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Reported impact of COVID-19 workload and stressors on school nurses' provision of care during the 2021–2022 school year: A secondary analysis of U.S. school nurse survey data

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Abstract

Many school nurses experienced increased work burden and stress during the COVID-19 pandemic. This analysis examined data from a Centers for Disease Control and Prevention cross-sectional, nationwide survey of school nurses in March 2022 to examine associations between school nurses' ability to conduct their core responsibilities and selected nurse and school factors among school nurses during the 2021–2022 school year and COVID-19 pandemic. Perceived adequate staffing and financial compensation reduced the odds of reported difficulties across all core school nursing tasks. Nurses without a registered nurse license and with higher caseloads were more likely to report difficulty in implementing specific tasks. The impact of these factors varied, with inadequate financial compensation having the largest association with school nurses' difficulty implementing all the core responsibilities. The study results improve our understanding of school nurses' challenges in implementing core school nursing responsibilities during the COVID-19 pandemic in the 2021–2022 school year.

Keywords

School nursing; School health; COVID-19; Emergency response; Policies/procedures

Introduction

During the 2021–2022 school year, almost 100% of schools in the United States were back to in-person learning (Institute of Education Sciences, n.d.) amid an unprecedented COVID-19 pandemic. School nurses nationwide were expected to resume core healthcare

services required to maintain a safe and healthy school environment for students and staff members while also taking steps to reduce transmission of COVID-19 (Howard, 2021; Long, 2022; Steed et al., 2022). To reduce transmission of the SARS-CoV-2 virus that causes COVID-19, the Centers for Disease Control and Prevention (CDC) (2021) encouraged schools to use layered prevention strategies involving school leaders, staff members, and school nurses. Recommended interventions included masking, promoting equitable access to vaccinations, offering vaccination clinics on-site, teaching proper handwashing and how to cover coughs and sneezes, offering diagnostic and screening SARS-CoV-2 testing, communicating with families about the importance of following isolation guidance for anyone who tests positive, managing SARS-CoV-2 tests and exposures, and conducting COVID-19 case investigations and contact tracing (Moss, 2021).

In many cases, school nurses led or supported the use of these interventions, in addition to their regular school nursing responsibilities, causing increased work burden and stress during the COVID-19 pandemic (Merkle et al., 2023). According to the National Association of State School Nurse Consultants (NASSNC) (2022), the additional burdens and accompanying health impacts of COVID-19 might have interfered with school nurses' core responsibilities to provide health care to students, ensure quality improvement in school health services, and act as health leaders within their schools and surrounding communities.

The purpose of this study was to examine associations between school nurses' ability to conduct their core responsibilities and selected nurse and school factors among school nurses during the 2021–2022 school year and COVID-19 pandemic. The study used anonymous data from a nationwide CDC survey of school nurses conducted in March 2022.

Background

Approximately 95,800 full-time public and private school nurses provide health services for the almost 52.5 million children ages 5–18 years who are enrolled in the approximately 130,000 public and private schools in the United States (National Center for Education Statistics, 2023; United States Census Bureau, 2022; Willgerodt et al., 2018). Health issues and medical emergencies occur at schools whether a nurse is available or not (Chriqui et al., 2019; Olympia, 2016), and multiple legal, medical, and societal factors affect the need for nurses in the school setting (Council on School Health et al., 2016). However, no federal laws currently require or regulate school nurse staffing, and the Department of Education does not track school nurse staffing across U.S. schools (Buttner, 2021). The American Academy of Pediatrics' Council on School Health et al. (2016) and the National Association of School Nurses (NASN) (n.d.) recommend that a registered school nurse be present in every school all day, every day, and CDC has suggested a ratio of one nurse for every 750 students (CDC, n.d.).

Despite these recommendations and the recognized importance of school nurses, as of 2018, only 36 states' laws addressed the availability of school nurses on campus and only Vermont requires a nurse every day that students are present (Steed et al., 2022). School nurse staffing models range from a school nurse in every school to regions of the country where the presence of a school nurse is minimal (Jameson et al., 2018; Network for Public Health

Law, 2017). A 2010 NASN survey of school nurses found that student-to-school nurse ratios varied widely, with school nurses caring for 125 or fewer students in some areas of the country and for as many as 5,100 students or more in other regions (Monsalve, 2010).

Other studies have found that school nurse staffing varies by type of school, urbanization, the poverty level of its student population, and region of the country. Most traditional public schools (84%) employ full- or part-time nurses, compared with 52% of charter schools and 35% of private schools (Buttner, 2021; Willgerodt et al., 2018). Rural schools are less likely to have adequate school nurse staffing than are schools in cities, towns, or suburbs, and schools with higher percentages of students receiving free or reduced-price lunches are less likely to have nursing support (Buttner, 2021). Schools in the West and Midwest are less likely to have nursing support, and school nurses in the South are more likely to have a licensed practical nursing certificate (LPN) than a registered nurse (RN) license (Buttner, 2021; Willgerodt et al., 2018).

While NASN and the American Academy of Pediatrics suggest school districts require school nurses to have an RN license, some school districts hire school nurses who are licensed practical nurses (LPN), licensed vocational nurses, or unlicensed assistive personnel (NASN, 2020b; Steed et al., 2022). Additionally, the nationwide school nurse shortage can lead to schools asking staff without proper medical training to perform school nurse duties, even when the state requires licensure or certification (Steed et al., 2022). RNs can delegate some but not all tasks to non-RN school nurses (National Association of School Nurses, 2020b).

School nursing responsibilities increased as the COVID-19 pandemic continued during the 2021–2022 school year. During school years without a pandemic, school nurses are already challenged to address the wide variety of health care needs in their assigned schools and among the students under their care (Dabney et al., 2017; Morse et al., 2022). The American Academy of Pediatrics and the Children’s Hospital Association (2023) jointly reported 251,781 COVID-19 cases among U.S. children for the week ending on September 2, 2021, a 240% increase since early July 2021. They jointly reported an even larger increase in cases, to 1,150,543, for the week ending January 19, 2022 - due to predominant circulation of the omicron variant - as students returned to school after the winter holiday break. Amid the significant prevalence of COVID-19 in many schools and communities, school nurses had to find new, COVID-safe ways to provide core school nursing services. Those services included direct care of acute, episodic, and chronic health concerns; health education and promotion; care coordination for chronic health concerns; interdisciplinary collaboration to address chronic absenteeism; and documentation of nursing interventions and outcomes (NASN, 2022).

Additionally, many students returned to school with increased social-emotional needs (Beal, 2021; Hertz & Barrios, 2021). During the 2020–2021 school year, many schools remained closed, had hybrid schedules, or offered remote learning to students. Although these strategies likely decreased COVID-19 cases in schools, they had unintended negative consequences for many students (Loades et al., 2020). During remote learning, students were removed from the social and emotional connections in schools and the school-based

health services offered (Bartek et al., 2021). During the pandemic, the number of students with depression, anxiety, and suicidal ideation increased significantly (Beal, 2021; Hertz & Barrios, 2021). During the 2021–2022 school year, school nurses needed to provide additional mental health support for students, including referrals for treatment (Moss, 2021).

In addition to supporting individual and population health within the school setting, school nurses can be effective partners for emergency planning and help inform decision-making and policymaking (Flaherty, 2020). However, an online survey of 747 school nurses from 43 states during late summer 2020 found that more than one-third (36.9%) reported not being included in school reopening plans for the 2020–2021 school year (Gormley et al., 2023). Many nurse respondents reported gaps between COVID-19 best practices recommended nationally and the health-related interventions planned at their local schools. For example, while 68.5% of the school nurse survey respondents said their schools required daily checks of students' temperatures, only 20.6% rated this practice as moderately or extremely useful (Gormley et al., 2023). Also, while many school nurses (70.4%) were expected to report suspected and known COVID-19 cases to the board of health, 26.9% did not know the district's plan for communicating a known COVID-19 case to the school community (Gormley et al., 2023).

During the COVID-19 pandemic, many school nurses experienced “stress from caring for students and staff with COVID-19, conflict with parents who disagreed with the schools' COVID-19 response and protocols, conflict with school administrators, and lack of funding and supplies to meet the new demands” (Lowe et al., 2023). An EdWeek Research Center survey in March 2023 (Will, 2023) found that 20% of the 2,300 school nurse respondents reported they were likely to leave their current job within the next 2 years to work for a different employer. In the same survey, about 30% reported they were likely to leave nursing entirely in the next 2 years to retire or pursue a different line of work. When asked why, 35% said they could get a higher salary, 21% said they do not have enough support from district or school leaders, and 18% said their workload is too high.

Conceptual Model

We used a literature review to develop a conceptual model of the research questions (Figure 1). The conceptual model depicts how selected school nurse characteristics and school-level factors worked through the mediators of COVID-19 and school nurse-related workload and stressors to affect school nurses' ability to complete core job responsibilities during the 2021–2022 school year. The model includes leadership support as a mediator influencing the workload and stressors and a few school-level and nurse-level factors. This conceptual model was used to develop the study questions, guide the study type, and make analytic decisions.

Methods

School Nurse Survey

Data from a 121-item online school nurse survey were used to evaluate the impact of COVID-19 on school nurses' ability to perform core responsibilities during the 2021–

2022 school year. CDC collaborated with NASN and NASSNC to distribute the online, anonymous survey to school nurses nationwide during March 7–30, 2022. NASN emailed a link to the survey to their 9,478 current members, and 59% (5,592) opened the email. NASN leaders also disseminated the survey link through their electronic weekly digest to 55,000 subscribers, some of whom are school nurses. NASSNC distributed the survey to their 75 state/regional current and retired school nurse consultant members and requested they distribute it to school nurses in their state/region. Detailed methods for conducting the survey have been described in a previous manuscript (Merkle et al., 2023). A convenience sample of school nurse survey participants voluntarily consented to participate, completed an informed consent form before taking the survey, and had the option to quit the survey at any time or decline to answer many of the questions. The school nurse survey was reviewed by CDC, deemed not research, and was conducted consistent with applicable federal law and CDC policy (e.g., 45 C.F.R. part 46, 21 C.F.R. part 56; 42 U.S.C. §241(d); 5 U.S.C. §552a; 44 U.S.C. §3501 et seq.). This study’s secondary analysis was reviewed and exempted by the University of Georgia’s institutional review board.

Dependent Variables

The dependent variables were school nurses’ self-reported ability to perform eight core school nursing responsibilities (Willgerodt et al., 2018) during the 2021–2022 school year. Survey participants were asked how COVID-19 affected their ability to conduct the following core responsibilities:

1. Providing basic health care (other than COVID-19) to students in case of injury or acute illness
2. Educating students and staff on healthy habits, such as proper nutrition and hygiene
3. Creating and/or following health plans for individuals with specific health needs (including IEP and 504 plans)
4. Teaching classes or educating students on nutrition and health
5. Dispensing students’ prescribed medications
6. Providing regular dental, hearing, and vision screenings
7. Providing training to school personnel to appropriately respond to common classroom health emergencies
8. Providing appropriate supervision for delegated care

School nurses responded either “more difficult,” “less difficult,” “the same,” or “not applicable/not part of my normal tasks.”

Independent Variables

The independent variables were the workplace and school nurse characteristics in the conceptual model (Figure 1). The workplace characteristics examined were the number of students per school nurse, perceived adequacy of staffing support for work related to COVID-19 during the 2021–2022 school year, and perceived adequacy of financial

compensation during the COVID-19 pandemic. The school nurse characteristics examined were years of nursing experience and having an RN license.

Sample Size

Because school nurses who worked less than 1 year ($n = 976$) could not compare their ability to complete the core school nursing responsibilities during the 2021–2022 school year with their ability to complete them before the COVID-19 pandemic, they were removed from the data set for this analysis. After these exclusions, the sample size was 6,995 (Figure 2).

Descriptive Analyses

We conducted descriptive analyses of school nurses' reported difficulty completing each of the eight core responsibilities due to COVID-19 during the 2021–2022 school year (Figure 3). Across all tasks, fewer than 1% of school nurses reported that the core school nursing tasks were less difficult to perform during the 2021–2022 school year. Because of this, in multivariable analyses, the responses were assessed as a binary variable describing an increase in difficulty to perform tasks. This variable was coded as 1 if the respondents reported "More Difficult" or 0 if the respondents reported "Less difficult to perform tasks" and "No change in performing tasks." If respondents reported "N/A (Not part of my usual or typical tasks)," they were not included in the corresponding multivariable models.

A standard set of factor analysis steps were followed to examine correlations and determine if any of the dependent variables should be combined. The variable combinations suggested by the quantitative factor analyses were qualitatively reviewed and resulted in the eight preliminary dependent variables being converted into five final dependent variables (Figure 4). Heat maps were developed to display the frequencies of overlapping responses and analyze the consistency of school nurses' answers across the combined variables. Sensitivity analyses were conducted to test different ways to handle inconsistent responses across the questions in the combined variable. The sensitivity analyses indicated the trends were the same; there were no qualitative differences in the results of the various options to handle responses that differed across the multiple questions in the combined variables.

Multivariable Logistic Regressions

We used multivariable logistic regressions to assess the associations between independent variables and each of the five dependent outcome variables. Separate regression models were fitted for each of the outcome variables. Full models included all selected nurse characteristics and workplace factors and were reduced using backward selection, referencing the Akaike information criterion (AIC) to find the best fit. Respondents who said all tasks within a final dependent variable did not apply to their jobs were removed (along with missing responses for that variable), creating a different sample size for each dependent variable. All analyses were completed using R (version 4.2.3) (R Core Team, 2023) and RStudio (version 2023.03.0, build 386) (RStudio Team, 2023). We used tidyverse packages (Wickham et al., 2019), psych library (Revelle, 2023), and gtsummary (Sjoberg et al., 2021) for data management and to create all tables and figures included in the results.

Results

Survey Respondents

Demographic and school workplace characteristics were provided in a previous paper (Merkle et al., 2023). The 7,971 eligible survey respondents were from all 50 states (with a range of 2 – 874 school nurses per state), the District of Columbia (6), tribal nations (2) and U.S. territories (6) and presented similar demographic characteristics to other assessments of school nursing in the United States (Merkle et al., 2023; Willgerodt et al., 2018). Of the approximately 95,800 school nurses in the United States (Willgerodt et al., 2018), about 8% took the survey. Most self-reported as female (99%) and non-Hispanic white (92%), with a median age of 49 years. Most worked in public schools (87%), and 35% worked in schools where at least 76% of students qualified for free or reduced lunch programs.

Of the 6,995 nurses included in this study, 82% reported having an RN license, and 72% reported more than 5 years of school nursing experience. More than half (52.3%) reported serving fewer than 750 students. Almost two-thirds (63%) reported inadequate staffing support related to COVID-19, and 82% felt inadequately compensated for their work during COVID-19.

COVID-19-Related Tasks

Among the school nurse respondents, 77% reported being assigned 7–14 COVID-19-related tasks during the 2021–2022 school year (Table 1). The most common COVID-19-related tasks school nurses reported being assigned were notifying parents or guardians about a COVID-19 close-contact exposure and quarantine guidelines; caring for ill or symptomatic students, teachers, or staff members suspected of having COVID-19; notifying parents or guardians about students testing positive for SARS-CoV-2 and needing to isolate; tracking student SARS-CoV-2 test results and vaccination status; contact tracing; and conducting symptom screening for students, teachers, and staff members.

Reported Difficulty Implementing Core School Nursing Tasks

School nurses also were expected to carry out core school nursing respond to support student health and wellness. Figure 3 shows school nurses' reported difficulty implementing all eight core school nursing tasks during the 2021–2022 school year due to COVID-19. Figure 4 displays how the eight core school nursing tasks were combined to create five final dependent variables for the multivariable analyses. Table 2 lists multivariable prevalence ratios of school nurses' ability to perform the five core school nursing responsibilities by workplace and school nurse characteristics. For the multivariable analysis tables, each independent variable has a reference category; all other coefficients are relative to the reference group shown.

Factors Affecting Reported Difficulty Implementing Core School Nursing Tasks

Having an RN license, fewer than 750 students per school nurse, perceived adequate staffing support related to COVID-19, and perceived adequate financial compensation were positively associated with school nurses' reported ability to carry out core school nursing responsibilities during the 2021–2022 school year. Perceived adequacy of financial

compensation during COVID-19 had the strongest association with school nurses' reported ability to carry out all five core school nursing tasks, with odds ratios ranging from 1.8–2.2. Having more than 5 years of school nursing experience did not significantly affect school nurses' ability to carry out most of their core school nursing responsibilities.

School nurses with more than 5 years of experience were 12% less likely to report difficulty dispensing student medications than were school nurses with 1–4 years of experience. The “years of school nursing experience” variable was removed from the model for most of the core tasks as it did not contribute to the model fit. Compared with school nurses without an RN license, school nurses with an RN license were 39% less likely to report difficulty providing basic, non-COVID-related health care; 64% less likely to report difficulty teaching health education; 45% less likely to report difficulty supporting team-based care; and 39% less likely to report difficulty conducting health screenings. Having an RN license was not significantly associated with school nurses' ability to dispense students' prescribed medications or to provide dental, hearing, and vision screening.

Compared with school nurses with less than 750 students in their caseload, school nurses with more than 750 students in their caseload were 36% more likely to report difficulty providing basic health care, 23% more likely to report difficulty providing health education, 65% more likely to report difficulty supporting team-based care, and 45% more likely to report difficulty dispensing student medications. The student-to-nurse ratio did not significantly predict school nurses' reported ability to conduct dental, hearing, and vision screening during the 2021–2022 school year.

Compared with school nurses who reported inadequate staffing, school nurses who reported adequate staffing were 61% less likely to report difficulty providing basic health care, 53% less likely to report difficulty teaching health education, 58% less likely to report difficulty supporting team-based care, 44% less likely to report difficulty dispensing student medications, and 60% less likely to report difficulty conducting health screenings.

Compared with school nurses who reported adequate financial compensation, the 82% of school nurses who reported inadequate compensation were 97% more likely to report difficulty providing basic health care, 120% more likely to report difficulty providing health education, 83% more likely to report difficulty supporting team-based care, 77% more likely to report difficulty dispensing student medications, and 92% more likely to report difficulty conducting health screenings.

Discussion

This study presents a novel investigation of individual and workplace factors associated with school nurses' ability to conduct their core responsibilities during the 2021–2022 school year and COVID-19 response effort.

RN License

Nurses with an RN license were less likely to report difficulty completing the core school nursing responsibilities than were nurses without an RN license. Trained registered school

nurses support student health by completing core school nursing functions during normal times and supporting specialized health and public health functions during emergencies (Steed et al., 2022; Moss, 2021). NASN (2019) advises that school districts should include a registered school nurse on their crisis teams to support emergency management planning and response; however, in an online survey of 747 school nurses from 43 states, 36.9% reported not being included in school reopening planning for the 2020–2021 school year (Gormley et al., 2023). Thirty-one states already have codified policies requiring particular degrees or licenses (typically an RN) for school nurses, and most states require school nurses to be licensed as an RN by the state board of nursing (Steed et al., 2022). The remaining 19 states could consider similar laws or policies requiring school nurses in their state to be licensed as an RN by the state board of nursing to support completion of core school nursing tasks during future public health emergencies.

Years of Experience

Having more than 5 years of experience was not significantly associated with school nurses' reported ability to complete most core school nursing responsibilities. Having more than 5 years of nursing experience was positively associated with school nurses' reported ability to dispense prescribed medications during the 2021–2022 school year. However, it was negatively associated with their ability to conduct health screenings; nurses with at least 5 years of experience were 32% more likely to report that COVID-19 made it more challenging to provide health screenings during the 2021–2022 school year (compared with those with 1–4 years of experience). The reason for this is unclear from the survey data. However, Tanner and colleagues (2024) obtained similar findings in their National Association of School Nurses (NASN) survey of school nurses' experiences during the COVID-19 pandemic. In the NASN study, greater level of education, 6 or more years of experience, and performing roles with greater responsibility or authority (school nurse administrators or consultants) were associated with increased reports of COVID-19 activities infringing upon core school nursing responsibilities (Tanner et al., 2024). It is possible that perceived self-competence differs depending on years of experience or that self-competency has a more complex association with years of experience and needs more in-depth analysis than this study allows. Additionally, medication administration is a less complex, more frequently performed, and more externally driven (i.e., dictated by health care provider) task than health screenings. Conducting health screenings, conversely, is a school nurse-driven responsibility that requires more complex and holistic care coordination, quality improvement, leadership, and community/public health activities. School nurses with more experience may be more likely to approach health screenings with a more holistic perspective, making the task more challenging to complete for those with greater experience, especially in the context of COVID-19.

Caseload

School nurses with fewer than 750 students were less likely to report difficulty with most core responsibilities. The student-school-nurse ratio was not significantly associated with school nurses' reported difficulty conducting health screenings during the 2021–2022 school year. Assigning school nurses no more than the CDC-recommended maximum of 750 students per school nurse (CDC, n.d.) might support nurses' ability to conduct core

school nursing responsibilities during future emergencies. Only 12 states recommend or require specific nurse-to-student ratios and the required ratios vary greatly, ranging from 1:500 to 1:3,000 (Steed et al., 2022). Barriers to improving school nurse staffing include a lack of funding and misunderstanding the school nurse's role (Maughan, 2009b). NASN recommends schools use student acuity and school community indicators to evaluate school nurse workloads at least annually to meet the health and safety needs of school communities (NASN, 2020a). States could pass and implement laws mandating a school nurse-student ratio of less than 1:750 and consider funding per pupil unit to support improved school nurse staffing levels (Maughan, 2009a).

Staffing Support and Financial Compensation

The conceptual model for this study (Figure 1) includes adequate staffing support related to COVID-19 and adequate financial compensation during COVID-19. NASSNC (2022) highlighted these two school-level factors when they described school nursing challenges during COVID-19. School nurses who reported adequate staffing and financial support during COVID-19 were less likely to report difficulty completing all five core tasks during the COVID-19 pandemic and the 2021–2022 school year. Perceived adequate financial compensation had the largest association with school nurses' ability to perform core school nurse duties during the COVID-19 pandemic and the 2021–2022 school year. While information from this survey does not provide insight into potential reasons for this association, a November 2021 NASN survey of school nurses found that school nurses overall and especially those with “more education, experience, and increased role authority” reported inadequate organizational support, particularly in the form of financial compensation (Tanner et al., 2024). The NASN survey also found that LPNs were more likely to receive overtime pay at a higher-than-normal- compensation rate than nurses with other licensure levels (including RNs) (Tanner et al., 2024).

As shown in Table 1, most school nurse respondents were assigned multiple, time-consuming COVID-19-related tasks during the 2021–2022 school year. Merkle et al (2023) reported that more than 50% of school nurse respondents worked more than 40 hours per typical week during the 2021–2022 school year. Schools and districts could ensure appropriate staffing support and adequate financial compensation to improve support for school nurses during public health emergencies on an ongoing basis. States and school districts' emergency response plans could include surge school nurse staffing (i.e., hiring additional staff to support school nursing responsibilities) and overtime pay for extra hours worked.

Limitations

The findings in this report are subject to several limitations. Limitations related to the CDC survey are previously described and include that a nonprobability-based convenience sample of school nurses was used, and a completion rate could not be determined (Merkle et al., 2023). Additionally, there could have been unassessed confounding factors (e.g., being diagnosed with COVID-19, changes in COVID-19 prevention strategies at their school, and stressors at home including sicknesses or deaths, lost jobs or income, or other personal issues) that also affected school nurses' reported ability to complete the core school nursing

responsibilities. Because of the cross-sectional study design, the results of this analysis can be used to assess association but not causation between the independent and dependent variables.

The multivariable analyses were based on the conceptual model for the study and did not include some factors (e.g., race/ethnicity, age, gender, school type, school location). Future quantitative analyses could explore additional variables, including demographic factors, stressors, or protective factors that were not part of this analysis. Future investigations could examine the relationship between different types and numbers of stressors and protective factors and how they affected school nurses' ability to complete essential non-COVID-19-related tasks during the 2021–2022 school year. Future efforts could also explore how workplace stressors could be reduced. Future policy analyses could assess how state- and district-level policies related to RN qualification, caseload, staffing, and financial compensation during COVID-19 affected the factors examined in this study as dependent and independent variables. Interviews and focus groups could be conducted with school nurses to offer a deeper understanding of school nurses' experiences.

Public Health Implications and Conclusions

School nurses are essential in supporting student health at schools, during public health emergencies and non-emergency times. This work examines a timely and vital topic among a critical workforce essential to the COVID-19 response. Multivariable logistic regressions showed that school nurses' ability to perform core responsibilities during the 2021–2022 school year was significantly associated with various school nurse and school level characteristics. Perceived adequacy of staffing and financial compensation reduced the odds of respondents reporting difficulties across core school nursing tasks.

The study findings underscore the importance of adequate staffing and appropriate compensation to support school nurses in effectively carrying out their vital roles, especially during public health emergencies. State legislators could help ensure that school nurses can complete their core tasks, in addition to tasks required during public health emergencies, by requiring school nurses in their states to have an RN license and schools to have no more than 750 students per school nurse. It is important that states and districts support appropriate staffing and funding for school nurses during public health emergencies.

We cannot prevent the workplace challenges that COVID-19 and other public health emergencies bring to schools and school nurses. However, states, school districts, and schools can use the information from this report to apply policies and strategies to better support school nurses during public health emergencies.

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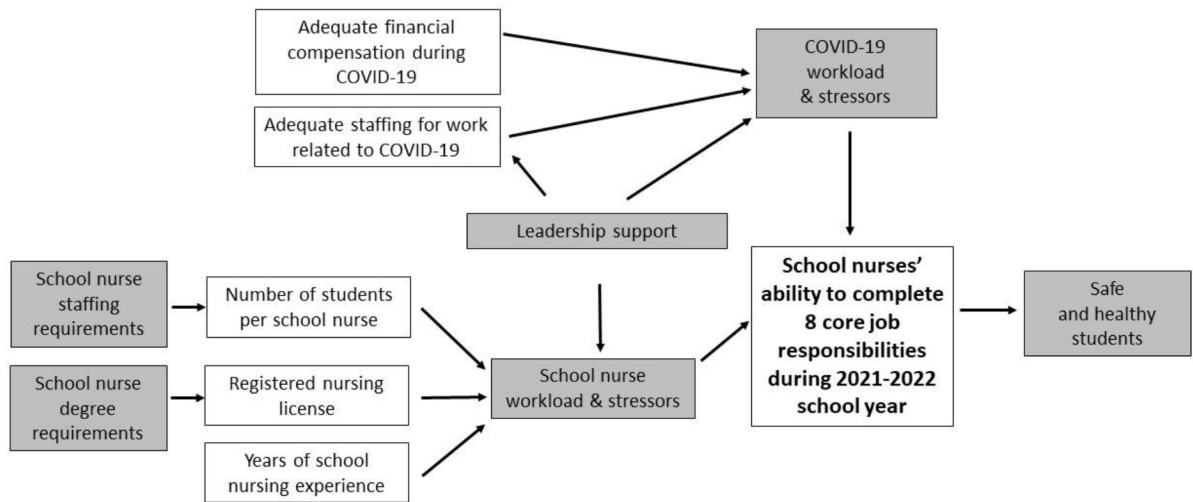


Figure 1.
Conceptual Model of Research Questions

Note. Shaded boxes are concepts that are not included in the multivariable data analyses.

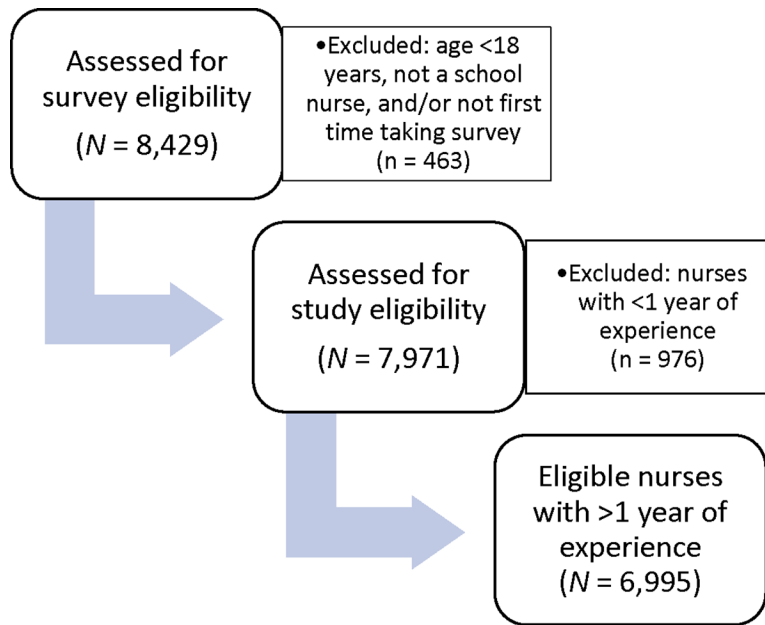


Figure 2.
CDC School Nurse Survey Respondent Eligibility for Study

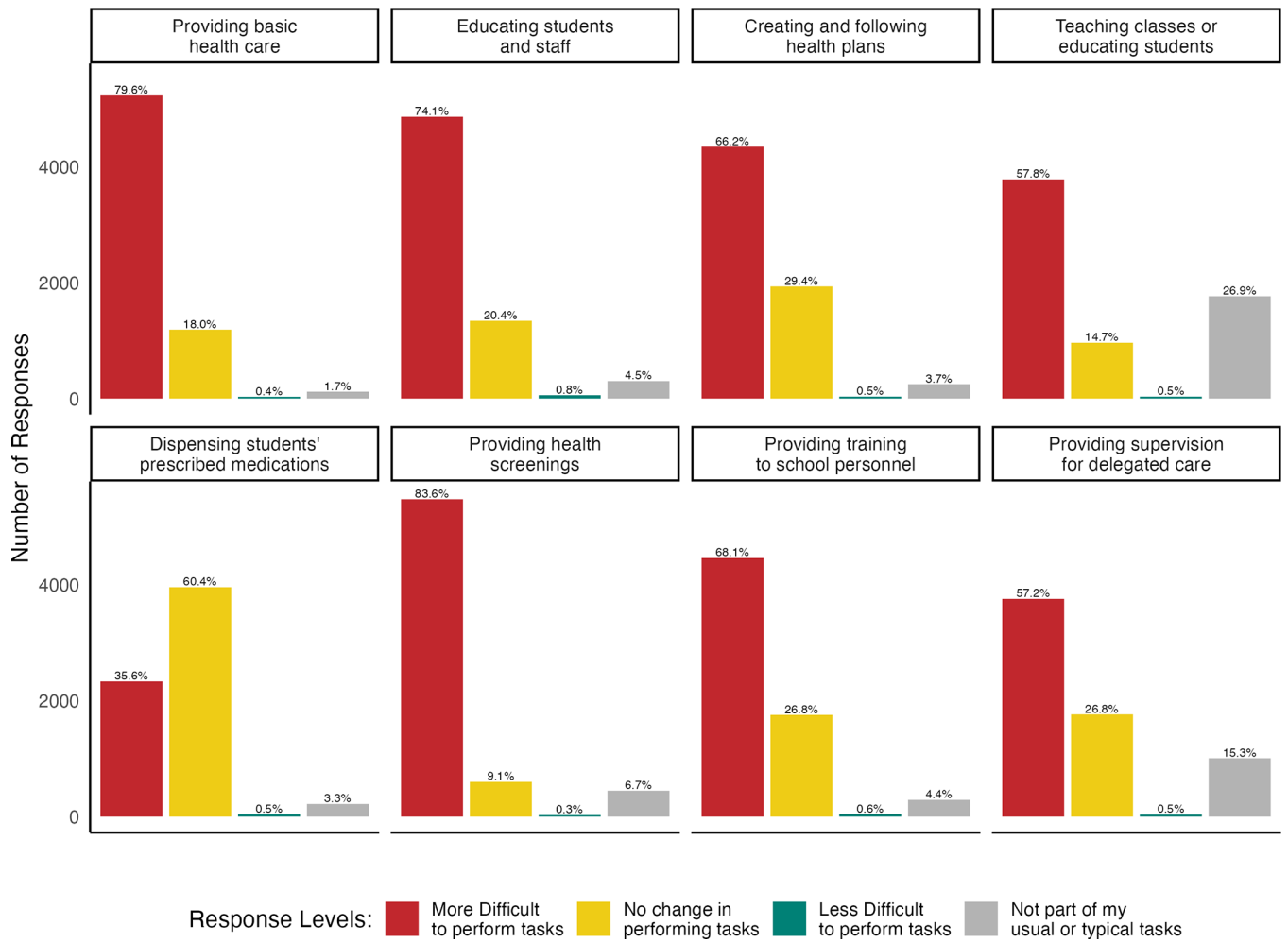


Figure 3.
 School Nurses' Reported Difficulty Implementing Core School Nursing Activities Due to COVID-19 During the 2021–2022 School Year
 Note. N = 6,995 school nurse respondents with >1 year of experience.

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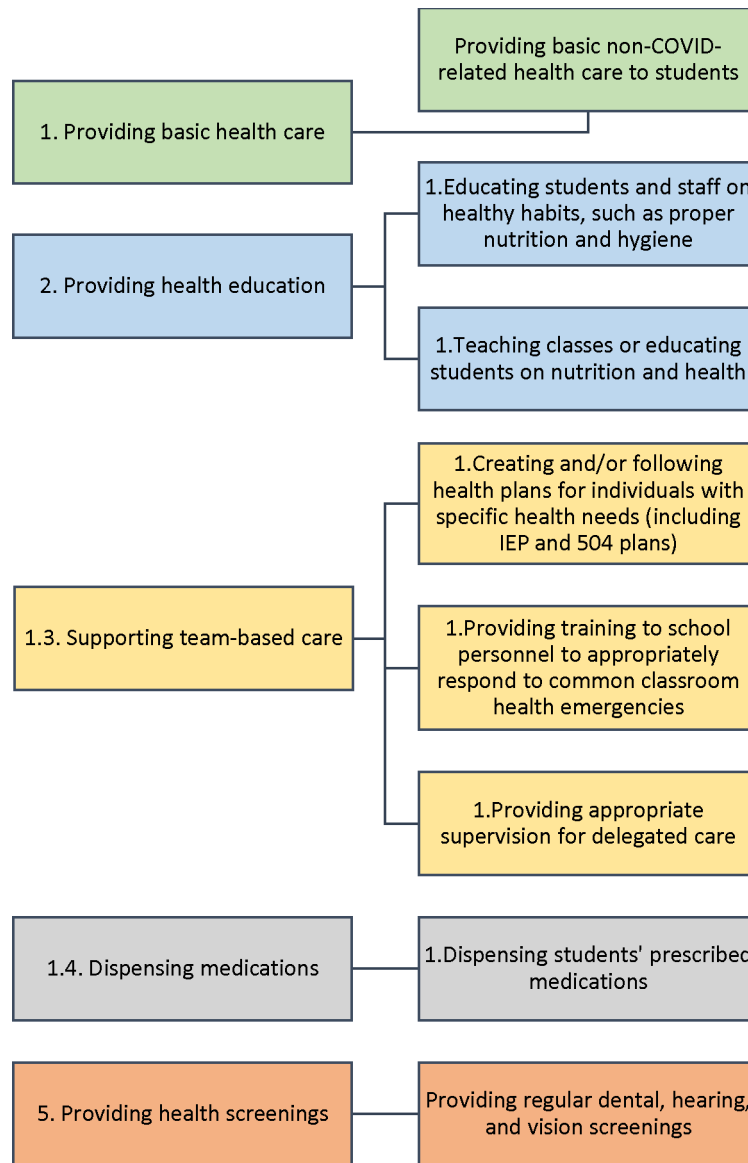


Figure 4. Final Dependent Variables Based on Factor Analyses, Heat Maps, and Qualitative Analyses

Table 1.

School Nurses' Assigned Duties Related to COVID-19 Outside of Their Normal Job Role During the 2021–2022 School Year

Characteristic	<i>n</i> (%)
Number of COVID-19 duties assigned	
0	44 (0.6%)
1–3	291 (4.3%)
4–6	1,244 (18%)
7–14	5,240 (77%)
Notifying parents of COVID-19 close-contact exposure and quarantine guidelines	6,124 (90%)
Caring for ill or symptomatic students, teachers, or staff suspected of having COVID-19	6,037 (89%)
Notifying parents/guardians about positive SARS-CoV-2 tests and isolation guidelines	6,009 (88%)
Tracking student SARS-CoV-2 test results and/or vaccination status	5,842 (86%)
Contact tracing	5,750 (84%)
Conducting symptom screening for students, teachers, or staff	5,510 (81%)
Conducting education or training activities for students, teachers, or staff related to COVID-19	4,235 (62%)
Providing information, education, or training activities for parents or the community related to COVID-19	3,934 (58%)
Helping develop or update plans relating to school closures or returning to school	3,870 (57%)
Administering SARS-CoV-2 tests	3,480 (51%)
Performing sanitation duties such as classroom disinfection	1,677 (25%)
Holding virtual office hours or telehealth activities	1,298 (19%)
Administering general COVID-19 vaccinations	978 (14%)
Other	291 (4.3%)
None of the above	44 (0.6%)

Note. N = 6,995 school nurse respondents with more than 1 year of experience; unknown = 176.

Table 2.

Associations between Selected School Nurse Characteristics and Workplace Factors and School Nurses' Reporting More Difficulty Completing Core School Nursing Responsibilities During the 2021–2022 School Year

Providing Basic Healthcare (n=5339)			
Variable	Coefficient Estimate (β)	Odds Ratio^a	p
Registered Nursing License			
No	Ref		
Yes	-.50	.61	<.001
Number of Students Per School Nurse			
<750	Ref		
>750	.31	1.36	<.001
Adequate Staffing Support Related to COVID-19			
No	Ref		
Yes	-.93	.40	<.001
Inadequate Financial Compensation During COVID-19			
No	Ref		
Yes	.68	1.97	<.001
Providing Health Education (n=5,172)			
Registered Nursing License			
No	Ref		
Yes	-1.04	.36	<.001
Number of Students Per School Nurse			
<750	Ref		
>750	.21	1.23	.01
Adequate Staffing Support Related to COVID-19			
No	Ref		
Yes	-.76	.47	<.001
Inadequate Financial Compensation During COVID-19			
No	Ref		
Yes	.79	2.20	<.001
Supporting Team-based Care (n=5,354)			
Registered Nursing License			
No	Ref		
Yes	-.59	.55	<.001
Number of Students Per School Nurse			
<750	Ref		
>750	.50	1.65	<.001
Adequate Staffing Support Related to COVID-19			
No	Ref		

Providing Basic Healthcare (n=5339)			
Variable	Coefficient Estimate (β)	Odds Ratio^a	p
Yes	-.87	.42	<.001
Inadequate Financial Compensation During COVID-19			
No	Ref		
Yes	.60	1.83	<.001
Dispensing Students' Prescribed Medications (n=5,257)			
Years of School Nursing Experience			
2-5 years	Ref		
5 years	-.13	.88	.046
Number of Students Per School Nurse			
<750	Ref		
>750	.37	1.45	<.001
Adequate Staffing Support Related to COVID-19			
Yes	Ref		
No	-.59	.56	<.001
Inadequate Financial Compensation During COVID-19			
No	Ref		
Yes	.58	1.77	<.001
Providing Health Screenings (n=5,023)			
Years of School Nursing Experience			
2-5 years	Ref		
5 years	.28	1.32	.008
Registered Nursing License			
No	Ref		
Yes	-.49	.61	<.001
Number of Students Per School Nurse			
<750	Ref		
>750	.18	1.20	0.08
Adequate Staffing Support Related to COVID-19			
No	Ref		
Yes	-.92	.40	<.001
Inadequate Financial Compensation During COVID-19			
No	Ref		
Yes	.65	1.92	<.001

Note. Respondents who said all tasks within a final dependent variable did not apply to their jobs were removed (along with missing responses for that variable), creating a different sample size for each dependent variable;

^a = Exponentiated value of the coefficient