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School Nursing Practice and Experiences During School Closures

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This doctoral project, directed and approved by the candidate's committee, has been accepted by the School of Nursing and College of Graduate and Professional Studies of Abilene Christian University in partial fulfillment of the requirements for the degree

Doctor of Nursing Practice

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School of Nursing

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by

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Dedication

My DNP project is dedicated to my mother. She would have been so proud of me for having completed my DNP degree. She was always my number one cheerleader, and I know she is watching over me from heaven and sending blessings down.

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I thank my sons, Broderick, Fletcher, and Arsenio, for their encouragement and support during my DNP journey. Also, special thanks to my daughters-in-law, Stephanie and April, for their help. Blessing from above for watching over me when I had cancer surgery and daily radiation during my DNP process. I thank God for allowing me to complete this journey. I want to thank all of my friends who supported me through this process, especially Dr. Barbara Parker, who consistently encouraged me when the journey took many turns. I want to thank Dr. Linda Gibson, my project chair; Dr. Michael Landry; and Dr. Donna Atobajeun and Dr. Faisal H. Aboul-Eneinn, my committee members, for their guidance and support throughout my project and DNP program. I want to also give special thanks to the school nurses who supported my DNP project.

Abstract

This evidence-based quality improvement project was to evaluate public school nurses' relationships and reaction to their new work environment during the closure of schools in Northern California resulting from the COVID-19 pandemic. This project addressed the change in school nursing, especially the nurses' working environment. A stress management program was offered to the school nurses as an intervention to give them information on perceived stress. The stress management program included mindfulness and stress-relieving techniques over a 1-month period. The research methodology used in the project was a pre- and postintervention using the Perceived Stress Scale-10 (PSS) to measure if the effects of the intervention reduced the school nurses' perceived stress. The data collection occurred online with Qualtrics. The school nurses received the consent, demographics, and PSS prior to the stress management program and at the end of the program. The results of the project were statistically insignificant. One of the reasons was a low number of participants in the stress management program. This intervention occurred at the beginning of the school nurses' summer vacation and during the COVID-19 pandemic. The conclusion of this project is that results were statistically insignificant; however, some of the school nurses who participated emailed that they were using the tools provided in the stress management program. School nurse leaders can use this stress management program to assist their staff with reducing their perceived stress when schools are closed during a pandemic. Other evidence-based studies in the literature have demonstrated that a stress management program is a way to reduce the perceived stress of staff.

Keywords: school nurse, pandemic, COVID-19, stress, stress technique, management program, virtual learning, infectious disease, pandemic and school closure

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Chapter 1: Introduction

School nurses in the U.S. public school system have played a vital role in student health since 1902 (Bergren, 2017). As of 2017, there were 95,776 full-time school nurses in the United States; however, 11% of public schools did not have a school nurse, and in California, there was only one school nurse for every 2,430 students (California School Nurse Organization, 2017; Willgerodt, 2018). School nursing is a specialized practice that helps advance student well-being and academic success by promoting health and safety while simultaneously transitioning students back to school (Council on School Health, 2016; Mattey, 2019). Since its beginnings, school nursing has evolved from being considered an aspect of general nursing into a stand-alone nursing specialty. The school nurses' role includes surveillance, chronic disease management, emergency preparedness, behavioral health assessment, ongoing health education, and extensive case management (Council on School Health, 2016; Maughan et al., 2018). While essential to any nursing specialty, critical thinking and organizational skills play an especially vital role for school nurses, as responsibilities are continuously added to their roles (Blackmon-Jones, 2017).

The role of the school nurse today is a complex one, and an increase in their workload has been identified as a primary stressor for nurses (Jameson & Bowen, 2020). Social, political, and cultural influences and the increasing number of students who attend school with complex health conditions have changed the nature of school nurse services over time (Johnson, 2017; Morse et al., 2020). Additionally, the school nurse evaluates immunization records noncompliance, which is essential in preventing vaccine-preventable diseases and monitoring the spread of infectious diseases (Rogers, 2019). These functions have become even more critical with the heightened risk of pandemic diseases, such as COVID-19 caused by the coronavirus.

Problem Statement

The specific problem addressed in this study is the problem of alleviating school nurses' work-related stress resulting from school closures and the transition to virtual work necessitated by the COVID-19 pandemic. COVID-19, an infectious disease caused by the newly discovered coronavirus, was declared by the World Health Organization (WHO, 2020) to be a pandemic on March 11, 2020. A few of the symptoms experienced by individuals with the virus include high fever, respiratory complications, and other ailments that can lead to death (Viner et al., 2020). Furthermore, the mode of transmission of the COVID-19 virus is droplets that spread when an infected person coughs and sneezes, especially from a distance less than 6 feet or in an enclosed space (Viner et al., 2020). Due to the virus's highly contagious nature, individuals with underlying medical conditions, elders, and those who are immunocompromised have the highest risk of getting the virus, resulting in negative patient outcomes (Kirlin, 2020). As of December 2020, there were more than 15 million COVID-19 cases, with over 285,000 deaths in the United States (Centers for Disease Control and Prevention, n.d.).

The surge of COVID-19 infections in the United States caused the closure of businesses, organizations, community events, colleges, and elementary, middle, and high schools (Kniffin et al., 2021). Businesses and the government immediately moved work online (Phelps, 2021). With the closure of schools, school nurses and educators also began working virtually from home. For school nurses, the change was especially disruptive. Before the COVID-19 pandemic, Northern California school nurses communicated and interacted with multiple students daily, provided first aid, administered medications, monitored students for child abuse, reviewed immunizations, and trained staff to perform procedures. Moreover, they participated in Individualized Education Plan (IEP) meetings, 504 meetings, Student Study Team (SST) meetings, and health office

meetings (Johnson, 2017). Nurses thrived on working with all stakeholders, such as students, their families, providers, staff, supervisors, and community agencies. However, the shift to working virtually from home left many school district employees, including school nurses, feeling fatigued, frustrated, isolated, and lacking energy and enthusiasm because it disrupted their ability to work consistently. Electronic platforms are helpful tools to convene meetings and facilitate communication, but the frequency of remote meetings during the school closures significantly reduced relationship building and may have led to loneliness and fatigue (Kirlin, 2020).

While teachers conducted classes in virtual classrooms starting in March 2020, and some used a hybrid model whereby the children learned virtually at times and in person at other times, school nurses could not practice in the same way. Challenges for school nurses who worked virtually included a lack of house workspace and questionable boundaries between work and other tasks (Kniffin et al., 2021). Since students were not physically present in schools, school nurses could not administer medications or assess acute illness or injury. School nurses also were not able to train staff to respond to urgent health issues or perform state-mandated screenings. Moreover, because of the shift to online work, school nurses could not always reach parents to complete a health assessment for their child's IEP, particularly after being on virtual instruction for multiple hours.

Furthermore, in spite of the pandemic and school closures, the school nurses' role nonetheless had to continue as it relates to children with learning disabilities and medical conditions. At times, whether during school closures or during typical in-person schooling, some children require additional assistance due to a medical disability or an educational barrier (Yonkaitis & Shannon, 2017). Any school staff member, parent, or health care provider can

make the referral or request an assessment for special education. If a student is eligible for the complete evaluation process, the school nurse, psychologist, classroom teacher, and special education teacher must assess the student from their respective areas of expertise (Johnson, 2017; Yonkaitis & Shannon, 2017).

During the evaluation, the school nurse assesses the student in the suspected area of disability and conducts a hearing and vision screening (Yonkaitis & Shannon, 2017). Additionally, the nurse reviews the IEP for any instructional modifications and related services such as physical therapy, occupational therapy, speech therapy, or nursing services. The evaluation process takes approximately 60 days to complete under typical circumstances. The nurse submits a formal report to the committee to determine if the student is eligible for an IEP (Johnson, 2017; Shannon & Yonkaitis, 2017). During school closures from COVID-19, nurses struggled to provide the same evaluation services under extraordinary circumstances.

Background

The school nurse's role has evolved since the 19th century (Bergren, 2017). The traditional school nurse model was physician-led, with schools excluding students with communicable diseases (Bergren, 2017). On October 1, 1902, the school nurse's role emerged from the public health department, focusing on addressing communicable diseases and chronic student absenteeism (Bergren, 2017). As a result of this public health initiative, a nurse in New York started providing school nurse services, and after 1 month, 12 school nurses began providing care to 10,000 students. After 1902, school nurse services were implemented in Los Angeles, California; Boston, Massachusetts; and Philadelphia, Pennsylvania. The main goal of the school nurse expansion was to ensure that students understood the importance of being healthy (Struthers, 2018). The services expanded to include immunization audits, student health

screenings, and follow-up of student illnesses to ensure student health (Bergren, 2017). Currently, the school nurse's role includes case management, prevention of acute and chronic conditions, and care coordination to ensure student health and readiness (McCabe et al., 2020; Willgerodt et al., 2018).

As a result of school closures in March 2020, however, school nurses may have experienced increased primary stress because of increased workload that may have prevented the school nurse from completing mandated responsibilities (Jameson & Bowen, 2020). These responsibilities included participating in students' health education, evaluating children who need special accommodations, monitoring immunization compliance, and implementing infection control policies (Johnson, 2017; Morse et al., 2020; Willgerodt et al., 2018). Furthermore, the school nurse also continued administrative duties during the school closures, including medical chart reviews and supervision of the licensed vocational nurses and paraprofessionals in the classroom who provide direct care to students.

Student Evaluations

In many communities where children lack a primary care provider, the school nurse serves as the health care provider (Willgerodt et al., 2018), completing a referral if care is needed beyond the nurse's scope of practice. Often, children with complex medical conditions such as gastrostomy feedings, catheterizations, tracheostomy care, seizures, and diabetes mellitus attend school. School nurses are responsible for ensuring those students' health and well-being during the school day (McCabe et al., 2020; Yonkaitis & Shannon, 2017). The school nurse reviews the student's medical history, communicates with the parent, trains school staff, and develops a yearly Individualized Health Plan (IHP) for the student (Johnson, 2017; Yonkaitis & Shannon, 2017).

Some children have learning disabilities in combination with their complex medical conditions. If a student has a medical condition, the school nurse, based on a review of the medical management plan, adds to the IEP the additional nursing services that the student needs during the school day (Johnson, 2017; McCabe et al., 2020; Yonkaitis & Shannon, 2017). Nursing services for students with an IEP may include classroom staff training to monitor students with a medical condition, daily medication administration, blood glucose testing, and staff training to perform daily specialized physical health care procedures (Yonkaitis & Shannon, 2017). The school nurse also prepares an IHP, which guides school staff in supporting the student during the day (Johnson, 2017).

If a student has a physical or mental disability that may impact their learning, they may be eligible for additional accommodations via the Section 504 Accommodations Plan (Johnson, 2017; Shannon & Yonkaitis, 2017). To determine eligibility, these students are evaluated by a collaborative team that includes the school nurse, parent, and other school members to determine the appropriate accommodations needed for the student. Additionally, the school nurse is responsible for obtaining and reviewing a medical management plan for any student with a medical condition. As with the IEP, the nurse trains the school staff to respond to students' needs and prepares an annual IHP to guide the team. However, with the closure of schools, the school nurse could not provide physical assessments for any students; indeed, the school nurses' ability to provide any required evaluations was hindered.

Infectious Disease Control

In 1918, the United States experienced the Spanish flu, which was similar to COVID-19. The flu led to school closures, restrictions on large gatherings, isolation, and quarantine (Pergolizzi et al., 2021; Schwartz, 2018). To compound these challenges, there was already a

shortage of nurses due to the Civil War (Pergolizzi et al., 2021). Following the flu pandemic, the measles outbreak of 1970 also led to school closures, and school nurses were challenged to create a system for monitoring immunization compliance. By ensuring that students were adequately immunized, school nurses were active participants in infection control as they helped decrease the spread of disease (Rogers, 2019). As a result, the school nurse today must be aware of students' vaccine status, and if any communicable disease is found, the nurse must report it to the local public health department to prevent an outbreak (Rogers, 2019). This process, similar to evaluations, was also hindered during school closures stemming from COVID-19.

Purpose of the Study

The purpose of this evidence-based quantitative project was to evaluate the public school nurses' relationships and reactions to the new work environment during the closure of schools in Northern California resulting from COVID-19. The project was designed to provide school nurses a stress management program including mindfulness and stress-relieving techniques that may help decrease their stress level during school closures.

Significance of the Problem

COVID-19 restrictions included mandated social distancing and quarantine and meant that during the pandemic school nursing changed, specifically the nurses' working environment and relationships with students, student families, and school staff. With the change, school nurses interacted solely with parents and had limited student communication. Therefore, it was important to examine how the new work environment impacted school nurses during school closures and examine whether a stress management program could help school nurses manage their perceived stress levels and improve their school nurse practice. Additionally, school nurses may learn how to adapt to unexpected changes in their work environment, but there is limited

knowledge or understanding of the school nurses' experiences during abrupt school closures and the sudden shift to working from home (J. Lee et al., 2019). This project sought to address that gap.

Nature of the Project

This project used informative, educational interventions to help school nurses manage their perceived stress from school closures during a pandemic. The school nurses completed the Perceived Stress Scale tool to detect the level of stress pre- and postimplementation (see the PSS tool in Appendix A and permission to use in Appendix B). The tool provides information about the nurses' emotional condition and thoughts about their current situation. The goal was to see if the intervention would be effective in helping school nurses reduce their perceived stress. The stress management program included definitions of stress, specific stressors for school nurses during school closures, mindfulness and stress-relieving tools, and stress reduction exercises. The stress management program was conducted in four sessions over the course of 1 month.

Research Question: PICOT

Among (P) U.S. school nurses experiencing stress during school closures, does the (I) implementation of a virtual stress management program, (C) compared to current practice without a stress management program, (O) increase their knowledge concerning how to manage their stress (T), as measured over a 1-month interval?

Conceptual Framework

The Neuman systems model provided the conceptual framework for this project. This model focuses on the client's wellness to their environmental stressors and reaction to stressors (Fawcett, 2001). This model uses primary, secondary, and tertiary nursing prevention interventions to retain, attain, and maintain the client's system's wellness (Petiprin, 2016). In this

project, I implemented a screening tool that served as a primary intervention to measure school nurses' perceived stress levels. In the Neuman systems model, prevention is the primary intervention. It focuses on keeping stressors and the stress response from having a detrimental effect on the body. Primary prevention is implemented before the patient reacts to the stressor, and secondary prevention focuses on removing the stressors (Petiprin, 2016). The virtual stress management classes were the secondary prevention intervention for this project.

Operational Definitions

COVID-19. COVID-19 is a contagious severe respiratory illness is caused by a new coronavirus called SARS-CoV-2 (Haas et al., 2020).

Individual Educational Plan (IEP). An IEP is a legal document that is a requirement in the federal Individuals with Disabilities Education Act of 1975; this law requires that students with disabilities receive an individual educational plan (Johnson, 2017).

Mindfulness. Mindfulness is a technique that asks the person to come to a certain level of awareness and pay attention to the present moment to reduce stress (J. Lee et al., 2019).

Pandemic. A pandemic is an infectious disease that is prevalent in a whole country or the world (Green, 2020).

School nurse. A school nurse is a specialty practice in school health services. Some of the responsibilities of a school nurse include triaging acutely ill students, managing students with chronic health conditions or who are suicidal, monitoring for child abuse and mandated screenings, performing health assessments for special education students, and training school staff (Blackmon-Jones, 2017).

Scope of the Project

This study utilized school nurses working in Northern California who are credentialed or have a preliminary credential and attend the public health school nurse meeting. The sample was nonrandom, and participants were offered the stress management intervention. The intervention was provided during business hours and in the evening.

Chapter Summary

Northern California school nurses working during the 2020 pandemic changed their practice. During the school closures, the nurses worked virtually without having physical contact with students, families, or staff. However, they were nonetheless still required to continue with health assessments for students who needed IEPs. This role in IEP assessment is fundamental and requires collaboration between the school nurse and other team members (Shannon & Yonkaitis, 2017). However, the closure of schools and abrupt shifts in working made adaptations difficult given remote working conditions. Therefore, in this project I implemented a stress educational intervention to help alleviate school nurses' worked-related stress due to school closures and the transition to virtual work.

The goal was to assist school nurses by providing tools and knowledge on stress management, enabling them to work virtually when schools close. The scope of this project applied to school nurses in Northern California. Therefore, it may not be generalized to other school nurses in other regions even though school nursing practice changed in other places. As an evidence-based scholarly project, it was designed to examine further the implementation of an educational intervention for school nurses who worked virtually from home during the 2020 pandemic.

Chapter 2: Literature Review

On January 20, 2020, the first case of the COVID-19 virus in the United States was diagnosed in Washington State (Hennein & Lowe, 2020). The virus spread to 24 million total cases in the United States by January 2021, making the United States the most impacted country in the world at that time (Centers for Disease Control and Prevention, n.d.). While individuals in various disciplines were affected by the pandemic, health care workers were among the most affected (Kniffin et al., 2021), with school nurses suffering a unique impact from the pandemic. This is partly due to an unprecedented move to control spread of the virus: All schools in the United States closed (Donohue & Miller, 2020), requiring school nurses to change their daily routines to accommodate students' new virtual learning environment.

School nurses play a critical role in schools, specifically in health care surveillance, chronic disease management, emergency preparedness, behavioral health assessment, ongoing health education, case management, and other duties (Council on School Health, 2016; Heuer & Williams, 2016). Their role places them in a position to be the liaison between the physician, community, and public health department (Council on School Health, 2016). Even with the closure of schools, the school nurse had to continue addressing student health and wellness, and this became an arduous task when students were all required to stay and learn from home (Rothstein & Olympia, 2020). Due to the increased demands and added job responsibilities that came with school closures, including the inability to see students, students' families, and staff in person, school nurses may also have experienced increased stress. Although there is limited evidence-based research discussing how the COVID-19 pandemic has affected school nurses, the literature addresses how health care workers in the hospital setting have been negatively affected by the COVID-19 pandemic (Hennein & Lowe, 2020). For example, one study showed that of

1,132 hospital workers surveyed in the hospital setting, 15.8% had developed generalized anxiety and 23.1% had probable posttraumatic stress disorder (Hennein & Lowe, 2020).

School nurses also work closely in the educational environment with educators. Kaden (2020) reported that working from home was the single most traumatic and transformative event for schoolteachers because they had to learn to rely on technology and find ways of connecting with parents and students virtually. Similarly, Hart and Nash (2020) reported that COVID-19 impacted teachers' daily interaction with students and staff. However, teachers who used an educational intervention reduced their stress during COVID-19 (Pozo-Rico et al., 2020). Implementing a stress management program also helped hospital nurses who experienced stress at work (Jordan et al., 2016). Although these studies are not specific to school nurses, the populations are similar and suggest that a stress management intervention may also benefit school nurses.

Literature Search

The literature search covered the public and school nurses' relationships and their reaction to work during school closures. The following databases were used to conduct the search: PubMed, Google Scholar, PsycINFO, Cumulative Index to Nursing and Allied Health Literature (CINAHL) Plus with Full Text, and the Cochrane Database of Systematic Reviews. The key search terms in direct relation to the PICOT question included *school nurse*, *pandemic*, *COVID-19*, *stress*, *stress technique*, *management program*, *virtual learning*, *infectious disease*, *pandemic*, and *school closure.* To optimize results, Boolean operators were used. Inclusion criteria included studies addressing the PICOT question with a primary focus on high-quality, consistent evidence utilizing Neuman's system theory. Search-limiting phrases included the English language, and studies were excluded if they did not address the PICOT question. If the

articles predated 2016, they were not used. These exclusion criteria were selected to ensure that the literature search would provide high-quality evidence interpreted in the English language. Finally, bibliographies from the identified studies provided additional relevant articles for review.

The Role of School Nurses

School nursing is a specialized practice within nursing. The school nurse protects and promotes student health, facilitates optimal development, and advances academic success. As the school nurse role has evolved, there has been an increase in school nurses' job responsibilities. The increased complexity of student medical issues and improper staffing of nurse offices have caused school nurses to adapt to the changing times but not without added stress (Lineberry et al., 2018). In one estimate, 27% of students in schools had complex chronic health conditions (Maughan et al., 2018). The increase in student health complexity has meant that school nurses have had to adapt to clinical changes, especially when the school nurse is the student's health care provider, as is the case in many communities. Because school nurses assess health risk, screen for potential injury, improve student knowledge through education, and advocate for the vulnerable, they are considered health care providers, and their care impacts chronic health conditions, high-risk behaviors, and behavioral and mental health issues (Darnell et al., 2019).

School nurses have identified 130 tasks they often perform, including direct care, health promotion, management, leadership, public roles, and community health (Morse et al., 2020). School nurses also identified the responsibility of gaining the knowledge and skills to manage student care in schools as another obligation of their role, for they are responsible for reviewing students' medical management, talking to parents, training school staff, and developing an Individualized Health Plan (IHP; Heuer & Williams, 2016; Morse et al., 2020).

Furthermore, the role of the school nurse in developing an IHP or IEP can be extensive. Some children with learning disabilities and medical conditions need further evaluation and accommodations provided by the school district. If students need additional medical or learning support during school hours, school nurses refer for assessment. This evaluation team includes the school nurse, psychologist, regular education teacher, special education teacher, the student's parents, and other as-needed workers such as speech therapists. The credentialed school nurse assesses the student in the suspected areas of disability, hearing, and vision screening (Johnson, 2017; Yonkaitis & Shannon, 2017). Also, if the student has a medical condition, the credentialed school nurse adds to the IEP the nursing services that the student requires during the school days. Nursing services for a student with an IEP may include training of classroom staff to monitor a student with a medical condition, daily medication administration, blood glucose testing, and training of staff to perform daily specialized physical health care procedures (Yonkaitis & Shannon, 2017).

For students with a medical disability and chronic medical condition that may negatively affect their learning, an IEP is created (Heuer & Williams, 2016; Yonkaitis & Shannon, 2017). As a collaborative team member, the school nurse assesses these students and helps determine what additional school nurse services are needed, including checking the blood sugar of a diabetic student, establishing seizure precautions for an epileptic student, or performing tracheostomy care for a student with breathing difficulties (Heuer & Williams, 2016; Yonkaitis & Shannon, 2017). Furthermore, other students who do not qualify for an IEP and do not have a complex medical condition can self-manage. However, they may need additional accommodations throughout the school day to prevent educational delays (Yonkaitis & Shannon, 2017).

Triple Aim and School Nurses

The Institute of Healthcare Improvement (IHI) developed the Triple Aim framework. This framework includes three dimensions: improving patient experiences, improving the health of the populations, and reducing the per capita cost of health care (Fitzpatrick et al., 2019). The school nurse leader can improve the populations of school nurses by ensuring they are prepared to transition quickly when school closes. There must be a plan in place when an emergency occurs. Implementing a health intervention for the school nurses will reduce stress and prevent errors in the workplace (Fitzpatrick et al., 2019). The Triple Aim has expanded to the Quadruple Aim to include joy in the workplace (Fitzpatrick et al., 2019). The main focus of joy in the work is to ensure that the staff has a positive experience at work and is being supported positively by their manager. This would improve the outcomes for the patient and nurses (Fitzpatrick et al., 2019).

The Role of the School Nurse in a Pandemic

The school nurse's role in a pandemic setting is to promote health and safety, perform case management, provide skilled health care to students, transition students back to school, train educators, perform surveillance, manage chronic diseases, prepare for emergency, and assess behavioral health (Council on School Health, 2016). When COVID-19 brought about school closures in the United States, the closures affected 90% of students (Donohue & Miller, 2020). Closing the schools also impacted teachers and school nurses as their work environment changed suddenly (Kaden, 2020). Due to school closures, the need for increased infectious disease vigilance even in the shift to virtual settings caused significant stress among teachers and school nurses (Hennein & Lowe, 2020). School closures did not change the responsibilities of teachers or school nurses. Yet most teachers could teach from home by adapting their lessons to online

modalities. It was difficult, however, for school nurses to fulfill their responsibilities when working from home.

The U.S. school nurse has mandated requirements as a school nurse. The nurse is included in the IEP process, must include measurable goals for the student's IEP (Shannon & Yonkaitis, 2017), and is responsible for assessing and developing an individual health plan for the student. If a student has barriers to learning without needing specialized instruction, they are assessed for accommodations according to section 504 (Shannon & Yonkaitis, 2017). The school nurse is also required to complete a health assessment. During the pandemic, school nurses had to adjust how they conducted assessments. They learned to do virtual meetings with parents in place of in-person meetings. Yet, they could not conduct a full student evaluation because vision and hearing screening, mandated by California Education Code 49452, cannot be conducted virtually. Moreover, for the school nurse, duties significantly increased during COVID-19, nurses were required to have all available current information about the virus, and their working hours increased (Combe, 2020).

School Nurse Stressors During the COVID-19 Pandemic

Stressors for school nurses increased during the pandemic. Kniffen et al. (2020) found that virtual sight lines increased perceived stress and invaded privacy. Loss of social connections was another stressor when working from home (Kniffen et al., 2020). Because school nurses are used to communicating with teachers, parents, community partners, and students daily, the lack of communication was another significant stressor, and uncertainty concerning COVID-19 was yet another (R. Lee et al., 2021). Furthermore, helplessness, uncertainty, and anxiety were identified as stressors in a qualitative descriptive study with school nurses (R. Lee et al., 2021).

Local school nurses have reported that they were expected to complete special education assessments for students and obtain permission from parents to waive the vision and hearing screening or obtain the information from the student's health care provider (O. Degas, personal communication, February 17, 2021). Additionally, school nurses have reported that they provided increased disease surveillance. The school nurses were trained in COVID-19 tracing to follow school district employees who work on site during school closures and students who have been diagnosed with COVID-19. They also had to complete the education on COVID-19 using electronic media. Providing remote training is a new approach.

Moreover, the school nurse had difficulty with case management because of the lack of student communication. The nurses' main contact during school closures was parents. During the pandemic, the requirement for school nurses to work in an unknown environment increased stress (R. Lee et al., 2021; Maughan et al., 2018).

Perceived Stress Scale

The Perceived Stress Scale (PSS) is a tool that measures the degree to which a situation in a person's life is appraised as stressful (Cohen et al., 1983). Cohen et al. (1983) developed the PSS in 1983; the scale questions are understandable, not content-specific, and ask about the feelings and experiences a person had in the last month. The PSS has reliability and validity (Cohen et al., 1983). A PSS score of 0–13 is considered low perceived stress, 14–26 is considered moderate perceived stress, and 27–40 is regarded as high perceived stress.

In one use of the PSS tool in a study with nursing students, the researcher evaluated 662 nursing students' views of the COVID-19 pandemic and their perceived stress levels. The analysis indicated that the stress levels of the nursing students increased during the pandemic (Aslan & Pekince, 2021).

Stress Reduction

Stress responses may include emotional, psychological, and behavioral components (Bellido et al., 2018). A stress response may contribute to many diseases such as cardiovascular disorders, insomnia, and digestive disorders (Bellido et al., 2018). Coping strategies can mediate stress (Bellido et al., 2018). In alignment with the Neuman systems theory, a virtual stress management program served as a secondary prevention strategy to help reduce the stressors that school nurses faced during the pandemic. Specifically, mindfulness techniques such as journaling, deep breathing, and meditation were taught throughout the virtual stress management program to help reduce stress (Larkin & Loughran, 2020).

The Neuman systems model was the conceptual framework for the project. This model describes the three levels of prevention: primary, secondary, and tertiary. The primary prevention protects the normal line of defense. The secondary prevention strengthens the internal lines of resistance, which reduces reactions and increases resistance factors. In this quality improvement evidence-based project, the secondary level of prevention primarily guided this project, which aimed to determine whether the virtual stress management intervention would impact internal lines of resistance and reduce stressors.

Stress Management Program

One of the techniques included in the stress management program was mindfulness. Mindfulness is a form of purposeful and nonjudgmental meditation (Donahoo et al., 2018; Liu, 2020). Mindfulness intervention was used during the COVID-19 pandemic, particularly breathing practices and the exercise of “being the thermostat and not the thermometer” (Liu, 2020, p. 15), meaning that the thermostat remains stable and the thermometer changes with the environment. Mindfulness has been used in the work environment to reduce stress (Liu, 2020),

such as with school administrators who used mindfulness techniques when they were experiencing stress. Mindfulness techniques reduced stress among teachers and staff, and participants received reminders about mindfulness on their phones (Donahoo et al., 2018). Liu (2020) found that mindfulness practice during COVID-19 was critical to helping school administrators reduce their stress, suggesting that a stress management program with mindfulness practices would offer the school nurse an easy way to reduce their stress.

The virtual stress program was provided to school nurses in the Northern California area. The program was advertised to school nurses, and they had an opportunity to sign up. The first meeting included the PSS and a demographic survey given to each participant. The following information was presented in the education intervention: what is stress, how to know you have stress, what is mindfulness, initial mindfulness techniques, how to use mindfulness in daily life, and how to journal, exercise, and gather resources. This program answered the PICOT question on school nurses experiencing stress during school closures and whether the implementation of a virtual stress management program increased the school nurses' knowledge related to stress management.

Conceptual Framework

The Neuman systems model provided the conceptual framework for this project. This theory focuses on the client's wellness in relation to their environmental stressors and reaction to stressors (Fawcett, 2001). This theory uses primary, secondary, and tertiary nursing interventions to retain, attain, and maintain the client's system's wellness (Petiprin, 2016). In the Neuman systems model, prevention is the primary intervention. It focuses on keeping stressors and the stress response from having a detrimental effect on the body. Primary prevention is implemented before the patient reacts to the stressor, and the secondary prevention focuses on removing the

stressors (Petiprin, 2016). For this project, a screening tool served as the primary intervention to measure school nurses' stress level. The secondary prevention intervention was implementation of virtual stress management classes.

Chapter Summary

There is limited knowledge on the school nurses' stress response to school closures during a pandemic. The school nurses' role before school closures was already complex and required direct communication with the student, parent, teachers, and health care providers. However, during the pandemic, the school nurse role became more complex when the nurse had to suddenly change to a new way of working. Nurses working in the hospital setting experienced stress related to working with COVID-19 patients, and teachers and school administrators also experienced stress from the shifts that occurred due to COVID-19. The literature review has demonstrated that school nurses too experienced stress during the school closure due to the pandemic, especially working virtually. In addition, educators used a stress management program to reduce their stress during the pandemic. Therefore, a project providing school nurses a stress management program and measuring their perceived stress before and after the program was supported by the literature.

Chapter 3: Research Methodology

This quality improvement project was designed to improve the school nurses' knowledge of stress management by providing a stress management program that includes using stress management techniques as a primary and secondary intervention strategy. This chapter describes the process of data collection and analysis of the problem of interest. The methodology includes study design, purpose, setting, sampling method, ethical approval, consent, data collection, instruments, data analysis, timeline, budget, risk, and benefits. The project was guided by the Neuman systems model of primary, secondary, and tertiary prevention (Petiprin, 2016).

Project Design

This quality improvement project consisted of a pre- and posttest design with three phases during a 1-month period: preintervention data collection, the educational intervention, and postintervention data collection. During the preintervention phase, the school nurses completed the PSS to provide data on their current stress level. After the administration of the PSS, the school nurses participated in the educational intervention phase—specifically, a weekly virtual stress management class wherein they learned various mindfulness techniques intended to help reduce perceived stress during school closures. The postintervention phase took place during the fourth week of the educational intervention. The school nurses completed the PSS to provide data on the impact of the stress management techniques.

Measurement Tool

The PSS was the measurement tool for this project. The PSS is a reliable 10-question tool (see Appendix A) that can be completed in less than 10 minutes, and it measures the extent of an individual's perceived stress in the last 30 days (Miller et al., 2020). The tool has been studied and has been shown to provide reliable data on the individual's stress level. It is a classic stress

assessment instrument that can determine proper follow-up interventions (Cohen et al., 1983). During the COVID-19 pandemic, the PSS measured student nurses' stress levels stemming from the transition from the traditional in-person learning environment to a virtual setting. The transition showed moderate amounts of stress (Aslan & Pekince, 2021). As a result, the PSS was used to compare the school nurses' level of perceived stress before and after the educational intervention. The scores are the following: 0–13 is considered low perceived stress, 14–26 is considered moderate perceived stress, and 27–40 is regarded as high perceived stress (Cohen et al., 1983).

Data Collection, Analysis, Management Plan, and Methodology

Data Collection (Population and Demographics)

The recruitment process included inviting 60 school nurses from Northern California who meet weekly on a virtual platform. The group leader provided stakeholder support of this quality improvement project and introduced the project to the school nurses. A proxy provided a demographic questionnaire and the PSS pre and postintervention data collection to ensure the confidentiality of the participants. The demographic data consisted of gender, age, ethnicity, years as a school nurse, size of the school district, and employment status (full-time, part-time, or per diem). Once the documents were received, the intervention phase commenced.

Consent. All school nurses who agreed to participate in the project were provided with an informed consent form before the planned intervention. The school nurses received an email from the DNP student who explained the project. They were allowed to ask questions, and for those who agreed to participate, the informed consent form was acknowledged before any intervention.

Inclusion Criterion. Any credentialed school nurse attending the weekly school nurse meeting in Northern California was eligible for this project.

Exclusion Criteria. Any school nurse who did not have credentials and did not work in Northern California was not eligible for this project.

Data Management

All of the data collected were kept on an encrypted, password-protected computer. No one had access to the data except for the DNP student.

Data Analysis

The data analysis began after the intervention was completed and the post-PSS was collected. The pre- and post-PSS were matched to ensure that all of the forms were returned. The data analyzed were the demographic answers and the pre- and post-PSS results. The data were entered into a Microsoft Excel spreadsheet and then imported into the SPSS software. Descriptive statistics were used to interpret the demographic data as they relate to the PSS results.

Methodology Appropriateness

Feasibility. This project was highly feasible as the school nurses' group was already in place. During the time of this project, the 2020 COVID-19 pandemic was present, and the schools were closed. As the primary investigator (PI), I obtained support from the school nurse group leader before the start of the project. The project interventions were offered during work hours and after work hours. The cost of this project was four $25 gift cards and small office supplies.

Budget. As part of implementing the project, there was a cost to providing virtual training. The school nurses were offered a drawing for a gift card at each interventional contact. The DNP student paid for all expenses.

Conflict of Interest. There was no known conflict of interest for this project. This project did not require HIPPA- or FERPA-related information to complete the study.

Institutional Review Board Approval and Process

The Institutional Review Board (IRB) of Abilene Christian University (ACU) was utilized for obtaining permission to conduct the DNP project titled *School Nursing Practice and Experience During School Closures*. The DNP student was supervised by a faculty advisor (chairperson). My training process for included Protecting Human Research Participants (PHRP) training and Ethics Core training. The date of completion of training was February 3, 2019.

I sent an email to the school nurse group (see Appendix C) to solicit nurses who were interested in participating in the training. The email included the introduction of the project and informed participants how I would prevent coercion and ensure the anonymity of the participants. To deidentify participants, they were asked to use the first two letters of their home address and the two numbers of their birthday month as a participant code. They used this same code on the demographic information for the pre- and post-PSS. The proxy collected the data electronically and matched the pre- and post-PSS. After the project, the school nurses were able to request the results of the study by email.

Interprofessional Collaboration

The interprofessional collaboration included all stakeholders, including the faculty of ACU, the DNP project chair, committee members, the DNP program director, and the IRB

committee. The chairperson for the school nurse group and the school nurses who participated in the study were also included. I was a member of the school nurse group.

Practice Setting and Target Population

The practice setting was a group of school nurses from different school districts in Northern California. The target population was credentialed school nurses who work in Northern California. They are an established group from school districts in Northern California who meet regularly in person. Their participation in the group was voluntary. At the time of this study, the credentialed school nurses group met virtually due to the COVID-19 pandemic. Approximately 60 school nurses attended the meetings at the time of study recruitment. Nonschool nurses also participated in the meetings but were not eligible to participate.

Risks and Benefits

Risks

One potential risk of this project was that the school nurses might experience overwhelming thoughts about their stress. The consent form included a statement making clear that the participants could withdraw at any time. The other risk was the school nurses' lack of comfort in participating in a virtual environment. This project had minimal emotional risk to the participants. The school nurses were provided information for contacting their school district's Employee Assistance Program.

Benefits

The participants in the project had the opportunity to increase their knowledge of reducing stress using the mindfulness methods. Postintervention, they could continue to use these mindfulness tools as a permanent change in the workplace.

Project Timeline

The proposal defense was scheduled once the chair approved the DNP student proposal. After the proposal defense was approved, it was forwarded to IRB for approval. Once IRB approval was obtained, the project was implemented. I obtained consent and then administered the demographic form and pre-PSS to the school nurses. The intervention was administered over 1 month, and the post-PSS was distributed at the last scheduled intervention. The DNP student then completed the data analysis and the balance of the project requirements. Overall, this quality improvement project took place over roughly 2 months.

Chapter Summary

This quality improvement project was implemented with school nurses located in Northern California. The project was designed to increase school nurses' knowledge of stress management techniques to reduce their stress during school closures. Before and after the intervention, the school nurses received a pre and posttest to measure their perceived stress level using the PSS-10 scale. The project had minimal emotional risk to the participants.

Chapter 4: Results

This chapter discusses the results of the evidence-based quality improvement project that used a pretest–posttest design. All nurses attending the virtual weekly nurses meeting were sent an invitation to attend the stress management program. The evidence-based quality improvement project was explained to the school nurses. The invitation included an explanation of the study, consent, PSS, and demographic forms.

Purpose of the Project

The purpose of this evidence-based quantitative project was to evaluate the public school nurses' relationships and reactions to their new work environment during the closure of schools in Northern California resulting from COVID-19. The project was designed to provide school nurses a stress management program, including mindfulness and stress-relieving techniques that may help decrease their stress level when working during school closures.

Data were collected before the stress management program began and again at the end of the program. A total of seven school nurses consented to participate in the program, and five school nurses completed the stress management program. The school nurses gave consent by reading the consent and indicating electronically that they had read and agreed to the consent. If they agreed, the demographic survey and pre-PSS were completed online with Qualtrics. A total of five school nurses completed the post-PSS with Qualtrics.

Discussion of Demographics

Overall, five respondents completed both pre- and postintervention surveys and were included in the analysis. While three (60%) of respondents were 50–59 years old, one respondent (20%) was 40–49 years old, and one respondent (20%) was older than 65 years. All (100%) respondents were female. Two of the respondents (40%) were Asian, two (40%) were White, and

one respondent (20%) was African American. While three of five (60%) reported having less than 20 years of experience as a school nurse, two (40%) had less than 10 years of experience. One respondent each (20%) reported that their school size was less than 10,000 students, less than 20,000 students, or less than 50,000 students, while two respondents (40%) were from schools with less than 40,000 students. Three of five (60%) respondents were full-time school nurses, while two (40%) worked part-time. Characteristics of respondents are presented in Table 1.

Table 1

Participants' Characteristics

Characteristic	Frequency (%)
Age	
40–49 years	1 (20%)
50–59 years	3 (60%)
> 65 years	1 (20%)
Gender	
Female	5 (100%)
Experience, median (IQR)	
< 10 years	2 (40%)
< 20 years	3 (60%)
Ethnicity	
African American	1 (20%)
Asian	2 (40%)
White	2 (40%)
School size	
< 10,000 students	1 (20%)
< 20,000 students	1 (20%)
< 40,000 students	2 (40%)
< 50,000 students	1 (20%)
Work status	
Full-time	3 (60%)
Part-time	2 (40%)

Data Analysis

To determine whether or not participants' stress as measured on the PSS was different when comparing the pre- and postintervention periods, the median scores were compared using the Wilcoxon signed-rank test. The lower the score on the PSS, the lower the participant's perceived stress level. A Wilcoxon signed ranks test was used to compare the grouped medians since the data were ordinal in form (see Table 2). The stress score was higher preintervention (median = 18.0) than postintervention (median = 17.2). However, there was no statistically significant difference between the scores (p = .104). This means the intervention did not have a significant impact in lowering the PSS posttest score (see Figure 1).

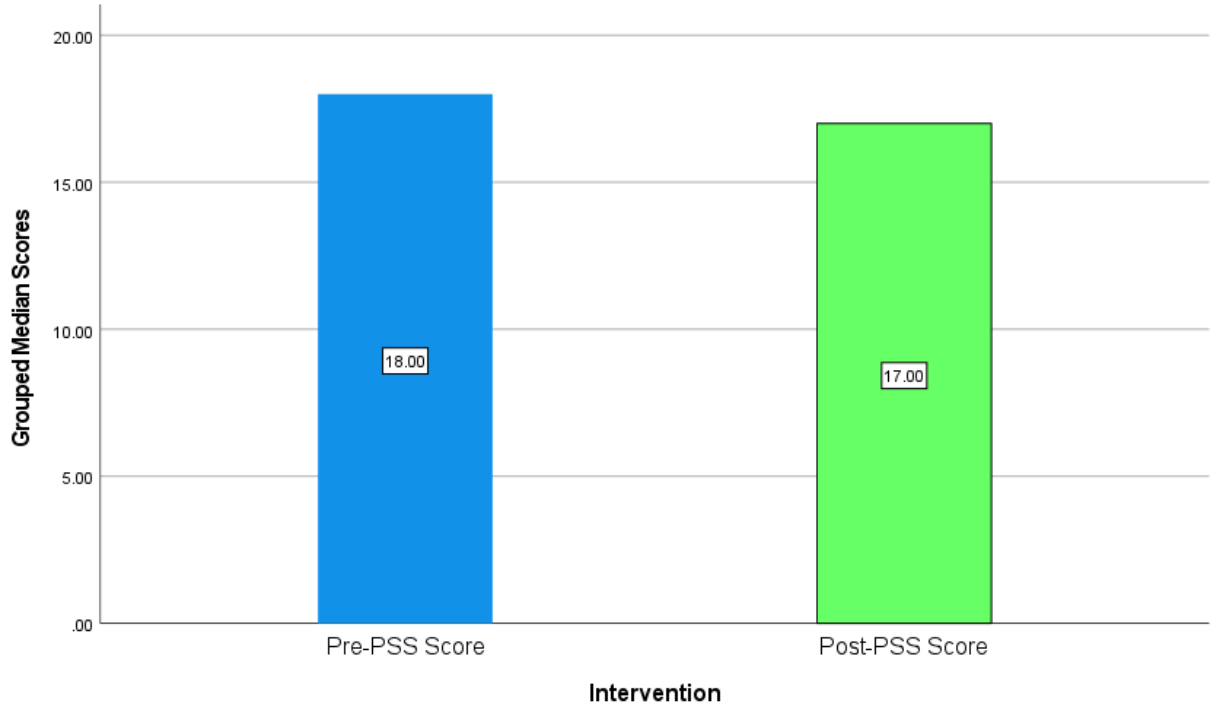
Table 2

Comparison of Stress Scores Before and After Intervention

Factor	Median pre	Median post	*p* value
Stress score	18.0	17.0	.104

Figure 1

Bar Graph of Pre- and Post-PSS Grouped Median Scores



Question Guiding the Inquiry

The PICOT question was structured to evaluate concepts identified in the problem of interest. Among (P) U.S. school nurses experiencing stress during school closures, does the (I) implementation of a virtual stress management program, (C) compared to current practice without a stress management program, (O) increase their knowledge concerning how to manage their stress (T), as measured over a 1-month interval? This evidence-based quality improvement project did not reveal that implementing a stress management program would reduce the school nurses' perceived stress over a 1-month period; therefore, the research question was not answered.

Reliability and Validity

The PSS measurement tool was an appropriate tool to use for this project because it measured the school nurses' perceived stress over the last month. The PSS tool was evaluated with a large national sample of 2,387 American adults, and the PSS demonstrated adequate internal consistency reliability (a = .78) and validity as measured by Cohen et al. (1983). The tool was easy for the nurses to complete. The school nurses did not have space for free response on the tool. Free space would have allowed them to write more information concerning their perceived stress.

The project was impacted by the limited number of participants. Participation was limited because of the COVID-19 pandemic and because many school nurses who usually attended the weekly school nurses meeting were on summer vacation. Hence, the validity of the quality improvement project was also impacted.

Chapter Summary

The DNP student conducted this project to reduce the perceived stress of school nurses during school closures after the implementation of a stress management program. The school nurses participated in a 1-month stress management program intervention. A Wilcoxon signed ranks test was used due to the low number of participants to compare the grouped medians since the data were ordinal in form. The score from this test showed there was no statistically significant difference between the two scores ($Z = –.944$, $p = .345$). This means the intervention did not have a significant impact on lowering the PSS posttest score. Even though the project was not statistically significant, at the school nurse meeting group the school nurses who participated reported learning how to manage their perceived stress during school closures.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this evidence-based quantitative project was to evaluate the public school nurses' relationships and reactions to their new work environment during the closure of schools in Northern California resulting from COVID-19. The project was designed to provide school nurses a stress management program including mindfulness and stress-relieving techniques that may help decrease their perceived stress level when working during school closures. I used the PSS to measure the school nurses' perceive stress pre- and post-stress management programs. The total number of school nurses at the beginning of the project was seven. At the end of the stress management intervention, there were five school nurses. This chapter discusses the implications for leaders, a relationship to the DNP Essentials, and recommendations for research and practice.

Interpretation of the Findings

The analysis of the pre- and post-PSS data indicated that participants' perceived stress level did not change after the stress management program. However, the school nurses did report at the school nurse meeting that they learned how to manage their perceived stress during school closures. Additionally, the school nurses received the stress management tools and resources for use in the future.

The sample size may have impacted the results of the study. As already noted, one participant did not report any changes, but a single response has an outsized influence on the analysis results when there are only five participants.

Limitations

There were a few limitations of this project. First, the sample size of five was small, which in turn affects the results of the project. One person rated their perceived stress as no

change, but a single response in a study of only five participants has considerable impact on the results. Having the project when the school nurses were on summer vacation was also a limitation, as noted earlier. Even though the project results were not significant, the school nurses did receive information on how to reduce their perceived stress and written information to take with them for future use as needed.

Implications and Analysis for Leaders

School nurses have experienced increased perceived stress during the COVID-19 pandemic, which resulted in school closures (R. Lee et al., 2021). Although this quality improvement project statistical analysis did not significantly show that the school nurses' perceived stress was lowered, evidence in the literature shows that implementing a stress management program has reduced the staff's stress as they learn techniques to assist them when changing their work environment due to the closure of schools (R. Lee et al., 2021). Leaders should consider mindfulness for school nurses as a way of helping them, as mindfulness reduces and prevents stress (Donahoo et al., 2018).

Mindfulness was identified in the literature review as a way of reducing perceived stress for school nurses. The results of the quality improvement project were statistically insignificant in lowering the school nurses' PSS scores. After the stress management program, I received emails from some of the school nurses stating they have used the tools from the project. The Essentials of Doctoral Education for Advanced Nursing Practice will be discussed below to help guide the implications of this project for nursing practice.

Essentials of Doctoral Education for Advanced Practice Nurses

Essential 1: Scientific Underpinnings for Practice. DNP graduates can address current and future practice issues, which can result in positive changes for the health of the community.

Nursing science includes knowledge from ethics and the biophysical, psychosocial, analytical, and organizational sciences as the basis for the highest level of nursing practice, which may result in new practices (American Association of Colleges of Nursing [AACN], 2006). The literature review completed for the quality improvement project revealed limited research on school nurses' reaction to abrupt school closures. The Neuman system model provides the conceptual framework for this project. This system model focuses on the clients' wellness to their environmental stressors and reactions to stressors (Fawcett, 2001). Through this essential, I have attended numerous school nurse conferences that provided the opportunity to discuss with school nurses their thoughts on working from home during the COVID-19 pandemic. The project's intended outcome was to reduce the school nurses' perceived stress by implementing a stress management program. Implementing the stress management program did not lower their perceived stress based on the data analysis. However, I completed all steps I used to create and conduct the project, and others could replicate the project.

Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking. Organizational and systems leadership are important elements for DNP graduates as they assess an organization, identify current issues, and facilitate organizational change (AACN, 2006). Through this essential, I met with school nurse leaders during the pandemic and discussed the impact of school closures on school nurses. School nurses had to make an abrupt change in their work environment without any preparation. The community and families depend on the school nurse to provide care during the day and link their primary care provider and the school (Donohue & Miller, 2020). The project's purpose was to provide a stress management program to help nurses to be able to have tools to help reduce their perceived stress

when schools are closed. The project was cost-effective as the stress management project used free tools from the internet.

Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice. Throughout my scholarly journey, I have used the clinical scholarship to analyze evidence-based literature to determine the best evidence-based practice to enhance my quality improvement project (AACN, 2006). Due to this process, I identified a gap for school nurses when schools closed due to the COVID-19 pandemic. Because of the extensive evaluation of existing literature, I determined that school nurses are experiencing stress due to the change to working at home. This project was necessary because of the limited knowledge of school nurses and school closures. The literature review was used to identify that there were limited studies on school nurses. The studies that were in the literature identified stress as one of the outcomes for school closures. This project was designed based on findings from the literature review that there were limited studies on school nurses' perceived stress and school closures. I completed statistical analyses on the data collected from this project and reviewed the intervention's outcomes.

Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care. As DNPs, we are trained in how to utilize technology to support and improve patient care; with this knowledge, we can assist with quality improvement for a health care system (AACN, 2006). Using this essential developed an electronic system for the survey that was used in this project. This process assisted me in evaluating the school nurses' response to the project, as well as the creation of the electronic stress management tools. The use of Zoom for the online part of the program was another

example of how technology played a role. Additionally, Qualtrics, Excel, and SPSS were used for data collection and analysis, which enabled the project leader to analyze the project's results.

Essential V: Health Care Policy for Advocacy in Health. The DNP graduate can create and implement and advocate for health care policy that affects the community (AACN 2006). Through my scholarly journey, I have reviewed and critically analyzed health care policies and evidence-based journals that focused on school health, quality of care, and health insurance changes. With this knowledge, I have used this information to manage changes in the school health community.

Essential VI: Interprofessional Collaboration. The DNP graduate is prepared to build collaborative teams and develop and implement practice models that enhance the standard of care for the vulnerable population (AACN, 2006). The DNP student collaborated with school nurse leaders and, after reviewing the literature, developed a stress management program.

Essential VII: Clinical Prevention and Population Health. The DNP graduate is prepared to help develop, implement, and evaluate interventions that address health promotion and disease prevention to decrease health care disparities (AACN, 2006). Through this essential, I analyzed evidence-based research and found a gap between the school nurse and school closures. The scholarly project aimed to improve school nurses' knowledge of perceived stress and reduce their perceived stress. Even though the results were not statically significant, the school nurses received stress management resources that they can use in the future during school closures.

DNP Essential VIII: Advanced Nursing Practice. DNP-prepared nurses can review many health care settings that prepare them to conduct comprehensive and systematic assessments of different complex health care situations. Additionally, they can demonstrate

advanced levels of clinical judgment, educate others in evidence-based practices to improve patient outcomes, and use analytical skills to evaluate the links between practice and organization policy issues (AACN, 2006). This essential provided me with the opportunity to attend conferences that discussed evidence-based research in school nursing. I learned from attending the school nurses conferences that there is a need for more school nurses to receive education on evidence-based practice.

Part of this essential involves guiding, mentoring, and supporting other nurses not only to achieve excellence in nursing but to involve nursing practice (AACN, 2006). I have mentored new school nurses through my doctoral journey and developed an orientation plan to assist their growth as school nurses. The school nurses who received the mentoring seem to be able to adjust to school health easier.

Recommendations for Future Research

Utilizing a larger sample size of school nurses would have changed the impact of this DNP project. Before the school nurses went on summer vacation, offering the stress management program may have helped with the sample size. The DNP student had to implement the intervention for the current study after the school year had ended. Future research could open up the stress management program to all school nurses in the state of California.

Additionally, the stress management program could be used on school nurses when they return to work when the schools reopen. It would be interesting to see if the school nurses' perceived stress after reopening schools after working from home for over 1 year would change. Furthermore, the stress management program could be offered to school nurses from other states, and researchers could analyze the differences between geographical areas.

Chapter Summary

This project did not have statistically significant results. However, school nurse leaders could use the stress management program to help school nurses reduce their perceived stress. The school nurse leaders could use this project to offer a staff development program specifically for school nurses.

The use of the SST was critical to the project because it assisted the DNP student in using a reliable and valid survey tool in the project. The low participation affected the study results, as other studies that used the PSS were able to show a reduction of perceived stress after implementing a stress management program. The use of the DNP Essentials was critical to the implementation of this project. DNP Essentials I and III were vital initially in this project. All of the other essentials guided the project. Recommendations from this project would be to implement the stress management program before the end of the school year and to offer the stress management program as a staff development day for school nurses.

References

American Association of Colleges of Nursing. (2006, October). *The essentials of doctoral education for advanced nursing practice.* https://www.aacnnursing.org/DNP/DNP-Essentials

Aslan, H., & Pekince, H. (2021). Nursing students' views on the COVID-19 pandemic and their perceived stress levels. *Perspectives in Psychiatric Care*, *57*(2), 695–701. https://doi.org/10.1111/ppc.12597

Bellido, A., Ruisoto, P., Belton-Velasco, A., & Clemente-Suarez, V. J. (2018). State of the art on the use of portable digital devices to assess stress in humans. *Journal of Medical Systems*, *42*, 100. https://doi.org/10.1007/s10916-018-0955-0

Bergren, M. D. (2017). School nursing and population health: Past, present, and future. *Online Journal of Issues in Nursing*, *22*(3), 1–1. https://doi.org/10.3912/OJIN.Vol22No03Man03

Blackmon-Jones, L. (2017). A strategy to promote successful transition to school nursing. *NASN School Nurse*, *32*(1), 50–55. https://doi.org/10.1177/1942602X16656383

California School Nurse Organization. (2017). *California school dashboard*. https://www.csno.org/assets/images/school_nurse_dashboard_2018-19_docx..pdf

Centers for Disease Control and Prevention. (n.d.). *COVID data tracker*. https://covid.cdc.gov/covid-data-tracker/#datatracker-home

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*(4), 385–396. https://doi.org/10.2307/2136404

Combe, L. G. (2020). Reopening schools during COVID-19: School nurse ethical conflicts and moral dilemmas. *NASN School Nurse*, *35*(6), 308–312. https://doi.org/10.1177/1942602x20963522

Council on School Health. (2016). Role of the school nurse in providing school health services. *Pediatrics, 137*(6), e20160852. https://doi.org/e20160852

Darnell, T., Hager, K., & Loprinzi, P. D. (2019). The impact of school nurses in Kentucky public high schools. *Journal of School Nursing, 35*(6), 434–414. https://doi.org/10.177/1059840518785954

Donahoo, L., Siegrist, B., & Garrett-Wright, D. (2018). Addressing compassion fatigue and stress of special education teachers and professional staff using mindfulness and prayer. *Journal of School Nursing, 34*(6), 442–448. https://doi.org/10.1177/1059840517725789

Donohue, J., & Miller, E. (2020). COVID-19 and school closures. *American Medical Association, 324*(9), 845–847. https://doi.org/10.1001/jama.2020.13092

Fawcett, J. (2001). The nurse theorists: 21st-century updates–Betty Neuman. *Nursing Science Quarterly, 14*(3), 211–412. https://doi.org/10.1177/08943180122108454

Fitzpatrick, B., Bloore, K., & Blake, N. (2019). Joy in work and reducing nurse burnout: From Triple Aim to Quadruple Aim. *AACN Advanced Critical Care, 30*(2), 185–188. https://doi.org/10.4037/aacnacc2019833

Green, M. S. (2020). Did the hesitancy in declaring COVID-19 a pandemic reflect a need to redefine the term? *Lancet, 395*(10229), 1034–1035. https://doi.org/10.1016/s0140-6736(20)30630-9

Haas, S., Swan, B. A., & Jessie, A. T. (2020). The impact of the coronavirus pandemic on the global nursing workforce. *Nursing Economic$, 38*(5), 231–237.

Hart, C., & Nash, F. (2020, May 19). *Coaching for teacher resilience during COVID-19: Part 1 Burnout and trauma*. RTI International Organization.

https://www.rti.org/insights/coaching-teacher-resilience-during-covid-19-burnout-and-trauma

Hennein, R., & Lowe, S. (2020). A hybrid inductive-abductive analysis of health workers' experiences and wellbeing during the COVID-19 pandemic in the United States. *PLoS ONE*, *15*(10), 1–21. https://doi.org/10.1371/journal.pone.0240646

Heuer, B., & Williams, S. (2016). Collaboration between PNP's and school nurses: Meeting the complex medical and academic needs of the child with ADHD. *Journal of Pediatric Health Care*, *30*(1), 88–93. https://doi.org/10.1016/j.pedhc.2015.09.001

Jameson, B. E., & Bowen, F. (2020). Use of the Worklife and Levels of Burnout Surveys to assess the school nurse work environment. *Journal of School Nursing*, *36*(4), 272–282. https://doi.org/10.1177/1059840518813697

Johnson, K. (2017). Healthy and ready to learn: School nurses improve equity and access. *Online Journal of Issues in Nursing*, *22*(3), 1–11. https://doi.org/10.3912/ojin.Vol22No03Man01

Jordan, T. R., Khubchandani, J., & Wiblishauser, M. (2016). The impact of perceived stress and coping adequacy on the health of nurses: A pilot investigation. *Nursing Research and Practice*, *2016*, 5843256. https://doi.org/10.1155/2016/5843256

Kaden, U. (2020). COVID-19 school closure-related changes to the professional life of a K–12 teacher. *Education Sciences*, *10*(6), 165. https://doi.org/10.3390/edusci10060165

Kirlin, J. (2020). COVID-19 upends pandemic plan. *American Review of Public Administration*, *50*(6–7), 467–479. https://doi.org/10.1177/0275074020941668

Kniffin, K. M., Narayanan, J., Anseel, F., Antonakis, J., Ashford, S. P., Bakker, A. B., Bamberger, P., Bapuji, H., Bhave, D. P., Choi, V. K., Creary, S. J., Demerouti, E., Flynn, F. J., Gelfand, M. J., Greer, L. L., Johns, G., Kesebir, S., Klein, P. G., Lee, S. Y., ... Vugt,

M. V. (2021). COVID-19 and the workplace: Implications, issues, and insights for future research and action. *American Psychologist, 76*(1), 63–77. https://doi.org/10.1037/amp0000716

Larkin, D., & Loughran, M. (2020). Holistic nursing faculty supporting nurses and nursing students on the front line of the COVID-19 pandemic. *Beginnings, 40*(5), 6–31.

Lee, J.-H., Hwang, J., & Lee, K.-S. (2019). Job satisfaction and job-related stress among nurses: The moderating effect of mindfulness. *Work, 62*(1), 87–95. https://doi.org/10.3233/WOR-182843

Lee, R. L., West, S., Tang, A. C., Cheng, H. Y., Chong, C. Y., Chien, W. T., & Chan, S. W. (2021). A qualitative exploration of the experiences of school nurses during COVID-19 pandemic as the frontline primary health care professionals. *Nursing Outlook, 69*(3), 399–408. https://doi.org/10.1016/j.outlook.2020.12.003

Lineberry, M., Whitney, E., & Noland, M. (2018). The role of school nurses, challenges, and reactions to delegation legislation: A qualitative approach. *Journal of School Nursing, 34*(3), 222–231. https://doi.org/10.1177/1059840517741526

Liu, L. (2020). Examining the useful of mindfulness practices in managing school leader stress during COVID-19 pandemic. *Journal of School Administration Research and Development, 5*(S1), 15–20. https://doi.org/10.32674/jsard.v5iS1.2692

Mattey, B. (2019). Power of the past, present, force the future part 4. *NASN School Nurse*, 45–54. https://doi.org/10.1177/1942602X18815443

Maughan, E. D., Cowell, J. M., Engelke, M., & Bergren, M. (2018). The vital role of school nurses in ensuring the health of our nation's youth. *Nursing Outlook, 66*(1), 94–96. https://doi.org/10.1016/j.outlook.2017.11.002

McCabe, E. M., Jameson, B. E., & Strauss, S. M. (2020). School nurses matter: Relationship between school nurse employment policies and chronic health condition policies in U.S. school districts. *Journal of School Nursing*. Advance online publication. https://doi.org/10.1177/1059840520973413

Miller, Y. R., Medvedev, O. N., Hwang, Y. S., & Singh, N. N. (2020). Applying generalizability theory to the Perceived Stress Scale to evaluate stable and dynamic aspects of educators' stress. *International Journal of Stress Management*, *28*(2), 147–153. https://doi.org/10.1037/str0000207

Morse, B. L., Anderson, L., Combe, L. G., Delack, S., Ondeck, L., & Homme, C. (2020). U.S. school nursing job analysis. *Journal of School Nursing*. Advance online publication. https://doi.org/10.1177/1059840520930075

Pergolizzi, J. V., LeQuang, J. A., Taylor, R., Wollmuth, C., Nalamachu, M., Varrassi, G., Christo, P., Breve, F., & Magnusson, P. (2021). Four pandemics: Lessons learned, lessons lost. *Signa Vitae*, *7*(1), 1–5. https://doi.org/10.22514/sv.2020.16.0096

Petiprin, A. (2016). *Betty Neuman's systems model*. Nursing Theory. http://nursing-theory.org/theories-and-models/neuman-systemsmodel.php

Phelps, R. (2021). What has worked in your COVID-19 response and how will the pandemic affect the profession overall? *Journal of Business Continuity & Emergency Planning*, *14*(3), 198–204. https://www.ingentaconnect.com/content/hsp/jbcep/2021/00000014/00000003/art00002

Pozo-Rico, T., Gilar-Corbí, R., Izquierdo, A., & Castejón, J. L. (2020). Teacher training can make a difference: Tools to overcome the impact of COVID-19 on primary schools. An

experimental study. *International Journal of Environmental Research and Public Health*, *17*(22), 8633. https://doi.org/10.3390/ijerph17228633

Rogers, K. (2019). Immunization noncompliance: Gauging the cause, effect, and management in the school setting. *NASN School Nurse, 34*(3), 140–144. https://doi.org/10.1177/1942602X18799868

Rothstein, R., & Olympia, R. P. (2020). School nurses on the front lines of healthcare: The approach to maintaining student health and wellness during COVID-19 school closures. *NASN School Nurse*, *35*(5), 269–275. https://doi.org/10.1177/1942602X20935612

Schwartz, J. (2018). The Spanish flu, epidemics and the turn to biomedical responses. *American Journal of Public Health, 108*(11), 1455–1458. https://doi.org/10.2105/AJPH.2018.304581

Shannon, R. A., & Yonkaitis, C. F. (2017). The role of the school nurse in the special education process: Part 2: Eligibility determination and the Individualized Education Program. *NASN School Nurse*, *32*(4), 249–254. https://doi.org/10.1177/1942602X17709505

Struthers, J. (2018). Home, hotel, hospital, hospice. In *Care Home Stories* (pp. 283–302). Transcript-Verlag. https://doi.org/10.14361/9783839438053-023

Viner, R., Russell, S., Croker, H., Packer, J., Ward, J., Stansfield, C., Mytton, O., Bonell, C., & Booy, R. (2020). School closure and management practices during coronavirus outbreaks including COVID-19: A rapid systematic review. *Lancet*, *4*(5), 397–404. https://doi.org/10.1016/S2352-4642(20)30095-X

Willgerodt, M. A. (2018). School nursing practice in the United States: An introduction to NASN infographics. *NASN School Nurse, 33*(4), 239–243. https://doi.org/10.1177/1942602X18778834

Willgerodt, M. A., Brock, D. M., & Maughan, E. D. (2018). Public school nursing practice in the United States. *Journal of School Nursing*, *34*(3), 232–244. https://doi.org/10.1177/1059840517752456WHO

World Health Organization. (2020, March 11). *WHO director-general's opening remarks at the media briefing on COVID-19*. https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020

Yonkaitis, C. F., & Shannon, R. A. (2017). The role of the school nurse in the special education process: Part 1: Student identification and evaluation. *NASN School Nurse, 32*(3), 178–184. https://doi.org/10.1177/1942602X17700677

Appendix A: Perceived Stress Scale

PERCEIVED STRESS SCALE

The questions in this scale ask you about your feelings and thoughts during the last month. **In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.**

Name _____ Date _____

Age _____ Gender (*Circle*): **M F** Other _____

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

1. In the last month, how often have you been upset because of something that happened unexpectedly?	0	1	2	3	4
2. In the last month, how often have you felt that you were unable to control the important things in your life?	0	1	2	3	4
3. In the last month, how often have you felt nervous and "stressed"?	0	1	2	3	4
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	0	1	2	3	4
5. In the last month, how often have you felt that things were going your way?	0	1	2	3	4
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	0	1	2	3	4
7. In the last month, how often have you been able to control irritations in your life?	0	1	2	3	4
8. In the last month, how often have you felt that you were on top of things?	0	1	2	3	4
9. In the last month, how often have you been angered because of things that were outside of your control?	0	1	2	3	4
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

Appendix B: Permission for Use of the Perceived Stress Scale

PERMISSION FOR USE OF THE PERCEIVED STRESS SCALE

I apologize for this automated reply. Thank you for your interest in our work.

PERMISSION FOR USE BY STUDENTS AND NONPROFIT ORGANIZATIONS: If you are a student, a teacher, or are otherwise using the Perceived Stress Scale (PSS) without making a profit on its use, you have my permission to use the PSS in your work. Note that this is the only approval letter you will get. I will not be sending a follow-up letter or email specifically authorizing you (by name) to use the scale.

PERMISSION "FOR PROFIT" USE: If you wish to use the PSS for a purpose other than teaching or not for profit research, or you plan on charging clients for use of the scale, you will need to see the next page: "Instructions for permission for profit related use of the Perceived Stress Scale".

QUESTIONS ABOUT THE SCALE: Information concerning the PSS can be found at https://www.cmu.edu/dietrich/psychology/stress-immunity-disease-lab/index.html (**click on scales on the front page)**. Questions about reliability, validity, norms, and other aspects of psychometric properties can be answered there. The website also contains information about administration and scoring procedures for the scales. Please do not ask for a manual. There is no manual. Read the articles on the website for the information that you need.

TRANSLATIONS: The website (see URL above) also includes copies of translations of the PSS into multiple languages. These translations were done *by other investigators*, not by our lab, and we take no responsibility for their psychometric properties. If you translate the scale and would like to have the translation posted on our website, please send us a copy of the scale with information regarding its validation, and references to relevant publications. If resources are available to us, we will do our best to post it so others may access it.

Good luck with your work.

Sheldon Cohen
Robert E. Doherty University Professor of Psychology
Department of Psychology
Baker Hall 335-D
Carnegie Mellon University
Pittsburgh, PA 15213

INSTRUCTIONS FOR PERMISSION FOR PROFIT RELATED USE OF PERCEIVED STRESS SCALE

Profit related use of the Perceived Stress Scale requires the permission of both the American Sociological Association (ASA) and the author (S. Cohen).

The author (S. Cohen) will grant you permission to use the PSS in printed questionnaire form, for a one-time fee of (USD) $200.00. If you plan to use it online or in an app, the fee is $200 *per year*. A lifetime permission is $900. If you are making a bank transfer (notify us and we will provide information) or through a check or money order in foreign currency, the fee is $230 USD. Our charge supports the documentation of the scale on our website (https://www.cmu.edu/dietrich/psychology/stress-immunity-disease-lab/index.html click on scales on front page) and handling of copyright requests.

The check should be made payable to:

Sheldon Cohen, [redacted]

Permission requires your completing a short form for the American Sociological Association (ASA), and paying their required fee (I think $25 for the page). The ASA form must be signed by me before submission to them.

Requests for copyright permission may use the online form. Please complete the form and send it to us (with appropriate payment as discussed above) for a signature. After receiving the form and payment, we will return the signed form to you for submission to ASA with their payment.

Please let us know if you have any questions about the scale or its interpretation. We wish you the best of luck with your project.

Sheldon Cohen

Appendix C: Solicitation Email

Hello! My name is Susie Brown, and I am conducting a research project for my doctoral degree at ACU. I am studying school nurses and their experiences during school closures. I would like to invite you to participate in my research.

To be included in this study, you must meet the following criteria:

- Be a school nurse attending the virtual school nurse meeting in northern California.

If you participate in this research, you will be asked to:

- Complete a 6-question demographic questionnaire, in which you will be asked about your age, gender, ethnicity, length of time as a school nurse, size of your school district, and your work status.
- Complete a 10-question stress instrument that can be completed in 3-5 mins. This will be electronically completed both before the class starts and at the end of the class.
- Complete a 20-minute virtual stress management class over a 4-week period. The classes will be offered at two times on Wednesdays 1:15 p.m. or 7 p.m.

If you have questions for me or would like to participate, please email me at: [redacted]. You can also call me at [redacted].

Susie Brown RN MSN

Doctoral Student

Appendix D: Project Timeline

	2020			2021									
Project Task	Oct–Nov		Dec	Jan–Feb		Mar–Apr		May–Jun		Jul–Aug		Sep–Oct	
Began development of PICOT question													
Secured research project chair and committee members													
First meeting with project chair													
Began and finalized conceptual framework													
Submitted Chapter 1 to project chair													
Finalized Chapter 1 and PICOT question													
Working Chapters 1–3 submitted to chair and committee for review. Made revisions.													
Obtained permission from the facility to use the school nurse group in the project.													
Prepared proposal defense PowerPoint slides and submitted to the committee.													
Submitted DNP research project proposal defense and proposal defense form.													

Appendix E: Recruitment Introduction Email

Hello! My name is Susie Brown, and I am conducting a research project for my doctoral degree at ACU. I am studying school nurses and their experiences during school closures. I would like to invite you to participate in my research.

All participants will be entered into a drawing for a chance to win a $25 gift card (4 cards to be given) for those who attend all virtual classes.

To be included in this study, you must meet the following criteria:

> Be a school nurse attending the virtual school nurse meeting in northern California.

If you participate in this research, you will be asked to:

> Complete two surveys, one before the class and one after. Each survey will take approximately 3-5 minutes and ask you questions related to demographic information and perceived stress.
> Complete a 20-minute virtual stress management class over a 4-week period. The classes will be offered at two times on Wednesdays **starting July 14**, the start times will be 1:15 p.m. or 7 p.m.

If you are interested in participating, please click the following link:

[redacted]

If you have questions, please email me at: [redacted]. You can also call me at [redacted].

Susie Brown RN MSN

Doctoral Student

Appendix F: IRB Approval Letter

ABILENE CHRISTIAN UNIVERSITY
Educating Students for Christian Service and Leadership Throughout the World

Office of Research and Sponsored Programs
320 Hardin Administration Building, ACU Box 29103, Abilene, Texas 79699-9103
325-674-2885

June 30, 2021

Susie E. Birden Brown
Department of Nursing
Abilene Christian University

Dear Susie,

On behalf of the Institutional Review Board, I am pleased to inform you that your project titled "School Nursing Practice and Experiences During School Closures",

(IRB#21-075)is exempt from review under Federal Policy for the Protection of Human Subjects.

If at any time the details of this project change, please resubmit to the IRB so the committee can determine whether or not the exempt status is still applicable.

I wish you well with your work.

Sincerely,

Megan Roth

Megan Roth, Ph.D.
Director of Research and Sponsored Programs

Appendix G: Demographic Data

Demographic data

Unique Code= the first four numbers of your address (add 0 if needed to total four numbers) and the first letter of the street. Example: 5667G

Unique Code_____Date

1. **Age**
   - < 39 years old
   - 40-49 years old
   - 50-59 years old
   - > 65 years old
2. **Gender**
   - Female
   - Male
3. **Ethnicity**
   - American Indian
   - Asian
   - Black or Afro-American
   - Hispanic or Larino
   - White
   - Other
4. **Length of time as a School Nurse**
   - < 5 years
   - < 10 years
   - < 15 years
   - < 20 years
   - <30 years
5. **Size of the school district**
   - < 5000 students
   - < 10,000 students
   - < 20,000 students
   - <25,000 students
   - < 30,000 students
   - < 35,000 students
   - < 40,000 students
   - < 50,000 students
6. **Do you work:**
   - Full-time
   - Part-time
   - Per-diem

Appendix H: Support Letter

April 26, 2021

To Whom It May Concern:
This letter is written confirmation of my intended support for Susie E Birden Brown, MSN, RN, regarding the Doctor of Nursing Practice Project. I understand that this project will provide a stress management program for the school nurses who attend the [redacted] School Nurses group. Also, I know that she will measure the school nurse's response to the stress management program.

It is my privilege to support Susie in her initiative to develop this project with the school nurses.

Sincerely,