

A Preliminary Assessment of Stress Across Nursing Curriculum

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Abstract:

Background: Nursing is a stressful profession and COVID-19 added another layer of stress to nurses and nursing educators. In order to identify those areas that are most stressful to students a survey was deployed at a small midwestern university across all nursing programs.

Materials and Methods: The Student Nurse Stress Index (SNSI) is a 22-item questionnaire that evaluates items stress on a 5-point scale Likert scale. This survey, along with demographic questions and open-ended qualitative questions regarding symptoms of stress and coping mechanisms, was distributed to nursing students in all programs including pre-nursing, the traditional Bachelor of Science in Nursing program, the RN to BSN program, the BSN to DNP program, MSN Nurse Educator Program, MSN Nurse Administrator program, and the MSN to DNP program.

Results: Fatigue was identified as the most common symptom of stress, while feeling overwhelmed and worrying were also rated very high. Qualitative data revealed a variety of coping mechanisms, including healthy, unhealthy, and mixed mechanisms.

Conclusion: A preliminary review of stressors, symptoms of stress, and coping mechanisms will allow for future research to help mitigate the negative impact of stress on those who are caring for our those within our communities.

Key Words: Stress, Nursing, Education, COVID-19

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I. Introduction

Stress is inherent to nursing; there are many demands and the consequences of nurses' actions are significant. In addition, nurses frequently work long hours and may even face interpersonal conflicts with other nurses and healthcare staff.¹ Stress is also prevalent in nursing education. Nursing students are required to complete rigorous academic work while completing clinical practicum courses as well. Many nursing students find it difficult to balance school, work, and family obligations.¹ In one study, nearly all (99.3%) of nursing students reported their own stress to be moderate or high.²

The COVID-19 global pandemic added another layer of stress to nursing education. When considering nursing students, it is important to remember this may include those in undergraduate, registered nurse (RN) to Bachelor of Science (BSN), and graduate programs. As the pandemic spread, nursing students faced additional stressors at home, work, and school. While the need for nurses increased, future nurses were sent away from clinical sites due to concern for their safety.³ Those already working in the nursing profession saw increased stress related to higher numbers and acuity of patients at work.^{4,5} At home, there were concerns regarding stay-at-home orders, remote learning for children, and risk to families from working in healthcare. Finally, nursing education took a dramatic turn with a move to online learning and loss of clinical sites.³

There was an obvious increase in stress in nursing and subsequently nursing education due to COVID-19. What is unknown is the degree of impact and the areas that faced the most challenges for nursing students across the curriculum. For these reasons, a survey was conducted to answer the following research questions: 1) What aspects of nursing education are most stressful? 2) What symptoms of stress are most prevalent? 3) What impact has COVID-19 had on stress levels while in nursing school? 4) What coping strategies are nursing students using?

II. Material and Methods

This survey was administered to all nursing programs at a small, midwestern university. Programs included pre-nursing, traditional Bachelor of Science in Nursing (BSN), Registered Nurse (RN) to BSN, Master of Science in Nursing-Nursing Education, Master of Science-Nursing Administration, BSN to Doctor of Nursing Practice (DNP), and Master of Science in Nursing (MSN) to DNP. The traditional BSN program is an

on-campus program, and the majority of pre-nursing students are on campus as well. All other programs are typically conducted virtually.

Undergraduate students complete approximately 60 hours of general education and pre-requisite courses prior to entering the nursing program. The nursing program is an additional 60 hours that is distributed over four semesters. The RN to BSN program length varies depending on the credits the student has upon admission. The RN to BSN program requires ten nursing classes and then any credits required to complete a Bachelor of Science degree. The BSN to DNP program is four years (12 semesters) and is online with the exception of precepted clinical hours. Finally, the MSN to DNP is two years (6 semesters) in length.

Study Design: Mixed methods

Study Location: The survey was completed across the nursing curriculum in a small midwestern university.

Study Duration: The study was conducted over the course of two weeks in the Fall 2020.

Sample size: A total of 205 students completed the survey. This pre-nursing, traditional on campus BSN students, online RN to BSN to students, MSN students in nursing education and nursing administration, MSN to DNP and BSN to DNP students.

Procedural Methodology

The survey included four demographic questions including age, gender, program, and area of practice. In addition, traditional BSN and DNP students were asked to select their current semester. All students completed the Student Nurse Stress Index (SNSI) which is a 22-item questionnaire that evaluates items stress on a 5-point scale Likert scale. Permission was obtained from the creator of the SNSI⁶. Symptoms of stress that the students had experienced in the previous three months were also evaluated. This included five emotional, 11 physical, six cognitive, and four behavioral symptoms. The survey ended with two qualitative questions regarding the impact of stress, current coping mechanisms, and any interest in new coping mechanisms.

Students were invited to participate through their student email account based on student classification as a nursing major. The survey was conducted via SurveyMonkey. No identifying information was obtained in the survey. Participation was voluntary and consent was implied by completing the questionnaire. Inclusion criteria included being a student in the department of nursing, completing simulation and willingness to complete the survey. Approval was granted through the University Institutional Research Board.

Statistical analysis

Quantitative data was analyzed using descriptive statistics. Qualitative data was gathered using the following open-ended question: ‘What coping mechanisms do you use to alleviate stress?’ Participant responses were reviewed by researchers and grouped into themes using the inductive method. This approach allows researchers to identify themes within qualitative data (Thomas, 2016). To accomplish this, students’ comments were put into a spreadsheet and examined by the reviewers. Upon completion, the following themes were identified: healthy, unhealthy, mixed, or no coping mechanisms. Coping mechanisms are defined as “a set of behaviors we used in our efforts to manage stressful situations, regardless of whether such attempts are beneficial” (Lazarus and Folkman, 1984.) For the purposes of this paper, healthy coping mechanisms are defined as beneficial to the student, while unhealthy mechanisms are considered non-beneficial. Mixed coping mechanisms are a combination of beneficial and non-beneficial behaviors.

III. Results

A total of 205 nursing students responded to the survey. The majority of students were female, with 92.6 % (n=190). The responses represented six cohorts of nursing students; pre-nursing students (n=13, 6.3%), traditional BSN students (n=64, 31%), BSN-DNP students (n=34, 16.6%), MSN students in educator or administrator tract (n=32, 15.6%), MSN-DNP students (n=17, 8.3%), and RN-BSN students (n=45, 22%). The average age of the student was 31.6 years. Areas of student practice included: administration (n=11, 5.3%), Advanced Registered Nurse Practitioners (APRN) (n=8, 3.9%), catheterization lab (n=4, 1.9%), critical access hospitals (n=5, 2.4%), critical care n=13, 6.3%), education (n=8, 3.9%), emergency room (n=10, 4.8%), home health (n=4, 1.9%), hospice (n=2, 0.09%), long term care (n=4, 1.9%), medical-surgical (n=15, 7.3%), obstetrics (n=6, 2.9%), occupational health (n=1, 0.04%), outpatient clinics (n=1, 0.04%), pediatrics (n=1, 0.04%), perioperative (n=7, 3.4%), psychiatric (n=6, 2.9%), public health (n=6, 2.9%), step down/intermediate care (n=4, 1.9%), and certified nurse assistant (n=8, 3.9%). Seventy-five respondents (36.5%) stated they were full-time students. For the purposes of this review, aggregate data were reviewed in order to identify areas for future research.

On a 5-point Likert scale, students rated symptoms or behaviors of stress using the Student Stress Index Score. A score of one correlated with not stressful, while a score of five meant extremely stressful. The question, “do you experience low energy” was scored the highest amongst all cohorts with a mean score of 3.23. In comparison, the question “do you experience dry mouth or difficulty swallowing” scored the lowest with a mean score of 1.43. Table 1 depicts the ten highest mean scores of the Student Stress Survey Index.

Table 1: Mean Scores of the Student Stress Index

Question	Mean Score
Do you experience low energy?	3.32
Do you feel overwhelmed, like you are losing control or need to take control?	3.26
Do you experience constant worrying?	3.17
Do you experience difficulty falling asleep or staying asleep?	3.03
Do you become easily agitated, frustrated, or moody?	3.01
Do you experience aches, pains or tense muscles?	2.97
Do you experience headaches?	2.94
Do you experience inability to focus?	2.90
Do you experience racing thoughts?	2.86
Do you experience forgetfulness or disorganization?	2.70
Do you feel bad about yourself (low self -esteem)?	2.62

Table 1: Lists the mean score for the top ten symptoms of anxiety reported by participants.

Qualitative Data

In addition to the Student Stress Index questionnaire, students were asked to submit qualitative responses to describe coping mechanisms utilized to decrease stress. This was gathered using the following open-ended question: ‘What coping mechanisms do you use to alleviate stress?’

Analysis of the data revealed 151 students reported engaging in healthy coping mechanisms. The mechanisms identified as “healthy” were then further subdivided into themes of exercise, prayer/meditation, support systems, medical or professional assistance, or distraction/entertainment. Because a single student could identify more than one coping mechanism, a total of 274 healthy behaviors were identified by students in all cohorts. The most common type of healthy coping mechanism was exercise followed by prayer and meditation. The number of responses that mentioned each healthy coping mechanism is listed in Table 2.

Table 2: Healthy Coping Mechanisms Reported by Students

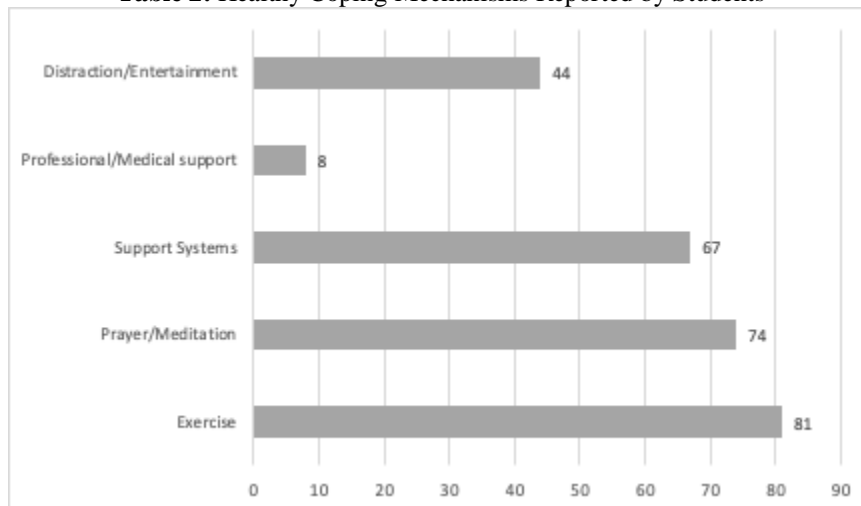


Table 2: Illustrates the number of students who reported healthy coping mechanisms.

Twelve students reported engaging in unhealthy coping mechanisms that were deemed non-beneficial to the student. The mechanisms identified as “unhealthy” were further grouped into themes of sleep/procrastination/avoidance, crying, alcohol use, over/binge eating, and other unhealthy behaviors. The most commonly reported unhealthy coping mechanism was sleep/avoidance/procrastination followed by over/binge eating. Six students reported using alcohol to cope with stress. The number of responses that mentioned each unhealthy coping mechanism is listed in Table 3.

Table 3: Unhealthy Coping Mechanisms Reported by Students

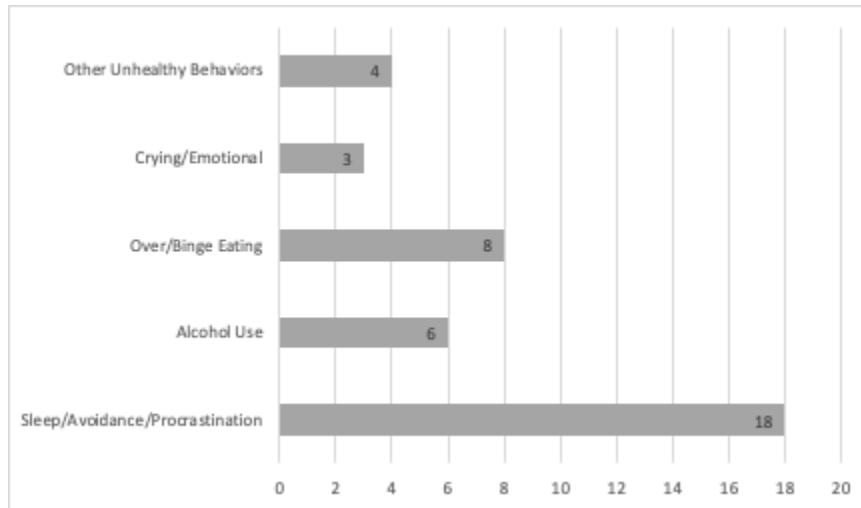


Table 3: Illustrates the number of students who reported unhealthy coping mechanisms.

Interestingly, 23 students reported not utilizing any coping mechanisms to decrease stress. The most common stated reason was lack of time. Finally, 17 students responded with mixed healthy/unhealthy coping mechanisms. For example, one student reported using yoga but also nicotine for stress reduction.

IV. Discussion

While nursing school is inherently stressful, the effects of the COVID-19 pandemic related to stress on nursing students at all levels is not yet documented in the literature. The purpose of this study was to describe the symptoms or behaviors related to stress on nursing students during the pandemic and to also define the current coping mechanisms of nursing students in a small mid-western university. Not surprisingly, fatigue or low energy was the highest reported symptom among all cohorts of nursing students. Within the programs surveyed student schedules were changed, classes became virtual, and clinicals were cancelled. Some students were required to take an incomplete in graduate programs until the clinical hours were completed. Students verbalized worry and stress to their instructors and highly reported (greater than 3 on the Likert scale) of the Student Stress Survey feelings of being overwhelmed, loss of control, constant worrying, easily agitated, and poor-quality sleep. In addition, the majority of the students were employed in some type of setting ranging from different inpatient settings including critical care units and emergency rooms to APRNs in practice. The additional stress of the fear of exposure to COVID-19 patients likely played a role in reported stress, especially as the risks of the virus to health care workers were unknown at the beginning of the pandemic.

Coping mechanisms allow students to take action to deal with stress, problems, or uncomfortable emotions. Healthy coping mechanisms likely have a positive student impact. A total of 151 healthy coping mechanisms included exercise, prayer/meditation, family/social support and distraction techniques. Some students sought medical or professional help to cope with stress. As students were increasingly isolated throughout the semester, instructors likely had more difficulty identifying students’ needs related to stress during this unprecedented time. This descriptive survey allowed instructors to identify current healthy coping mechanisms that can be further reinforced and incorporated into course work and curriculum.

Unhealthy coping mechanisms have non-beneficial impacts on students. By far, the most common unhealthy coping mechanism students engaged in was increased sleep or procrastination/avoidance techniques. A fair number of students stated they coped with stress by binge/overeating and a small number of students reported increased alcohol use. Finally, several students reported crying binges and becoming emotional during this time. These unhealthy coping mechanisms are concerning, as students are more isolated and distanced from support systems outside the family. The identification of unhealthy coping mechanisms allows for instructors to provide more emotional and physical support to students. The positive effects of healthy coping mechanisms

versus the negative consequences of unhealthy coping mechanisms can be discussed in courses and assignments can be designed with healthy coping mechanisms in mind. For example, students may be given extra credit for activity challenges or students may be directed to online or on-campus resources to deal with the challenges of the pandemic.

Some students reported no use of coping mechanisms citing lack of time as the primary reason. This is concerning as all students need support to not only navigate school, but also the pandemic challenges. The importance of utilizing healthy coping mechanisms, even for a short period each day should be stressed throughout the semester. Self-care strategies can be easily identified and enforced by instructors throughout the semester.

Although nursing school is stressful, as educators, we have a responsibility to our students to recognize the effects of stress and to intervene with appropriate resources as available. The university did offer increased availability of virtual counseling to students, but can healthy stress reduction techniques be incorporated into the classroom and curriculum? Also, preventative self-care may have more benefit than intervention and the data suggest that students did suffer significant stress symptoms.

A limitation of this study is that the data is reported as aggregate, and do different cohorts of students have different needs. These identified areas of concerns will be looked at in future studies with targeted stress reduction techniques offered to students. Finally, this was a small single-center study and results may not be generalized to other universities. Future research may incorporate multi-sites and with a larger sample size.

V. Conclusion

Nursing school is known to be stressful even prior to the additional stress of COVID-19. The impact of COVID-19 on nursing education, nursing students and nurses is important to assess in order to identify ways to mitigate the negative effects of it. Nursing students and nurses need to recognize signs of stress and develop healthy coping mechanisms to manage stress. In order to conduct further research to make a positive impact in this area, it was imperative to identify those areas that are most stressful.

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