Nurse Anesthesia Program Structures Impact on SRNA Stress Levels

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Abstract

Understanding the effect of stress on Student Registered Nurse Anesthetists (SRNAs) during their CRNA school could improve the development or expansion of program structure and wellness interventions to help manage stress during school. Support by CRNA programs and faculty could improve coping strategies and address areas of concern that extreme levels of anxiety, depression, and stress can have on SRNAs. After the approval from the Institutional Review Board, a survey was created on Qualtrics and was sent out through email as a solicitation to four CRNA programs: three programs being frontloaded curriculum structures and one school an integrated program. Responses to the survey included a total of 114 SRNAs at various levels of their education in CRNA schools. Results of the survey showed that SRNAs experience higher than normal, in some cases, extreme levels of stress, anxiety, and depression during CRNA school. Education on stress and positive coping should begin as early as the interview process for future SRNA candidates and continue throughout their career in anesthesia school. Furthermore, most students participating in the survey did not feel that their school or faculty supported their mental health and well-being. The conclusion is that the development of wellness programs and mental health education is necessary for SRNAs during CRNA school. These programs should begin early to help the SRNA develop positive coping mechanisms to utilize during CRNA school. More research is needed to determine if the structure of the CRNA curriculum frontloaded verse integrated influences the stress load that an SRNA experiences during CRNA school.

Keywords: CRNA, SRNA, stress, depression, anxiety, wellness program, mental health, front-loaded, integrated, CRNA school

Nurse Anesthesia Program Structures Impact on SRNA Stress Levels

Student Registered Nurse Anesthetists (SRNAs) face enormous amounts of stress during nurse anesthesia programs, which are comprised of over 2,000 hours of intense didactic work and extensive clinical training (Council on Accreditation for Nurse Anesthesia Educational Programs, 2019). To an extent, stress can be a positive motivator for students, but at a certain level, the stress can lead to the inability to perform adequately. Sources of stress can include but are not limited to: moving away from home for education and training, decreased income due to the inability to work, and adapting to the rigors demand of a graduate education program (Chipas et al., 2012). Chipas et al. (2012) states that 47.3% of SRNAs reported depression, and 21.2% reported suicidal ideation. Unmanaged stress can lead to an inferior academic performance, decreased retention of knowledge, and poor health of the SRNA (Chipas et al., 2012). Currently, there is no standard approach to wellness training across the national nurse anesthesia programs, but more have opted to incorporate wellness and stress reduction education into their curriculums (Kent, 2021). Further evaluation is needed to determine additional sources of stress the SRNAs experiences while completing this advanced degree. This research will allow programs to implement stress management education at an optimal time for knowledge retention.

Background

The Council on Accreditation of Nurse Anesthesia Education Programs (COA) accredits nurse anesthesia programs within the United States and Puerto Rico that award post-master's certificates, master's, or doctoral degrees. The standards created by COA are designed to prepared graduates with competencies for entry into anesthesia practice. Entry-into-practice competencies for the nurse anesthesia professional prepared at the doctoral level are those

required at the time of graduation to provide safe, competent, and ethical anesthesia and

anesthesia-related care to patients for diagnostic, therapeutic, and surgical procedures. The

SRNA didactic curriculum includes 24-51 months of intense doctoral coursework including

advanced anesthesiology, pathophysiology, anatomy and physiology, pharmacology, leadership,

healthcare policy, and healthcare information and technology (Council on Accreditation of Nurse

Anesthesia Educational Programs, 2019).

Although the COA has these standards in place, SRNAs can obtain their education from

either a front-loaded or integrated program. Front-loaded programs have a curriculum structure

where you take all, or a majority, of the didactic coursework up-front. Didactic education

provides students with a foundation in the basic sciences as well as all aspects of anesthesia

equipment and anesthesia principles (Imus et al., 2015). After the didactic coursework is

complete, students begin clinicals. The implementation of clinical experiences may be done

gradually or immediately, full-time. Students that are in didactically formatted programs have

anxiety and apprehension when transitioning to the clinical portion of their education (Imus et

al., 2015). The research that showed this called for a modification to program structure which

then created the integrated program structure. Integrated nurse anesthesia programs have classes

and clinical experiences running simultaneously. The clinical training component of SRNA

education which overlaps the didactic curriculum in integrated programs includes two years of

learning in a high-stakes atmosphere, executing knowledge, and responsibility and rigor in

practice on vulnerable patients (Conner, 2015).

Stressors among SRNAs can be either academic or personal. Common personal stressors

include changes body image, decreased self-esteem, quitting their job to start school, financial

challenges, lack of personal/family time, and transitioning into the student role (Fernandez & Klopfenstein, 2020). Academic stress can be defined as the anxiety and discomfort experienced during the learning process, especially during challenging graduate education programs (Chipas et al., 2012). Common academic causes of stress are ineffective time management, clinical assignments, different teaching styles, and fear of dismissal due to poor grades (Chipas et al., 2012). Chipas (2012) found that stress levels continuously rise over the first 18 months of the program.

Problem Statement

Based on the literature and research on wellness for SRNAs I focused my PICOT question to address the goal of analyzing how nurse anesthesia students perceive feelings of support from their CRNA program regarding their well-being and stress management during academic careers. This research will be conducted through several academic programs to increase the understanding of different curriculum structures and wellness programs and education at different universities. My PICOT question is as follows: Do student registered nurse anesthetist (P) feel that their CRNA program (C) provides support, education, and resources for their mental health and well-being (I) resulting in decreased feelings of stress, anxiety, and positive coping mechanisms (O) during their academic career in CRNA school (T)? Academic programs are required by COA to provide education on wellness and substance abuse for anesthesia students and it is imperative that this educational requirement is being implemented in the curriculum in a way that is creating a positive impact on the mental health and wellness of SRNAs.

Organizational "Gap" Analysis of Project Site

Seventeen percent of SRNAs reported taking prescription medications to help decrease or manage their stress, and 78% of SRNAs report that their programs did not offer stress management resources (Chipas et al., 2012). Increased rates of depression and suicidal ideation and lack of perceived stress management resources show that adequate wellness and stress management among SRNAs is clearly needed. Even more specifically, there is a lack of research related to the causes of stress in nurse anesthesia students.

I am currently enrolled in a front-loaded nurse anesthesia program. My biggest academic stressors include lack of income, clinical assignments, and increased travel. Since starting my program, I have also started taking prescription medications to help decrease and manage my stress level. I have a close friend who is enrolled in an integrated program. Based on certain conversations we have had, she does report an increased level of stress, but doesn't report anxiety related to clinical because she is required to complete shadow days. She also hasn't started taking prescription medications to help manage or decrease her stress levels. We may have different responses to stress due to personal factors, but I have an interest in analyzing if our varying levels of stress are related to the academic factor of different program structures.

The information obtained from this study could help nurse anesthesia program directors format their programs in a way that positively impacts their students' levels of stress. Program directors may also gain insight as to when stress management resources need to be offered in relation to the students' coursework.

Review of the Literature

An initial search was conducted in March 2022 using two different electronic databases MEDLINE-EBSCO, and the AANA journal. The keywords were developed from the PICOT question and those keywords included "stress and well-being, anxiety, mental health, SRNA, student-registered nurse anesthetist, CRNA, curriculum, program, school, anesthesiology." From the keywords, four different BOOLEAN phrases were used to search MEDLINE-EBSCO. The first phrase was "student nurse anesthetist and stress" which obtained 13 results on EBSCO. The second search phrase used was "anxiety and SRNA" and this resulted in 5 articles on EBSCO with 3 articles being duplicates. The third phase used was "Wellness or well-being AND student nurse anesthetist" which resulted in 10 articles on EBSCO and 6 duplicates. The fourth search phrase used was "CRNA school and curriculum" and this resulted in 266 articles on EBSCO with 83 articles being duplicates and only two articles being used for the literature review. Finally, the last search phrase was "SRNA stress" and this was searched in the AANA journal database resulting in 26 articles with 14 being duplicates from previous searches listed above. An additional article was added to the list of used articles--a prominent study on the stress and well-being of SRNAs which was published in 1999, out of our inclusion criteria timeline. The inclusion criteria for the articles searched were published within the last 12 years, published in English, with full articles provided, involving participants who were nurse anesthesia students and CRNAs, and were relevant to the PICOT question. The exclusion criteria included any articles published more than 12 years ago, those with an incorrect setting, review articles, meta-analysis articles, and topics not relevant to the PICOT question. A total of 320 articles from the electronic databases MEDLINE-EBSCO and AANA journals database were recorded. A total of 104 duplicate articles were excluded. 216 articles were screened based on title, abstract, and

study design, which resulted in 202 articles being further excluded. That left 13 articles for the literature matrix with the additional article of the landmark article bringing the literature matrix article total to 14 articles.

The 14 articles that were reviewed and assessed for this project have varying levels of evidence and different studies that include SRNAs in the majority and a few of the articles include SRNAs and CRNAs. One of the landmark studies that was completed outside of the inclusion criteria was conducted in 1999 and included 1,504 SRNA participants that completed a survey assessing varying categories to determine the level of stress and support of stress management from their CRNA program (Perez & Carroll-Perez, 1999). This study reported that 76% of nurse anesthesia students did not attend a school that had a stress or wellness program specific to their CRNA program. Of the 14% of students who reported having a stress management program at their school, only 7.9% of the students utilized this resource. The results of this study identified the most stressful factors nurse anesthesia students faced which were fear of failure in classes and exams, fear of being perceived as incompetent, exhaustion, lack of social life, and fear of making a medical error. Overall, this study showcased the need for CRNA programs to create and implement programs and education on stress management (Perez & Carroll-Perez, 1999).

A research study by Foley and Lanzillotta-Rangeley (2021), conducted an educational 10-day program on mindfulness and meditation that had students participate in 10 minutes of meditation for 10 days. The students took a demographic survey prior to starting and a standardized stress scale DASS-21 that was taken pre-intervention and post-intervention. After completing the meditation practice for 10 days SRNAs felt decreased anxiety, depression, and stress, and 44% of the participants wanted to continue practicing mindfulness and incorporating

it into their daily routine (Foley & Lanzillotta-Rangeley, 2021). Mesisca and Mainwaring

(2021), used surveys to assess 76 SRNAs anxiety, mental wellbeing, stress, and support from

academic resources, and preceptor support. The data for this study was collected with online

surveys using three validated tools: the Perceived Stress Scale-10 (PSS-10), Medical Student

Well-Being Index (MSWBI), and the Penn State Worry Questionnaire (PSWQ). From this study

it was found that in doctoral nurse anesthesia education programs there is low well-being and

consistently high levels of stress and distress for the SRNAs while going through school. The

conclusion of this article was that there needs to be increased awareness of the impact of low

well-being among SRNAs in school, and intervention and wellness programs are needed, and

more research needs to be conducted on this subject matter. Students want more support from

their CRNA programs and education to learn to manage their mental health more effectively

(Mesisca & Mainwaring, 2021). Overall, looking at the last twenty years, articles and research

studies have continued to demonstrate the known high levels of stress SRNAs endure during

their academic career while in school and the lack of support, education, and resources on mental

health for SRNAs from their academic program.

Theoretical Framework

Theories of stress have always noted the importance of both person and environment in

understanding the nature and consequences of stress. The interactive perspective in psychology

shows that behavior, attitudes, and well-being are brought together by the person and

environment (Pervin, 1989). This perspective has been formalized into the person-environment

(P-E) theory of stress (Appendix D) and is the theory that was used to guide this project.

The premise of this theory is that stress arises not from the person or environment

separately but rather by their fit with one another. There are three basic divisions that are central

to the P-E fit theory. The first is between the person and the environment which is needed for

conceptualization of the theory and provides the foundation for examining reciprocal causation

(Edwards et al., 1998). The second division is between objective and subjective representations

of the person and environment. Objective person refers to characteristics that exist, and the

subjective person is the perception one has about their own characteristic and attributes. The

objective environment includes physical and social situations as they exist independent of the

person's perceptions. The subjective environment is related to situations and events that the

person perceives (Edwards et al., 1998). These two divisions produce four types of correlations

between person and environment:

(1) Objective P-E fit, which is the fit between the objective person and the objective

environment

(2) Subjective P-E fit, which is the fit between the subjective person and the subjective

environment

(3) Contact with reality, which is the degree that the subjective environment relates to the

objective environment

(4) Accuracy of self-assessment, which is the match between the subjective and objective

person

The third and final division differentiates two types of P-E fits. The first involves the fit between

the demands of the environment and the abilities of the person. Demands include work

requirements, role expectations, and upholding group and organizational standards. Abilities

include skills, training, time, and energy the person may need to meet the demands (Edwards et

al., 1998). The second involves the balance between the needs of the person and the supplies in

the environment that relate to that person's needs. The theory characterizes needs as innate

biological and psychical requirements, ascertained values, and rationale to achieve desired ends (Harrison, 1985). Supplies refer to extrinsic and intrinsic resources and rewards that may fulfill the person's needs, such as nourishment, housing, financial stability, and social involvement (Harrison, 1978).

In the early stages of this theory, the premonition of good mental health was characterized by decreased differences between objective P-E fit, subjective P-E fit, contact with reality, and accuracy of self-assessment (French et al., 1974; Harrison, 1978). Modifications of the theory revealed that objective P-E fit has minimal impact on mental health unless it is perceived by the person and thereby translated into subjective P-E fit (Caplan, 1983). Current treatments of the P-E fit theory highlights the subjective P-E fit as the critical pathway to mental health and well-being (Edwards et al., 1998).

Subjective misfits are caused by the discrepancies between the environment's supply and demands or the person's abilities and needs. These discrepancies produce two sets of possible outcomes. The first set includes psychological, physical, and behavioral strains. Strains are defined as changes from normal functioning or normal baseline (Caplan et al., 1980). Psychological strains include unhappiness, anxiety, insomnia, or restlessness. Physiological strains include elevated blood pressure, increased total cholesterol, and a weakened immune system function. Behavioral strains include tobaccos use, excessive eating, and frequent utilization of health care services. When these responses occur risk factors for other diseases increase. The frequency and accumulation of the experience of strains over time can lead to mental and physical illnesses such as chronic depression, elevated blood pressure, cardiovascular disease, peptic ulcers, and cancer (Edwards & Cooper, 2013). The second outcome includes efforts to resolve P-E misfit, which involves the use of coping and defense. Coping tries to

improve objective P-E fit by changing the objective person or the objective environment (French et al., 1974). Defense involves efforts to enhance subjective P-E fit through cognitive distortion of the subjective person or environment without changing their objective counterparts (French et al., 1974). Defense may also include denial of experience strain, where the person acknowledges subjective P-E misfit but discounts its resulting negative impacts on their health (Harrison, 1978).

Overall, SRNA stress could occur if the supplies provided in the environment are insufficient to fulfill needs. Insufficient supplies also occur because of unmet environmental demands. Front-loaded and integrated SRNA program structures present the students with different environmental supplies and demands. This theory will be used to analyze if the SRNA environment, either a front-loaded or integrated program, leads to a subjective P-E misfit.

Goals, Objectives and Expected Outcomes

The principle aim of this project was to gather data to determine the need for a restructuring of CRNA programs to create a better learning environment that prioritized the mental health and wellness of SRNAs.

Objectives:

- Explore current literature within the last 10 years related to the wellness of SRNAs in nurse anesthesia graduate programs
- Send SRNAs a validated survey to collect data on stress, anxiety, and perceived mental health support from current program
- Analyze the data collected to measure the level of perceived anxiety and stress in SRNA students at their current position in a CRNA program

Expected outcomes:

- Determine if different program structures create a significant difference in SRNAs perceived stress levels

- Formulate recommendations to improve wellness initiatives in nurse anesthesia graduate programs based upon survey results

SWOT Analysis

A SWOT analysis was used to evaluate internal and external factors specific to the strengths, weaknesses, opportunities, and threats that could affect the implementation and progression of the doctoral nursing project (Appendix B). An internal strength was having two students working together on this project. This project encompassed data from multiple nurse anesthesia programs, so the two students helped divide the large workload for the project. Both students are passionate about mental health and wellness. Both students have previous backgrounds in working on wellness committees. Another internal strength was faculty involvement with a project chair that is passionate about gathering more information on stress and anxiety in SRNAs. The faculty chair believes in the benefit of the research project. Finally, having the program director as a co-chair for this project allowed for additional input, insight, and guidance to help facilitate the development and progression of this research project. External strengths include the access to other programs through faculty that teach at multiple CRNA programs. These faculty teachers assisted with the distribution of research projects which increased the sample size of the student nurse anesthetist population. Being able to work with four other nurse anesthesia programs expanded the knowledge that we gathered from this

research project. Another external strength was the use of technology to gather the data with an online survey.

An internal weakness for this project was the physical distance between the two students heading this research project and the project chair. Meetings for this project were held virtually through online meetings and conference calls, which can lead to miscommunication. Scheduling conflicts are also another weakness since both students were in clinical on opposite days during the week, limiting the availability for meetings. An external weakness was determining a valid survey to use for the research project that would gather the most pertinent data. There are several valid surveys that focus on anxiety, depression, wellness, mental health, and overall wellbeing, so deciding which survey will be most applicable to the information that needed to be collected was an issue. The distribution of the surveys by faculty members who teach at the different facilities was also a weakness in this project because the distribution of the surveys was dependent on another party involved in the project. The lack of direct access to the other schools participating created barriers to sending out the surveys within the projected timeline.

A large sample size of students from different CRNA programs is one of the major opportunities for this project that could lead to data that can be presented to the American Association of Nurse Anesthesiology. This data could impact schools' curriculum structure and highlight the need for more mental health services and education. A change in the environment for meeting with the chair of the project in person could be an opportunity to impact the trajectory of the project and allow for concise direction for the next steps needed to be completed. One of the external threats to this project was that this project relied heavily on technology and virtual communication. Using several CRNA programs without direct communication could limit the number of surveys that are completed by the students affecting

the possible population size for data collection. Other students in the same program and cohort as the student chairs in charge of this project are completing other doctoral projects that have similar themes such as depression assessment and wellness initiatives. These other projects that include surveys could impact the results of the surveys that are sent out for this research project and alter the data results. The chair of this project was aware of the threat of another doctoral project and created a timeline to distribute the surveys to avoid interference.

Project Design/Methods

After Institutional Review Board (IRB) approval, a survey research design was conducted to evaluate the stress perception of SRNAs in CRNA programs that are structured differently. Utilization of this research design allowed the unbiased representation of the population at interest and a standardized measurement. The survey design was a cross-sectional study, which means data will be collected at one point in time from a sample selected to represent a larger population.

Project Site and Population

The project took place at 4 accredited CRNA programs throughout the United States. Three of the programs have a frontloaded structure, where the students participate in at least one year of didactic coursework up-front without clinical involvement. After the majority of didactic coursework is completed, the student begins integrating into the clinical setting. One of the programs had an integrated structure where the classes and clinical experiences run simultaneously within one year of the program start. All SRNA students (cohort of 2023, 2024, and 2025) currently enrolled in these programs will be sent the survey.

Measurement Instruments

The first section of the survey consisted of questions related to demographic data and the use/availability of stress management programs. The second section of the survey was the DASS-21. The DASS-21 is a clinical assessment that measures the three related states of depression, anxiety, and stress. It has 21 questions and takes about 3 minutes to complete. Students are asked to read each statement and circle a number, from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time) dictating how much the statement applied to them over the past week. The third section contained a list of stressors related to anesthesia school. Students were asked to rate the sources of stress on a scale from 1 (no stress) to 5 (extremely stressful). The final section of the questionnaire addressed the use of coping strategies by the students. Seven coping strategies were measured by a scale rating the frequency of use from 1 (always) to 4 (never). The survey (Appendix E) was utilized after validation by two students from the same cohort, two nurse anesthesia faculty member, and one faculty member outside the nurse anesthesia department.

Data Collection Procedures

An online Qualtrics survey was utilized for the dissemination of this project. Qualtrics meets the highest IRB and security standards in the industry. Survey reminders were sent out every two weeks after the initial request for participation. Data collection was completed in a 12-week period. Stats iQ uncovers the meaning in data, identifies hidden trends, and produces predictive models. Stats iQ automatically runs the right statistical test and visualizations, and then trends the results into simple language that can be put into action.

Ethical Considerations/Protection of Human Subjects

Students were asked to provide electronic informed voluntary consent allowing those refusing to participate to do so. Participants had the right to withdraw from the study at any time with no penalty and it had no effect on their academic performance. Only the scholarly project team had access to the date which was stored on a password protect computer. Data will be deleted three years following project completion.

Data Analysis and Results

The survey was sent out through email solicitation with a link that was created through Qualtrics. The survey was sent to SRNAs at Marian University, Clarkson College, National University, and The University of South Florida. Marian University, Clarkson College, and National University fall under the category of a front-loaded program. The University of South Florida is an integrated program. Distribution of the survey started on November 21, 2022, and continued through February 19, 2023, for a total of 90 days. There were 114 surveys started and a total of 112 completed surveys. Data collected from the surveys resulted in the following: Marian University, 70 SRNA participants; Clarkson College, 16 SRNA participants; National University, 6 SRNA participants; and University of South Florida with 22 SRNA participants. Each participant was asked to select her year in CRNA school, and there were 47 first year SRNAs, 44 second year SRNAs, and 23 third year SRNAs (Qualtrics, 2022-2023).

Demographics of the students were collected. The average age of SRNAs was between 25-35 years old with the 25-30 age group resulting in 42.9% of the total population surveyed and the age category 30-35 making up 32.46% for a total of 75.36%. The gender division of SRNA students resulted in 70 female student and 44 male student respondents. Relationship status showed that majority of SRNA participants were some types of a relationship with 53.51% married and 25.44% in a committed relationship. The other relationship categories resulted in

19.3% of respondents marking "single" and less than 1% in "divorced" or "other" category

(Qualtrics, 2022-2023).

Students were asked if their CRNA school provided resources and education for mental

health. 71.38% of students responded yes, 23.68% selected no, and 4.39% selected unsure.

Utilizing the mental health resources provided by the school was only used by 11.40% of

students; however, reaching out for mental health or other counseling services were utilized by

26.32% of students. 16.67% of students did not use any mental health services, but recognized

that they needed such a service., and 57% of the SRNAs did not utilize any mental health

services at all. These results show that a little more than one quarter of the students were

actively engaged in counseling services during their current enrollment in CRNA school

(Qualtrics, 2022-2023).

The DASS-21 questionnaire was chosen because of the standardization of the stress scale

measuring three categories of anxiety, depression, and stress. The DASS-21 items questionnaire

is self-reporting and was included in the survey sent out to students. The DASS-21 can be

referenced in Appendix E, section 2. The DASS-21 questionnaire has categorized results of

depression, anxiety, and stress, in sections of normal, moderate, severe, and extremely severe.

Based on the scoring key, the mean score for each question in the DASS-21 survey was

calculated to report the total score and define the category resulting from that total score. This

calculation was decided on because of the validity of responses attributed to a standard deviation

of <1.0 for each question. For depression, the score was 24.28, which is categorized as severe

depression. Anxiety category was a total of 26.08 which is categorized as extremely severe, and

the stress category score was 31.76 which is severe. These results show that the SRNAs who

participated in this section of the survey are past the moderate levels of anxiety, stress, and

depression and are experiencing much higher-than-normal levels while in CRNA school

(Qualtrics, 2022-2023).

The next data collected reflected on questions about items and events that have occurred

for the students during their time in CRNA school. The highlights of this question show that

27.6% of participants experienced the death of close person or family member. Divorce and

marital separation effected 7.41%, and 11.11% had a birth of a child while in CRNA school.

Changes in personal habits were experienced by 83.78%, and 83.94% has a change in their

financial state. This question and the entire results are in Appendix F Table 1. Further evaluation

of specific sources of stress were asked in question 13 of the survey, and the full results of the

question are in Appendix F Table 2. Stress factors that scored highly were fear of a clinical error

with a SD= 1.08 and categorized as highly stressed by 35.14% and as moderate stress by 25.23%

of SRNAs. Mental and physical exhaustion resulted in a SD= 1.08 with 25.23% reporting as

highly stressed and 28.83% in the moderate stress category (Qualtrics, 2022-2023).

Assessment of the use of 6 coping strategies was asked in question 14 (Appendix F Table

3) with the answer selection of always, frequently, seldom, and never. The results showed that

only 0.91% always communicated with faculty regarding feelings or frustrations, 7% frequently,

55.45% seldomly. 36.36% of respondents expressed frustrations with classmates, 26.36%

always, 53.64% frequently, 18.18% seldom, and 1.82% never. The use of relaxation or

meditation techniques to deal with stressful situations was only used by 8.18% always, 33.64%

frequently, 40.91% seldom, and 17.27% never. Seek guidance from a professional counselor

always was 4.59%, frequently 10.09%, 22.94% seldom, and 62.39% never. The exercise

category showed 18.18% always, 33.64% frequently, 43.64% seldom, and 4.55% never. The

final coping strategy of relying on personal support systems showed 47.27% selected always,

while 39.09% chose frequently, 12.73% seldom, and 0.91% never. The coping strategies show

that support systems were the most significantly utilized in the "always" category, and

professional counseling was the highest reported for the "never" category (Qualtrics, 2022–

2023).

The University of South Florida (USF) CRNA school is an integrated program and had

22 first year SRNA students participate in the survey. SRNAs gender characteristics were 14

female and 6 male students. Four students were in the 20–25-year range, twelve students in the

25–30-year range, two students in the 30-35 year range, and four students in the 35-40 year

range. The students reported 31.82% single and 68.18% in a relationship or marriage. The

SRNAs at USF answered 72.73% yes to having resources provided to them for mental health

from their school, but 90% have not used the resources. Only 13.64% of the students have

reached out for professional counseling services, and another 13.64% answered that they have

not but they do need to seek out counseling. The majority, 68.18%, selected that "yes," they feel

supported by faculty regarding their mental health (Qualtrics, 2022–2023).

Results of the DASS-21 questionnaire has categorized each section of depression,

anxiety, and stress, as normal, moderate, severe, and extremely severe. Based on the scoring key

the mean score for each question in the DASS-21 survey was calculated to report the total score

and define the category to which the total score contributed. This calculation was decided on

because of the validity of responses attributed to a standard deviation of <1.07 for each question.

For depression, the score was 10.41, which is in the normal category. Anxiety category was a

total of 12.87, which is categorized as moderate, and the stress category score was 10.46, which

is the normal category. The front-loaded programs had a depression score of 24.28, which is

categorized as severe depression. The anxiety category was a total of 26.08 which is categorized

as extremely severe, and the stress category was 31.76 which is severe. The coping strategy

results for USF SRNAs were like those at other schools in all six categories (Qualtrics, 2022–

2023).

Further evaluation of specific sources of stress were asked in question 13 of the survey,

and the full results of the question for USF SRNAs is in Appendix G. The biggest difference

between the front-loaded curriculum and integrated curriculum structure is when SRNAs start

clinical. For front-loaded, the implementation of clinical experiences may be done gradually or

immediately, full time. Integrated nurse anesthesia programs have classes and clinical

experiences running simultaneously. For USF SRNAs, the fear of clinical error was 31.82% for

extremely stressed, and for Marian SRNAs it was a 38.81% for highly stressed. USF students

scored mental and physical exhaustion at 45.45% for moderately stressed, and for Marian

SRNAs it was 31.34% for highly stressed.

Discussion

The survey was sent out through email solicitation with a link that was created through

Qualtrics. The survey was sent to SRNAs at Marian University, Clarkson College, National

University, and the University of South Florida. Marian University, Clarkson College, and

National University fall under the category of a front-loaded program. The University of South

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of 112 completed surveys were received. Data collected from the surveys was gleaned from

Marian University's 70 SRNA participants, Clarkson College's 16 SRNA participants, National

University's 6 SRNA participants, and the University of South Florida's 22 SRNA participants.

Each participant was asked to select her year in CRNA school, and there were 47 first year SRNAs, 44 second year SRNAs, and 23 third year SRNAs (Qualtrics, 2022–2023).

Demographics of the students were collected, and the average age of SRNAs was between 25–35 years old with the 25-30 age group resulting in 42.9% and the age category of 30-35 making up 32.46% for a total of 75.36%. The gender division of SRNA students resulted in 70 female students and 44 male student respondents. Relationship status showed that the majority of SRNA participants were in some type of relationship with 53.51% married, and 25.44% in a committed relationship. The other relationship categories resulted in 19.3% of students labeling themselves as single and less than 1% were in a divorced or other category (Qualtrics, 2022–2023).

Students were asked if their CRNA school provided resources and education for mental health, and 71.38% of students responded yes, 23.68% selected no, and 4.39% selected unsure. Utilizing the mental health resources provided by the school was only done by 11.40% of students; however, reaching out for mental health or other counseling services was utilized by 26.32% of students. 16.67% of students did not use offered services, but recognized they needed to do so, and 57% of the SRNAs did not utilize any services at all. These results show that a little over a quarter of students were actively engaged in counseling services during their current enrollment in CRNA school (Qualtrics, 2022–2023).

The DASS-21 questionnaire was chosen because of the standardization of the stress scale measuring three categories of anxiety, depression, and stress. The DASS-21 items questionnaire is self-reporting and was included in the survey sent out to students. The DASS-21 can be referenced in Appendix E section 2. The DASS-21 questionnaire has categorized results of depression, anxiety, and stress, into sections of normal, moderate, severe, and extremely severe.

Based on the scoring key, the mean score for each question in the DASS-21 survey was calculated to report the total score and define the category to which the total score contributed. This calculation was decided on because of the validity of responses attributed to a standard deviation of <1.0 for each question. For depression, the score was 24.28, which is categorized as severe depression. The anxiety category was a total of 26.08 which is categorized as extremely severe, and the stress category score was 31.76 which is severe. These results show that the SRNAs who participated in this section of the survey are past the moderate levels of anxiety, stress, and depression and are experiencing many higher-than-normal levels while in CRNA school (Qualtrics, 2022–2023).

The next data collected reflected on questions about situations and events that occurred for the students during their time in CRNA school. The highlights of this question show that 27.6% of participants experienced the death of a close person or family member. Divorce and marital separation affected 7.41%, and 11.11% had the birth of a child while in CRNA school. Changes in personal habits were reported by 83.78%, and 83.94% had a change in their financial state. This question and the entire results are in Appendix F Table 1. Further evaluation of specific sources of stress was asked in question 13 of the survey, and the full results of the question are in Appendix F Table 2. Stress factors that scored high were fear of a clinical error with an SD= 1.08 and categorized as highly stressed by 35.14% and moderately stressed by 25.23% of SRNAs. Mental and physical exhaustion scored an SD= 1.08 with 25.23% highly stressed and 28.83% in the moderate stress category (Qualtrics, 2022–2023).

Assessment of the use of 6 coping strategies was asked in question 14 (Appendix F Table 3) with the answer selection of always, frequently, seldom, and never. The results showed that only 0.91% always communicated with faculty regarding feelings or frustrations, 7% frequently,

and 55.45% seldomly. 36.36% expressed frustrations with classmates: 26.36% always, 53.64%

frequently, 18.18% seldomly, and 1.82% never. The use of relaxation or meditation techniques to

deal with stressful situations was only used by 8.18% always, 33.64% frequently, 40.91%

seldom, and 17.27% never. Seeking guidance from a professional counselor always was 4.59%,

frequently 10.09%, 22.94% seldom, and 62.39% never. The exercise category showed 18.18%

always, 33.64% frequently, 43.64% seldom, and 4.55% never. The final coping strategy of

relying on personal support systems showed 47.27% selected always, 39.09% frequently,

12.73% seldom, and 0.91% never. The coping strategies show that support systems were the

most significantly utilized in the "always" category, and professional counseling was the highest

reported for the "never" category (Qualtrics, 2022–2023).

University of South Florida (USF) CRNA school is an integrated program and had 22

first year SRNA students participate in the survey. SRNAs were 14 female and 6 male students

with four students in the 20–25-year range, twelve students in the 25–30-year range, two students

in the 30–35-year range, and four students in the 35–40-year range. The students reported

31.82% were single, and 68.18% were in a relationship or marriage. The SRNAs at USF

answered 72.73% yes to having resources provided to them for mental health from their school,

but 90% have not used the resources. Only 13.64% of the students have reached out for

professional counseling services, and another 13.64% answered that they have not, but they need

to seek out counseling. The majority, 68.18%, selected yes that they feel supported by faculty

regarding their mental health (Qualtrics, 2022–2023).

Results of the DASS-21 questionnaire have categorized each section of depression,

anxiety, and stress as normal, moderate, severe, and extremely severe. Based on the scoring key,

the mean score for each question in the DASS-21 survey was calculated to report the total score

and define the category to which the total score contributed. This calculation was decided on because of the validity of responses attributed to a standard deviation of <1.07 for each question. For depression, the score was 10.41 which is in the normal category. The anxiety category was a total of 12.87 which is categorized as moderate, and the stress category score was 10.46 which is the normal category. The front-loaded programs had a depression score of 24.28, which is categorized as severe depression. The anxiety category was a total of 26.08 which is categorized as extremely severe, and the stress category was 31.76 which is severe. The coping strategy results for USF SRNAs were similar to those at other schools in all six categories (Qualtrics, 2022–2023).

Conclusion

Analyzing the findings from the survey and the relevant literature, a recommendation for wellness programs in nurse anesthesia graduate training programs became apparent. It is crucial for programs to provide a clear pathway in policy and procedure for students to have access to mental health resources. However, programs need to do more than just provide instructions for mental health and wellness assistance. It is essential to have an ongoing assessment of students' well-being during their journey in CRNA school The stress that SRNAs experience during their time in school changes with each year of the program and varies based on program structure such as front-loaded versus integrated programs. Multiple studies over the last thirty years have proven that CRNA school is challenging not only academically but on the mental and emotional health of the SRNAs. Currently, there is no data supporting one particular approach to improving SRNA wellness over another, but nurse anesthesia educational programs must improve their wellness efforts and prioritize the mental health of their students. Further research may develop

curricular innovation for nurse anesthesia education and, possibly, for graduate programs in other

professional clinical disciplines.

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Appendix A

Citation	Research Design & Level of Evidence	Population / Sample size n=x	Major Variables	Instruments / Data collection	Results
Bozimowski, G., Groh, C., Rouen, P., & Dosch, M. (2014). The prevalence and patterns of substance abuse among nurse anesthesia students. *AANA Journal, 82*(4), 277–283.	Retrospective study\n\nLevel III	N=2,439	Study has limited the analysis to descriptive data, the addition of correlative data could have provided more insight and no psychometric assessments were performed to ensure validity or reliability	Surveys were sent via email to the program directors of 111 CRNA schools to send to their students to collect over a 5-year period. The result of the surveys included 2,439 students that participated. The surveys were analyzed by statistical software.	The result in 0.65% prevalence of substance abuse among SRNAs while in school from the study. This study was used to assess the frequency, prevalence, outcomes, and preventative measures for substance abuse among SRNAs over a 5-year period from 2008 to 2012. Wellness promotion and mental health education were the most frequent prevention strategies needed to decrease substance abuse among SRNAs.
Chipas, A., Cordrey, D., Floyd, D., Grubbs, L., Miller, S., & Tyre, B. (2012). Stress: Perceptions, Manifestations, and Coping Mechanisms of Student Registered Nurse Anesthetists. *AANA Journal, 80*(4), S49–S55.	Descriptive Study\n\nLevel VI	N = 1,282	Gender, race/ethnicity, program type, semester in school, depression, suicidal ideation, symptoms, exercise, coping mechanisms	An online SurveyMonkey questionnaire composed of 54 study-specific questions was developed to assess stress in the SRNA population. Statistical procedures used to analyze data included independent t-tests for response levels in various domains and Pearson correlation coefficient. Internal consistency was determined by calculating the average of split-half correlations using statistical analysis software.	SRNAs have a substantially higher level of stress than practitioners. This high level may not be fully appreciated by educators, clinical staff, or the AANA. It is essential that this community understand the issues contributing to the high levels of stress within this population so we can work toward implementing solutions that reduce the stress. The academic community and the AANA have a role in helping students cope with stress.

| Chipas, A., CRNA, PhD, & McKenna, D., CRNA, MSNA. (2011). Stress and burnout in nurse anesthesia. *AANA*, 79(2), 122–128. | A descriptive study using a cross-sectional survey method

Level VI | N=5,737 | Survey sent to CRNAs and SRNAs and did not differentiate between level of experience or year in program. | A survey was sent to emails in the ANNA database to all CRNAs and SRNAs 5,737 surveys were completed to be used for data for this study. The respondents were 85% practicing CRNAs and 15% were SRNAs. The results were analyzed and distributed into different categories. | SRNAs reported to be more stressed than CRNAs with 90% of the stress coming from school. Of the CRNAs that were stressed majority of them were educators that reported a higher level of stress. Results concluded that the anesthesia profession is a stressful job, and that stress management should start during anesthesia school. |
|---|---|---|---|---|---|
| Elisha, S., & Rutledge, D. N. (2011). Clinical education experiences: perceptions of student registered nurse anesthetists. *AANA Journal*, 79(4 Suppl), S35–S42. | A descriptive study using a cross-sectional survey method

Level VI | N=696 | Survey sent via email and no validation of reported experiences, invalid email addresses | SRNAs received informational email message to inform them that they would receive an invitation to participate in a study and a brief explanation of the study. A 54-item questionnaire was sent 52 questions that required closed-ended responses and 2 were open-ended. Data were analyzed using the SPSS statistical software program. | The study's focus was to examine SRNA experiences during clinical education rotations. SRNA participants report high numbers of verbal abuse (69%), sexual harassment (13%), physical abuse (14%), or racial discrimination (12%) was experienced by less than 15% of the SRNAs. Learning can be enhanced by a reduction in perceived mistreatment of all types. The results of this study show that this information could be used to create educational modules and standards of conduct for preceptors in the clinical setting. |

Citation	Design/Level	Sample	Limitations	Methods	Results
Farina, C., Hranchook, A. M., Bittinger, A. C., & Aebersold, M. (2021). The Flipped Classroom with Case-Based Learning in Graduate Nurse Anesthesia Education. *AANA Journal, 89*(3), 254–260.	RCT - Pilot study Level II	N=36	Certain groups of students were not exposed to a flipped classroom model and limited to a small cohort of nurse anesthesia students to try the model of a flipped classroom. Other limitations related to curriculum limitations regarding deadlines and length of the course	Academic performance and course satisfaction were compared using a pre-course, and post-course satisfaction survey from a neuro anesthesia graduate course comparing two different first-year cohorts one with a traditional teaching method (n=19) and one that incorporated a flipped classroom model (n =17) that had case studies. The data was analyzed using a mixed methods model that also measured demographic data to compare the two cohorts for similarities regarding age, and prior nursing experience.	The satisfaction scores between the two cohorts were not significantly different. However, there was an increase in satisfaction scores in both cohorts between the pre-course survey and post course survey. The study results that there is potential for flipped base classroom model to be used in graduate anesthesia school and that there is a need for further research and studies on this topic.
Flynn, F. M., Bing-Jonsson, P. C., Falk, R. S., Tønnessen, S., & Valeberg, B. T. (2022). Educating for Excellence: A Cohort Study on Assessing Student Nurse Anesthetist Non-Technical Skills in Clinical Practice. *AANA Journal, 91*(1), 7–15.	Cohort Study Level IV	N=22	size of the sample, recruitment method was for convenience sample, a possible threat to the study's objectivity was the first author is a clinical supervisor, but no invalidation was found	A cohort of SRNAs was prospectively followed over a 12- months during anesthesia education, SRNAs were assessed at 3 different time points, 9 weeks into clinical rotations, 20 weeks after clinical rotation, and 37 weeks in clinical practice. Data was collected using the assessment instrument NANTS-no to assess the SRNAs non-technical skills in clinical practice between January 2018 to January 2019. Non-technical skills should be rated according to what is expected of a qualified CRNA	Of the SRNAs that participated in this study only seventeen SRNAs non-technical skills were rated at all 3-time points, while 3 SNAs' non-technical skills were rated at 2 of the time points. Descriptive statistics were presented for the SRNAs showing an improvement of the SRNAs non-technical skills and the SRNAs scored themselves significantly lower in all 4 categories compared to the expert groups of clinical educators and mentors. This study shows the lack of confidence the SRNA has in their own skill level and performance of non-technical skills.
Foley, T., DNP, CRNA, & Lanzillotta-Rangeley, J., PhD, CRNA. (2021). Stress reduction	Level II RCT -Cohort study	N=33	Limited sample size n=33, small sample size of students that completed preintervention and postintervention survey (n=33) compared to the	The preintervention and postintervention survey answers were paired together with unique user identifier code and compared. A single-tailed *t* test was used to analyze decreases in the categories of	The results of this study showed a decrease in depression after completing the course on wellness and mediation and completing ten days of practicing meditation. Students reported wanting to continue the use

Citation	Design / Level	N	Variables	Methods / Measures	Results
through mindfulness meditation in student registered nurse anesthetists. *AANA, 89*(4), 284–289.			number of students that enrolled in the course (n=71).	depression, anxiety, and stress Results of the DASS-21 questionnaire was analyzed by a Wilcoxon signed rank test that resulted in a significant decrease in depression and anxiety of the participants that participated in the mindfulness meditation management.	of a meditation method and incorporate time for mindfulness into their daily routine.
Griffin, A., PhD, CRNA, APN, Yancey, V., PhD, CHPN, HNC-A, RN, & Dudley, M., PhD. (2017). Wellness and thriving in a student registered nurse anesthetist population. *AANA, 85*(5), 325–330.	RCT – pilot study Level II	N=75	Different cohorts, different class levels, demographics such as gender, age, marital status, and previous nursing experience	Salutogenic Wellness Promotion Scale (SWPS), Perceived Self-Efficacy Scale (PSE), and Academic Achievement. To measure a student's academic success - GPA. Data analysis using multiple regression analysis, and SWPS was selected as the predictor variable.	16 months of following 3 cohorts demonstrated that there is a strong correlation between self-efficacy and higher perceived wellness scores. There is a need for further evidence to study the relationship between these two factors and student nurse anesthetists during CRNA school. Increased levels of stress and decreased wellness were shown in programs with a doctoral curriculum versus a master's program.
Imus, F. S., & Burns, S. (2015). What to Consider Before Beginning Graduate Education: A Pilot Study. *AANA Journal, 83*(5), 345–350.	Descriptive Pilot study Level III	N=66	Age, gender, academic year, previous years of experience as a nurse, number of clinical cases, call hours, and years since attending an academic program	General Self-Efficacy Scale (GSE), a survey sent to the students and data were collected with electronic data tool, analyzed with descriptive and correlational statistics (Pearson R)	The self-efficacy results are prominent predictors of a student nurse anesthetist clinical performance and that SRNAs have decreased self-efficacy compared to the students only enrolled in didactic courses
Imus, F. S., Burns, S. M., Fisher, R., & Ranalli, L. (2015).	Descriptive Study Level VI	N = 29	Open ended questions, benefits of clinical training,	An online surgery was used to collect data related to the perception of the pre-clinical	All students found that the pre-clinical experience helped reinforce their didactic curriculum. Many of the students

Citation	Level/Design	N	Variables	Methods	Results
Students' perceptions on pre-clinical experience in a front-loaded nurse anesthesia program. *Journal of Nursing Education and Practice, 5*(10), 22–27. https://doi.org/10.5 430/jnep.v5n10p22			study habits, lab time, anxiety, and confidence.	experience. It was a 21-item Likert scale style survey.	additionally stated that this experience encouraged and motivated them to want to learn and study. There is a benefit to early integration into the clinical arena. Continued research is recommended regarding the benefits of preclinical education affecting students' confidence and anxiety levels.
Mesisca, J., DNP, CRNA, & Mainwaring, J., DNP, MS CRNA. (2021). Stress, anxiety, and well-being in nurse anesthesia doctoral students. *AANA Journal, 89*(5), 396–402.	Cross-sectional mixed-methods study Level I	N=76	Class levels, open-ended questions, previous nursing experience, demographics	Data was collected and dispersed with an online survey. Three validated measurement tools used Perceived Stress Scale-10 (PSS-10), Penn State Worry Questionnaire (PSWQ), and Medical Student Well-Being Index (MSWBI)	CRNA programs result in SRNAs having low well-being, high stress, and high anxiety levels. Students want more support from programs and education and managing their mental health. There is a need for more research on this subject matter.
Perez EC, & Carroll-Perez I. (1999). A national study: stress perception by nurse anesthesia students. *AANA Journal, 67*(1), 79–86.	Level II RCT -Cohort study	N= 1,504	Surveys were mailed to the addresses of student nurse anesthetists and could have been filled out with other individuals' opinions involved (spouse, children, and friends or classmates).	Survey questionnaires were mailed to the national list of student nurse anesthetists and of the 2,200 questionnaires sent out only 1,504 were filled out and returned and 1,400 of those surveys were analyzed for the data collected through the questionnaire.	Results of this study showed that 76% of the students reported that their program did not have a stress management program. Of the remaining students that reported a stress management program only 7.9% participated in it. For the life crisis portion of the survey, 26% of students fell into the moderate life crisis category and 73% were in the major life crisis category. In conclusion, this study showed the need for CRNA programs to

Stillwell, S. B., Vermeesch, A. L., & Scott, J. G. (2017). Interventions to Reduce Perceived Stress Among Graduate Students: A Systematic Review with Implications for Evidence-Based Practice. *Worldviews on evidence-based nursing, 14*(6), 507–513. https://doi.org/10.1 111/wvn.12250	Systematic review Level 1	N= 373	Stress, stress management course, yoga, meditation, deep breathing, mindfulness training, anxiety	Data was collected from the following databases: CINAHL plus, MEDLINE, PsycINFO. The search terms used included study, intervention, experiment, research, selfcare, stress, coping, anxiety, and mindfulness. Two authors completed an asynchronous review of the articles and one expert evidence-based practice mentor and one wellness expert conducted rigorous appraisal of the eight identified studies. Evidence was evaluated and synthesized, and recommendations for practice were determined.	Self-care interventions reduced the perceived stress levels in graduate health science students. Implementing a self-care mind-body stress reduction (MBSR) program may be encouraging for students. MBSR includes yoga, breath work, meditation and mindfulness. More research needs to be done to develop a standardized MBSR protocol.

create or better implement a stress management program for SRNAs.

Appendix B

STRENGTHS

- Two students working on a larger research project
- Project chair has a background on this topic
- Director of program is co-chair for the project
- . Ability to reach different programs to increase data collection
- Use of technology to distribute and analyze data

WEAKNESSES

- Inabiltiy to meet in person with project chair
- Heavy reliability on technology for communication
- Indirect comminication with other CRNA programs through faculty teachers
- Relying on faculty to distribute the survey at other programs

OPPORTUNITIES

- Large sample size from several CRNA programs
- Increased data collection
- Impact CRNA course curriculum to benefit students
- Gain insight into the need for better mental health resources
- Present data to the AANA

THREATS

- Miscommunication through virtual communication
- Lack of access to the other programs participating in the survey
- Relying on others to distribute survey lead to delayed timeline
- Not receiving IRB approval
- Technology issues with survey being accessed or completed
- Similar themes in other DNP projects

Appendix C

DNP Project

GANTT CHART

TASKS	JUL 2022	AUG 2022	SEP 2022	OCT 2022
Proposal 1				
Proposal 2				
Proposal3				
IRB				
Methods				
Implementation	▬▬▬			
Data Analysis	▬▬▬▬▬▬			
Dissementation				▬▬▬

DNP Project

GANTT CHART

TASKS	NOV 2022	DEC 2022	JAN 2023	FEB 2023
Proposal 1				
Proposal 2				
Proposal3				
IRB				
Methods				
Implementation				
Data Analysis				
Dissementation	▬▬			
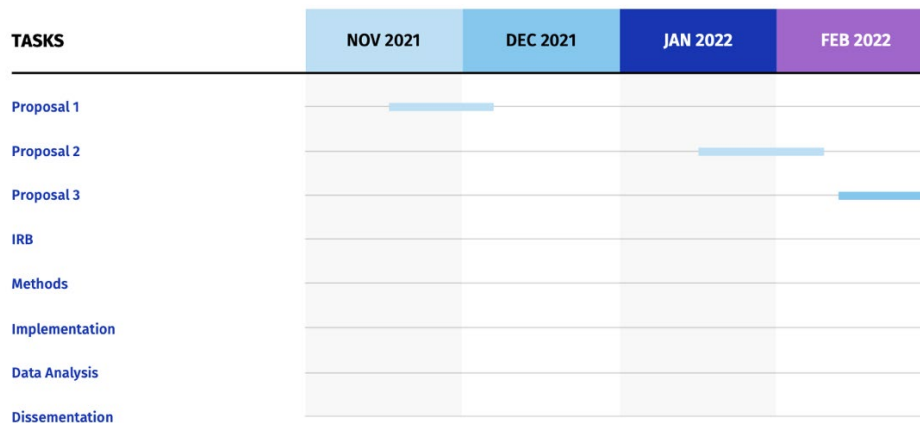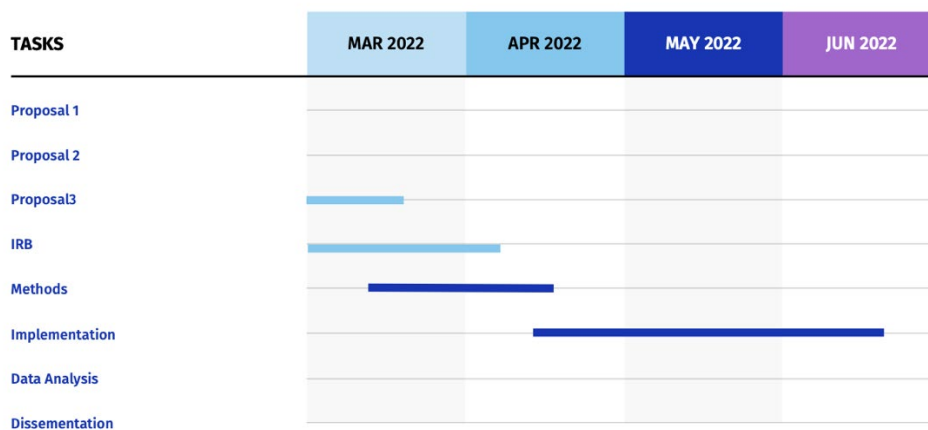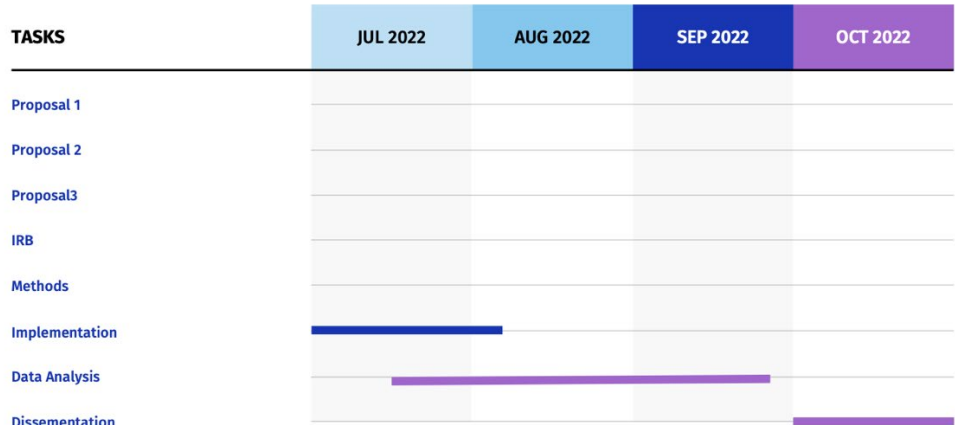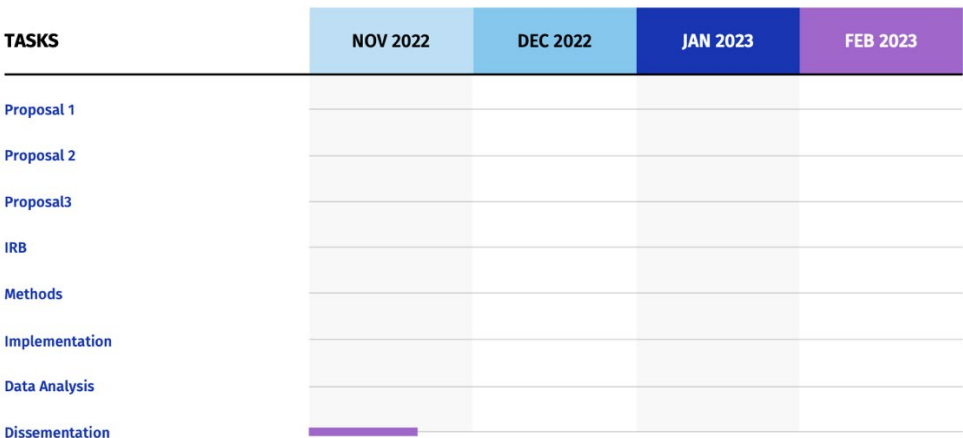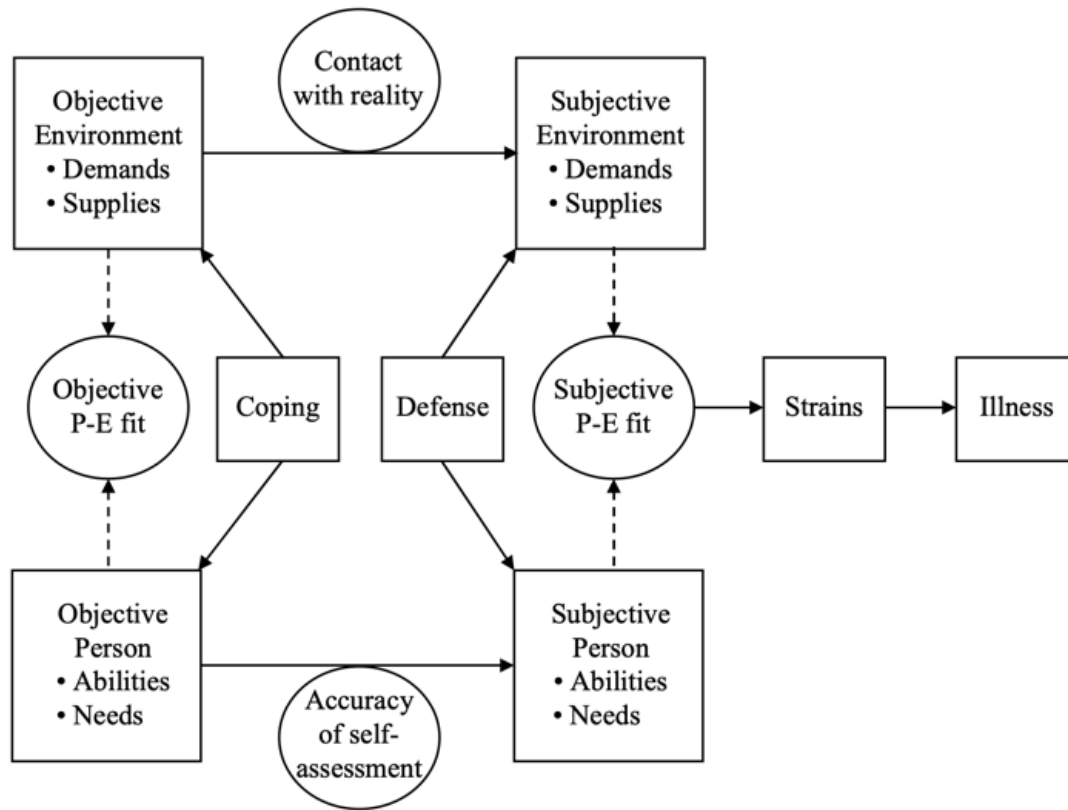
Appendix D

Appendix E

Section 1 – Demographics

1. Please select age category
   a. 20-25
   b. 25-30
   c. 30-35
   d. 35-40
   e. 40+

2. Please select your gender
   a. Male
   b. Female
   c. Other
   d. Decline to answer

3. Relationship status
   a. Single
   b. Married
   c. Relationship
   d. Divorced
   e. Other

4. Please select the CRNA school that you attend
   a. Marian University
   b. Clarkson College
   c. National University
   d. Webster University
   e. Southern Illinois State University
   f. Midwestern University
   g. University of South Florida
   h. Kaiser Permanente School of Anesthesia

5. Please select your year in anesthesia school
   a. First
   b. Second
   c. Third

6. Does your CRNA school provide education or resources for mental health?
   a. Yes
   b. No
   c. Not sure

7. Have you used the resources for mental health from your CRNA program?
   a. Yes

      b. No
      c. No resources available

8. Have you reached out for mental health/counseling services while in CRNA school?
      a. Yes
      b. No
      c. Have not needed services

9. Do you feel supported by your CRNA school faculty regarding your mental health and wellbeing?
      a. Yes
      b. No
      c. Sometimes
      d. Never

Section 2 – DASS 21

DASS21

Name: Date:

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you **over the past week**. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0   Did not apply to me at all
1   Applied to me to some degree, or some of the time
2   Applied to me to a considerable degree or a good part of time
3   Applied to me very much or most of the time

1 (s)	I found it hard to wind down	0	1	2	3
2 (a)	I was aware of dryness of my mouth	0	1	2	3
3 (d)	I couldn't seem to experience any positive feeling at all	0	1	2	3
4 (a)	I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5 (d)	I found it difficult to work up the initiative to do things	0	1	2	3
6 (s)	I tended to over-react to situations	0	1	2	3
7 (a)	I experienced trembling (e.g. in the hands)	0	1	2	3
8 (s)	I felt that I was using a lot of nervous energy	0	1	2	3
9 (a)	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10 (d)	I felt that I had nothing to look forward to	0	1	2	3
11 (s)	I found myself getting agitated	0	1	2	3
12 (s)	I found it difficult to relax	0	1	2	3
13 (d)	I felt down-hearted and blue	0	1	2	3
14 (s)	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15 (a)	I felt I was close to panic	0	1	2	3
16 (d)	I was unable to become enthusiastic about anything	0	1	2	3
17 (d)	I felt I wasn't worth much as a person	0	1	2	3
18 (s)	I felt that I was rather touchy	0	1	2	3
19 (a)	I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	0	1	2	3
20 (a)	I felt scared without any good reason	0	1	2	3

DASS-21 Scoring Instructions

The DASS-21 should not be used to replace a face to face clinical interview. If you are experiencing significant emotional difficulties you should contact your GP for a referral to a qualified professional.

Depression, Anxiety and Stress Scale - 21 Items (DASS-21)

The Depression, Anxiety and Stress Scale - 21 Items (DASS-21) is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress.

Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest / involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The stress scale is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset / agitated, irritable / over-reactive and impatient. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items.

The DASS-21 is based on a dimensional rather than a categorical conception of psychological disorder. The assumption on which the DASS-21 development was based (and which was confirmed by the research data) is that the differences between the depression, anxiety and the stress experienced by normal subjects and clinical populations are essentially differences of degree. The DASS-21 therefore has no direct implications for the allocation of patients to discrete diagnostic categories postulated in classificatory systems such as the DSM and ICD.

Recommended cut-off scores for conventional severity labels (normal, moderate, severe) are as follows:

<u>NB</u> Scores on the DASS-21 will need to be multiplied by 2 to calculate the final score.

	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

Lovibond, S.H. & Lovibond, P.F. (1995). Manual for the Depression Anxiety & Stress Scales. (2nd Ed.)Sydney: Psychology Foundation.

Section 3 – Sources of Stress

Please select the items that have occurred since your admission to nurse anesthesia school
1. Death of spouse
2. Divorce
3. Marital separation
4. Death of close family member
5. Personal injury/illness
6. Marriage
7. Marital reconciliation
8. Change in health
9. Pregnancy
10. Change in financial state
11. Death of a close friend
12. Change in number of arguments with spouse
13. Change in living conditions
14. Change in personal habits
15. Change in residence
16. Change in church activities
17. Change in social activities
18. Change in sleeping habits
19. Change in eating habits
20. Change in number of family gatherings

Use the rating scale below to answer the following questions
1- No stress
2- Mild stress
3- Moderate stress
4- Highly stressed
5- Extremely stressed

1. Fear of dismissal
   a. 1
   b. 2
   c. 3
   d. 4
   e. 5

2. Fear of academic failure
   a. 1
   b. 2
   c. 3
   d. 4
   e. 5

3. Fear of instructors perception of being incompetent
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

4. Fear of clinical error
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

5. Written clinical evaluations of performance
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

6. Ongoing personal conflict with a specific instructor
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

7. Ongoing personal conflict with peers
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

8. Mental and physical exhaustion
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

9. Ineffective time management
    a. 1
    b. 2
    c. 3

    d. 4
    e. 5

10. Adjusting to different styles of instruction
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

11. Lack of time for leisure or social activates
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

12. Lack of autonomy and control over schedule and assignments
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

13. Successful completion of the national certification examination
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

14. Preparedness for graduation as a competent practitioner
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

15. Expected vigilance despite increased fatigue and workload
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

Section 4 – Utilizing Coping Strategies

Please indicate the frequency with which you use the following strategies based on the scale below
  1- Always
  2- Frequently
  3- Seldom
  4- Never

1. Communicate your feelings and/or frustrations to the faculty
   a. 1
   b. 2
   c. 3
   d. 4

2. Ventilate your frustrations to your fellow classmates
   a. 1
   b. 2
   c. 3
   d. 4

3. Use relaxation techniques to deal with stressful situations
   a. 1
   b. 2
   c. 3
   d. 4

4. Seek guidance from a professional counselor
   a. 1
   b. 2
   c. 3
   d. 4

5. Exercise
   a. 1
   b. 2
   c. 3
   d. 4

6. Reliance on personal support systems
   a. 1
   b. 2
   c. 3
   d. 4

Appendix F

Table 1 - Question 12 (all schools included)

#12	Please select the items that have occurred since your admission to nurse anesthesia school	Yes		No		Total
1	Death of a spouse	1.85%	2	98.15%	106	108
2	Death of close family member	19.27%	21	80.73%	88	109
3	Death of close friend	6.48%	7	93.52%	101	108
4	Marriage	13.89%	15	86.11%	93	108
5	Marital separation	4.63%	5	95.37%	103	108
6	Divorce	2.78%	3	97.22%	105	108
7	Personal injury/illness	23.85%	26	76.15%	83	109
8	Change in health	35.78%	39	64.22%	70	109
9	Pregnancy	5.56%	6	94.44%	102	108
10	Birth of new child	11.11%	12	88.89%	96	108
11	Change in financial state	83.93%	94	16.07%	18	112
12	Change in living conditions	54.13%	59	45.87%	50	109
13	Change in personal habits	83.78%	93	16.22%	18	111
14	Change in residence	64.22%	70	35.78%	39	109
15	Change in church activities	33.94%	37	66.06%	72	109
16	Change in social activities	82.73%	91	17.27%	19	110
17	Change in sleeping habits	79.28%	88	20.72%	23	111
18	Change in exercise habits	90.09%	100	9.91%	11	111
19	Change in eating habits	79.28%	88	20.72%	23	111
20	Change in the number of family gatherings	83.78%	93	16.22%	18	111

Table 2 - Question 13 (all schools included)

#13	Question	1 - No stress		2 - mild stress		3 - moderate stress		4 - highly stressed		5 - extremely stressed		Total
1	Fear of dismissal	14.41%	16	27.03%	30	24.32%	27	15.32%	17	18.92%	21	111
2	Fear of academic failure	6.31%	7	18.92%	21	24.32%	27	29.73%	33	20.72%	23	111
3	Fear of instructors perception of being incompetent	5.45%	6	24.55%	27	21.82%	24	27.27%	30	20.91%	23	110
4	Fear of clinical error	3.60%	4	11.71%	13	25.23%	28	35.14%	39	24.32%	27	111
5	Written evaluation of performance	18.92%	21	19.82%	22	34.23%	38	18.02%	20	9.01%	10	111
6	Ongoing personal conflict with a specific instructor	63.96%	71	14.41%	16	9.01%	10	6.31%	7	6.31%	7	111
7	Ongoing personal conflict with peers	68.47%	76	19.82%	22	7.21%	8	1.80%	2	2.70%	3	111
8	Mental and physical exhaustion	4.50%	5	12.61%	14	28.83%	32	28.83%	32	25.23%	28	111
9	Ineffective time management	7.27%	8	38.18%	42	29.09%	32	16.36%	18	9.09%	10	110
10	Adjusting to different styles of instruction	9.09%	10	30.00%	33	31.82%	35	15.45%	17	13.64%	15	110
11	Lack for time for leisure or social activities	5.41%	6	17.12%	19	33.33%	37	26.13%	29	18.02%	20	111
12	Lack of autonomy and control over schedule and assignments	8.11%	9	26.13%	29	32.43%	36	17.12%	19	16.22%	18	111
13	Successful completion of the national certification exam	8.18%	9	19.09%	21	30.91%	34	20.91%	23	20.91%	23	110
14	Preparedness for graduation as a competent practitioner	7.21%	8	20.72%	23	33.33%	37	15.32%	17	23.42%	26	111
15	Expected vigilance despite increased fatigue and workload	7.21%	8	18.92%	21	34.23%	38	22.52%	25	17.12%	19	111

Table 3 - Question 14 (all schools included)

#14	Question	1- Always		2 - Frequently		3 - Seldom		4- Never		Total
1	Communicate your feelings and/or frustrations to the faculty	0.91%	1	7.27%	8	55.45%	61	36.36%	40	110
2	Express your frustrations to your fellow classmates	26.36%	29	53.64%	59	18.18%	20	1.82%	2	110
3	Use relaxation/meditation techniques to deal with stressful situations	8.18%	9	33.64%	37	40.91%	45	17.27%	19	110
4	Seek guidance from a professional counselor	4.59%	5	10.09%	11	22.94%	25	62.39%	68	109
5	Exercise	18.18%	20	33.64%	37	43.64%	48	4.55%	5	110
6	Reliance on personal support systems	47.27%	52	39.09%	43	12.73%	14	0.91%	1	110

Appendix G

Table 1 – Question 13 (USF student responses only)

#13	Question Sources of Stress	1 - No stress		2 - mild stress		3 - moderate stress		4 - highly stressed		5 - extremely stressed		Total
1	Fear of dismissal	13.64%	3	36.36%	8	18.18%	4	13.64%	3	18.18%	4	22
2	Fear of academic failure	0.00%	0	22.73%	5	18.18%	4	36.36%	8	22.73%	5	22
3	Fear of instructors perception of being incompetent	0.00%	0	42.86%	9	14.29%	3	28.57%	6	14.29%	3	21
4	Fear of clinical error	0.00%	0	9.09%	2	27.27%	6	31.82%	7	31.82%	7	22
5	Written evaluation of performance	13.64%	3	9.09%	2	54.55%	12	18.18%	4	4.55%	1	22
6	Ongoing personal conflict with a specific instructor	90.91%	20	4.55%	1	0.00%	0	0.00%	0	4.55%	1	22
7	On going personal conflict with peers	81.82%	18	13.64%	3	0.00%	0	0.00%	0	4.55%	1	22
8	Mental and physical exhaustion	4.55%	1	9.09%	2	45.45%	10	22.73%	5	18.18%	4	22
9	Ineffective time management	13.64%	3	31.82%	7	40.91%	9	13.64%	3	0.00%	0	22
10	Adjusting to different styles of instruction	9.09%	2	31.82%	7	36.36%	8	9.09%	2	13.64%	3	22
11	Lack for time for leisure or social activities	4.55%	1	13.64%	3	36.36%	8	22.73%	5	22.73%	5	22
12	Lack of autonomy and control over schedule and assignments	13.64%	3	40.91%	9	18.18%	4	9.09%	2	18.18%	4	22
13	Successful completion of the national certification exam	4.55%	1	18.18%	4	36.36%	8	27.27%	6	13.64%	3	22
14	Preparedness for graduation as a competent practitioner	0.00%	0	22.73%	5	45.45%	10	18.18%	4	13.64%	3	22
15	Expected vigilance despite increased fatigue and workload	9.09%	2	9.09%	2	59.09%	13	9.09%	2	13.64%	3	22