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Symptoms of Depression, Anxiety, and Post-Traumatic Stress Disorder, and Suicidal Ideation Among School Nurses in Prekindergarten through Grade 12 Schools — United States, March 2022

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Abstract

School nurses are integral to creating safe environments in U.S. schools. Many experienced increased work burden and stress during the COVID-19 pandemic. CDC collaborated with the National Association of School Nurses and the National Association of State School Nurse Consultants to distribute a 121-item online, anonymous survey to school nurses nationwide during March 7–30, 2022. Among the 7,971 respondents, symptoms of depression, anxiety and PTSD, and suicidal ideation were measured, and prevalence ratios were used to identify associations

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with demographics, workplace characteristics, and support. Results found high levels of work-related stressors and indicated that employment characteristics, COVID-19-related job duties, and other workplace stressors and supports affected school nurse mental health. The survey findings underscore the mental health challenges many school nurses experienced during the 2021/2022 school year. The findings can inform supportive policies and practices to reduce workplace stressors and increase workplace supports for school nurses.

Keywords

mental health; policies/procedures; communicable diseases; school nurse characteristics; administration/management

Introduction

School nurses support student health and academic success through case finding, nursing care procedures, care coordination, leadership, health education, and emergency care (Council on School Health, 2016; Maughan et al., 2016 NASSNC, 1996) and have been integral to creating safe environments in the nation's schools during the COVID-19 pandemic. School nurses are the health care representatives on site at schools, and they serve as liaisons between school personnel, families, health care professionals, and the community (Council on School Health, 2016; Maughan et al., 2016). School nurses experienced increased work burden and stress as the COVID-19 pandemic presented unprecedented challenges to the pre-Kindergarten through grade 12 (preK-12) education system (NASEM, 2020).

In response to the pandemic, schools have implemented COVID-19 layered prevention strategies that have included necessary interventions but have also increased the workload of school staff, including nurses (Science Brief, 2021). Workplace demands and new, unfamiliar tasks, such as COVID-19 testing, caring for staff and students suspected of having COVID-19, and contacting parents/guardians about COVID-19 isolation and quarantine recommendations, coupled with concern for their own health and that of their families, students, and co-workers has the potential to increase stress, anxiety, and burnout of school nurses (Galanis et al., 2021; Golonka et al., 2019). Workplace demands and new, unfamiliar, tasks also could affect the mental health of the approximately 100,000 school nurses in the United States (Willgerodt et al., 2018) and adversely affect their job performance (CDC, 2018). These additional burdens and accompanying health impacts have the potential to interfere with school nurses' roles providing healthcare to students, ensuring quality improvement in school health services, and acting as leaders within their schools and surrounding communities (NASN, 2016).

Data on the mental health of school nurses before and during the COVID-19 pandemic are limited. Despite the important role school nurses have in supporting the health of children and communities, this is the first nationwide effort to evaluate the impact of the COVID-19 pandemic on their mental health. Other researchers have assessed the impact of the COVID-19 pandemic on mental health among the overall U.S. population (Czeisler et al., 2020; Ettman et al., 2020; Vaharatian et al., 2021; Zhu et al., 2021), as well as some

targeted populations, including healthcare (Gainer et al., 2021, Li et al., 2021), public health (Bryant-Genevier et al., 2021), and other frontline and ‘essential’ workers (Rosemberg et al., 2021). Seventy-seven percent of school nurses are funded by local school districts rather than health departments or healthcare systems (Willgerodt et al., 2018), so school nurses may not be represented in surveys about the mental health of public health workers or healthcare workers.

The purpose of the investigation was to examine associations between stressors and protective factors among school nurses during the COVID-19 pandemic and symptoms of depression, anxiety, and post-traumatic stress disorder (PTSD), and suicidal ideation.

Methods

To assess the current mental health of school nurses and better understand their experiences during the COVID-19 pandemic, CDC collaborated with the National Association of School Nurses (NASN) and the National Association of State School Nurse Consultants (NASSNC). A 121-item, nonprobability-based, anonymous survey was developed by the authors and distributed by NASN and NASSNC to school nurses nationwide from March 7–30, 2022. The 15-min, online survey was revised from a Spring 2021 survey on the mental health of people working in state and local public health departments (Bryant-Genevier J et al., 2021). The survey included questions on demographics, experiences, stressors, coping strategies, supports, and self-reported mental health symptoms. Anyone who worked as a school nurse in a public or private school in the United States or in a U.S. tribe or territory during the 2021/2022 school year was eligible to take the survey. NASN emailed a link to the survey to their 9,478 current members, and 59% (5,592) opened the email. 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.

Symptoms of mental health conditions were evaluated by including in our survey the 9-item Patient Health Questionnaire (PHQ-9) for depression (Kroenke et al., 2001), the 2-item General Anxiety Disorder (GAD-2) for anxiety (Kroenke et al., 2007), the 6-item Impact of Event Scale (IES-6) for PTSD (Thoresen et al., 2010), and one item of the PHQ-9 for suicidal ideation. The PHQ-9, GAD-2, and IES-6 responses are based on the two weeks prior to the survey. Those who scored ≥10.0 out of 27 on the PHQ-9 were categorized as having symptoms of moderate to severe depression. Scores ≥3.0 out of 6 on the GAD-2 were categorized as having symptoms of anxiety. Scores ≥1.75 out of 4 on the IES-6 were classified as having symptoms of PTSD. Respondents who indicated on a PHQ-9 question they had been “bothered by thoughts that you would be better off dead or thought of hurting yourself” at any time in the past two weeks were categorized as experiencing suicidal ideation.

Prevalence of symptoms of mental health conditions and suicidal ideation were calculated and examined by demographic and workplace characteristics, work-related stressors and supports, and U.S. Department of Health and Human Services regions. Univariable and multivariable prevalence ratios were calculated using Poisson regression with 95% confidence intervals estimated using a robust standard error. Confidence intervals for

regional prevalence rates were calculated using robust standard error. Missing responses were excluded from all frequency and prevalence calculations. Survey data were collected using REDCap (Harris et al., 2009). Analyses were completed using R (version 4.1.1; R Core Team, 2021), RStudio (version 1.4.1717; RStudio Team, 2021b18), the tidyverse packages (Wickham et al., 2019), geepack (Højsgaard et al., 2006), and gtsummary (Sjoberg et al., 2021). This activity was reviewed by CDC and was conducted consistent with applicable federal law and CDC policy (e.g., 45 C.F.R. part 46.102(l)(2), 21 C.F.R. part 56; 42 U.S.C. §241(d); 5 U.S.C. §552a; 44 U.S.C. §3501 et seq.).

Results

School nurse demographics and workplace characteristics, and associations with mental health outcomes, along with point estimates and 95% confidence intervals are presented in Table 1. The 7,971 survey respondents were from all 50 states, the District of Columbia, tribal nations, and U.S. territories. Among respondents, 98.6% percent were female, 92.0% were White, 86.8% worked at a public school, and 80.2% were Registered Nurses. More than a third (34.5%) reported working in schools where at least 76% of students qualified for free or reduced lunch programs, and more than half (56.0%) reported working more than 40 hours per week during the 2021/2022 school year. Among respondents, 44.8% reported symptoms of at least one adverse mental health condition in the two weeks prior to completing the survey. Among respondents, prevalences of symptoms of moderate to severe depression, anxiety and PTSD, and suicidal ideation were 23.9%, 22.2%, 30.4%, and 4.3% respectively. Some respondents did not respond to the full series of questions about symptoms of depression (12.4%), symptoms of anxiety (11.4%), symptoms of PTSD (14.8%), and suicidal ideation (11.3%). An analysis was conducted examining the prevalence of multiple mental health outcomes and found of the 6,687 school nurse respondents who answered the full series of questions for all mental health outcomes for this study, 23.1% reported symptoms of two or more mental health outcomes (data not shown). Respondents working over 40 hours per week reported a greater prevalence of symptoms of depression, anxiety and PTSD, and suicidal ideation. Nurses of Hispanic or Other race/ethnicity (defined in Table 1), those who indicated they were assigned 750 students or more, and those who worked in schools where more than 75% of students qualified for free or reduced lunch programs were more likely to report symptoms of depression.

Table 2 presents school nurses' workplace stressors and associations with the prevalence of mental health outcomes, along with prevalence ratios and 95% confidence intervals. During the 2021/2022 school year, 93.2% of school nurses reported having notified parents about children's COVID-19 positive test results and close-contact exposures, 83.0% cared for students, teachers, and staff who were suspected of having COVID-19, and 48.0% administered COVID-19 tests. Since the beginning of the COVID-19 pandemic in March 2020, 82.4% of nurses felt inadequately compensated for their work, 64.0% felt unappreciated at work, 72.7% worried about workplace exposure to COVID-19, 38.6% reported experiencing stigma or discrimination due to their work, 23.8% reported receiving job-related threats, and 48.3% reported having felt bullied, threatened, or harassed due to their work. Respondents who reported they felt inadequately compensated for their work, felt unappreciated at work, or worried about workplace exposure to COVID-19 were more

likely to report symptoms of depression, anxiety, PTSD, or suicidal ideation than those who did not. Lastly, nurses who reported stigma or discrimination, received job-related threats, or felt bullied, threatened and/or harassed due to their work were more likely to report symptoms of depression, anxiety, PTSD, or suicidal ideation than those who did not. Nurses who notified parents/guardians about positive COVID-19 tests or close-contact exposures and isolation or quarantine guidelines, and who cared for students, teachers and staff who were suspected of having COVID-19 were significantly more likely to report symptoms of depression, anxiety and PTSD. Nurses who reported administering COVID-19 tests reported a greater likelihood of symptoms of anxiety and PTSD.

Table 3 presents school nurses' workplace supports and associations with the prevalence of mental health outcomes, along with the prevalence ratios and 95% confidence intervals. Among respondents, since the beginning of the 2021/2022 school year, 67.6% of school nurses felt supported always or most of the time by their coworkers/peers, 60.9% by their supervisor, and 41.5% by their school district leadership. Additionally, 54.5% reported that their employer offered an Employee Assistance Program (EAP) or a similar program, 58.2% agreed with how their management, employer or organization responded to the risk of COVID-19 exposures at work, 27.4% reported that their workplace/employer offered training to prevent stress or burnout, 18.7% reported that their workplace/employer offered a flexible work schedule, and 38.1% reported that adequate staffing support was provided when required for their work related to COVID-19. School nurses who responded that they were supported always or most of the time by their coworkers/peers, supervisor, or school district leadership were less likely to report symptoms of depression, anxiety or PTSD, or suicidal ideation than those who reported they were not at all or were somewhat supported. Nurses who reported they agreed with how their management, employer or organization responded to the risk of COVID-19 exposure at work, and those who reported that adequate staffing support was provided for work related to COVID-19 were less likely to report symptoms of depression, anxiety or PTSD, or suicidal ideation than those who did not. Respondents who reported their workplace/employer offered training to prevent stress or burnout or who reported their workplace/employer offered a flexible work schedule were less likely to report symptoms of depression, anxiety or PTSD than those who did not.

Figure 1 illustrates the prevalence of mental health outcomes by U.S. Department of Health and Human Services regions. The prevalence of symptoms of moderate to severe depression ranged from 18.4−31.6%, 19.8−32.3% for symptoms of anxiety, 21.3–44.6% for symptoms of PTSD, and 2.7−7.7% for suicidal ideation. Compared to all regions combined, regions 3, 6, 9, and 10 reported higher prevalence rates of symptoms of depression; region 6, 7, 9, and 10 reported higher prevalence rates of symptoms of anxiety; regions 1, 2, 5, 9, and 10 reported higher prevalence rates of symptoms of PTSD, and suicidal ideation was higher in regions 1, 2, 3, 7, 8, 10. Across all outcomes examined, region 10 reported the highest prevalence point estimates. The lowest prevalence rates of symptoms of moderate to severe depression were reported in regions 1, 5, and 8; the lowest prevalence rates of symptoms of anxiety and PTSD were reported in regions 2, 4, and 8, and the lowest prevalence rates of suicidal ideation were reported in regions 4, 6, and 9.

Discussion

This study presents a novel investigation of a critical issue impacting a key workforce in the COVID-19 response effort. There has been consensus among population surveys examining mental health outcomes among U.S. adults, finding increases in the prevalence of symptoms of depression, anxiety, and suicidal ideation during the COVID-19 pandemic (Ettman et al., 2020, Vahratian et al., 2021). Some similarities and differences are apparent when comparing the prevalence of mental health outcomes among school nurses to other U.S. adults during the COVID-19 pandemic. The overall prevalence of symptoms of mental health conditions among school nurses in this study (45%) was higher than the 40.9% previously reported in the general population in June 2020 (Czeisler et al., 2020) but lower than the 52.8% previously reported among public health workers in March-April 2021 (Bryant-Genevier et al., 2021). Rates of symptoms of moderate to severe depression and anxiety among school nurses during the pandemic (23.9 and 22.2% respectively) were similar to the U.S. adult population (24.3% and 25.5%, respectively) (Czeisler et al., 2020) but less than what was found in other public health workers (30.8 and 30.3%, respectively) (Bryant-Genevier et al., 2021). The prevalence of symptoms of PTSD among school nurses (30.4%) was higher than the U.S. adult population (21.8%) (Zhu et al., 2021) but lower than what was observed among public health workers (36.8%) (Bryant-Genevier et al., 2021), and rates of suicidal ideation (4.3%) were lower than what was observed among the U.S. adult population (10.7%) (Czeisler et al., 2020) and among public health workers (8.4%) (Bryant-Genevier et al., 2021).

The findings align with other analyses that demonstrated nurses have been faced with adverse working conditions during the COVID-19 pandemic. In a previous study on school nurses' reports on reopening roles, practices, and concerns during the COVID-19 pandemic at the start of the 2020/2021 school year, over one-third (36.9%) reported not being included in school reopening planning, and only one quarter reported that their school had an isolation space suitable and ready for students with COVID-19 symptoms waiting to leave school (Gormley et al., 2021). A meta-analysis of nurse burnout during the COVID-19 pandemic found similar results that some associated risk factors included increased workload, low levels of COVID-19 training, increased working times and number of patients (Galanis et al., 2021).

Among the study population, there was an evident theme that suggested greater support of school nurses is warranted from a leadership level. Not feeling supported by leadership, not agreeing with the response to how the risk of COVID-19 exposure was handled, not being supported with adequate staff, working long hours, feeling unappreciated, and feeling inadequately compensated were all reported by the majority of respondents and were all significantly associated with all mental health outcomes examined. Having access to an employee assistance program or similar program was not associated with the mental health outcomes examined. It is uncertain if this was based on limited utilization, lack of awareness, or other limitations within the structure of the programs offered.

This work represents a timely and important topic among a key workforce that has been essential to the COVID-19 response. The mental health outcome measures have been

validated and widely used in other mental health investigations. A large number of school nurses responded to the survey, with representation from all states and some territories and tribes. School nurses who responded to our survey had similar demographics as compared to previous published estimates of school nurses nationwide (Willgerodt et al., 2018). The findings highlight opportunities to improve supportive policies and practices to reduce workplace stressors and increase workplace supports for school nurses.

The findings in this report are subject to several limitations. A nonprobability-based convenience sample of school nurses was used, and a completion rate could not be determined. Though strict tests of generalizability were not performed, the 7,971 survey respondents were from all 50 states, the District of Columbia, tribal nations, and U.S. territories and present similar demographic characteristics to other assessments of school nurses in the United States (Willgerodt et al., 2018). Second, self-reported mental health symptoms were assessed using screening instruments that do not provide clinical diagnoses; however, the screening instruments have been clinically validated (Kroenke et al., 2001, 2007; Thoresen et al., 2010). Third, participants were surveyed about symptoms experienced in the two weeks preceding the survey, which may not reflect all symptoms experienced during the pandemic. Pre-pandemic mental health conditions were not available for comparison. Fourth, between 11.3% and 14.8% did not respond to the full series of questions about mental health outcomes. Finally, some other stressors or events experienced by school nurses were not assessed by the survey, such as being diagnosed with COVID-19 or experiencing changes in COVID-19 prevention strategies at their school (e.g., masking requirements).

Future quantitative analyses could explore additional stressors or protective factors that were included in this survey but were not part of this analysis. Further effort is needed to identify factors contributing to the disparity in reported symptoms of depression between nurses of Hispanic or Other race/ethnicity and their White counterparts. Future investigations could look at the relationship between different types and numbers of stressors and protective factors and the mental health outcomes among school nurses. Additionally, future efforts could explore factors that increase successful utilization of EAP programs, how workplace stressors could be reduced, and how mental health and well-being could be promoted.

School districts, schools, and others could consider various strategies to support school nurse mental health. Leadership could provide principals and school nurse managers with training to help them recognize the signs and symptoms of stress and depression in team members and encourage them to seek help from qualified mental health professionals. Leadership’s focus on appropriate work hours and staffing is also critical for school nurses. Leadership could also provide free or subsidized lifestyle coaching, counseling, or self-management programs and offer workplace training to prevent stress or burnout during work time, perhaps during designated school staff professional development days. Resiliency training, support groups, skill building to defuse tense situations, virtual and distance learning could also be offered. School nurses could be consulted about decisions that affect their job and stress levels and given the opportunity to advise decisions. Adopting layered strategies that promote prioritization of school nurse mental health may influence the social norms

around mental health more broadly (CDC, 2018; Maughan et al., 2016; NASSNC, Personal Communication, March 2022).

Conclusion

The goal of this study was to assess school nurse mental health during the COVID-19 pandemic. The survey findings underscore the personal mental health challenges many school nurses experienced during the 2021/2022 school year. Results highlight employment characteristics, COVID-19-related job duties, and other workplace stressors and supports that affected school nurse mental health. While significant association between workplace support and stressors, and mental health outcomes during the pandemic were identified, it is important to recognize that there is no baseline data on school nurse mental health prior to the pandemic. Many of these factors may have been present before the pandemic and may remain as the pandemic subsides.

Implementing prevention and control policies and practices that reduce factors that contribute to school nurses' poor mental health might improve mental health outcomes. Tools and strategies to recognize burnout and mental health symptoms could be provided for school nurses. The findings may inform national, state, and local education and public health agencies on supportive policies and practices to reduce workplace stressors and increase workplace supports for school nurses. Supportive policies and practices could include adequate staffing, training and support, particularly as they relate to COVID-19 or future public health emergencies.

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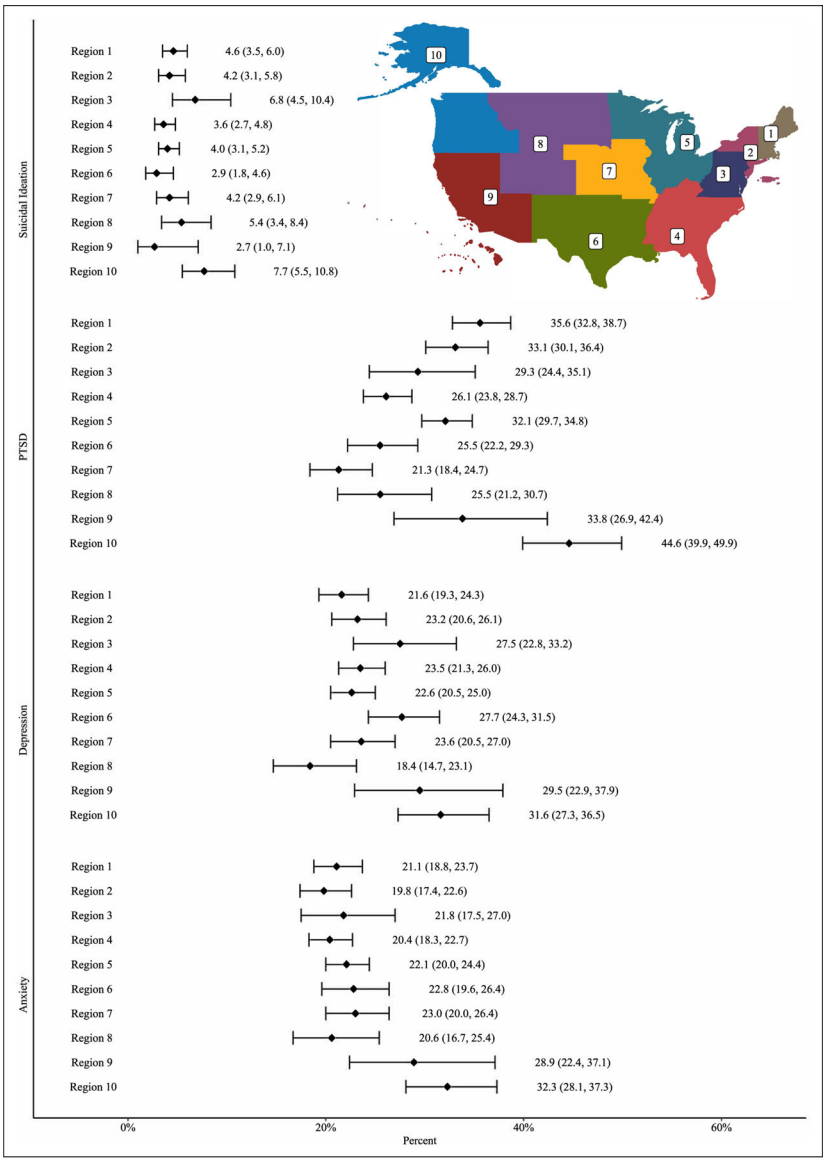

Figure 1.

Prevalence* of symptoms of depression, anxiety and post-traumatic stress disorder, and suicidal ideation among preK-12 school nurses in the U.S. during the 2021/2022 school year by U.S. Department of Health and Human Services regions.

*Prevalence rate per 100 individuals and 95% confidence interval.

Note: Complete survey responses for mental health outcomes were the following: symptoms of depression (N=6,980), symptoms of anxiety (N=7,057), symptoms of PTSD (N=6,791), suicidal ideation, (N=7,064). Region 1: CT, ME, MA, NH, RI, and VT, Region 2: NJ, NY, PR, and VI, Region 3: DE, DC, MD, PA, VA, and WV, Region 4: AL, FL, GA, KY, MS, NC, SC, and TN, Region 5: IL, IN, MI, MN, OH, and WI, Region 6: AK, LA, NM, OK, and TX, Region 7: IA, KS, MO, and NE, Region 8: CO, MT, ND, SD, UT, and WY, Region 9: AZ, CA, HI, NV, AS, MP, FM, GU, MH, and PW, Region 10: AK, ID, OR, and WA.

Table 1.

Demographics and Workplace Characteristics and Prevalence of Symptoms of Depression, Anxiety and PTSD, and Suicidal Ideation among PreK-12 School Nurses in the United States During the 2021/2022 School Year (n=7,971)

Characteristic	Total N (%)	Symptoms of Depression			Symptoms of Anxiety			Symptoms of PTSD			Suicidal Ideation		
		N	Pr[1]	PR (95% CI)[2]	N	Pr[1]	PR (95% CI)[2]	N	Pr[1]	PR (95% CI)[2]	N	Pr[1]	PR (95% CI)[2]
Overall	—	1,669	23.9	—	1,564	22.2	—	2,066	30.4	—	306	4.3	—
Gender													
Male	96 (1.3)	87	19.5	—	89	20.2	—	85	30.6	—	89	7.9	—
Female	7,547 (98.6)	6,837	24.0	1.23 (0.80–1.89)	6,913	22.2	1.10 (0.73–1.66)	6,650	30.5	1.00 (0.72–1.38)	6,919	4.3	0.55 (0.27–1.12)
Transgender/ None of these	11 (0.1)	11	27.3	1.40 (0.49–4.01)	11	27.3	1.35 (0.47–3.85)	11	36.4	1.19 (0.51–2.77)	11	9.1	1.16 (0.16–8.54)
Age (years)													
18–39	1,629 (22.6)	1,478	24.8	—	1,483	28.2	—	1,438	34.1	—	1,482	5.1	—
40–49	2,100 (29.2)	1,916	26.9	1.09 (0.97–1.22)	1,940	25.7	0.91 (0.82–1.02)	1,866	33.3	0.97 (0.89–1.07)	1,939	4.5	0.90 (0.66–1.21)
50–59	2,152 (29.9)	1,975	23.6	0.95 (0.85–1.07)	2,003	19.8	*0.70 (0.62–0.79)*	1,929	30.4	*0.89 (0.81–0.98)*	2,006	4.2	0.83 (0.61–1.12)
≥ 60	1,315 (18.3)	1,195	19.0	*0.77 (0.66–0.89)*	1,206	13.8	*0.49 (0.41–0.57)*	1,150	23.0	*0.67 (0.59–0.76)*	1,210	3.1	*0.60 (0.41–0.89)*
Race/Ethnicity													
Non-Hispanic White	6,867 (92.0)	6,261	23.5	—	6,329	22.1	—	6,108	30.6	—	6,336	4.3	—
Non-Hispanic Black	224 (3.0)	196	26.0	1.11 (0.87–1.41)	198	20.2	0.92 (0.69–1.21)	181	24.3	0.80 (0.61–1.03)	198	5.1	1.19 (0.64–2.19)
Hispanic	212 (2.8)	186	32.8	*1.39 (1.13–1.72)*	188	26.6	1.20 (0.95–1.53)	179	33.5	1.10 (0.89–1.35)	188	5.9	1.37 (0.76–2.47)
Other[3]	158 (2.1)	132	32.6	*1.38 (1.08–1.78)*	134	26.9	1.22 (0.92–1.62)	130	33.1	1.08 (0.85–1.39)	134	6.0	1.40 (0.71–2.77)
Percent of students that qualify for free/reduced lunches at assignment													
< 75%	3,868 (65.5)	3,559	23.5	—	3,595	21.7	—	3,453	31.9	—	3,598	4.2	—
76–100%	2,040 (34.5)	1,854	26.9	*1.14 (1.04–1.26)*	1,881	23.2	1.07 (0.97–1.19)	1,811	31.2	0.98 (0.90–1.06)	1,882	4.6	1.10 (0.85–1.43)
Hours worked in a typical week													
0–40 h/week	3,292 (43.9)	3,015	17.6	—	3,052	19.0	—	2,934	22.8	—	3,053	3.2	—
41–60 h/week	3,760 (50.1)	3,529	27.3	*1.55 (1.41–1.70)*	3,566	24.1	*1.26 (1.15–1.39)*	3,433	34.6	*1.52 (1.40–1.64)*	3,572	5.0	*1.53 (1.20–1.94)*
≥ 61 h/week	446 (5.9)	414	40.3	*2.29 (1.99–2.63)*	417	29.0	*1.52 (1.29–1.80)*	405	50.4	*2.21 (1.96–2.48)*	417	6.7	*2.07 (1.38–3.11)*
Number of students in assignment													
< 750 students	4,063 (56.8)	3,774	22.8	—	3,816	21.3	—	3,673	28.8	—	3,818	4.3	—
≥ 750 students	3,084 (43.2)	2,868	25.0	*1.10 (1.01–1.20)*	2,895	23.0	1.08 (0.99–1.18)	2,793	31.6	1.10 (1.02–1.18)	2,900	4.3	1.01 (0.81–1.27)
Type of school													

Characteristic	Total N (%)	Symptoms of Depression			Symptoms of Anxiety			Symptoms of PTSD			Suicidal Ideation		
		N	Pr[1]	PR (95% CI)[2]	N	Pr[1]	PR (95% CI)[2]	N	Pr[1]	PR (95% CI)[2]	N	Pr[1]	PR (95% CI)[2]
Public	6,654 (86.8)	6,017	23.9	—	6,084	22.2	—	5,867	30.4	—	6,086	4.3	—
Public charter/magnet/alternative	288 (3.8)	258	24.0	1.00 (0.80–1.25)	262	24.4	1.10 (0.88–1.37)	250	29.6	0.98 (0.80–1.19)	263	5.7	1.34 (0.81–2.22)
Private/parochial/independent	491 (6.4)	447	20.8	0.87 (0.72–1.05)	450	18.4	0.83 (0.68–1.01)	428	30.6	1.01 (0.87–1.17)	454	5.5	1.29 (0.87–1.93)
Boarding school/residential	235 (3.1)	213	27.7	1.16 (0.93–1.44)	216	24.5	1.10 (0.87–1.40)	203	32.0	1.05 (0.86–1.29)	216	2.8	0.65 (0.29–1.45)

[1] Prevalence rate per 100 respondents

[2] Prevalence Ratio and 95% confidence interval

[3] Multiple races (n =70), Asian (n =53), American Indian and Alaskan Native (n= 29), Native Hawaiian and Other Pacific Islander (n= 6)

Note: Complete survey responses for mental health outcomes were the following: symptoms of depression (N= 6,980), symptoms of anxiety (N= 7,057), symptoms of PTSD (N=6,791), suicidal ideation, (N=7,064). Missing values are not shown in the table. Italicized results represent statistical significance at alpha < 0.05.

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Table 2.

Workplace Stressors and Prevalence of Symptoms of Depression, Anxiety and PTSD, and Suicidal Ideation PreK-12 School Nurses in the United States During the COVID-19 Pandemic (n=7,971)

		Symptoms of Depression			Symptoms of Anxiety			Symptoms of PTSD			Suicidal Ideation		
Characteristic	**N (%)**	**N**	**Pr[1]**	**PR (95% CI)[2]**	**N**	**Pr[1]**	**PR (95% CI)[2]**	**N**	**Pr[1]**	**PR (95% CI)[2]**	**N**	**Pr[1]**	**PR (95% CI)[2]**
Notified parents/guardians about test results, exposures, isolation or quarantine[3]													
No	509 (6.8)	454	18.5	—	460	16.3	—	449	16.5	—	463	5.0	—
Yes	7,001 (93.2)	6,517	24.2	*1.31 (1.08–1.60)*	6,588	22.6	*1.38 (1.12–1.71)*	6,332	31.5	*1.91 (1.55–2.36)*	6,592	4.3	0.86 (0.57–1.30)
Caring for students, teachers or staff suspected of having COVID-19[3]													
No	1,358 (17.0)	825	19.3	—	835	16.9	—	811	23.1	—	836	4.1	—
Yes	6,613 (83.0)	6,155	24.5	*1.27 (1.10–1.47)*	6,222	22.9	*1.35 (1.16–1.59)*	5,980	31.4	*1.36 (1.20–1.55)*	6,228	4.4	1.07 (0.76–1.52)
Administered COVID-19 tests[3]													
No	4,145 (52.0)	3,396	23.2	—	3,436	20.8	—	3,315	26.1	—	3,440	4.0	—
Yes	3,826 (48.0)	3,584	24.6	1.06 (0.98–1.15)	3,621	23.5	*1.13 (1.03–1.23)*	3,476	34.5	*1.32 (1.23–1.42)*	3,624	4.7	1.19 (0.95–1.48)
Inadequate staffing support provided when required for your work related to COVID-19[3]													
No	4,234 (61.9)	2,570	14.5	—	2,597	14.1	—	2,528	19.3	—	2,598	2.8	—
Yes	2,607 (38.1)	4,174	29.6	*2.04 (1.84 to 2.27)*	4,220	27.2	*1.92 (1.73 to 2.14)*	4,091	37.3	*1.93 (1.76 to 2.11)*	4,225	5.2	*1.87 (1.44 to 2.43)*
Felt inadequately compensated													
No	1,220 (17.6)	1,205	12.3	—	1,217	13.1	—	1,173	16.2	—	1,219	2.2	—
Yes	5,706 (82.4)	5,621	26.5	*2.16 (1.85–2.53)*	5,684	24.2	*1.85 (1.59–2.16)*	5,527	33.6	*2.07 (1.81–2.37)*	5,689	4.7	*2.13 (1.44–3.16)*
Experienced stigma or discrimination due to your work													
No	4,255 (61.4)	4,193	18.2	—	4,239	16.6	—	4,099	21.7	—	4,243	2.8	—
Yes	2,674 (38.6)	2,640	33.0	*1.82 (1.67–1.97)*	2,668	31.0	*1.87 (1.71–2.04)*	2,604	44.2	*2.04 (1.90–2.19)*	2,671	6.7	*2.41 (1.92–3.02)*
Received job-related threats due to your work													
No	5,262 (76.2)	5,185	20.2	—	5,243	18.5	—	5,084	24.7	—	5,247	3.4	—
Yes	1,644 (23.8)	1,625	35.5	*1.76 (1.61–1.91)*	1,639	33.4	1.81 (1.65–1.97)	1,598	48.1	*1.95 (1.81–2.09)*	1,644	7.2	*2.12 (1.69–2.65)*
Felt bullied, threatened and/or harassed due to your work													
No	3,575 (51.7)	3,523	17.0	—	3,559	15.5	—	3,439	19.7	—	3,564	2.7	—
Yes	3,335 (48.3)	3,290	31.4	*1.84 (1.69–2.01)*	3,327	29.3	*1.89 (1.72–2.07)*	3,244	41.9	*2.13 (1.97–2.30)*	3,329	6.0	*2.24 (1.77–2.85)*
Felt unappreciated at work													

Characteristic	N (%)	Symptoms of Depression			Symptoms of Anxiety			Symptoms of PTSD			Suicidal Ideation		
		N	Pr[1]	PR (95% CI)[2]	N	Pr[1]	PR (95% CI)[2]	N	Pr[1]	PR (95% CI)[2]	N	Pr[1]	PR (95% CI)[2]
No	2,501 (36.0)	2,469	12.6	—	2,488	12.7	—	2,414	18.3	—	2,493	1.8	—
Yes	4,446 (64.0)	4,377	30.5	*2.43 (2.17–2.72)*	4,433	27.5	*2.16 (1.93–2.42)*	4,309	37.3	*2.04 (1.86–2.23)*	4,435	5.7	*3.19 (2.33–4.36)*
Worried about workplace exposure to COVID-19													
No	1,895 (27.3)	1,867	18.9	—	1,886	15.2	—	1,831	19.4	—	1,892	3.3	—
Yes	5,059 (72.7)	4,988	25.9	*1.37 (1.24–1.53)*	5,042	24.7	*1.62 (1.44–1.83)*	4,896	34.5	*1.77 (1.60–1.96)*	5,043	4.7	*1.43 (1.09–1.88)*

[1] Prevalence rate per 100 respondents

[2] Prevalence Ratio and 95% confidence interval

[3] Refers to experiences that occurred during the 2021/2022 school year.

Note: Complete survey responses for mental health outcomes were the following: symptoms of depression (N=6,980), symptoms of anxiety (N=7,057), symptoms of PTSD (N =6,791), suicidal ideation (N=7,064). Missing values are not shown in the table. Italicized results represent statistical significance at alpha < 0.05.

Table 3.

Workplace Support and Prevalence of Symptoms of Depression, Anxiety and PTSD, and Suicidal Ideation among PreK-12 School Nurses in the United States During the 2021/2022 School Year (n=7,971)

Characteristic	Total N (%)	Symptoms of Depression			Symptoms of Anxiety			Symptoms of PTSD			Suicidal Ideation		
		N	Pr[1]	PR (95% CI)[2]	N	Pr[1]	PR (95% CI)[2]	N	Pr[1]	PR (95% CI)[2]	N	Pr[1]	PR (95% CI)[2]
Felt supported by coworkers/peers													
Not at all or Somewhat	2,244 (32.4)	2,213	33.8	—	2,234	31.2	—	2,169	38.6	—	2,240	7.0	—
Always or Most of the time	4,676 (67.6)	4,607	19.2	*0.57 (0.52–0.62)*	4,659	17.8	*0.57 (0.52–0.62)*	4,525	26.3	*0.68 (0.63–0.73)*	4,660	3.0	*0.43 (0.34–0.54)*
Felt supported by supervisor													
Not at all or Somewhat	2,703 (39.1)	2,650	32.8	—	2,692	30.3	—	2,616	37.2	—	2,695	6.6	—
Always or Most of the time	4,210 (60.9)	4,162	18.3	*0.56 (0.51–0.61)*	4,194	17.0	*0.56 (0.51–0.61)*	4,069	26.0	*0.70 (0.65–0.75)*	4,198	2.7	*0.41 (0.33–0.52)*
Felt supported by school district leadership													
Not at all or Somewhat	4,045 (58.5)	3,979	29.8	—	4,030	27.3	—	3,917	35.4	—	4,034	5.4	—
Always or Most of the time	2,870 (41.5)	2,836	15.8	*0.53 (0.48–0.58)*	2,858	15.0	*0.55 (0.50–0.61)*	2,773	23.4	*0.66 (0.61–0.72)*	2,862	2.7	*0.49 (0.38–0.64)*
Does your employer offer an Employee Assistance Program (EAP) or a similar program?													
No or do not know	3,123 (45.5)	3,074	24.2	—	3,108	23.2	—	3,015	30.6	—	3,111	4.2	—
Yes	3,742 (54.5)	3,694	23.6	0.98 (0.90–1.06)	3,735	21.4	0.93 (0.85–1.01)	3,628	30.2	0.98 (0.92–1.06)	3,737	4.3	1.04 (0.83–1.30)
Did/does your workplace/employer offer training to prevent stress or burnout?													
No or do not know	4,991 (72.6)	4,915	25.5	—	4,972	24.0	—	4,829	32.3	—	4,975	4.5	—
Yes	1,885 (27.4)	1,862	19.7	*0.77 (0.69–0.85)*	1,880	17.6	*0.73 (0.66–0.82)*	1,824	25.3	*0.78 (0.72–0.86)*	1,882	3.6	0.79 (0.60–1.03)
Did/does your workplace/employer offer flexible work schedule?													
No or do not know	5,575 (81.3)	5,493	25.1	—	5,555	22.9	—	5,392	31.2	—	5,560	4.4	—
Yes	1,286 (18.7)	1,273	18.6	*0.74 (0.66–0.84)*	1,284	19.2	*0.84 (0.74–0.95)*	1,248	26.7	*0.85 (0.77–0.94)*	1,283	3.7	0.86 (0.63–1.16)
Did/Do you agree with how your management/employer/organization responded to the risk of COVID-19 exposures at work?													
No or Neutral	2,845 (41.8)	2,796	30.8	—	2,835	29.4	—	2,748	36.8	—	2,835	6.1	—
Yes	3,962 (58.2)	3,913	18.9	*0.61 (0.56–0.67)*	3,947	17.1	*0.58 (0.53–0.64)*	3,838	25.8	*0.70 (0.65–0.75)*	3,953	2.9	*0.47 (0.37–0.59)*

[1] Prevalence rate per 100 respondents

[2] Prevalence Ratio and 95% confidence interval

[3] Refers to experiences that occurred during the 2021/2022 school year.

Note: Complete survey responses for mental health outcomes were the following: symptoms of depression (N=6,980), symptoms of anxiety (N=7,057), symptoms of PTSD (N =6,791), suicidal ideation, (N=7,064). Missing values are not shown in the table. Italicized results represent statistical significance at alpha < 0.05.