

STUDENT REGISTERED NURSE ANESTHETISTS' PERCEPTIONS OF COVID-19
PANDEMIC ON STRESS AND WELLNESS: A DESCRIPTIVE STUDY

A Major Paper Presented

by

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Abstract

High levels of stress have been documented in the student registered nurse anesthetist (SRNA) population and coping skills employed as student have been shown to endure after graduation. Heightened levels of stress, anxiety, and depression have been reported in American adults related to the COVID-19 pandemic. As classes transitioned online and clinical was suspended due to the stay-at-home orders, this stress was predominant for nurse anesthesia students. Research was not available and needed to be conducted to determine how the COVID-19 pandemic affected the stress levels of nurse anesthesia students. Studying how nurse anesthesia students respond to unforeseen events can help us develop additional preparation and coping strategies for future cohorts. The purpose of this study was to explore the effects of the COVID-19 pandemic on stress and wellness and coping mechanisms for student registered nurse anesthetists. A total of n=19 current and prior SRNAs were sent a Qualtrics survey with the COVID-PSS-10, Coronavirus Anxiety Scale, and three qualitative questions. Twelve participants (63%) completed the Qualtrics survey between March-April 2021. High perceived stress was reported in 33% of the participants (n=4). Dysfunctional anxiety symptoms were reported by 33% of SRNAs (n=4). Most responses to the qualitative questions reported uncertainty or stress relief, diminished physical and social wellness, and some form of maladaptive coping. The results display the importance of identifying students at risk for maladaptive coping. Additional stress management training should be provided to students and faculty and tailored according to students' academic progression. Updates to the Graduate Student Handbook, coupled with a dynamic resource toolkit, would guide students navigating the challenging phases of graduate level education.

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Student Registered Nurse Anesthetists' Perceptions of COVID-19 Pandemic on Stress and Wellness: A Descriptive Study

Background/Statement of the Problem

Stress has been documented and researched in the student anesthesia population for over 30 years (Wildgust, 1986). Although applicants to nurse anesthesia programs are aware of the rigorous academic curriculum, the ability to cope with the challenges varies greatly for every person. The American Association of Nurse Anesthetists (AANA) and graduate education programs are cognizant of the dangers of inadequate coping skills and how these adaptive or maladaptive coping measures continue into professional work as a Certified Registered Nurse Anesthetist [CRNA] (Griffin et al., 2017). Even with the vast number of health and wellness resources available, it is nearly impossible to predict or plan for the effects of the current coronavirus disease 2019 (COVID-19) pandemic.

In March 2020, the World Health Organization declared COVID-19 a pandemic meaning the virus not only affected a large number of people, but it had spread over multiple countries or continents (AJMC Staff, 2020). In the United States, several states mandated physical distancing of at least six feet, mandatory masks, and stay-at-home orders, with exemptions for essential businesses and workers. According to the Centers for Disease Control and Prevention (CDC), symptoms of anxiety increased threefold from the previous year and depression increased four times in the United States during April-June 2020 secondary to the COVID-19 pandemic (Czeisler et al., 2020). This survey also noted that substance abuse increased by ten percent and more mental health conditions were seen in young adults, Hispanic and black persons, essential workers, and unpaid caregivers (Czeisler et al., 2020).

The impact of the COVID-19 pandemic has yet to be fully considered or experienced. With many businesses closed for several months, schools transitioning to virtual learning, and extracurricular activities cancelled; the financial, educational, psychological, and physical effects are still being discovered. The American Psychological Association (APA) observed the additional stress for students and provided coping strategies to decrease stress such as establishing a routine, providing self-care, learning to manage disappointments, limiting media consumption, and helping others to cope (APA, 2020). Stress research has also found that stress and anxiety can affect academic performance, impair workplace functioning, and inhibit performance on everyday life tasks (Boals & Banks, 2020). This stress can be amplified for nurse anesthesia students.

Nurse anesthesia students endure vast amounts of stress due to the complexity of the curriculum and pressure to perform in critical situations. These stresses are magnified when students are forced to teach themselves anesthesia concepts and learn how to do a hands-on profession while clinical is cancelled. An additional influence on the level of stress for nurse anesthesia students is that several students at a School of Nurse Anesthesia in Rhode Island returned to work in COVID-19 units as registered nurses during the pandemic. Historically, it is discouraged for any nurse anesthesia student to work due to the 40-60 clinical hours required each week. When analyzing the effect of the pandemic on healthcare workers in New York City during the surge of cases, nurses and advanced practice providers were found to report more psychological distress (Shechter et al., 2020). Although the long-term effects of this pandemic will be discovered over time, additional research is required to determine the existing effects of

the pandemic. Determining how nurse anesthesia students respond to unforeseen events can facilitate additional preparation and coping strategies for future cohorts. The purpose of this study was to explore the effects of the COVID-19 pandemic on stress and wellness and coping mechanisms for student registered nurse anesthetists.

Literature Review

A literature review was performed using the databases CINAHL, PubMed, and Google Scholar. Searched keywords included stress, wellness, coping, nurse anesthesia, student registered nurse anesthetist (SRNA), COVID-19, pandemic. The time frame searched was from 2010-2020. The review appraised articles that are relevant to SRNA's perceptions of COVID-19 pandemic on stress and wellness. The purpose of this literature review was to assess the current data on SRNA stress to guide new research related to the effect of the COVID-19 pandemic on stress and wellness of the SRNA.

Stress and Wellness

Stress can be a difficult concept to define as it is perceived differently by every person. Furthermore, this perception can vary depending on the individual stressor. Stress is defined as an event or group of events with a stressor that produces a chemical reaction in the brain that activates a physiological fight-or flight response in the body (Dhabhar, 2014). The stress response occurs via the sympathetic nervous system and causes increased arterial pressure, increased blood flow to active muscles, decreased blood flow to gastrointestinal tract and kidneys, increased cellular metabolism, increased glucose concentration, increased mental activity, and increased rate of blood coagulation (Guyton & Hall, 2016). Individual perception and the level of stress can be beneficial or harmful to a person's health and wellness. There are several different models of wellness, however each version concurs that there are multiple dimensions of wellness. The most represented domains of wellness are physical, spiritual, emotional, social, and intellectual (Beauchemin, 2018).

Following Lazarus' theory of stress, Crum et al. (2017) studied the stress mindset to demonstrate how a person's appraisal of stress can affect their physiological, cognitive, and emotional response to stress. This study investigated a university study pool participants' stress response to a stress task (mock job interview). After being randomly assigned a positive or negative stress video. The stress response was measured by self-reported emotion levels after the interview, cortisol levels in saliva timed 30, 45, and 60 minutes after the initial stress task, and performance of cognitive tasks between each saliva sample. The positive stress video before the stress task proved to increase positive mood, cortisol levels, and cognitive flexibility but did not decrease negative emotional reactions to the stress in threatening situations (Crum et al., 2017). The limitations of this research study are the design complexity, lack of control group, and inability to test for effects of chronic stress. The physiological, cognitive, and emotional effects of stress have been researched in academia, but additional research is required to enhance the wellness and coping skills of college students.

Students' Coping and Wellness

Due to the higher number of college students experiencing mental health issues, research focus has shifted to determine how to facilitate wellness in this population. Unhealthy behaviors such as alcohol consumption, tobacco use, unbalanced diet, risky sexual behaviors and decreased physical activity have been shown to affect academic performance (Beauchemin, 2018). A random controlled trial study was conducted to determine the effectiveness of a solution focused wellness intervention compared to interpersonal therapy on self-identified volunteers. Both groups met weekly over seven weeks for one-hour sessions. Although the control group did have positive benefit from

the therapy sessions, the focused solution group showed lower levels of perceived stress and greater perceived wellness. The participants were not specifically targeted as students in high-risk groups and the results were all self-reported perceived outcomes which may affect validity and generalizability. Another limitation of this study is the explanation of results. For example, the lower attrition rate was quoted as an indicator of positive effect in the solution focused group without objective support. Since this study was unable to target students in high stress majors, it is important to examine the stress and coping in these at-risk populations.

Stress among nurses and nursing students has been reported as higher than the general student population due to the longer hours of study, clinical placements, and assessments (Gibbons et al., 2010). Gibbons et al. used a convenience sample of 171 nursing students in the United Kingdom to complete five questionnaires. The results demonstrated that clinical experiences and support during clinical improved satisfaction levels, higher reported self-efficacy correlated with lower reported stress levels, and maladaptive coping produced adverse effects even when used infrequently (Gibbons et al., 2010). For this survey, coping is defined as how a person manages their perceived stress and can be identified as problem-based (changing the person-environment relationship) or emotion-based which changes the meaning of the situation (McEwen & Dilks, 2019). This study found that emotion-based coping was more often expressed in unproductive ways. Significant research burden can be surmised from this study due to the large number of questionnaires and high attrition rate (49%). This study is relevant because it examines the stress, coping, and satisfaction in nursing students and can

reasonably be used as a foundation for research into the stress and wellbeing of student registered nurse anesthetists.

Student Registered Nurse Anesthetists' Stress and Wellness

Student Registered Nurse Anesthetists (SRNAs) are registered nurses that have worked in the critical care environment for at least one year. SRNAs tend to be motivated, high performers to matriculate into highly competitive nurse anesthesia programs. The areas of stress and responses to stress in student registered nurse anesthetists were examined in a qualitative survey of 18 students to guide coping skills (Wildgust, 1986). Although the sampling plan was not described in detail, convenience sampling can be deduced, due to the small scale of the study. The junior and senior students were polled separately using a ranking system to identify major sources of stress related to academics, clinical, and social/personal areas. Higher levels of stress were reported in junior students, but information overload remained the highest ranked academic stressor in both groups. Stressors transitioned from new experiences such as first intubation to specific clinical rotations such as cardiothoracic surgery rotation. Social stress evolved from adjusting to new environment and lack of time for family to not feeling prepared to graduate. This study is pertinent because it is the foundation of stress research in the student registered nurse anesthesia population. Although this article is limited by the small sample size, lack of validity for questionnaire, and vague explanation of methods, it is the root of SRNA stress research.

Chipas et al. (2012), built on the knowledge gained by Wildgust's research to investigate the stress differences between front-loaded and integrated education programs and how professional organizations can assist with coping. A study specific survey was

provided to associate members of the American Association of Nurse Anesthetists (AANA) via SurveyMonkey. Over 1300 students enrolled which represented approximately 25 percent of all SRNAs enrolled at the time. Higher reported levels of stress were noted in female, divorced, and minority students and lower levels were reported in male students and students that exercised frequently (Chipas et al., 2012).

Depression in undergraduate populations is estimated at approximately 10 percent and between 7-14 percent among medical students and residents (Chipas et al., 2012). This study discovered a significantly higher rate of depression among student registered nurse anesthetists at 47 percent. Almost 20 percent of the respondents also reported taking prescription medications and/or being under the care of a mental health professional to assist in stress management. Even more concerning was the high rate of suicidal ideation, which was reported at 21.2 percent. According to the National Institute of Mental health, suicide is the second leading cause of death for people aged 10-34 and the fourth leading case of death among people aged 35-54 (2020). This study clarifies the significance of studying stress in the Student Registered Nurse Anesthetist population.

Griffin et al. (2017) enhanced the current research on SRNA stress by exploring perceived wellness and self-efficacy compared to academic achievement and clinical competence throughout their program of study. Student participants were followed over a 16-month period and were provided two questionnaires triennially. Academic data were also collected, and clinical competence scores were based on preceptors' clinical evaluations. Patient satisfaction with SRNAs care was also measured using the Caring Behaviors Inventory (CBI) and Client Perception of Caring Scale (CPCS). All data collected were correlational and not trended so cause and effect relationships are

undermined. Another limitation of this study is the homogenous sample size seen in the minimal variance in objective data.

Lower overall perceived wellness and self-efficacy ratings were noted in the last two semesters when classes were transitioned to virtual learning (Griffin et al., 2017). The loss of social interactions in the classroom environment was speculated to diminish perceived wellness. Curriculum adjustments were recommended to alleviate the complete loss of social contacts in order to enhance perceived wellness. Small variations in students' perceived wellness were noted in this study and even larger deviations can be expected from the social isolation mandated after the COVID-19 pandemic.

Depression and Anxiety during COVID-19 Pandemic

According to the National Institute of Mental Health (2020), depression consists of a range of symptoms lasting more than two weeks. These symptoms include feelings of hopelessness, emptiness, irritability, decreased energy, difficulty concentrating, insomnia or oversleeping, appetite changes and physical pain or digestive problems that do not ease with treatment. Some of these symptoms overlap with symptoms of anxiety such as being easily fatigued, difficulty concentrating, irritability, and sleep problems (National Institute of Mental Health, 2020). Using web-based surveys, Czeisler et al. (2020) reported significant increases of anxiety and depression symptoms during April-June 2020 in the United States during the COVID-19 pandemic. More than 5400 participants completed the Patient Health Questionnaire and Impact of Event scale in April, May, and June. These results were compared to reported data on anxiety and depression obtained in 2019. Approximately 25 percent of participants reported symptoms of anxiety and depression compared to eight and six percent in 2019,

respectively. Specific populations were more significantly affected to include young adults, Hispanic and black persons, essential workers, and unpaid caregivers for adults (Czeisler et al., 2020). This study emphasizes the additional strain of the COVID-19 pandemic to stress levels of average adults in the United States.

Depression rates are four times higher in the Student Registered Nurse Anesthetist (SRNA) population when compared to the undergraduate students, medical students, and medical residents (Chipas et al., 2012). In a cross-sectional study, anxiety and depression were measured in 323 medical students and medical interns using the Beck Anxiety Inventory (BAI) and Beck Depression Inventory-II (Nakhostin-Ansari, 2020). The prevalence of depression was approximately 27 percent, and the most common symptoms were changes in sleep pattern, loss of energy, and difficulty concentration (Nakhostin-Ansari, 2020). Lower GPA correlated with higher levels of depression and symptoms of COVID-19 was the largest factor for developing depression symptoms. Although the percentages of anxiety and depression were abnormal in this study, no significant differences were noted in pre-COVID-19 questionnaires which demonstrates a higher overall baseline of anxiety and depression in this population. This study was limited to medical students in Iran where the COVID-19 was well controlled when comparing mortality rates and patient admission. More research is needed for medical students in the United States in order to adequately compare anxiety and depression levels.

Increased levels of depression and anxiety have been found in American adults due to the COVID-19 Pandemic. According to the current literature, stress has been found in significantly higher levels for student registered nurse anesthetists (Wildgust, 1986; Chipas et al., 2012; Griffin et al., 2017). The synergistic effect of the pandemic in

addition to higher baseline stress puts SRNAs at greater risk for poor performance, depression, and suicide.

The impact of stress and wellness on student registered nurse anesthetists has been extensively defined in the literature. Professional organizations and academic institutions have attempted to reduce the impact of stress on student registered nurse anesthetists with wellness tips, newsletters, and curriculum adjustments. Few articles have researched the experiences of SRNAs during unprecedented states of emergency such as the COVID-19 pandemic. Further research is indicated to support future students. Therefore, this study explored the effects of the COVID-19 pandemic on stress and wellness and coping mechanisms for student registered nurse anesthetists.

Theoretical Framework

Lazarus and Folkman's theory of stress, coping, and adaptation is the theoretical framework that will guide this non-experimental study with quantitative and qualitative data. Lazarus and Folkman's theory focuses on the process of the individual psychological response to stressful situations (McEwen & Dilks, 2019). The major concept of this theory is that stress is more complex than a simple response to a stressor but is centered around the person's perception of the stressor (McEwen & Dilks, 2019).

Stress is defined as the relationship between the person and environment that is perceived by the individual as exceeding his or her resources and endangering their well-being (Lazarus & Folkman, 1984). Lazarus classified an individual's evaluation of a stressor or stressful events as a cognitive appraisal (McEwen & Dilks, 2019). There are three cognitive appraisals: primary, secondary, and reappraisal. Primary appraisal is the individual's perception of the stressor and secondary appraisal is the evaluation of the individual's response to an event. Reappraisal occurs after new or additional information has been received by the individual (McEwen & Dilks, 2019). An individual's perception of the threat of COVID-19 is an example of primary appraisal and reappraisal occurs as the CDC provides new information about the transmission of the disease, death rates, and safety precautions.

To handle the pressure and emotion of appraised stress, coping occurs to manage the appraisal. There are two types of coping: problem-focused and emotion-focused coping. Problem-focused coping changes the person-environment relationship (McEwen & Dilks, 2019). For example, during the initial response to the COVID-19 pandemic, graduate nurse anesthesia programs essentially forced problem-focused coping by

requiring all student registered nurse anesthetists to stay at home and transition to virtual learning. Clinical experiences were also suspended as hospitals closed operating rooms for elective procedures. Emotion-focused coping changes the meaning of the stressful event or situation. Emotion-focused coping occurred as SRNAs managed the stress of attempting to learn a hands-on profession virtually. Reappraisal can only occur after the person has effectively coped with the stressor and adjusted to the new information (McEwen & Dilks, 2019).

Effective coping leads to adaptation which is defined as the ability of a person to survive and flourish (Lazarus & Folkman, 1984). It is important to note that adaptation affects an individual's health, psychological well-being, and social functioning and no area is affected in isolation (McEwen & Dilks, 2019). For example, if an individual developed COVID-19, they would be required to cease working which could affect their social functioning and in turn, cause a negative self-image and financial concerns.

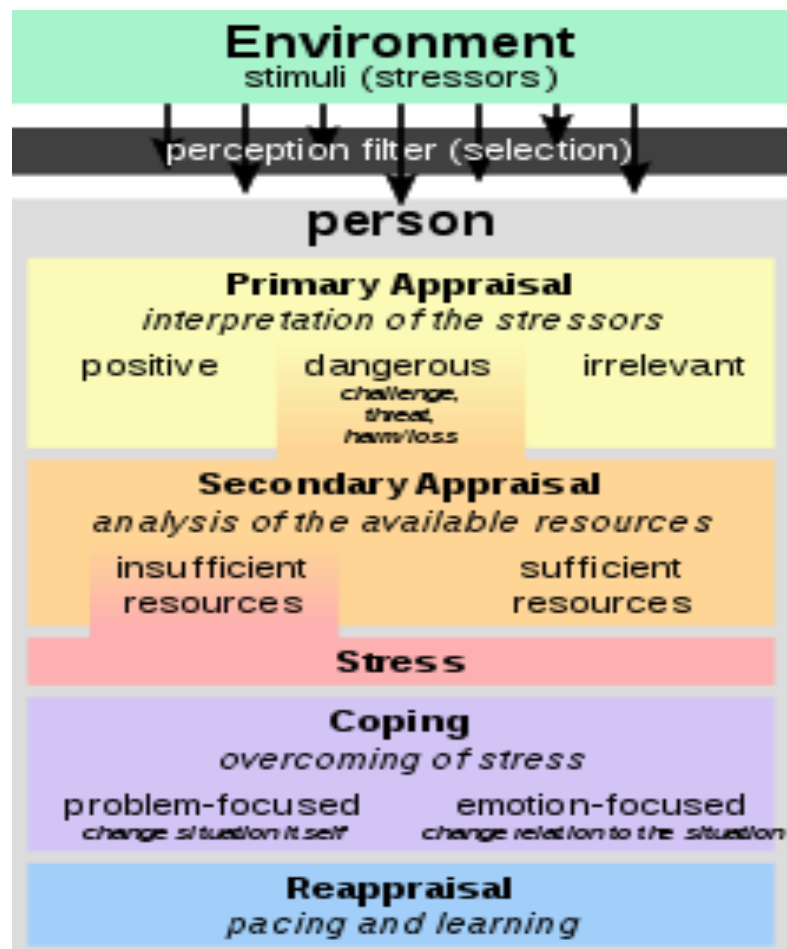
Lazarus and Folkman's stress theory was used to evaluate the stressors and psychological well-being for nursing students in an initiative to promote support and self-efficacy (Gibbons, et al., 2010). The study surveyed 171 nursing students in the United Kingdom using the general health questionnaire and the transactional model of stress. This study found that coping can be improved through interactive peer initiatives and maladaptive coping has adverse effects even when used infrequently (Gibbons, et al., 2010).

By applying Lazarus and Folkman's stress theory, this author examined and explored the effect of the COVID-19 pandemic as an additional stressor to the SRNAs during didactic classes and clinical practicums. The survey results would demonstrate the

effect of the COVID-19 pandemic on stress, wellness, and coping strategies. This information would be used to determine best practices for SRNAs to handle substantial stressors and facilitate academic success virtually.

Figure 1

Transactional Model of Stress and Coping of Richard Lazarus



Method

Purpose

The purpose of this study was to explore the effects of the COVID-19 pandemic on stress and wellness and coping mechanisms for student registered nurse anesthetists. This research was undertaken to better understand the stress, wellness, and coping of graduate students during significant unforeseen circumstances. The prospective objective would be for positive changes to the curriculum and culture to promote wellness and facilitate academic success.

Design

The design of this descriptive study was a non-experimental survey that included qualitative and quantitative data.

Sample/Site

Purposive sampling was used to sample the student registered nurse anesthetists (SRNAs) in the School of Nurse Anesthesia program in Rhode Island during the COVID-19 pandemic. Eligibility criteria included all student registered nurse anesthetists in the didactic portion or clinical practicum from 2019-2020. The target sample included newly graduated Certified Registered Nurse Anesthetists (CRNAs) that were students during this period. Exclusion criteria included any students in nurse anesthesia school prior to or after the COVID-19 pandemic.

All students in the School of Nurse Anesthesia program in Rhode Island must meet the same minimum acceptance standards. The nurse anesthesia program is full time, 30 months long, and requires a minimum of 2000 clinical hours. The number of students enrolled in the program ranges from 7-10 students annually. The target sample was 19

student registered nurse anesthetists during the COVID-19 pandemic, including recent graduates that were students between March and June 2020. The anticipated number of male participants was three to five and the anticipated number of females was between eight and fourteen participants. The estimated age range of participants was mid-20s to early 40s. The target group was primarily female (74%), male (26%), and students of color (16%). Support letters were obtained from the Dean of the School of Nursing and the Chair of the Graduate Nursing department before the study was conducted online.

Procedures

After the study was approved by the Institutional Review Board (IRB), the program administrative assistant sent an email with the Qualtrics survey link to the SRNAs. The link to the survey included an informational consent letter (Appendix A) and recruitment letter (Appendix B). The informational consent letter described the purpose, goals, length of the survey, and the expected time commitment of the study. The informational consent letter included a confidentiality pledge, voluntary consent, and right to withdraw at any time without penalty. Consent was obtained in the first question of the Qualtrics survey requiring participants to click on hyperlink to adult consent PDF and answering, "I consent," to complete survey. The recruitment letter described how participants were selected for recruitment and the potential benefits of the study. The 10-item COVID-PSS, 5-item CAS, and 3 qualitative questions were provided electronically to the administrative assistant for the School of Nurse Anesthesia with instructions to forward to the students enrolled in the nurse anesthesia program from 2019 to 2020, to include recent graduates. After the questionnaire was emailed to the participants, a reminder email was sent approximately two weeks later. All the survey results were

accounted in one month after the original email. Participation remained voluntary, and no participant identifiers were included in the survey. A five-dollar coffee reward incentive in the form of an eGiftcard via Qualtrics was available to the participants that completed the surveys. The coffee eGiftcard link was separated from participants' survey responses to maintain anonymity.

To facilitate larger participation rates, organizational and systems factors were considered. Obtaining approval from the Rhode Island College IRB was the first task and adequate time was established for this process. The administrative assistant of the program also had to agree to forward the survey to the participants. Prior to disseminating the survey, experts evaluated the survey questions for content, clarity, and ease of use. Obtaining current email addresses was an additional barrier since half of the intended participants were no longer current students. Other factors to consider included incomplete surveys due to survey length, SRNA/CRNA workload, and obtaining current means of email communication.

Ethical concerns, actual and potential, were also important considerations. All participant identities were protected, and all participants were recruited equitably. Participation was completely voluntary with the option to withdraw from the study at any time. The recruitment and information consent letters provided full disclosure by clearly describing the purpose, risks, and benefits of this study. Knowing the purpose of the survey may have altered the participants' responses and the accuracy of the findings. This survey required the participants to recall their experiences during the COVID-19 pandemic. This remembrance may have caused additional emotional and/or

psychological distress. To help alleviate this potential ethical consideration, campus resources were described in the information letter.

Measurement

A modified Perceived Stress Scale (COVID-PSS-10) was used to measure students' perception of stress during the COVID-19 pandemic (Appendix C). The scale instructions were modified to reflect a two-week period retrospectively during the height of the pandemic between March and June 2020. The adapted scale specifically measured stress associated with COVID-19 and high internal consistency (Cronbach alpha 0.86) has been reported with students and professors in Colombia (Pedrozo-Pupo et al., 2020). The modified PSS utilizes Likert-type questions with five response options ranging from never to very often and scores equal to or higher than 25 were deemed as high perceived stress associated with COVID-19. For example, COVID-PSS-10 queries about the frequency of optimistic feelings and stressful feelings with the epidemic (Pedrozo-Pupo et al., 2020). Questions one through three, six, nine, and ten are scored from 0-4 and the remaining questions (4, 5, 7, and 8) are scored reversely from 4 to 0. Permission to use the scale was obtained via email to the authors. According to Cohen and Williamson, higher scores on the PSS correlated with increased symptoms of depression (1988). The modified Perceived Stress Scale was chosen due to its ease of use and focus on perception of stress which aligns with the study objective. The PSS has been used to measure stress in several different populations to include students, health program participants, patients, and technical workers. Strong validity, reliability, and psychometric properties have been reported for the PSS (Lee, E., 2012).

The Coronavirus Anxiety Scale has been used to measure students' perceived anxiety during the COVID-19 pandemic (Appendix D). The 5-item Likert scale has been validated as a mental health screener that focuses on potential dysfunctional anxiety associated with the COVID-19 pandemic (Lee, S. et al., 2020). For the purpose of this study, this scale was used to measure the participants' coping mechanisms and/or change in coping. This scale was chosen because it highlights potential maladaptive coping during the COVID-19 pandemic. The scale specifically measures distinct physiological symptoms triggered by coronavirus related thoughts and information such as dizziness, sleeping problems, feelings of paralysis, and/or eating problems. For example, this scale asked participants to rate if they have or how often they have trouble falling or staying asleep after thinking about coronavirus. Disturbance in one's physiological status caused by anxiety is an indicator of inadequate coping. Hence the scale's appropriateness to assess the coping variable of this study.

The scale instructions were modified to reflect a two-week period retrospectively during the height of the pandemic between March and June 2020. Each item is rated to demonstrate the frequency of symptoms within a two-week period between March-June 2020 with a 5-point scale, 0 being not at all and 4 equaling nearly every day. A CAS score greater than or equal to 9 classified adults as having dysfunctional levels of anxiety with 90% sensitivity and 85% specificity (Lee, S. et al., 2020). According to Lee's replication study, the cut off score was lowered to greater than or equal to five for the general public but cut score of greater than or equal to nine used when screening at risk or anxious groups (Lee, S., 2020). For this study, the cut off score was set at five. This scale has been used for adults in the United States and has demonstrated high validity and

reliability with a Cronbach alpha of .93 (Lee, S. et al., 2020). The authors placed the Coronavirus Anxiety Scale in the public domain, therefore formal permission was not required for its reproduction (Lee, S. et al., 2020).

The qualitative data were obtained by open-ended questions. Three questions were included to limit research burden. These questions were used to discover themes specific to the SRNA population during the COVID-19 pandemic (Appendix E). The questions were developed using current literature as a guide to obtain qualitative data of each variable being researched: stress, wellness, and coping.

Data Analysis

The quantitative data were analyzed using basic descriptive statistics in Microsoft Excel. The qualitative data were organized, coded, and analyzed for themes.

Results

A total of n=19 current and prior SRNAs were sent the Qualtrics survey containing the three assessment measures. Twelve participants (63%) completed the online Qualtrics survey between March and April 2021. The results presented below reflect the SRNAs' perspective of COVID-19 pandemic on stress, coping, and wellness, respectively.

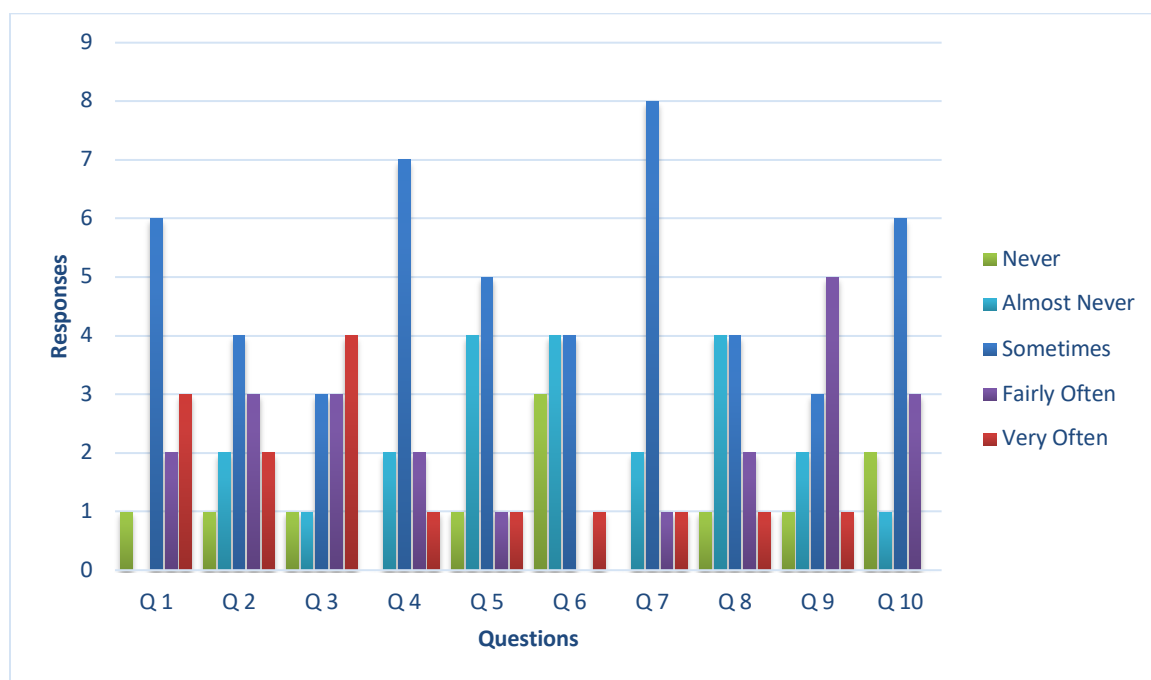
The COVID-PSS-10 was used to assess the impact of the COVID-19 pandemic on SRNA's stress during the initial months of the pandemic. For the COVID-PSS-10, n=12 current and past SRNAs completed the survey with scores ranging from 3-34. High perceived stress, scored as 25 and higher, was reported in 33% of the participants (n=4). Questions one through three, six, nine, and ten are scored from 0-4 and the remaining questions (4, 5, 7, and 8) are scored reversely from 4 to 0. Figure 1 summarizes the responses to the COVID-PSS-10.

As it relates to question one of the COVID-PSS-10, 42% (n=5) felt affected fairly or very often as if something serious would happen unexpectedly with the epidemic. For question two, 42% (n=5) felt unable to control the important things in their life due to the epidemic at least fairly often. Question three responses indicated 58% (n=7) of participants had been nervous or stressed by the epidemic fairly or very often. As it relates to question six, 58% (n=7) rarely (responses never or almost never) felt unable to cope with the things they had to do to control the possible infection. Question nine responses showed 50% (n=6) of SRNAs had been upset fairly or very often that things related to the epidemic are out of their control. For question 10, 25% (n=3) of participants felt fairly often that the difficulties accumulated during the epidemic, and they felt unable to overcome them.

The responses for question four of the COVID-PSS-10, demonstrated 17% (n=2) SRNAs rarely (almost never) felt confident about their ability to handle their personal epidemic related problems. As it relates to question five, 42% (n=5), never or almost never felt optimistic about the epidemic. For question seven, 17% (n=2) expressed they rarely (almost never) felt able to control the difficulties that could appear in life due to the infection. Lastly, the responses to question eight indicated that 42% (n=5) rarely or never felt that they had everything under control in relation to the epidemic.

Figure 1

COVID-PSS-10 Responses

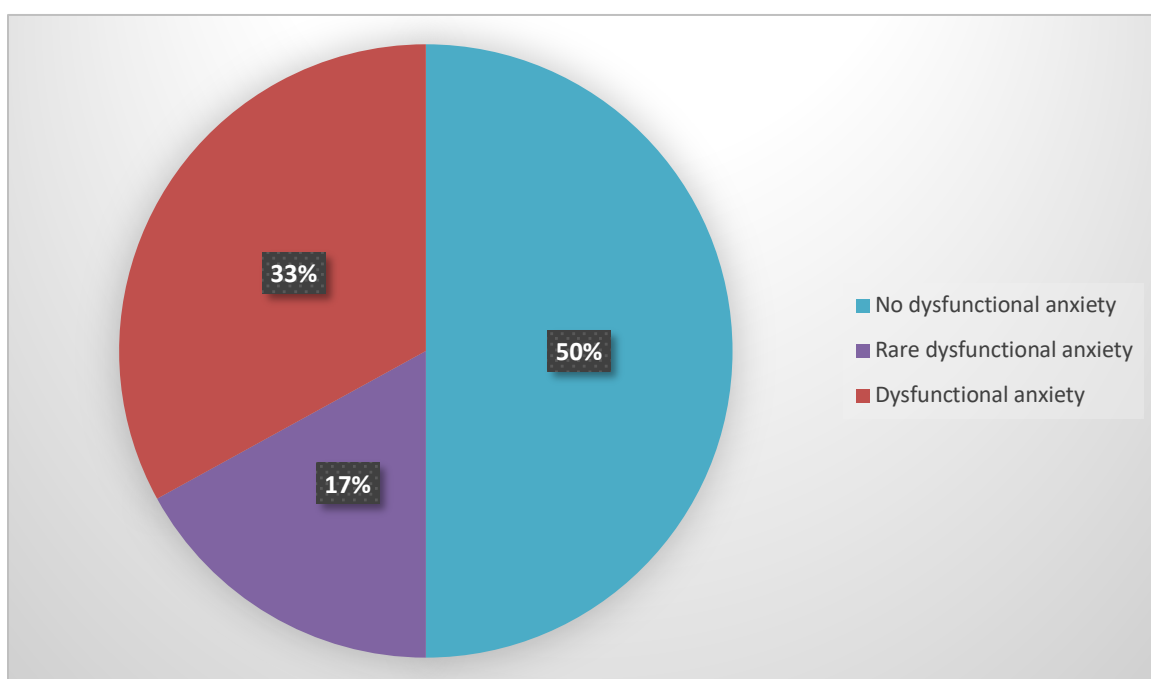


The Coronavirus Anxiety scale was employed to measure the impact of the COVID-19 pandemic on participants' coping mechanisms since it addresses physiological factors such as dizziness, sleep disorders, perceived immobility, appetite loss, and gastrointestinal disturbances (Lee, S., 2020) which are indicative of one's ability to cope. Using the cut-off score of five, 33% (n=4) of SRNAs experienced dysfunctional

anxiety as it relates to the CAS. The responses to the Coronavirus Anxiety Scale demonstrated 50% of the participants did not have any dysfunctional anxiety symptoms (n=6). A small number of participants, 17% (n=2) reported rare dysfunctional anxiety symptoms with scores less than 5. Figure 2 summarizes the percentages dysfunctional anxiety symptoms and Figure 3 displays the responses to the CAS.

Figure 2

Percentage of dysfunctional anxiety symptoms

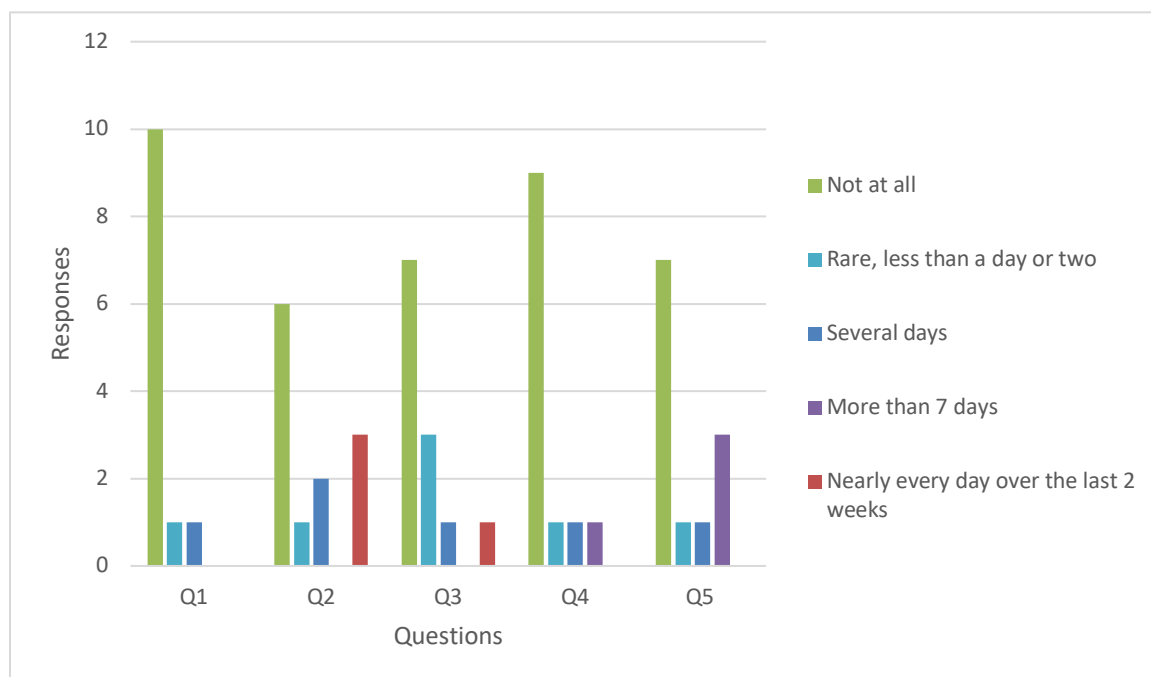


As it relates to question one of the Coronavirus anxiety scale, 83% (n=10) of participants reported never feeling dizzy, lightheaded, or faint while reading or listening to coronavirus related news. For question two of the CAS, 25% (n=3) of SRNAs reported having trouble falling or staying asleep due to thoughts of the coronavirus nearly every day for two weeks. Question three measured perceived immobility related to coronavirus information and 83% (n=10) reported never or rarely feeling paralyzed or frozen. As it

relates to question four of the CAS, 83% (n=10) SRNAs reported they rarely or never lost interest in eating while thinking about the coronavirus. Lastly, 25% (n=3) of participants reported feeling nauseous or having stomach problems while thinking about coronavirus information.

Figure 3

Coronavirus Anxiety Scale responses



To better understand that participants' experience of the COVID-19 pandemic on stress, wellness, and coping mechanisms, responses were obtained from three qualitative survey questions. The responses were organized in a table to easily visualize and identify themes. Several themes were noted and are presented below with a description of the survey questions and corresponding responses.

Question one asked the participants to describe how they felt when in person didactic classes transitioned to online courses and/or when clinical practicums were held between March and June 2020. The recently graduated class of 2020 would have already

been in clinical practicums at different hospitals at this time. During March-June 2020, the current class of 2021 were still in the first year of graduate school for nurse anesthesia and would have didactic courses only, with clinicals planned to start in May 2020. This question was used to explore the participants' individual stress responses to the changes as they related to the COVID-19 pandemic effect on standardized teaching.

Several responses overlapped into multiple themes. The four major themes identified for question one were uncertainty, relief, decreased learning, and disappointment. A total of five participants (42%) described overwhelming feelings of stress and uncertainty after the transition to online courses. One SRNA reporting feelings of being “overwhelmed, stressed, and uncertain,” while another student stated they felt “unsure and stressed” after the transition. One participant stated they “felt lost and overwhelmed,” and a different student reported “some initial apprehension and stress,” after classes transitioned online. Five participants (42%) also reported online courses as a source of stress relief. One SRNA reported the transition to online courses was a source of stress relief because they “could come home earlier than if class was in person.” Another student expressed they were “happy to have classes online,” and one more student expressed happiness that the “educators made the right decision to transition to online courses since little information was known regarding COVID-19”. Another SRNA reported feeling “pleased because in person classes were a waste of time.”

Concern was reported in 33% of participants (n=4) that learning would be hindered due to the delay. One participant described how “difficult it was to learn via pre-recorded PowerPoint presentations.” Another SRNA stated “online learning was a huge learning curve and hindered my ability to learn.” One student felt their “learning would

suffer,” while another student felt “unable to succeed with the transition to online classes, specifically with online exams and quizzes.” Lastly, disappointment was expressed in 25% of participants (n=3) about the overall educational experience compared to in-person learning. One student reported “disappointment, worried I would not get the most out of my educational experience.” Another participant reported dismay and frustration concerning the “unpreparedness of faculty for online learning.” One SRNA declared they were “frustrated that it didn’t happen soon enough.”

The second qualitative question required the participants to describe how the COVID-19 pandemic affected their overall wellness considering the dimensions of wellness: physical, intellectual, social, emotional, spiritual, vocational, and environmental. The major themes noted were decreased physical wellness, uncertainty, diminished social wellness, and modest respite. Most of the participants (75%, n=9) reported decreased physical wellness. One participant stated, “not being able to exercise as frequently also affected my emotional wellness.” Participants reported they “overate and exercised less,” “drank more,” “got fat due to snacks and wine,” and “drank too much wine.” More than 50% of participants (n=7) also described diminished social wellness. One participant described “reluctancy to visit family and losing support system,” and another student reported “more fighting with spouse.” Another SRNA reported developing “a social anxiety and fear of leaving my house,” and one student stated, “because of school, my physical and social wellness already suffered.” One participant described a decline in overall wellness and “limited interaction with family, friends, and colleagues.”

The recurring theme of uncertainty was reported by 50% of the participants (n=6). One participant described worry about “effect on daily life and if our loved ones would get sick.” Another response described being “worried about getting sick and missing clinical,” and one SRNA reported being “a bit more distracted and noticed a decline in overall health.” One student reported a “constant state of worry about the virus and how it would affect people I cared about.” A few participants (n=3) reported a modest respite for their overall wellness. One participant stated, “the pandemic allowed time and opportunity to deal with life stressors that were affecting me.” One SRNA related to being “more of an introvert and staying inside by myself is where I’d rather be,” and another response reported feeling “happy for the family time.”

Question three queried how the COVID-19 pandemic affected the overall coping mechanisms of the participants during nurse anesthesia school. The themes identified for this question were maladaptive coping, consistent coping, and uncertainty. Half of the participants reporting using maladaptive coping skills during the COVID-19 pandemic (n=6). One participant stated their “coping mechanisms worsened because the normal coping activities such as going to the gym or meeting up with friends was not readily available.” Some coping mechanisms reported were “wine and ice cream,” “sleep and alcohol,” and “poor coping.” One third of the participants (n=4) stated that their coping mechanisms were not affected by the COVID-19 pandemic. One participant stated, “it didn’t affect my coping skills, but it certainly required me to use them.” One student stated, “I don’t think my coping changed,” while another SRNA stated it “probably had a positive affect.” Lastly, 25% of participants (n=3) reported increased uncertainty. A SRNA stated the pandemic “made it harder to cope with school due to the unknown of

what was going to happen with clinical, classes, my learning, and graduation.” Another participant reported that they “struggled to cope at times and felt unsure of my role as a SRNA,” while another student reported feeling “overwhelmed.”

The study results were disseminated to the participants, the Rhode Island College Digital Commons, and via the MSN poster presentations.

Summary and Conclusions

The purpose of this study was to explore the effects of the COVID-19 pandemic on stress and wellness and coping mechanisms for student registered nurse anesthetists. According to the responses to the COVID-PSS-10, CAS, and qualitative questions, the impact of COVID-19 pandemic varied widely amongst SRNAs.

High perceived stress was reported in 33% of the participants, according to the responses of the COVID-PSS-10. This percentage is more than double the results from the original COVID-PSS-10 where 15% of the participants scored high perceived stress (Pedrozo-Pupo et al., 2020). Higher scores on the PSS have been linked to increased symptoms of depression (Cohen & Williamson, 1988). The results of the COVID-PSS-10 also represent a slightly higher average compared to the elevated national average (25%) of depression and anxiety for adults in US during April-June 2020 (Czeisler et al., 2020). This supports the idea that SRNAs are at a higher level of stress at baseline and the impact of the COVID-19 pandemic enhanced this stress due to the disruption of the program.

The Coronavirus anxiety scale was used to measure the participants' coping mechanisms and 33% of the participants reported dysfunctional anxiety symptoms. Most of the dysfunctional symptoms reported were gastrointestinal and sleep related. The data strongly suggested that during the period of the COVID-19 pandemic a moderate proportion of the participants experienced high levels of anxiety that impacted their coping ability and possibly their academic performance. Interestingly, half of the participants reported no dysfunctional anxiety symptoms related to the COVID-19 pandemic. Although no inferences can be made from the CAS, several qualitative responses reported the time away from clinical during the pandemic as a stress reliever.

The varying levels of anxiety correlated to coping may also relate to the class year and the timing of the survey. Overall, this data indicates that SRNAs have adequate coping skills to deal with the demands of school and the additional pressure of the unforeseen COVID-19 pandemic.

The qualitative questions identified recurring themes of uncertainty, maladaptive coping, and stress relief. Question one queried the participants' feelings after classes transitioned online. The leading responses expressed uncertainty or stress relief. Due to the dichotomy of responses, virtual learning was not identified as an additional stress. In an earlier study, virtual learning was correlated to lower overall perceived wellness and self-efficacy ratings in the last two semesters of nurse anesthesia school (Griffin et al., 2017). The small sample of the current study likely impacted the study finding and contributes to the conflicting result.

Qualitative question two examined the students' perception of how the pandemic affected their overall wellness. The majority of responses described diminished physical (75%) and social wellness (50%). Participants stated that due to the pandemic there was no outlet to maintain their physical wellness and the limited social interactions were exacerbated. These perceived wellness declines cannot be definitively associated with the COVID-19 pandemic. As one participant stated, "because of school, my physical and social wellness already suffered prior to the pandemic." Nevertheless, the high number of participants who had diminished physical and social wellness while in the nurse anesthesia program during the time of the COVID-19 pandemic is concerning and indicate the need for supportive resources for the SRNA population. The increased need for wellness support is evident on the American Association of Nurse Anesthetists

(AANA) website. Along with a specific *Student Wellness* page with support sessions, wellness apps, podcasts there is also a *COVID-19 Well-being* page with clinical practice guidelines and SRNA resources (AANA, 2021).

The last qualitative question queried the effect of the pandemic on participants' coping mechanisms. Half of the participants reported some form of maladaptive coping to include increased alcohol use, overeating, and excess sleep. Even infrequent maladaptive coping can produce adverse effects in nursing students and this evidence needs to be addressed more closely to assist nurse anesthesia students (Gibbons et al., 2010).

This research is limited by convenience sampling, small sample size, and recall bias. The target sample of participants were SRNAs at a School of Nurse Anesthesia in Rhode Island during the initial peak of the COVID-19 pandemic. These students are either classmates or know the writer of this study. The target sample was 19 students and 12 people decided to participate in the study. The survey was distributed in April 2021 and asked the participants to recall how they were feeling a year before during March-June 2020. Since clinical is now back in person and some participants had already graduated, there is risk for recall bias. Limited qualitative responses were another limitation. SRNAs were probably overwhelmed with academic, clinical, and other responsibilities and had little time to complete the survey, even when a small incentive was offered. Stress remains a highly subjective and complex measure to assess. Without pre- and post- surveys, it is difficult to ascertain if the individual is always at a high level of stress or if the stress level is due to the COVID-19 pandemic.

The lack of demographic data was another limitation. Higher levels of stress have been reported by female, divorced, and minority students but this survey was unable to support this finding without collecting demographic data (Chipas et al., 2012).

Distinguishing between each SRNA class was made possible from the qualitative responses. The senior class (class of 2020) reported stress relief and more utilization of acquired coping skills in order to finish master's project while quarantined at home away from clinical. One participant expressed surprise at "how much I was able to use the pandemic to help cope personally and in nursing school." Some concern was expressed about being unable to obtain minimum required cases for graduation. But this sentiment was overshadowed by the stress relief articulated.

The junior class (class of 2021) was completing didactic courses during April-June 2020 and had not started clinical. The responses revolved around the difficulty of converting to virtual learning and did not mention clinical concerns. More feelings of being overwhelmed were reported in this group. This correlates with primary nurse anesthesia research that found higher levels of stress in junior students, with information overload being the highest stressor (Wildgust, 1986).

This research found that the COVID-19 pandemic affected SRNAs differently. Although the history of nurse anesthesia research states that this population of students reports higher stress levels, anxiety, and depression, the full additional impact of the COVID-19 pandemic has yet to be determined. This study showed higher levels of stress, increased maladaptive coping, and diminished wellness in direct relation to the COVID-19 pandemic. More importantly, even with this data, the resiliency of the nurse anesthesia student population prevails.

Recommendations and Implications for Advanced Nursing Practice

Advanced Practice Nurses (APNs) continue to be a vital subspecialty in the American healthcare system. CRNAs specifically have been shown to be more cost effective and provide the majority of anesthesia care in rural areas (AANA, 2021). The CRNA role expanded due to the COVID-19 pandemic as the Centers for Medicare & Medicaid Services (CMS) temporarily suspended physician supervision requirements for CRNAs to increase flexibility and patient access (AANA Public Relations, 2020). CRNAs were invaluable to the COVID-19 response and ensuring SRNAs are adequately trained to deal with stress will further improve the wellness and productivity of CRNAs after graduation.

Maladaptive coping skills as a student tend to escalate as a CRNA with enhanced familiarity, practical knowledge, more access to drugs, and no watchful clinical instructor present (Bozimowski, et al., 2014). This exemplifies the importance of identifying sources of stress, coping skills, and wellness as a student in order to prevent substance abuse, depression, and diminished overall wellness related to productivity.

This research study guided the following recommendations and implications. Specific stress management techniques need to be provided and tailored according to the students' academic progression. For example, a new junior student in the didactic portion of CRNA school will require assistance in returning to nursing education, time management, life/school balance, and study tips. A senior student closer to graduation will require board study tips, interview pointers, and finance management. SRNAs and faculty need to have the knowledge and ability to identify when stress is overwhelming before it develops into unhealthy symptoms and activities (Chipas et al., 2012). An

example from the military is the Stress Continuum model that was created to determine the spectrum of stress states in order to assess operational stress risk (Nash, 2011). This model has been adapted by several organizations to help workers in high stress occupations such as healthcare or law enforcement [see Appendix F] (Brower, et al., 2021). This model could be adapted for graduate students in nurse anesthesia school to assist SRNAs and faculty to identify stress states.

The School of Nurse Anesthesia in Rhode Island requires all students to complete four wellness modules as part of AANA Learn/CRNA Knowledge Network. These modules explain the role of the anesthesia professional, stress causes and consequences, coping effectively, and developing a personal wellness plan. These courses provide continuing education credits and provide an initial introduction into the stress of the anesthesia provider. Providing these courses at the beginning of the program is sensible because junior students report higher levels of stress (Wildgust, 1986). A refresher course or additional wellness courses should be provided as students progress in their studies and stressors evolve because lower overall perceived wellness has been reported during the last two semesters in an earlier research study (Griffin et al., 2017).

The responses to this research study varied greatly which follows Lazarus & Folkman's stress theory (1984) that states perception of stress is a very individual psychological response. The goal of this research study was to focus on the primary and secondary appraisals of the COVID-19 pandemic by inquiring about stress, coping, and wellness during the initial peak when didactic courses transitioned online and clinicals were suspended during March-June 2020. Primary appraisal is the individual's perception of the stressor and secondary appraisal is the evaluation of the individual's response to an

event. By delivering this survey one year after this period, more responses based on reappraisal were provided by the participants. Reappraisal occurs after new or additional information has been received by the individual (McEwen & Dilks, 2019). The reappraisal phase is ongoing as COVID-19 hospitalizations and deaths persist in the United States and the Delta variant spreads. Since reappraisal can only occur after the person has effectively coped with the stressor and adjusted to the new information, additional research will be required to assess full impact of the COVID-19 pandemic (McEwen & Dilks, 2019).

Another objective of this research study was to evaluate the coping mechanisms of SRNAs in response to the COVID-19 pandemic. Problem focused coping was difficult to assess because the COVID-19 regulations changed the person-environment relationship and there were no alternate options. For example, if a student had difficulty transitioning to virtual learning, there were no in-person alternatives to enhance learning. The qualitative portion of the survey focused on emotion-based coping by investigating the SRNA response to the COVID-19 pandemic. For example, one participant responded, “With clinicals on hold, there was initially some apprehension about if I could still acquire the minimum required cases. But after looking over the numbers it wasn’t too concerning.” Since half of the participants reported some form of maladaptive coping, additional resources should be provided to SRNAs especially during unprecedented periods. The American Psychological Association (APA) provided student webinars in March 2020 for coping in the era of coronavirus and the AANA also included COVID-19 resources for students (APA, 2020; AANA, 2021).

Implications for policy change to update Graduate Student Handbook to reflect student resources to promote better stress management and wellness. Dynamic resources are required as unforeseen circumstances occur, but basic psychological support and resources should be included in the Graduate School Handbook and specifically in the Student Handbook for the School of Nurse Anesthesia. Review of the Undergraduate and Graduate Student Handbooks at Rhode Island College School of Nursing reveals a lack of resources to support students during stressful ordeals. Possible update of the student handbooks with linkages to beneficial resources to combat stress and promote wellness would be worthwhile. A resource toolkit including adapted stress continuum model, coping and wellness strategies, and resource links to counseling services could also be provided to SRNAs in the handbook during orientation. An example of a basic resource toolkit is attached in Appendix G.

The impact of the COVID-19 pandemic is still being realized in the United States. A national poll of American adults shows anxiety about COVID-19 remains high at 41% but has decreased from 60% in 2020 (Brooks, 2021). One third of the participants reported dysfunctional anxiety symptoms according to the CAS. A Medscape nurse career satisfaction report showed that CRNAs have higher levels of burnout after the pandemic increasing from nine percent to 26% (Stokowski, Bastida, McBride, & Berry, 2020). This highlights a potential challenge in the CRNA workforce. By cultivating coping mechanisms in the SRNA population, a more resilient CRNA population ensues with enhanced wellness, productivity, and job satisfaction.

Future research is needed to identify the full impact of the COVID-19 pandemic on the stress, coping, and wellness of SRNAs. A larger, more comprehensive survey is

warranted. The COVID-19 pandemic is ongoing, and more research is needed to understand the long-term effects. Better determination of student's experiences throughout the pandemic could be obtained via focus groups and/or individual interviews.

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Appendix A

Informational Consent Letter

Current and Former SRNAs:

I am conducting a survey for all Student Registered Nurse Anesthetists during the initial period of the COVID-19 Pandemic, ranging from March 2020-June 2020. I would like to request your participation in this survey entitled: Student Registered Nurse Anesthetists' Perceptions of COVID-19 Pandemic on Stress and Wellness: A Descriptive Study.

The purpose of this study is to explore the effects of the COVID-19 pandemic on stress and wellness and coping mechanism for student registered nurse anesthetists. This information will be used to guide wellness and stress management techniques for future SRNA cohorts.

The survey will take less than ten minutes to complete and there will be no follow-up questions or additional participation required. This survey is completely voluntary and anonymous. You are free to choose not to complete this survey at any point if you wish. If any questions cause you distress, please do not continue to answer them. If you require additional support, please call the RIC HOPE line to speak with a licensed clinician at 401-456-HOPE. Appointments at the counseling center can be made online or via phone at 401-456-8094.

Upon completion of the survey, you will be provided a link for a five-dollar Dunkin Donuts gift card.

If you have any questions regarding this project, please feel free to contact me or the principal investigator, Dr. Fearon-Lynch at:

Lserrano_0939@email.ric.edu
252-259-3953

jfearonlynch@ric.edu
401-456-9715

Thank you for your consideration to participate!

Sincerely,

Lysandra Serrano
BSN, RN, CCRN
MSN-CRNA Student
Rhode Island College

Appendix B

Recruitment Letter

To whom it may concern,

You are asked to consider participating in a study examining perceptions of the effect of the COVID-19 Pandemic on your stress, wellness, and coping in the nurse anesthesia program. This is an anonymous survey for all Student Registered Nurse Anesthetists (SRNAs) during the initial pinnacle of the COVID-19 Pandemic, ranging from March-June 2020.

Your insight and personal experiences during that challenging period will guide stress management and wellness activities for future SRNA cohorts. The survey will be delivered electronically via Qualtrics to ensure anonymity and efficiency. The survey will be opened for one month and will take less than ten minutes to complete.

As a token of appreciation for your time and thoughtfulness, you will receive a link for a \$5 Dunkin Donuts gift card after completion. Thank you for your support and consideration.

Sincerely,

Lysandra Serrano
BSN, RN, CCRN
MSN-CRNA Student
Rhode Island College

Appendix C

COVID-PSS-10

Please rate each item based on your experience during March-June 2020.

1. I have felt affected as if something serious will happen unexpectedly with the epidemic.

Never Almost Never Sometimes Fairly Often Very Often

2. I have felt that I am unable to control the important things in my life due to the epidemic.

Never Almost Never Sometimes Fairly Often Very Often

3. I have been nervous or stressed by the epidemic.

Never Almost Never Sometimes Fairly Often Very Often

4. I have been confident about my ability to handle my personal epidemic related problems.

Never Almost Never Sometimes Fairly Often Very Often

5. I have felt that things are going well (optimistic) with the epidemic.

Never Almost Never Sometimes Fairly Often Very Often

6. I have felt unable to cope with the things I have to do to control the possible infection.

Never Almost Never Sometimes Fairly Often Very Often

7. I have felt that I can control the difficulties that could appear in my life due to the infection.

Never Almost Never Sometimes Fairly Often Very Often

8. I have felt that I have everything under control in relation to the epidemic.

Never Almost Never Sometimes Fairly Often Very Often

9. I have been upset that things related to the epidemic are out of my control.

Never Almost Never Sometimes Fairly Often Very Often

10. I have felt that the difficulties accumulate in these days of the epidemic and I feel unable to overcome them.

Never Almost Never Sometimes Fairly Often Very Often

Pedrozo-Pupo, J. C., Pedrozo-Cortes, M. J., & Campo-Arias, A. (2020). Perceived stress associated with COVID-19 epidemic in Colombia: An online survey.

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Appendix D

Coronavirus Anxiety Scale (CAS)

How often have you experienced the following activities over any 2-week period during March – June 2020?

Not at all Rare, less than a day or two Several days More than 7 days Nearly every day over the last 2 weeks

1. I felt dizzy, lightheaded, or faint, when I read or listened to news about the coronavirus. 0 1 2 3 4

2. I had trouble falling or staying asleep because I was thinking about the coronavirus. 0 1 2 3 4

3. I felt paralyzed or frozen when I thought about or was exposed to information about the coronavirus. 0 1 2 3 4

4. I lost interest in eating when I thought about or was exposed to information about the coronavirus. 0 1 2 3 4

5. I felt nauseous or had stomach problems when I thought about or was exposed to information about the coronavirus. 0 1 2 3 4

Column Totals ± ± ± ± ±

Total Score _____

Note. The CAS was created by Sherman A. Lee, PhD. (2020) and originally published in the journal *Death Studies*, 44(7). <https://doi.org/10.1080/07481187.2020.1748481>

Note. CAS: Coronavirus Anxiety Scale. The CAS is placed in the public domain to encourage its use in clinical assessment and research. No formal permission is therefore required for its reproduction and use by others, beyond appropriate citation of the present article.

Appendix E

In your own words, please answer the following questions.

1. Please describe your feelings/emotions when in person didactic classes were transitioned to online courses and/or when clinical practicums were held during March-June 2020.
2. During March-June 2020, how did the COVID-19 Pandemic affect your overall wellness? Please consider any/all of the dimensions of wellness: physical, intellectual, social, emotional, spiritual, vocational, and environmental.
3. During March-June 2020, how did the COVID-19 Pandemic affect your overall coping mechanisms during nurse anesthesia school?

Appendix F

Continuum of Stress Model and Support Options

The stress continuum model highlights the fact that people react to trauma in different ways. The color codes are analogous to a traffic light, with green as good to go, yellow and orange as warning lights, and red as stop and remove from the source of trauma. By intervening with progressive levels of support during the yellow and orange zones, it may be possible to prevent illness.

STAFF RESPONSE	READY	REACTING	INJURY	ILL
CONTRIBUTING FACTORS	Health maintenance and energy management	Any stress	Life threat, major loss, exhaustion	moral distress, severe
DESCRIPTION	Well-being and optimal functioning	Mild and transient stress or loss of function	More severe & persistent distress or loss of function	Clinical mental disorders (e.g., posttraumatic stress disorder, depression) or unhealed stress injuries
FEATURES	Physically, mentally, and spiritually fit	Feeling irritable, anxious, down; loss of focus or motivation, trouble sleeping	Excessive guilt, shame, blame; panic; loss of control over emotions; misconduct	Persistent symptoms that worsen over time; severe distress or social/occupational impairment
SUPPORT OPTIONS	Prevention: maintain self-care and resiliency practices	Peer support, psychological first aid or brief counseling	Brief professional mental health treatment and time off for recovery	Extended professional mental health treatment and time off for recovery

Source: The authors. Adapted from the U.S. Navy. Navy Leader's Guide for Managing Sailors in Distress: The Stress Continuum Model. 2012. Accessed March 5, 2021. https://www.med.navy.mil/sites/nmcphc/Documents/LGuide/op_stress.aspx.¹¹

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Appendix G

Stress, Coping, and Wellness Resources Toolkit

Description	Resources
AANA COVID-19 CPC, SRNAs, and Educators	https://www.aana.com/aana-covid-19-resources/cpc-srnas-and-educators
AANA COVID-19 Well-being	https://www.aana.com/aana-covid-19-resources/covid-19-well-being
AANA Well-being Resources	https://www.aana.com/membership/students/student-wellness
APA Stress Resources	https://www.apa.org/topics/stress
Coping	https://www.metrohealthready.org/wp-content/uploads/2020/10/COPING-ON-TEMPLATE.pdf
COVID Fatigue	https://www.uwhealth.org/news/managing-covid-fatigue-is-crucial-to-our-health-and-wellbeing-during-the-pandemic
Managing COVID Fatigue	https://www.cdc.gov/coronavirus/2019-ncov/hcp/managing-workplace-fatigue.html
Promoting wellness Video (2.42 minutes)	The Eight Dimensions of Wellness - YouTube
Perceived Stress Scale	https://www.mindgarden.com/documents/PerceivedStressScale.pdf
Substance use disorder	Anesthetists in Recovery- AIR (aana.com)
Substance abuse and mental health services	Home - SAMHSA Behavioral Health Treatment Services Locator
Relaxation Techniques - NIH	https://www.nccih.nih.gov/health/relaxation-techniques-what-you-need-to-know
Rhode Island College Health and Wellness Counseling Services	https://www.ric.edu/department-directory/center-health-and-wellness/counseling-services
National Alliance on Mental Illness Resources	https://www.nami.org/Support-Education/Video-Resource-Library
Maintaining your psychological health during a pandemic	https://www.health.mil/Military-Health-Topics/Centers-of-Excellence/Psychological-Health-Center-of-Excellence/Real-Warriors-Campaign/Articles/Maintaining-Your-Psychological-Health-During-a-Pandemic
Prioritizing your mental health	https://www.health.mil/Military-Health-Topics/Centers-of-Excellence/Psychological-Health-Center-of-Excellence/Real-Warriors-Campaign/Articles/Prioritizing-Your-Psychological-Health