Received: 24 October 2022 | Revised: 13 February 2023 | Accepted: 14 February 2023

DOI: 10.1111/phn.13182

PHN PUBLIC HEALTH NURSING WILEY

POPULATION STUDY

Exploration of California School Nurse perspectives on the impact of COVID-19

Nakia C. Best PhD, RN[1] | Eden Donahue DNP, RN, PHN, NCSN[2,3] | Phyllis F. Agran MD, MPH, MA, FAAP[4] | Kirsten Munk DNP, MSN, RN, NCSN[2,5] | Na'imah F. Rochelle MSN, RN[1] | John Billimek PhD[6]

[1]Sue & Bill Gross School of Nursing, University of California, Irvine, California

[2]School Nurses of California Foundation, Newport Beach, California

[3]School of Applied Health, California State Polytechnic University, Humboldt, Arcata, California

[4]Department of Pediatrics, University of California, Irvine, California

[5]School of Nursing, California State University, Sacramento, California

[6]Department of Family Medicine, University of California, Irvine, California

Correspondence
Nakia C. Best, PhD, RN, Irvine Sue & Bill Gross School of Nursing, University of California, 854 Health Sciences Quad Mail Code: 3959, Irvine, CA 92697, USA.
Email: nbest@uci.edu

Funding information
National Center for Research Resources; National Center for Advancing Translational Sciences; National Institutes of Health, Grant/Award Numbers: UL1TR0001414; NIHCEAL/STOPCOVID-19CA, 21-312-0217571-66106L

Abstract

Objective: To explore in a sample of school nurses (SN) in California the impact of the COVID-19 pandemic on school nurse health services, how school nurses mitigated the impact of COVID-19, and moral distress levels among school nurses.

Design and Methods: Nineteen ($N = 19$) school nurses who work in K-12 schools in California, USA participated in a mixed-methods approach involving qualitative descriptive design, inductive content analysis, and descriptive statistics. Interviews were conducted in August and September 2021.

Results: Five themes emerged: (1) role of the SN during the COVID-19 pandemic, (2) coordination with school administration, (3) COVID-19 related challenges and disruptions to care, (4) moral distress, and (5) coping during the pandemic.

Conclusion: The pandemic had a profound impact on school nurses. This study provides school nurse perspectives of the impact of COVID-19 on services they delivered, the unique skills of school nurses essential to mitigation strategies, and moral distress school nurses encountered during the pandemic. Understanding the important role school nurses had during the pandemic is paramount to fully contextualize the contributions they made within public health nursing practice and inform preparedness for future pandemics.

KEYWORDS
mixed-methods research, moral distress, pandemic, school nurse

1 | BACKGROUND

In response to the COVID-19 crisis, California schools closed in March 2020. Schools rapidly shifted to remote learning, requiring significant adjustments to this new "lifestyle" and associated uncertainties (Gormley et al., 2021). Students no longer had direct access to the school environment for academic instruction, social and emotional development, a place of safety, and school-supported programming fundamental to their health and well-being (Glauberman et al., 2022). Students and families were suddenly impacted by school closures because of the loss of programs such as health services for acute and chronic health conditions, behavioral health services, speech and other critical therapies, and reliable nutrition (American Academy of Pediatrics [AAP], 2022).

School nurses (SNs) are the school healthcare providers charged with advancing student well-being and academic achievement (AAP Council on School Health, 2016; National Association of School Nurses [NASN] & American Nurses Association [ANA], 2022). Grounded in public health, the SN role encompasses broad responsibilities that support student emotional, behavioral, physical, and social health

well-being (Best et al., 2021). This is accomplished through activities and services such as direct care, program and policy development, education programs for school staff, students, and families, health promotion and prevention, and care coordination between student, family, school, and home (NASN, 2016).

Even prior to the COVID-19 pandemic, SNs were overextended. The 2017 National School Nurse Workforce Study of 1062 public schools found an estimated 55.9% of SN respondents were responsible for providing school health services in two or more schools (Willgerodt et al., 2018). In 2019, the average SN to student ratio in California was 1–2410 (KidsData, 2020). SNs are forced to focus on acute issues for individual students, due to the limited time associated with a higher number of students, often across multiple school sites. SNs then have less time for proactive preventive care for the school population (Willgerodt et al., 2018).

When the COVID-19 pandemic required healthcare professionals to change how they provided healthcare services, SNs also had to pivot. SNs leveraged their experience in public health to continue their pre-pandemic core responsibilities and additional COVID-19 related functions (Gormley et al., 2021). Their new function as one of the pandemic experts needed to ensure the health and safety of the students and school community, placed SNs in a difficult position (Hoke et al., 2021).

School nurses experience moral distress when they believe they know the ethically correct thing to do, but something restricts their ability to pursue the right course of action (Silverman et al., 2021; Wocial & Weaver, 2013). The SN role and environment they work in can manifest moral dilemmas, such as lack of time to provide care or to address family requests. Powell et al. (2018) found that 97.3% of SNs experienced moral distress, and common moral dilemmas SNs experienced were positively correlated with their moral distress. The stresses of COVID-19 exacerbated moral distress among SNs as they navigated the constantly changing COVID-19 policies and guidelines, provided care in high-risk environments, and encountered numerous insults, all to protect students, school staff, and their communities (Bergren, 2021).

To our knowledge, this is the first mixed-methods study to explore experiences and measure moral distress and types of moral dilemmas school nurses in California faced during the COVID-19 pandemic. The purpose of this study was to learn more about the impact of COVID-19 on school nurses in California and to identify moral distress levels and moral dilemmas they have faced during the pandemic.

2 | METHODS

2.1 | Design

We used a mixed-methods approach for this study (Creswell & Plano, 2018). Demographics and moral distress data were first collected through an online survey. Additionally, we used a qualitative descriptive design (Sandelowski, 2000, 2010) that included criterion sampling, open-ended semi-structured interviews, and content analysis (Hsieh & Shannon, 2005). Criterion sampling guided our selection of participants with known SN experience and identifying school nurses who worked in California schools during the first year of the pandemic (2019–2020 school year). Inductive qualitative content analysis included the interpretation of narrative responses (impact of COVID-19 on their work as a SN and subjective personal meanings of how they coped during the pandemic) through a process of coding that generated categories or a typology of expressions (Hsieh & Shannon, 2005). Approval for this study was obtained from the Institutional Review Boards of University of California, Irvine. Participants gave consent at the beginning of the survey after reviewing the study information sheet, and verbally provided consent at the beginning of their interview.

2.2 | Participants

The sample included 19 participants employed as frontline nurses in California, who were employed in K-12 schools, were not solely in an administrative role, and held a clear SN services credential. SNs in California are required to hold a valid RN license, a bachelor's degree, and possess a state-issued preliminary credential to begin practicing. Upon issuance of the preliminary credential, the nurse must obtain two years of successful SN experience and complete a course of study in a program accredited by the California Commission on Teacher Credentialing within five years to earn a clear SN services credential. Recruitment efforts targeted SNs who worked in the school setting during the 2019–2020 school year. These efforts involved presentations of the study by the authors during California SN conferences and meetings, and recruitment emails sent to SNs who resided in California and were previous graduates of SN credentialing programs.

2.3 | Measures

The survey included demographic information and questions about moral distress and moral dilemmas. The Moral Distress Thermometer (MDT; Wocial & Weaver, 2013) was used to measure moral distress. Wocial and Weaver (2013) define moral distress as "when you believe you know the ethically correct thing to do, but something or someone restricts your ability to pursue the right course of action" (p. 169). The MDT is a one item, 11-point scale with varying levels of moral distress ranging from 0 (none) to 10 (worst possible). Survey instructions included a definition of moral distress, and we asked participants to indicate the level of moral distress they experienced in the past month. We also included 14 questions developed by Powell et al. (2018) to measure SN moral dilemmas. These items used five response options from strongly agree to strongly disagree. The authors of the MDT (L. D. Wocial, personal communication, March 15, 2021) and SN moral dilemma items (S. B. Powell, personal communication, March 11, 2021) were contacted and provided permission to use their items in this study.

TABLE 1 Semi-structured interview guide.

What are your experiences of working as a school nurse during the COVID-19 pandemic?
What activities/services have you provided during the COVID-19 pandemic?
Tell me about any skills you perform or services you provide that no other school employee can perform?
Describe any involvement you had in developing plans, policies, or protocols related to the COVID-19 pandemic
How have you been coping with your own health and safety?

TABLE 2 Categories, sub-categories, and definitions.

Categories	Sub-categories	Definitions
Role of the school nurse during the COVID-19 pandemic	Activities and services Policy, protocol, guideline development Skills only RNs can do and misunderstood role of the school nurse	COVID-related activities, health services, and skills conducted by school nurses; circumstances when the role of the school nurses was misunderstood or there was minimal school nurse involvement
Coordination with school administration		Positive and negative interactions or communication with school principals, vice principals, or district staff during the pandemic
COVID-19 related challenges and disruptions to care	Disruption to usual care Challenges of COVID	Disruption of normal school nurse functions due to COVID-related duties; challenges of COVID-positive cases
Moral distress		Situations when school nurses knew the ethically correct thing to do but were restricted in their ability to do so in their work as a school nurse
Coping during the pandemic		Activities or mechanisms of coping school nurses used during the pandemic

2.4 | Procedures

Data were collected and managed using Qualtrics, a secure, web-based software platform. SNs interested in our study were sent a link to the Qualtrics survey, which included the study information sheet, demographic questions, the MDT, and moral dilemma questions. Upon completion of the survey, the research assistant confirmed they had a clear SN credential, identified their geographic area of employment in California, and then scheduled the interview at a time convenient to the SN. Two authors conducted individual semi-structured interviews lasting 30–50 min. Participants were interviewed via Zoom, audio-recorded, and asked to respond to questions about their experiences working as a SN during the pandemic and follow-up probing questions (Table 1). The interview guide was developed from concepts in literature related to the pandemic including experiences of school nurses, how they coped with their own health, and moral distress in health care providers (Miles et al., 2020). They responded to these interview questions with narratives of their experiences and subjective meanings. Participants were given a $50 e-gift card. All interviews were conducted between August and September 2021.

2.5 | Data analysis

Inductive content analysis (ICA) was used to analyze the data (Graneheim & Lundman, 2004; Graneheim et al., 2017; Vears & Gilliam, 2022). Four team members independently analyzed the data. The categories and sub-categories generated from the data were continually revised iteratively (Table 2). Concurrent data analysis and data collection continued until data saturation was achieved. All the analyzed data were discussed until consensus was reached and confirmed to have been reliably interpreted.

Demographic, MDT, and moral distress data were entered into IBM SPSS Statistics Version 28.0 for descriptive statistics. To look for variability in dilemmas based on moral distress levels, the sample was divided into SNs who had high and low moral distress. Scores on the MDT greater than 4 were categorized as "high" levels of moral distress, and scores less than 4 were categorized as "low" levels of moral distress (Powell et al., 2018).

2.6 | Strategies to enhance rigor

Strategies to promote rigor included prolonged engagement, sampling adequacy and appropriateness, peer debriefing, and member checking (Hamilton, 2020). Prolonged engagement consisted of quality of time spent and building interviewer/interviewee trusting relationships to produce thick, rich data. The authors spent adequate time with participants to ensure they understood the purpose of a research study, were informed of study procedures, and as a display of respect for their SN role. Care was taken to schedule interviews on a day and time convenient for each participant. Further, quality of time consisted of a

consideration of the burden of research on participants actively working during the pandemic. Informed consent, review of survey data, and interviews were 30–50 min. All interviews were conducted with only interviewee and the first or third author present. Participants were encouraged to freely express issues and experiences related to school nursing. Interviews were recorded via audiotape and later transcribed verbatim with the first author and a research assistant reviewing each transcript for accuracy.

Sampling adequacy and appropriateness was determined by data saturation and whether participants enrolled in the study were representative of a larger population or, at a minimum, captured the range of variables known to influence a particular experience (Merriam & Tisdell, 2016). The SNs participants varied according to location in California, education, years of RN and SN experience, and SN-to-student ratio. Member checking is grounded in the assumption that individual memory and meanings ascribed to an experience are constant (Hamilton, 2020). Post interview, member checking assumes that participants are willing to engage in the recall of a stressful life event, which is likely an added burden during the research process. In this study, member checking was conducted with members of the target population during the process of data collection and drafting of this paper for the purpose of the interpretation of findings, generation of categories, and accuracy of conclusions.

3 | RESULTS

3.1 | Participant characteristics

The interviews included in this study are from 19 SNs in California, all of whom completed a survey and participated in individual semi-structured interviews. The participants were primarily employed full-time in California public schools ($n = 18$, 94.7%) and female ($n = 17$, 89.5%). Fourteen (73.6%) participants identified as White, two (10.5%) as Filipino, one (5.3%) as Black, one (5.3%) as Asian Indian, and one (5.3%) as Chinese. Fifteen (78.9%) participants had graduate degrees and 13 (68%) were certified in public health. On average, they had worked 22 years as a nurse and an average of 10 years as a SN. The average SN to student ratio for these participants was 1 to 2414 students, and 16 (84.2%) participants served multiple schools. All participants responded to the Moral Distress Thermometer (MDT) question, which was a scale from 0 (none) to 10 (worst possible) (M = 5.8) and fifteen (78.9%) of the participants reported their level of moral distress between uncomfortable and worst possible. Participant characteristics are summarized in Table 3.

The percentage of the SNs' responses to each moral dilemma question is shown in Table 4. The common dilemmas SNs experienced were "unable to provide care due to workload," "unable to provide care due to lack of time," "unable to provide preventive care," and "unable to provide case management due to workload." The least common dilemmas were "unable to provide care due to lack of referral services" and "don't have a private space."

TABLE 3 Characteristics of study participants ($N = 19$).

Characteristic	*n* (%)
Gender	
Female	17 (89.5)
Male	2 (10.5)
Race/ethnicity	
African American	1 (5.3)
Asian Indian	1 (5.3)
Chinese	1 (5.3)
Filipino	2 (10.5)
White	14 (73.6)
Hispanic, Latino, a/or Spanish origin	2 (10.5)
Highest degree earned	
Bachelor's degree	4 (21)
Master's degree	13 (68)
Doctorate	2 (10.5)
Public health nurse certification	13 (68)
Nursing experience	
Less than 10 years	2 (10.5)
10–15 years	5 (26.3)
Greater than 15 years	12 (63.2)
School nurse experience	
Less than 10 years	10 (52.6)
10–15 years	8 (42.1)
Greater than 15 years	1 (5.3)
Number of students	
<500	2 (10.5)
500–1000	1 (5.3)
1001–2000	5 (26.3)
2001–3000	3 (15.8)
3001–4000	4 (21.1)
4001–5000	2 (10.5)
>5000	2 (10.5)
Number of schools	
1 school	3 (15.8)
2 schools	2 (10.5)
3 or more schools	14 (73.7)
Full-time employment	18 (94.7)
Lead/coordinating nurse	12 (63.2)
Moral distress level per MDT categories	
>6–10 (greater than distressing to worst possible)	10 (52.6)
>4–6 (greater than uncomfortable to distressing)	5 (26.3)
>2–4 (greater than mild to uncomfortable)	2 (10.5)
0–2 (none to mild)	2 (10.5)
Moral distress level per MDT, mean ± SD	5.8 ± 2.1

Abbreviations: MDT, moral distress thermometer; SD, standard deviation.

TABLE 4 Percent agreement of responses to moral Dilemmas for participants with high and low levels of moral distress ($N = 19$).

Moral Dilemmas	Total Group (%)	High MD (%)	Low MD (%)
Not enough time to provide care students with chronic illness	78.9	63.2	15.8
Pressure from administration	68.4	57.9	10.5
Unable to provide care due to workload	94.7	73.7	21.1
Unable to provide care due to lack of time	94.7	73.7	21.1
Concern students with chronic illness do not receive needed care	63.2	52.6	10.5
Unable to address family requests due to lack of time	73.7	57.9	15.8
Unable to address staff requests due to lack of time	73.7	52.6	21.1
Pressured to not interrupt class to provide needed care	63.2	52.6	10.5
Unable to provide preventive care	89.5	73.7	15.8
Unable to provide care due to lack of school resources	68.4	52.6	15.8
Unable to provide care due to lack of referral services	57.9	47.4	10.5
Unable to provide case management due to workload	89.5	68.4	21.1
Unable to achieve goals for student due to family situation	63.2	52.6	10.5
Don't have a private space	57.9	47.4	10.5

Abbreviation: MD, moral distress.

3.2 | Qualitative analysis

The following section describes experiences from school nurses who were working in California K-12 schools during the COVID-19 pandemic, including brief quotations. Five categories were found to represent the SN experience: (1) role of the SN during the COVID-19 pandemic, (2) coordination with school administration, (3) COVID-19 related challenges and disruptions to usual care, (4) moral distress, and (5) coping during the pandemic. Table 2 summarizes the categories, sub-categories, and definitions.

3.2.1 | Role of the school nurse during the COVID-19 pandemic

Activities and Services. A major change for SNs was the increased responsibilities. Participants described the types of pandemic-related activities and services they provided for students, school staff, families, and the community.

> "Everything from the PPE [personal protective equipment], training, COVID contact tracing, going to the meetings, updating everything on the website or getting it to that person saying you got to change this, you got to change that. Calling County when they have questions. Educating. It's everything."

School nurses also conducted activities that ensured students had continued access to nutrition and personal hygiene supplies.

> "School nurses, we did not stop working. We not only provided the school health support but also food distribution sites. We were all staffing our schools when food was being distributed to families. We also had feminine product distribution sites because our girls, you know, again in Title I schools, in particular, would get their supplies at school, and we had to bring the supplies to them because they couldn't be in school."

Policy, protocol, guideline development. This sub-category is exemplified by SN involvement in developing COVID-related policies and protocols. One participant expressed frustration about not being involved initially in planning.

> "At the very, very beginning we weren't at the table [planning meetings]. Our team—the nursing team—wasn't at the table much in the very beginning… they quickly realized that they needed someone who understood the medical aspect of it, and so then they brought our team in."

Conversely, another participant described how they were extensively involved in COVID-19 protocols and guidelines.

> "I worked with the administration tightly and we developed all the plans for reopening. And also, the other agency that was instrumental in providing recommendations and was really at the forefront. A lot of what I brought to the table for our admin team came from the California School Nurse Organization and the data that they had gotten together about how best to reopen schools."

Skills only RNs can do and misunderstood role of the school nurse. During the pandemic, school districts employed additional health staff, such as unlicensed assistive personnel or licensed vocational nurses. However, certain duties and skills fall exclusively within the scope of practice of the credentialed school nurse. Participants spoke about their role in ensuring services for students were maintained during the pandemic and specific skills they conducted as a RN. One participant described the skills they utilize as a school nurse and difficulty they have encountered with others misunderstanding the role of the SN:

> "Well, I'm the only registered nurse on site, and so I'm the only one who can do any kind of actual assessment. I'm the only one that can sit in for [Section] 504 plans,

who can write up emergency healthcare plans, who can train staff on seizure protocols, medication, those kind of things…And people look at us like we don't know what we're talking about. I'm graduate level educated, you know? I know what I'm talking about. And, just, the amount of disrespect. I love the case management aspect, the advocacy aspect, the educational aspect of school nursing. I'm the bridge between the medical and the educational. That's what I want to be able to do, and I can't now."

3.2.2 | Coordination with school administration

Participants expressed both positive and negative experiences with school administration. One participant discussed how the pandemic revealed the expertise of SNs and how they could positively contribute to the school administrative team.

> "I know our school – their admin team is pretty tight, and so to kind of be invited into that, my colleague and myself, that was not something that they would normally do. I think they kind of see what we bring to the table. Whether or not they always agree, but we're there, so they listen, so that's good."

Another participant described resistance to including SNs on the team.

> "The nurses I didn't think took a leadership role. You weren't allowed to take a leadership role, you just weren't even included in enough of the information, or enough of the planning…It would have taken a really assertive nurse to say, okay we're going to do this. We want to sit on this team, we're going to be the leader of this team, this is the way we are going to do this. But it was immediately made into an HR [human resources] problem, and nurses were way down the line."

3.2.3 | COVID-19 related challenges and disruption to care

Disruption to usual care. Major stressors for SNs included how COVID-related duties disrupted usual SN functions, such as annual health screenings. *"…now we've got kids that have been in school… they're in their second year and we still don't know if they can see and hear, you know, the little ones…the kids who started school in 2019, we've never tested them."* Another participant voiced concern that they could possibly miss a child's illness or signs of abuse due to the disruption the pandemic caused in the school setting: *"It's just having time for kids, having time for kids and parents. I always worry that I might miss that sign that a kid is getting abused at home. That's always at the back of my mind because of business. We're just trying to get through it."*

Participants responsible for students with disabilities/chronic health conditions described how they struggled to fulfill duties related to care plans and educating teachers: *"I have a student who is on several medications. She's G-Tube fed. She gets catheterized every day. So, I mean, definitely stay on top of their care plans. And not only that, informing the teachers and letting them know what they need to know as a teacher with that special needs student [student with a disability/chronic health condition]. I'm not meeting that duty of mine."*

Challenges of COVID. All participants experienced challenges in their professional and/or personal lives due to the pandemic. One participant explained how conflict arose with parents and school board members:

> "being you know an advocate for kids in a hostile – it's hostile, in a hostile environment…You know, trying to do what's best when parents don't agree, when your [school] board doesn't agree, when – at least my superintendent agrees, but it's constant conflict. That's been the hardest." One participant described how they constantly increased work hours to complete everything, despite their own health: "I'm gonna get it all done at my own health and my own expense, you know, 'cause I just – so, my work days went from, you know, 7 ½ hour work days to like 10 easily."

3.2.4 | Moral distress

Participants described feeling that no matter how hard they were working, they still were not meeting the needs of the students and families: *"…it was trying to do the best you can and working so hard and so many hours and you still felt like you weren't doing a good enough job."* There were instances when SNs were not prioritized to receive COVID-19 vaccines early. One participant described continuing to work in the school setting, despite not being vaccinated, because they wanted to ensure students could continue to attend school in person: *"…and I went back and worked in the quarantine room without vaccination despite my age, which is taking a pretty big…thing for me to do. But I really believe that as nurses we did have an obligation to help the kids stay in school."*

3.2.5 | Coping during the pandemic

Participants spoke of the strategies they used during the pandemic to cope, including building connections, reflecting on what keeps them going, and setting boundaries. One participant described how the bonds they built with students and families helped them keep working: *"And what keeps me going is the children really, the students, because working as a school nurse, I have the opportunity to see these children grow, get to know the families that have entrusted me, and so I have a connection with them, and I don't want to let them down, which is why I'm still here."*

Another participant discussed how they learned to set boundaries and how the school administrator assisted them with prioritizing:

"Yeah, you have to just limit yourself to work hours, so you can have time for your life. And she's [school principal] *like, "You know, the other stuff is not emergency. Like, paperwork is not emergency. It's gonna wait for you." So, she tried to kind of rein me in because I was really spending a lot of time…So, somebody seeing that or knowing that I made a difference there, that matters."*

4 | DISCUSSION

This study began in the middle of the ongoing COVID-19 pandemic. During data collection for this study in August-September 2021, California SNs were reflecting on their first year of the pandemic and preparing for the upcoming reopening of schools for the 2021/2022 school year, amid the spread of the Delta variant. The findings of this study show that SNs who work on the front lines in the school setting are essential to mitigating the impact of COVID-19 on students, families, and school staff. Participants in this study referred to how the SN role expanded to meet the needs of their assigned schools, leadership and advocacy, situations that led to moral distress, and how they have been coping during the pandemic.

The State of California was a pioneer in implementing mitigation measures to slow the spread of COVID-19, including required vaccines and vaccine verification for healthcare workers, universal masking in K-12 settings and indoor public settings, and vaccination incentives (State of California, 2021). The findings of this study highlight the COVID-19 related activities and services California SNs provided, in addition to their routine duties. New responsibilities included organizing isolation rooms for actual and suspected COVID-19 cases, triaging students and providing/connecting to medical care, COVID-19 screening and testing, contact tracing, vaccine clinics, and developing new policies and procedures to manage the pandemic. Similar to Lee et al. (2021) and Hoke et al. (2021), we found that SNs also assisted students, families, and school staff with guidance and education regarding COVID-19. The COVID-19 pandemic brought about a heightened sense of responsibility to support students, families, school staff, and communities among all administrators, staff, students, and parents. School nursing practice requires SNs to communicate and collaborate at multiple levels and partner with community organizations (Fleming & Willgerodt, 2017). To meet everyone's needs and to ensure students' abilities to continue achieving positive health and academic outcomes, SN participants highlighted the importance of consistent communication and collaboration within their schools and outside agencies. In many cases, the pandemic helped to strengthen communication among school teams. School nurses helped create a safe environment by providing clear explanations of new policies, which increased the parents and school staff confidence in the school's decision-making process during an uncertain time (Combe, 2020). School nurses should continue to expand relationships with local and state public health departments and departments of education to confer on the current pandemic and future outbreaks.

Schools were faced with a complex pandemic for which they were not prepared. Federal, state, and local guidelines relied on basic public health interventions that were constantly changing based on new data and information. The front-line SNs, trained in managing infectious diseases, were in the best position to guide the protocols and policies within their own schools, mindful of the demographics and needs of their school population (Um & Choi, 2022). We found that some SNs had a significant role in implementing school safety measures and school reopening planning. However, not all SNs had similar experiences. In some cases, SNs felt their decisions were undermined. These were missed opportunities for some schools to utilize the expertise of SNs (Gormley et al., 2021), while others embraced this as an opportunity to include SNs in the leadership team.

According to our study participants, over the course of the pandemic, some school administrators and policy makers understood the unique skills of the SN, their capacity, and value. Our study participants pivoted and prioritized their responsibilities to manage a pandemic, mindful of the needs of all their students, including those with medical, educational, and social needs. As the pandemic evolved, SNs identified themselves as critical participants in managing the pandemic and establishing policies and protocols to prepare for school reopening as safely as possible.

For some SNs, pandemic management was the first time they were actively involved in ongoing policy efforts. They embraced the opportunity to expand their leadership role. Several SNs expressed this was the first time they felt their health-related expertise was fully valued and being utilized and relied upon at a district-wide level. This type of involvement in leadership at the policy level, is an example of SNs practicing to the full extent and scope of their practice – one of the key desired outcomes identified in the recent Future of Nursing 2020–2030 report (National Academies of Sciences, Engineering, and Medicine [NASEM], 2021). Several SNs discussed participating in advocacy efforts with their unions and/or administrators to increase health staff to support contact tracing and school-based testing. This study brings to light, the need for continued advocacy at all levels from boards of education to administrators, staff, and parents, and more training in advocacy and policy development for school nurses.

Although many SNs embraced their new leadership roles during the pandemic, some participants reflected on the added pressure of being the SN and, often the only, healthcare professional in the school setting. During a time of uncertainty, school closures, and a transition to online learning, SNs were working overtime to keep their students, staff, and community safe. The quickly changing guidelines and policies related to the pandemic caused many SNs to feel as if they were failing, despite working extra hours. The ever-changing COVID-19 policies have caused unintended mental health consequences of burnout, stress, and depression in front-line healthcare workers (Limoges et al., 2022). Collaboration and transparent communication among school administrators and school nurses to develop and implement policies can increase sense of control and improve the confidence of school nurses in their decision making (Berger et al., 2021; Manzano Garcia & Ayala Calvo, 2021)

Among notable findings was that 79% of participants reported moral distress as uncomfortable, distressing, or worst possible. Also,

95% of participants encountered moral dilemmas related to their workload and lack of time restricting them from providing care. The pandemic caused internal stress for SNs as there was conflict between their personal and professional expectations. SNs discussed the impact of weighing professional duties over personal safety. The dichotomy between serving the community and a lack of resources, within the context of a pandemic, caused many healthcare professionals to contemplate leaving the profession (Raso et al., 2021). Additional quantitative research should consider comparisons of school nurse pandemic experiences and intention to leave.

The stressors from the COVID-19 pandemic are expected to amplify mental health issues and turnover rates among healthcare workers (Awan et al., 2022). As COVID-19 becomes a regular aspect of school health services, there needs to be a recognition of the collective trauma experienced by society, healthcare professionals, school communities, and SNs, a small sector of healthcare professionals who work within school communities (Sanchez-Gomez et al., 2021). SNs can find strength and support among other SNs to help each other through the shared traumatic experience of providing school health services during the pandemic.

Although SNs discussed an obligation to the school community, many SNs recognized the importance of coping on a personal and professional level. During a time of global turmoil and change, SNs recognized the need for coping as a means of self-preservation. SNs identified a variety of groups that were central to their coping process: self, students/families, coworkers, professionals, family, friends, and animals/nature. Across these groups, SNs recognized the importance of connection, appreciation, and boundary setting. Other school nurses can use connections, appreciation, and boundaries as stabilizing factors to stay in the profession despite high levels of stress (Hossain & Clatty, 2021).

SNs are already starting to embody the principles to overcome the moral distress caused by the COVID-19 pandemic but many of these stressors were present before the pandemic (Powell et al., 2018). SNs, like other sectors of the healthcare system, need to be supported through policies, resources, and recognition to lessen the detrimental impact of the COVID-19 pandemic on the school nursing profession and ensure quality school health services for communities (Bergren, 2021; Office of the Surgeon General, 2022).

Magnified by the pandemic, burnout and professional wellness which includes the stressors identified in this study has received global attention. It is recognized as a systemic problem which requires a systemic approach (van Niekerk et al., 2023). SNs and school communities need to incorporate coping strategies as one component of a broad-based systemic intervention into practice for SNs to continue to optimally serve their students, families, and communities.

4.1 | Strengths and limitations

The research team ensured findings were "data rich and trustworthy" by using qualitative methodological strategies, including prolonged engagement and persistent observation (Graneheim et al., 2017). We spent quality time with the participants to develop trusting relationships between interviewer/interviewee. Our research team included SNs who were involved in each step of the study. We also utilized member checking with SNs who practiced in California during data collection. We determined adequate sample size when the data were saturated (Morse, 2015). Although generalizability is not a focus of qualitative studies, we also considered the sample was adequate after recruiting SNs representative of each of the California School Nurses Organization's six regions across the state.

We interviewed SNs as they were beginning the 2021–2022 school year. We must consider that perspectives may have been different if collected in a different time period. Only two male SNs were interviewed. SNs are predominantly female, however this is a limitation of the study. We were fortunate that although few in number, the male participants in the study were open about their experiences and the information they shared did not greatly differ from the female participants in the study.

5 | CONCLUSION

The pandemic had a profound impact on SNs. This study provides SN perspectives of the impact of COVID-19 on services they provided, the unique skills of SNs essential to mitigation strategies, and moral distress SNs encountered during the pandemic. School nursing is grounded in public health. They are critical to public health initiatives, as they provide care for students, families, and communities. Understanding the school nurse role during the pandemic is paramount to fully contextualize the contributions they made within public health nursing practice and inform preparedness for future pandemics.

ACKNOWLEDGMENTS

The authors would like to thank California school nurses who work every day to improve the lives of school-aged children, and School Nurses of California Foundation for their support in the work of school nurses. We would also like to acknowledge Dr. Jill B. Hamilton for her expertise and feedback in preparing the manuscript. The project described was supported by the National Center for Research Resources and the National Center for Advancing Translational Sciences, National Institutes of Health, through Grant UL1 TR0001414 and NIH CEAL/STOP COVID-19 CA Grant Number 21-312-0217571-66106L. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

DATA AVAILABILITY STATEMENT

Research data are not shared.

ORCID

Kirsten Munk DNP, MSN, RN, NCSN https://orcid.org/0000-0002-8029-4218

REFERENCES

American Academy of Pediatrics. (2022). *COVID-19 guidance for safe schools and promotion of in-person learning*. Retrieved October 21, 2022, from https://www.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/covid-19-planning-considerations-return-to-in-person-education-in-schools/

American Academy of Pediatrics Council on School Health. (2016). Role of the school nurse in providing school health services. *Pediatrics*, *137*(6), e20160852. https://doi.org/10.1542/peds.2016-0852

Awan, S., Diwan, M. N., Aamir, A., Allahuddin, Z., Irfan, M., Carano, A., Vellante, F., Ventriglio, A., Fornaro, M., Valchera, A., Pettorruso, M., Martinotti, G., Di Giannantonio, M., Ullah, I., & De Berardis, D. (2022). Suicide in healthcare workers: Determinants, challenges, and the impact of COVID-19. *Frontiers in Psychiatry*, *12*, 792925. https://doi.org/10.3389/fpsyt.2021.792925

Berger, L., Berger, N., Bosetti, V., Gilboa, I., Hansen, L. P., Jarvis, C., Marinacci, M., & Smith, R. D. (2021). Rational policymaking during a pandemic. *Proceedings of the National Academy of Sciences*, *118*(4), 1–7. https://doi.org/10.1073/pnas.2012704118

Bergren, M. D. (2021). School nurses' moral distress amid COVID-19. *The Journal of School Nursing*, *37*(6), 419–420. https://doi.org/10.1177/10598405211056570

Best, N. C., Nichols, A. O., Oppewal, S., Pierre-Louis, B., Waller, A. E., Zomorodi, M., & Travers, D. (2021). An appraisal of school nurse health services and programs in North Carolina public schools, 2006–2016. *The Journal of School Nursing*, *37*(3), 146–156. https://doi.org/10.1177/1059840519899439

Combe, L. G. (2020). School nurses: Living the framework during COVID-19. *NASN School Nurse*, *35*(4), 183–187. https://doi.org/10.1177/1942602%D7;20929533

Creswell, J. W., & Plano, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Sage Publications.

Fleming, R., & Willgerodt, M. A. (2017). Interprofessional collaborative practice and school nursing: A model for improved health outcomes. *The Online Journal of Issues in Nursing*, *22*(3). https://doi.org/10.3912/OJIN.Vol22No03Man02

Glauberman, G., Wong, D. K., & Qureshi, K. (2022). Experience of parents of preschool children in Hawaii during the COVID-19 pandemic. *Public Health Nursing*, *39*(5), 949–957. https://doi.org/10.1111/phn.13076

Gormley, J. M., Poirier, V., Hassey, K. A., Van Pelt, M., & Ye, L. (2021). School nurses' reports on reopening roles, practices, and concerns during the COVID-19 pandemic at the start of the 2020–2021 school year. *The Journal of School Nursing*, 105984052110548, https://doi.org/10.1177/10598405211054805

Graneheim, U. H., Lindgren, B. -M., & Lundman, B. (2017). Methodological challenges in qualitative content analysis: A discussion paper. *Nurse Education Today*, *56*, 29–34. https://doi.org/10.1016/j.nedt.2017.06.002

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, *24*(2), 105–112. https://doi.org/10.1016/j.nedt.2003.10.001

Hamilton, J. B. (2020). Rigor in qualitative methods: An evaluation of strategies among underrepresented rural communities. *Qualitative Health Research*, *30*(2), 196–204. https://doi.org/10.1177/1049732319860267

Hoke, A. M., Keller, C. M., Calo, W. A., Sekhar, D. L., Lehman, E. B., & Kraschnewski, J. L. (2021). School nurse perspectives on COVID-19. *The Journal of School Nursing*, *37*(4), 292–297. https://doi.org/10.1177/1059840521992054

Hossain, F., & Clatty, A. (2021). Self-care strategies in response to nurses' moral injury during COVID-19. *Nursing Ethics*, *28*(1), 23–32. https://doi.org/10.1177/0969733020961825

Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*(9), 1277–1288. https://doi.org/10.1177/1049732305276687

KidsData. (2020). Ratio of students to pupil support service personnel, by type of personnel *[Data set]*. California Department of Education & DataQuest. Retrieved June 8, 2022 from https://www.kidsdata.org/topic/126/pupil-support

Lee, R. L. T., West, S., Tang, A. C. Y., Cheng, H. Y., Chong, C. Y. Y., Chien, W. T., & Chan, S. W. C. (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

Limoges, J., Mclean, J., Anzola, D., & Kolla, N. J. (2022). Effects of the COVID-19 pandemic on healthcare providers: Policy implications for pandemic recovery. *Healthcare Policy*, *17*(3), 49–64. https://doi.org/10.12927/hcpol.2022.26728

Manzano Garcia, G., & Ayala Calvo, J. C. (2021). The threat of COVID-19 and its influence on nursing staff burnout. *Journal of Advanced Nursing*, *77*, 832–844. https://doi.org/10.1111/jan.14642

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.

Miles, M. B., Huberman, A. M., & Saldana, J. (2020). *Qualitative data analysis: A methods sourcebook* (4th ed.). Sage Publications.

Morse, J. M. (2015). Critical analysis of strategies for determining rigor in qualitative inquiry. *Qualitative Health Research*, *25*(9), 1212–1222. https://doi.org/10.1177/1049732315588501

National Academies of Sciences, Engineering, and Medicine. (2021). *The future of nursing 2020–2030: Charting a path to achieve health equity*. The National Academies Press. https://doi.org/10.17226/25982

National Association of School Nurses. (2016). Framework for 21st century school nursing practice: National Association of School Nurses. *NASN School Nurse*, *31*(1), 45–53. https://doi.org/10.1177/1942602%D7;15618644

National Association of School Nurses & American Nurses Association. (2022). *School nursing: Scope and standards of practice* (4th ed.). National Association of School Nurses.

Office of the Surgeon General. (2022). *Addressing health work burnout: The U.S. Surgeon General's Advisory on building a thriving health workforce*. U.S. Department of Health & Human Services. Retrieved October 21, 2022 from https://www.hhs.gov/sites/default/files/health-worker-wellbeing-advisory.pdf

Powell, S. B., Engelke, M. K., & Swanson, M. S. (2018). Moral distress among school nurses. *The Journal of School Nursing*, *34*(5), 390–397. https://doi.org/10.1177/1059840517704965

Raso, R., Fitzpatrick, J. J., & Masick, K. (2021). Nurses' intent to leave their position and the profession during the COVID-19 pandemic. *Journal of Nursing Administration*, *51*(10), 488–494. https://doi.org/10.1097/NNA.0000000000001052

Sanchez-Gomez, M., Giorgi, G., Finstad, G. L., Urbini, F., Foti, G., Mucci, N., Zaffina, S., & León-Perez, J. M. (2021). COVID-19 pandemic as a traumatic event and its associations with fear and mental health: A cognitive-activation approach. *International Journal of Environmental Research and Public Health*, *18*(14), 7422. https://doi.org/10.3390/ijerph18147422

Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing & Health*, *23*(4), 334–340. https://doi.org/10.1002/1098-240x(200008)23:4%3C334::Aid-nur9%3E3.0.co;2-g

Sandelowski, M. (2010). What's in a name? Qualitative description revisited. *Research in Nursing & Health*, *33*(1), 77–84. https://doi.org/10.1002/nur.20362

Silverman, H. J., Kheirbek, R. E., Moscou-Jackson, G., & Day, J. (2021). Moral distress in nurses caring for patients with COVID-19. *Nursing Ethics*, *28*(7-8), 1137–1164. https://doi.org/10.1177/09697330211003217

State of California. (2021). *California implements first-in-the-nation measure to encourage teachers and school staff to get vaccinated*. Retrieved October 21, 2022 from https://www.gov.ca.gov/2021/08/11/california-implements-first-in-the-nation-measure-to-encourage-teachers-and-school-staff-to-get-vaccinated/

Um, Y.-J., & Choi, Y.-J. (2022). A grounded theory on school nursing experiences with major pandemic diseases. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, *59*, 004695802210904. https://doi.org/10.1177/00469580221090405

van Niekerk, M., Tileston, K., Bouchard, M., Atanda, A., Goldstein, R., Gantsoudes, G., Carter, C., & Christino, M. A. (2023). System-level interventions for addressing burnout and improving professional wellness for orthopaedic surgeons. *Journal of the Pediatric Orthopaedic Society of North America*, *5*(1), 1–14. https://doi.org/10.55275/JPOSNA-2023-620

Vears, D. F., & Gillam, L. (2022). Inductive content analysis: A guide for beginning qualitative researchers. *Focus on Healthcare Professional Education*, *23*(1), 111–127. https://doi.org/10.11157/fohpe.v23i1.544

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

Wocial, L. D., & Weaver, M. T. (2013). Development and psychometric testing of a new tool for detecting moral distress: The Moral Distress Thermometer: MDT. *Journal of Advanced Nursing*, *69*(1), 167–174. https://doi.org/10.1111/j.1365-2648.2012.06036.x

How to cite this article: Best, N. C., Donahue, E., Agran, P. F., Munk, K., Rochelle, N. F., & Billimek, J. (2023). Exploration of California School Nurse perspectives on the impact of COVID-19. *Public Health Nursing*, 1–10. https://doi.org/10.1111/phn.13182