

# School Nurse Staffing in Texas Alternative High Schools: A Mixed Methods Exploration

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## Abstract

School nurses represent cost-effective investments in students' health and educational success. Alternative high schools (AHSs) serve an understudied population of youth who are at risk for school dropout and face numerous social inequities, heightening their risk for poor health outcomes. In this two-phase explanatory sequential mixed methods study, we examined school nurse staffing in Texas AHSs. Findings suggest Texas AHSs face understaffing for familiar reasons common across districts (e.g., lack of funding), but also reveal potential deeper inequities. Quantitative findings indicate 71% of Texas AHSs have some form of nursing support, most often an on-call or part-time nurse. Qualitative findings support and enrich this finding with insights into the negative consequences of not having a full-time nurse, indiscriminate approaches to staffing AHSs, and how AHSs can be the only school in the district without a full-time nurse. Altogether, our findings reveal opportunities to better support AHSs with adequate nursing support.

## Keywords

high school, school nurse ratios, health disparities, school nurse characteristics

## Background

School nurses promote the health and educational success of nearly 15 million youth enrolled in U.S. high school classrooms (National Center for Education Statistics, 2021). Yet little is understood about school nurses working in alternative schools serving students at risk for health, educational, and social inequities. Broadly defined, alternative schools are public schools serving students whose needs cannot typically be met in a traditional school setting. As settings that are not categorized as traditional, vocational, or special education, they may circumvent certain state and/or federal accountability standards applied to traditional schools (Porowski et al., 2014). The National Center for Education Statistics estimates that about 435,000 students attended an alternative school during the 2014–2015 school year (Jimenez et al., 2018). However, accurate estimates of the number of alternative schools and student enrollment are difficult to obtain, given that each state can decide what programs to classify as alternative schools, as well as the eligibility criteria to attend and the grades served (Jimenez et al., 2018; Porowski et al., 2014). In Texas, for example, alternative education encompasses a wide variety of school types such as early college schools for high achieving students, newcomer schools for recent immigrants and refugees

with limited English proficiency, credit recovery schools for students at risk for school dropout, and disciplinary programs serving short-term placements for behavioral infractions.

For the purposes of this paper, we consider alternative high schools (AHSs) as those that (1) meet the National Center for Education Statistics definition for alternative education, (2) serve students in grades 9–12 who are at risk for school dropout due to falling behind on credits and/or behavioral issues resulting in placement in a non-residential disciplinary program or school of choice, and (3) are housed within the educational system rather than the justice system. In Texas, this includes disciplinary alternative educational programs (referred to hereafter as “disciplinary AHSs”) that serve mandatory placements for students removed from the traditional high school setting for behavioral infractions, as well as AHSs of choice serving generally longer-term placements for students who have fallen

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behind on credits. AHSs of choice belong to either independent school districts (with oversight from an elected board and access to local and state tax dollars) or public charter districts (with oversight from an appointed board, fewer regulations from the state, and access to state tax dollars but not local tax dollars; Texas Education Agency, 2022a; Texas Education Agency, 2022b). Black, Hispanic, Native, low-income, and lesbian, gay, bisexual, and transgender (LGBTQ) youth, as well as those with learning disabilities, are also disproportionately enrolled in AHSs nationwide (Carver et al., 2010; Johnson et al., 2016; Lehr et al., 2009; Schwab et al., 2016). Institutionalized discrimination (e.g., disproportional enforcement of Zero Tolerance policies, high stakes testing such as accountability tests that influence school ratings and funding; American Evaluation Association, 2002) contributes to the overrepresentation of these marginalized groups in the AHS setting (Carver et al., 2010; Heitzeg, 2009; Johnson et al., 2017; Swain & Noblit, 2011; Vanderhaar et al., 2014). Once sent to an AHS, students are often stigmatized as “bad” and “broken” until they graduate or drop out (Becker, 2010; Carver et al., 2010; Heitzeg, 2009; Johnson et al., 2017). AHS placement has been identified as one pathway on the school-to-prison pipeline that contributes to health and social inequities across the lifespan (Vanderhaar et al., 2014).

AHS students have experienced high levels of adverse childhood experiences, and they have higher levels of mental health needs and health-risk behaviors than do their peers in traditional schools (Grunbaum et al., 2001; Henderson et al., 2019; Johnson et al., 2013). The only nationally representative data about health-risk behaviors among this population—collected over two decades ago—indicated that, as compared to students in traditional schools, students in AHSs were more likely to report marijuana use (54% vs. 26%), cigarette use (70% vs. 36%), four or more lifetime sexual partners (48% vs. 16%), and attempting suicide (18% vs. 8%; Grunbaum et al., 2001). More recent data from statewide surveys in Minnesota and Texas support the continued elevated prevalence of health-risk behaviors and mental health issues (Johnson et al., 2013, 2019).

### *The Need for Nurses in Alternative High Schools*

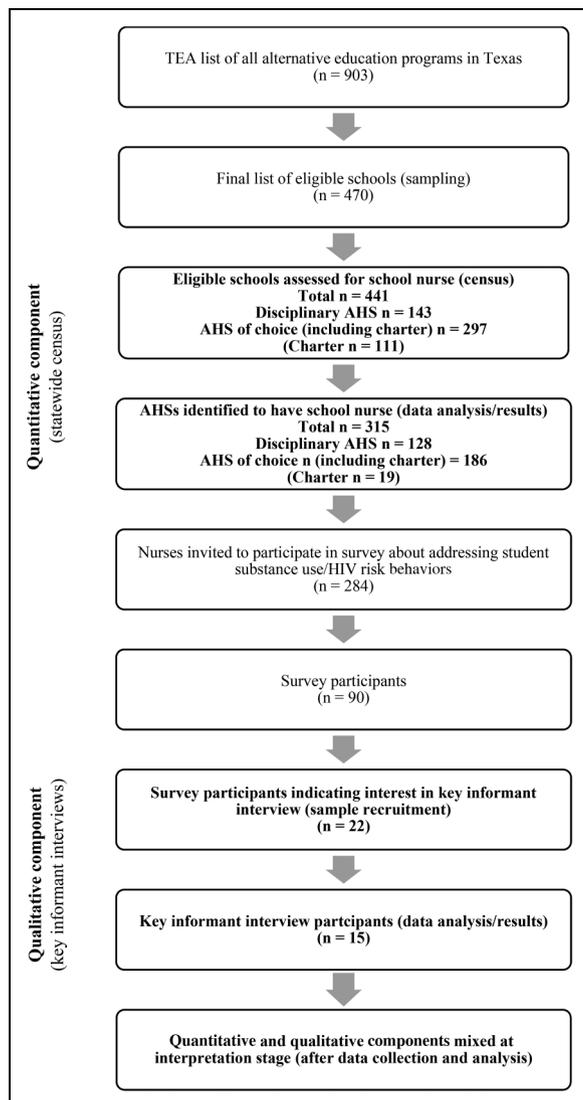
Addressing health equity, social determinants of health, and mental and behavioral health is clearly supported by NASN’s 21st Century Framework for School Nursing Practice (the “NASN Framework;” NASN, 2016). In a recent systematic review, Aronowitz et al. (2021) found that wellness-focused environments could positively impact student health and academic achievement and decrease levels of school punishment, and issued a call to action for school nurses to leverage their positions to advocate for dismantling the school-to-prison pipeline. School nurses are well-positioned to lead efforts for wellness-focused school environments that can address the complex

needs of AHS students from a health perspective rather than a disciplinary perspective (Aronowitz et al., 2021). The literature supports that school nurses address mental and behavioral health (e.g., substance use, sexual risk-taking) through various strategies (e.g., screening, brief intervention, and referral to treatment; comprehensive sex education, school-based structural interventions, educational programs) (Bourgault & Etcher, 2022; Dickson et al., 2020; Dittus et al., 2018; Ducker & Terry, 2012; Embrey, 2012; Hoskote et al., 2023). Evidence also suggests that school nurses positively impact student health and academic outcomes and that better school nurse staffing is associated with improved self-management of chronic conditions, better grades, and fewer absences (Best et al., 2021; Bonaiuto, 2007; National Association of School Nurses [NASN], 2019; Pennington & Delaney, 2008; Rodriguez et al., 2013; Yoder, 2020). No known studies have explored the impact of school nursing in AHSs, specifically. However, school nurses have effectively addressed the needs of other populations of underserved youth. For example, Baisch et al. (2011) found that in predominantly low-income urban schools with a nurse, life-threatening conditions and asthma were identified among students more often than in schools without a nurse, and immunization rates were higher. Similarly, McCullough et al. (2020) found that low-income middle schools in Arizona with a school nurse had higher immunization rates than those without a nurse.

### *Purpose of Study*

Although various recommendations exist regarding optimal levels of school nurse staffing in the U.S. (NASN, 2020), little is known about school nurse staffing in AHSs. School districts and charter schools in Texas are required to meet certain health requirements (e.g., provide coordinated school health programs, report data to the state regarding student health and physical activity), but are not required to have registered nurses on each campus (Swaby, 2021). NASN recommends that schools be staffed by an RN with at least a baccalaureate degree (Hoover & Dooley, 2019; NASN, 2021), but in Texas licensed vocational nurses (LVNs) can serve in school nurse roles (Education Services Center Region 12, 2017; *Texas Education Code: Title 2, Subtitle G, Chapter 38*, 2007; Texas Education Agency, 2022b). Given the stigmatized nature of AHSs, the inequities faced by AHS students, and the varying resources available to schools and districts, a better understanding of current staffing patterns and perceived needs to support school nursing work in AHSs is an important step in assuring that AHS students have the necessary support they need to be healthy and succeed academically.

The purpose of this mixed methods study was to describe school nurse staffing in Texas AHSs. Our research questions were as follows: (1) what percentage of Texas AHSs are served by a school nurse, (2) what type of appointments



**Figure 1.** Sequential Mixed Methods Design Flow Chart.

are held by nurses in Texas AHSs (i.e., full-time, part-time, on call), (3) does staffing differ by school or district/community characteristics, and (4) how do school nurses working in Texas AHSs describe their type of appointment and perceive the adequacy of nurse staffing in this setting? Our study was guided by NASN's 21st Century Framework for School Nursing Practice (NASN, 2016), which highlights the importance of evidence-based approaches to providing school health services, including appropriate staffing, as well as the importance of school nurses in addressing health equity.

## Methods

We conducted a two-phase explanatory sequential mixed methods study, in which quantitative and qualitative data collection and analysis are conducted separately, with nurses in Texas AHSs during the 2018–2019 school year. Specifically, we used the participant selection model

variant (quant-QUAL) in which the quantitative component is done first and used primarily to identify participants for more in-depth follow-up interviews, and qualitative findings are more heavily emphasized (see Figure 1; Creswell & Plano Clark, 2007). We integrated findings from our statewide census with results from key informant interviews to provide more depth and interpretation regarding the landscape of school nurse staffing in Texas AHSs. All study protocols were reviewed and approved by the Institutional Review Board at The University of Texas at Austin, as well as each school district that required approval for research to be conducted with their nurses.

### Quantitative Component (Statewide Census)

The quantitative data for this paper come from a statewide census of school nurse staffing in Texas AHSs that we conducted in the summer and fall of 2018. This census was used to construct our sampling frame for a statewide survey of school nurses working in AHSs as part of a larger study aiming to better understand their role in addressing student substance use and HIV risk behavior. We used the census of schools rather than the survey of nurses for the present analysis because it was more inclusive of Texas AHSs, and it therefore more appropriately answered our school-level research questions. The qualitative data in the present study are from key informants recruited via the statewide survey.

We obtained a list of all AHSs in the state during the 2017–2018 school year ( $N = 903$ ) through an open records request from the Texas Education Agency, the state agency responsible for overseeing public education. The list we received included additional information about each school, including campus type (e.g., disciplinary AHSs, residential juvenile justice programs, AHSs of choice, including a variety of campuses such as newcomer schools and credit recovery schools) and district type (e.g., urban district, charter district) (Texas Education Agency, 2018).

We scanned this initial list and eliminated duplicates and schools that did not meet the following inclusion criteria: (1) schools housed within the educational system, (2) schools serving some combination of grades 9–12, (3) AHS of choice serving students at risk for dropout (e.g., credit recovery) or disciplinary AHS (i.e., our earlier definition of AHS for this paper), (3) non-residential campuses where students travel to campus for class and return home. We retained schools classified as charter schools if we could determine that they served academically at-risk students. As we worked to determine the presence of a school nurse and obtain their contact information, we removed additional schools from our list (e.g., schools that were permanently closed), leaving us with 470 eligible schools for our census. Ultimately, we were able to connect with 441 AHSs—our final analytic sample size. We removed all identifying information from the data set prior to analysis (e.g., school name, name and contact information of nurse) and

stored all versions of our data set on a password protected computer.

**Measures.** We created one variable (*school nurse*, which included RNs and LVNs) with the following four categories to represent the status of school nurse staffing in Texas AHSs: (1) no nurse, (2) full-time nurse, (3) part-time or on-call nurse, and (4) nurse, appointment type unknown. We combined part-time and on-call nurses into one category for the quantitative analysis, because neither group had a full-time presence on campus and our sample size for part-time nurses was small. We used the following strategies to determine the presence of a school nurse, including the type of appointment (i.e., full-time, part-time, on call) when possible: (1) website identification (school nurse listed on website for the AHS, as required by the Texas Education Code; *Texas Education Code: Title 2, Subtitle F, Chapter 28*, 1995), (2) phone call to the school and/or district to ask if they had a school nurse, (3) email to a school and/or district administrator to inquire about the presence of a school nurse in the AHSs.

We created two additional variables—*charter school status* and *community/district size*—to determine whether nurse staffing differed by school or district/community characteristics (our third research question). *Charter school status* was a dichotomous variable (disciplinary AHSs and “non-charter” AHS of choice belonging to an independent school district vs. charter schools). There were no differences in school nurse staffing between non-charter AHS of choice and disciplinary AHSs, so combining them into one category made for a clearer comparison between charter and non-charter AHSs. *Community/district size* was created by condensing the Texas Education Agency’s nine district types (based on size and location of the community) into five broader categories: (1) large county/city, (2) mid-sized county/city, (3) small county/city, (4) small district, and (5) rural (see notes to Table 1). We excluded charter schools for this variable because we could not determine the size of the district or community in which

they were located, thus *community/district size* compared differences among non-charter schools, only.

**Analysis.** We conducted quantitative analyses using Proc Freq in SAS (version 9.4; SAS/ACCESS, 2019) to obtain prevalence estimates for *school nurse* staffing overall. We also calculated chi-square estimates and 95% confidence intervals to determine whether significant differences in school nurse staffing existed by *charter school status* and *community/district size*. Differences were considered statistically significant if the confidence intervals did not overlap (Cumming, 2014).

**Qualitative Component**

We conducted key-informant interviews between August and December of 2019 with a convenience sample of school nurses across the state of Texas. We recruited participants through the statewide survey described above as part of our quantitative component and as described in Figure 1. A total of 90 eligible nurses took the survey, with 61 of them completing at least 80% of the survey. The last question in the survey assessed interest in participating in a key informant interview; we received contact information from 22 potential participants and successfully recruited 15 of them. To be eligible to participate, the nurses had to meet the same eligibility criteria as described in the quantitative section above (i.e., an RN or LVN assigned at least on-call/part-time to at least one school serving some combination of grades 9–12 in a school meeting our definition of an AHS).

Interviews were conducted either in person or by phone. The first author and another trained research staff member conducted all interviews, which lasted 60–105 min. Each participant consented to participate in the interview, filled out a short demographic survey at the beginning of the interview (e.g., indicating whether they were assigned to the AHS as a full-time, part-time, or on-call nurse), and received a \$50 electronic gift card as an incentive. Each participant was

**Table 1.** Percentage of Texas Alternative High Schools that Have any Type of School Nurse Appointment, by Community/District Size (2018 Statewide Census), n = 330.

	Large County/City <sup>a</sup> % (95% CI)	Mid-sized County/City <sup>b</sup> % (95% CI)	Small County/City <sup>c</sup> % (95% CI)	Small district <sup>d</sup> % (95% CI)	Rural <sup>e</sup> % (95% CI)
No School Nurse	10.0 (4.6, 15.4)	9.6 (4.4, 14.8)	15.6 (3.0, 28.2)	7.7 (0.0, 16.1)	14.3 (0.0, 32.6)
Nurse (any type of appointment)	90.0 (84.6, 95.4)	90.4 (85.2, 95.6)	84.4 (71.8, 97.0)	92.3 (83.9, 100.0)	85.7 (67.4, 100.0)

Note:  $\chi^2 = 1.59$  ( $p = 0.81$ ). Charter schools excluded from analysis due to inability to determine their geographical location. TEA = Texas Education Agency.  
<sup>a</sup>Located in county with a population of >985,000, or contiguous to such a county (TEA classification: *Major Urban* or *Major Suburban*).  
<sup>b</sup>Located in a county that has a population between 100,000-984,999 & not contiguous to a *Major Urban* district, or is contiguous to such a county & meets certain enrollment criteria (TEA classification: *Other Central City* or *Other Central City Suburban*).  
<sup>c</sup>Located in a county with a population between 25,000-99,999 (TEA classification: *Independent Town*).  
<sup>d</sup>District enrollment is at least 300 and has grown by at least 20% over the last 5 years, or district enrollment is equal to or greater than median district enrollment for state (TEA classification: *Non-Metropolitan Fast Growing* or *Non-Metropolitan Stable*).  
<sup>e</sup>District enrollment is less than 300 students or enrollment is between 300 and median for state but it is not a fast-growing district (TEA classification: *Rural*).

assigned an identification number that we used to label all transcripts, audio files, and administrative notes. We also removed identifying information (e.g., school, district, town names) from any data presented here.

We developed a semi-structured interview guide organized by key topic areas according to the overall aims of our study to address how participants described their appointments and perceived the adequacy of nurse staffing in Texas AHSs. We inquired about current job responsibilities (e.g., schools overseen, time spent in AHS setting), staffing models (e.g., how many buildings a nurse was assigned to, paraprofessionals to whom they delegated responsibilities), and opinions about staffing in the AHS setting.

**Analysis.** Key informant interviews were audio recorded and transcribed verbatim by a third party. Trained members of our research team listened to each recording and verified each transcript as we received it from the transcription agency. We used iterative thematic analysis to explore participants' perceptions of staffing and support for school nurses working in Texas AHSs (Braun & Clarke, 2006). Two authors (KEJ, WT) of this paper independently read three transcripts to familiarize themselves with the data before independently conducting line-by-line analysis and meeting to compare initial codes. After three subsequent rounds of independent coding and discussion, the team reached consensus on the codes and finalized the codebook. Next, we divided the remaining transcripts between these two authors to independently code, meeting biweekly to compare codes and identify emerging themes. We continued this process until saturation of major themes was achieved. A third member of the research team was available for consultation on data interpretation as needed. Dedoose software (SocioCultural Research Consultants) was used to facilitate coding and data management.

**Qualitative Rigor.** Transferability was addressed by providing detailed descriptions of data and reporting data using participants' direct quotes. Credibility of data analysis was enhanced by having the first two authors (KEJ, WT) critically and independently review the data before meeting to reflect on the analytic process. Reflexivity was maintained through ongoing documentation in a shared research log, comparing these notes against the data and engaging in regular discussions about the reflections. We did not conduct member checking because although it has been encouraged by some to provide verification and credibility, it has also been criticized for being a threat to validity (Elo et al., 2014; Morse et al., 2002).

### Integration of Quantitative and Qualitative Components

Analyses of quantitative and qualitative data were conducted independently and combined in the results and interpretation

stages of the study to triangulate our findings and for clarification, elaboration, and illustration (i.e., complementarity; Wisdom et al., 2012).

## Results

### Quantitative Component: Percentage of Texas AHSs Served by a School Nurse

We were able to confirm school nurse staffing in 441 of the 470 AHSs in Texas meeting our eligibility criteria. Of these 441 schools, 71.4% ( $n = 315$ ) reported that they had a nurse in some capacity. A further breakdown by appointment type revealed that 18.6% ( $n = 82$ ) had a full-time nurse; 7.0% ( $n = 31$ ) had a part-time nurse; 21.8% ( $n = 96$ ) had access to an on-call nurse who came to campus only as needed; and 24.0% ( $n = 106$ ) had a school nurse, but we could not determine the type of appointment.

Regarding whether staffing differed by charter school status or district/community size, we found non-charter schools were significantly more likely than charter schools to report having access to a school nurse in some capacity (89.7% vs. 17.1%). Among non-charter schools reporting a school nurse, 23.3% (95% CI: 18.8, 27.9) had a full-time nurse, as opposed to 4.5% (95% CI: 0.7, 8.4) of charter schools. Among non-charter schools (charter schools were excluded due to inability to determine district/community size), there were no differences by community/district size in the overall percentage of schools with any type of school nurse appointment. See Table 2.

### Qualitative Component

Among our key informants ( $n = 15$ ), nine (60%) were assigned to a disciplinary AHS only, three (20%) were assigned to an AHS of choice only, and three (20%) were assigned to both a disciplinary AHS and an AHS of choice. Furthermore, eight (53%) were assigned full-time to one AHS campus, two

**Table 2.** Percentage of Texas Alternative High Schools that Have a School Nurse, by Charter Status and Type of Nurse Appointment (2018 Statewide Census),  $n = 441$ .

	Non-Charter % (95% CI)	Charter School % (95% CI)
Nurse (any type of appointment)*	89.7 (86.4, 92.3)	17.1 (10.1, 24.1)
No school nurse*	10.3 (7.0, 13.6)	82.3 (75.9, 89.9)
On call/part-time nurse*	36.4 (31.2, 41.6)	6.3 (1.8, 10.8)
Full-time nurse*	23.3 (18.8, 27.9)	4.5 (0.7, 8.4)
Nurse (appointment type unsure)*	30.0 (25.1, 34.9)	6.3 (1.8, 10.8)

Note:  $\chi^2 = 214.44$  ( $p < 0.0001$ ). Within rows, all comparisons were statistically significant (\*) as evidenced by non-overlapping confidence intervals ("total" column omitted from comparisons).

(13%) were assigned full-time to two AHS campuses, one (7%) was assigned part-time, and four (27%) had an on-call assignment. See Table 3.

**Theme: Inadequately Staffed to Meet Student Health Needs.** We identified one major theme that captured participants' perceptions of staffing and support for school nurses working in Texas AHSs: that these settings are *inadequately staffed to meet student health needs*. Although 71.4% of schools in our quantitative component had a nurse in some capacity, the qualitative findings revealed that even those assigned to an AHS in a full-time role struggled to meet the unique health needs of students. We identified four sub-themes tying back to this broader theme: (1) understaffing of school nurses in Texas AHSs; (2) an indiscriminate approach to staffing that did not account for the needs of the student population; (3) negative consequences that resulted from

being inadequately staffed; and (4) inequities in nurse staffing in AHSs as compared to other schools in the district. Next, we offer further explanation of our subthemes along with representative quotes in the text and in Table 4.

**Subtheme: Understaffed.** Our quantitative data suggested that most Texas AHSs did not have a full-time nurse, with budgetary constraints being a frequently cited reason by participants:

I said, there needs to be a full-time nurse on that campus. But it's a money issue. (On call RN at urban disciplinary AHS)

One key informant provided a rich description of how understaffing within her district impacted the limited amount of time she was able to spend at the AHS:

Everybody, everybody calls me 'The Blur' because...they'll see me here and then they'll see me there. And then they'll see me here and then they'll see me there. And I said there's a reason for that. It's because we're terribly understaffed. (On call RN at urban disciplinary AHS)

**Table 3.** Demographics of Qualitative Sample of Nurses Working in Texas AHSs, 2019 (n = 15).

Sex, % (n)	
Female	100 (15)
Male	0 (0)
Race/ethnicity, % (n)	
White, non-Hispanic	80.0 (12)
Hispanic/Latino	20.0 (3)
Age, years (range)	51 (35-69)
Licensure	
LVN	20.0 (3)
RN	80.0 (12)
Education level, % (n)	
Masters in nursing	6.7 (1)
Baccalaureate in nursing	40.0 (6)
Associates in nursing	26.7 (4)
Diploma in nursing	6.7 (1)
Licensed Practical/Vocational Nurse	20.0 (3)
Years in school nursing, mean (range)	14.24 (4-25)
Years working with AHS students, mean (range)	7.47 years (11 months-24 years)
Type of AHS assignment, % (n)	
School of choice	20.0 (3)
Disciplinary AHS	60.0 (9)
School of choice & disciplinary AHS	20.0 (3)
Type of AHS assignment, % (n)	
Full time, one AHS campus	46.7 (7)
Full time, two AHS campuses	13.3 (2)
Part time	13.3 (2)
On call	26.7 (4)
Student grades served, % (n)	
High school only	13.3 (2)
Middle and high school,	46.7 (7)
Elementary, middle, and high school	40.0 (6)
Geographical location of school(s) % (n)	
Urban	46.7 (7)
Suburban	26.7 (4)
Urban & Suburban	6.7 (1)
Rural	20 (3)

While our quantitative findings suggested that AHSs were understaffed in ways that were similar (yet more pronounced) to school nursing shortages in general, our key informant interviews provided insights into unique considerations related to understaffing in the AHS setting. For example, even with the smaller enrollments in AHSs, nurses felt that the acuity of student social needs, mental health, and health-risk behaviors—on top of other routine health needs (e.g., vision screenings) warranted a full-time nurse who could establish trust and rapport with students so that they could effectively conduct case management and other school nursing interventions. The potential for students and their health needs to fall through the cracks of the school system without a full-time nurse present in the AHS was concerning to participants. Even when a full-time nurse was assigned to an AHS campus, the flexible scheduling of AHSs (e.g., evening hours) might mean that one full-time nurse could still be inadequate for ensuring the campus is staffed to respond to student needs. As one participant pointed out:

Because our campus is open for that many hours [7:30 am–8:00 pm], I can't be... I'll come back and do hearings and visions or if they—something's needed... but... I can't be here all the time, every day. (Full time RN at suburban AHS of choice)

Participants also described competing priorities and state/district-level policies that prevented them from spending sufficient time on campus with students. One participant who was assigned an AHS and other schools within the district captured this tension saying:

It's not that I'm not allowed that much time over there at [the disciplinary AHS]. It's just with all of my other duties that

**Table 4.** Additional Representative Quotes About School Nurse Staffing in Texas Alternative High Schools.

Theme: Inadequately staffed to meet student health needs

<i>Subtheme</i>	<i>Respondent characteristics</i>	<i>Representative quotes</i>
Understaffed	Part time LVN at rural DAEP	Even though there's—even though there's, honestly, probably no more ever, in all the age groups, there's probably no more than 20, 25 students at a given time. And that's probably reaching right there. There still would be enough for them to do probably at the DAEP level.
	Full-time RN at urban school of choice	I know a lot of districts still don't have a full-time nurse at every campus, which I don't agree with. But, you know, I think they need one at every campus. But that's ideal, I guess, you know, in a perfect world
Indiscriminate approach to staffing undermines student needs	Full time RN at urban DAEP	I worked as a sub nurse for, like, seven months. And then, they didn't even have a sub orientation. [District colleague] just sat down and talked to me and then I was thrown to the wolves. And now they have a little orientation for the—for subs, as well as new nurses. Now, new nurses have someone at the campus with them for weeks on end. But back then, you just—I just started at the [AHS] and I didn't know anything about crisis intervention. And I just winged it. And I just—Everything I learned was from experience about how to deal with it. And just, just it's taken me years, but [laughs] I like to think now I pretty much know what to do.
	On call RN at urban DAEP	It's not generally, just, okay, you know, here's a person, who's an attendance secretary who makes \$10 an hour and she's being shoved into a first aid role as a—basically an EMT.
Negative consequences of inadequate nurse staffing (e.g., limited capacity to address needs, establish trust and rapport)	On call RN at urban DAEP	And if I needed to get there, I can get there relatively quickly, but like today, I, mm, mm, I don't have a car. So, there's no way for a nurse to physically get to that campus on time. If you have a kid that's having an asthma attack, if you have a kid that's having difficulty breathing, I can only do the whole, "Well, tell me what you're seeing" to a layperson
	Full-time RN at urban school of choice	I use my whole time, my full time at work, you now, building these relationships and to where the kids trust me enough to admit things to me and to tell me things and all. So, I don't see how—I think you would miss a lot being part-time or on call. I don't think you would—these kids are already very leery, just when I'm out and there's a sub just to cover the basic nursing things. So I don't, I don't feel like you would get the story and the background and the—and I don't think the kids would open up because it takes them a while. They're already very distrusting of adults in some situations, you know? And, and I think you would miss out a lot.
School nurse staffing inequities	On call LVN at suburban DAEP	...every school, except for the DAEP and the career technology center, have a nurse
	On call RN at urban DAEP	You know, and to me that's kind of a disservice to them. And I will tell you, they don't share with the parents the fact that there's no nurse on that campus.
	Part time LVN at rural DAEP	I mean, I don't see...honestly of that [AHS getting its own nurse] ever happening. I mean, before I took this job seven years ago, an aide... nurse's aide—well, she was a paraprofessional— had this position for 35 years... so really it took a lot for them to even hire a new nurse.

are required here at the junior high, because that's where my office is... I'm more required at the junior high level than they allow me to be at the high school or [disciplinary AHS] level. I mean in all honesty; I feel like there could be a nurse at each campus. (Part time LVN at rural disciplinary AHS)

*Subtheme: Indiscriminate Approach to Staffing.* Participants reported that their school districts lacked intentional

processes as to how to staff nurse and health support positions in AHSs. They described falling into their roles due to coincidental circumstances rather than active recruitment by the district. For example, some participants recounted how they had been hired into their roles after serving as substitute or on-call nurses in the district, or looking for part-time work and the AHS being one of the few opportunities. When asked, participants typically reported entering

their roles in the AHS without formal orientation regarding the unique needs of AHS students. Several participants reflected on the lack of orientation and training. As one shared,

It [an orientation] would have been cool. It would have been awesome. I think I would have been better prepared... better able to serve the kiddos, the staff, and the parents because it—alternative centers run different than regular schools. They definitely do. (Full time RN at urban disciplinary AHS)

A different participant shared how instead of hiring an additional full-time nurse, their district continued to pay for short-term substitutes to augment nursing capacity:

I've always said that we need an extra nurse anyway for when someone's kid gets sick or something like that. And so, the money that we're paying in substitutes, we could have that extra nurse. (On call RN at urban disciplinary AHS)

Participants also described various permutations of support staff for health needs on their campuses. When asked about who they delegated responsibilities to when they were not on site at the AHS, participants often described working with staff who had no health-related training, such as secretaries and administrators, rather than health paraprofessionals, who were not typically staffed to serve AHSs. Participants reported training secretaries, principals, and counselors to administer first aid and medications and describe student conditions to nurses over the phone to help them assess student conditions and plan appropriate courses of action. Most participants worried about this state of affairs and the need to frequently leave students and faculty without personnel capable of responding to health emergencies. One participant did not believe a health aide would be useful, however, since the bulk of her responsibilities consisted of case management, which falls under the role of a school nurse.

This is all case management, here... it would be useless to have a health aide here because case management is just, I mean, every day, everyone's case management. (Full-time RN at urban AHS of choice)

Because schools in Texas are not required to have an RN on campus (Hoover & Dooley, 2019), we asked our school nurse key informants their opinions about AHSs being staffed by RNs versus LVNs. Whether the participant was an RN or LVN, they expressed mixed and uncertain opinions about whether AHSs should be staffed by RNs or LVNs, with no predominant themes emerging. The following quote captures this ambiguity:

I don't believe there's a huge difference in capability necessarily, but in legal scope of practice we need an RN at the [disciplinary AHS]. (Full-time LVN at suburban AHS of choice and disciplinary AHS).

**Subtheme: Negative Consequences of Inadequate Nurse Staffing.** Participants revealed how inadequate nurse staffing limited their capacity to support AHS students. Specifically, participants who served their campuses in an on-call or part-time capacity reported that their limited presence on the AHS campus impacted their ability to develop rapport with students, to identify and understand the complex needs of the student population, and to provide appropriate nursing care for this at-risk group. One participant captured these struggles succinctly:

I don't know how you could not have a nurse on staff full-time to take care of these kids. And that's how they fall through the cracks because they don't have that stability, they don't have that opportunity to build a rapport with the nurse or probably even the social worker, because they're inundated dealing with issues too, so that they have somebody to go to. Because the teachers are busy teaching class. (Full-time RN at urban AHS of choice)

Participants widely reported being stretched thin, impacting their ability to fully address the range of physical, mental, and emotional health concerns that students at AHSs experience.

**Subtheme: School Nurse Staffing Inequities.** Participants indicated that the haphazard approach to staffing within AHSs combined with structural inequities within public education systems and funding contributed to school nurse staffing inequities between AHSs and other campuses within the district. In Texas, schools are not required to have any nurse or licensed health personnel, and staffing decisions are made at the local school district level. Among our qualitative sample, it was common that within a given district, every school except for the AHS was assigned a full-time nurse. Participants recognized that the student population on their campuses was smaller, but they argued that staffing decisions should be predicated on the needs of the students, not merely the number of students. Because the acuity of health and social needs of students at AHSs are often higher than traditional public schools, participants perceived that the current approach to school nurse staffing was not just inadequate, but inequitable. One participant connected this inequity to the social positions of AHS students and families, saying:

I think it's, you know, look at the population that's there. These are not affluent children. These are not children that—whose parents are doctors, lawyers, things like that. No, it's a parent who is lower socioeconomic. They're where the kids have gotten into trouble. They're at-risk youth. They're there. And, you know, they're there for a reason because they got themselves in trouble. Granted. But the parents don't know any better to ask. (On call RN at urban disciplinary AHS)

## Discussion

The NASN (2020) calls for registered professional nurses to be available to all students while they are in school and for school nurse workloads to be evaluated annually, at a minimum. Such workload assessments should take into account not just the size of the student population but the students' acuity and social needs, the characteristics of nursing staff, and the infrastructure of the school and community (Jameson et al., 2018, 2022; NASN 2020). For AHS students, an overlooked population experiencing great health and social inequities, this may amount to needing at least one full-time nurse despite typically smaller enrollments. This highlights the need to consider behavioral and social needs in addition to physical needs when assessing the acuity of a student population— an important contribution to the literature regarding school nurse staffing and its implications for health equity.

Indeed, our mixed methods findings suggest that Texas AHSs are sorely understaffed and, according to nurses working in these settings, could benefit from increased nursing support. While AHSs were understaffed across the board, when looking at school and district characteristics in our census we noted a stark difference between AHSs that were charter schools (17%) and AHSs that were non-charter schools (90%) having any type of nursing support. This may be due to differences in the policies regulating charter schools (e.g., sources of funding, structure of the boards overseeing them) or other unidentified factors. Another potential explanation could be misclassification bias: if one charter in our census was deemed to not have a nurse, it often meant that every charter in the network was classified as not having a nurse, since, unlike AHSs in independent school districts, our point of contact for one charter was often the point of contact for the entire charter network statewide. Further exploration is warranted given the proliferation of charter schools in Texas— particularly with regards to students considered to be academically at risk.

While our quantitative findings confirm much of what is already known about the inadequacy of nurse staffing in U.S. schools, overall, our qualitative findings provide more depth regarding the uniquely dire and inequitable patterns of understaffing in this sample from Texas. Findings from our statewide census of AHSs suggested that only 19% of AHSs were served by a full-time nurse. This is a very crude estimate, because we were unable to determine the type of appointment for 24% of nurses working in Texas AHSs (despite requirements that each campus in the district must specify on their website whether they have a full-time nurse; *Texas Education Code: Title 2, Subtitle F, Chapter 28*, 1995). But even if all schools in our dataset with undetermined school nurse appointment types were full-time appointments—which is highly unlikely—there would still be fewer than half of Texas AHSs served by a full-time nurse (43%). This is substantially less than the national estimate for staffing across schools (62%) from Willgerodt et al. (2018).

Qualitative findings also highlighted possible structural inequities within districts regarding school nurse staffing. Specifically, we learned that AHSs may be the only school in the district without a full-time nurse—a curious finding, given the degree of health and social inequities AHS students face. AHS nurse key informants echoed well-documented reasons for staffing shortages in traditional public schools (e.g., lack of funding), as well as consequences of being understaffed (e.g., being unable to establish rapport to address student health needs; Davis et al., 2021; Fauteux, 2010; Smile et al., 2019; Willgerodt et al., 2018). Concerningly, some perceived the lack of school nurses in their AHS as a conscious decision that was influenced by the social and economic vulnerability of the youth and families disproportionately served in these settings. Given the acuity of AHS students' mental health, behavioral health, and social needs, the understaffing of school nurses in AHSs raises important equity issues that require further investigation, introspection, and intervention. That AHSs would be overlooked, or even intentionally neglected, when allocating already scarce resources for school nursing contradicts several components of the NASN Framework (e.g., health equity, school nurses as systems-level leaders) and would be consistent with literature suggesting that the AHS setting and student population are stigmatized and not prioritized relative to other campuses in a district (Becker, 2010; McNulty & Roseboro, 2009; Watson, 2011). Although AHSs have been criticized as a stop along the school-to-prison pipeline, they also represent an opportunity to intervene, disrupt that progression, and address health and social needs that may be manifesting as poor grades, chronic absenteeism, or disruptive behaviors. Adequate investment in school nurses— which signals addressing the health-related roots of these issues— is one important step in supporting students who have been written off by large swaths of society.

As long as school nurses are funded primarily through education budgets, which are constantly strained, there will remain substantial barriers to school nurse staffing (e.g., lower pay relative to nurses in acute care, cutting existing school nurse positions). The *Future of Nursing 2020–2030* report provides suggestions that could address these barriers, including establishing payment mechanisms for school nurses that are flexible, sustainable, and competitive with wages that can be earned in other nursing specialties (National Academy of Medicine, 2021). Our results suggest a more deliberate approach to staffing AHSs is needed, including how to fund them within the broader context of underfunded school systems. Without adequate investment in school nurses, our key informants commonly reported incorporating secretaries, principals, and other staff without formal healthcare training into the delivery of health services. This is a common phenomenon across schools nationwide (Willgerodt et al., 2018), but is particularly concerning for AHS students given the inequities they face. The NASN Framework, which is grounded in public health, and promotes a student-centered approach that incorporates

family, school, and community context, clearly supports the critical role that school nurses can play as licensed healthcare personnel in addressing health and social equity for marginalized populations (NASN, 2016; Willgerodt et al., 2021). For example, school nurses can bring in a crucial health-focused perspective to leading evidence-based program and policy development within AHSs to address disproportionately high levels of mental health problems and health-risk behaviors (e.g., substance use, fighting, externalizing symptoms seen as disruptive to the classroom) that are often treated as disciplinary issues and can lead to progression along the school-to-prison pipeline (Aronowitz et al., 2021). We also noted a lack of intentional efforts to determine nurse staffing needs for AHSs and support for nurses to practice to their full scope with this population (e.g., lack of orientation, active recruitment to positions). Our findings also highlight the need to consider unique hours of operation for AHSs (e.g., evening hours) as well as the professional development needs of nurses working in this setting to be adequately prepared to address student needs. No clear consensus emerged among interview participants regarding whether AHSs should be staffed by RNs or LVNs. This may be partially attributable to RNs not being utilized to their full scope of practice in the AHS setting due to time constraints or misunderstandings by educators about the differences in licensure (Davis et al., 2021), as well as unclear guidelines regarding what LVNs could do in areas related to case management, social needs, mental health, and health-risk behaviors. Yet, many also felt that either an RN or LVN was well-positioned to establish the trust needed to work with AHS students. Clearer guidance is needed to ensure that school nurses are empowered to practice to their full scope without risking their licensure.

### *Strengths and Limitations*

Our mixed methods design strengthens the credibility of our findings. We had a high degree of convergence between quantitative and qualitative findings, including that AHSs are understaffed to an even greater degree than what has previously been found regarding public schools more broadly. However, our quantitative findings should be interpreted in the context of limitations, including the potential for misclassification bias (e.g., in our inclusion criteria for schools, in determining whether charter schools in particular were staffed with school nurses, in classifying whether nurses were appointed full-time, part-time, or on call). We were also unable to recruit nurses from charter AHSs to glean more insights during our interviews. Results suggesting staffing inequities within districts emerged organically from participants' responses rather than through a formal question on our semi-structured interview guide. Our findings indicate that this is an important area for future studies to assess formally. We were also limited in assessing differences in staffing by licensure (i.e., RN vs. LVN) since

we could not ascertain this information during our census. Some may regard the lack of member checking to be a limitation of our qualitative findings. Finally, staffing patterns in Texas AHSs may not reflect staffing patterns in other states.

### *Implications for School Nursing Practice*

In addition to the structural and health equity implications of ensuring adequate school nurse staffing in AHSs, our findings have important implications for school nurses practicing in AHSs and in settings that interface with AHSs (e.g., traditional schools that refer students to AHSs). First, they highlight the importance of ensuring that school nurses and their advocates educate decisionmakers, school administrators, and the broader school community (e.g., students and families) about the full scope of services that school nurses can provide from the individual level to the systems level. While many are familiar with the work school nurses do on an individual level to address physical health (e.g., vision and hearing screenings, asthma management), the NASN Framework clearly specifies that addressing health behaviors, community and population health, and health equity through upstream interventions (e.g., case management, advocacy, policy, and program development) is a crucial part of the school nurse role. Such upstream efforts are particularly needed in AHS settings and require school nurses and other stakeholders to educate and advocate for adequate school nurse staffing in these settings. For example, schools could support nurses in these efforts by providing a dedicated percentage of their paid effort to activities such as serving on school health advisory councils where important policy decisions regarding student health and school nursing are made. In this role, nurses could educate other advisory council members and school board members about the AHS population and how school nurses can best serve them (e.g., having a school nursing presence at all times when students are on campus). School nurses should also consider becoming active in their state's school nursing association where they can expand awareness about and support for AHS students, as well as familiarizing themselves with the legislative process in their state and how they might form or join coalitions that can advocate for the needs of AHS students. Nurses in all settings should also familiarize themselves with the school-to-prison pipeline and the role they can play in disrupting it. For example, nurses in AHSs and traditional schools alike are well-positioned to advocate for health-oriented policies and programs to student issues that often result in alternative school placement (e.g., substance use, externalizing behaviors).

At the school-level, school and district administrators may wish to consider working with school nurses to develop orientations and continuing education opportunities that focus on case management and advocacy, including navigating social needs of students and families and understanding how they relate to mental and behavioral health needs

(e.g., drug overdoses, pregnancy, mental illness, bullying). Our results suggest the role of the school nurse may look different than that of a school nurse in another school on campus, thus requiring different strategies for fully supporting nurses in this setting to meet student needs.

The presence of school nurses in AHSs is crucial to achieving health and social equity for this vulnerable population. This study provides insight into the state of school nurse staffing in Texas AHSs, providing additional evidence to support that the needs of this population are not receiving equitable attention when allocating resources for student support. Such underinvestment threatens to further entrench inequities during a critical developmental period that impacts the remainder of the life course and must be addressed.

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