could confirm the results of this project.

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