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## High School Students' Self-Reported Use of School Clinics and Nurses

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### Abstract

Access to school health clinics and nurses has been linked with improved student achievement and health. Unfortunately, no studies have examined how many students report using school clinics or nurses and for which services. This study addressed this gap with data from a nationally representative sample of 15- to 25-year-olds. Respondents who reported being in high school were provided a list of services and asked whether they had gone to a school nurse or clinic for any of the listed services. Nearly 90% reported having access to a school clinic or nurse. Among students with access, 65.6% reported using at least one service. Non-White students and younger students were more likely to report having access to a clinic or nurse. These results show many students have access to clinics or nurses and are using these services, although not uniformly for all services.

### Keywords

quantitative research; communicable diseases; chronic diseases; asthma; immunizations; health/wellness

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Students' access to health services at school can include nursing services, school-based health centers, integrated services (e.g., school coordinated services delivered off-campus), or a combination of different services (American Academy of Pediatrics, 2001; Magalnick & Mazyck, 2008). It is estimated that there are nearly 75,000 registered nurses employed within schools (U.S. Department of Health and Human Services, 2010), where they play an integral role in managing chronic disease, assessing health needs, and ensuring disease is not a barrier to achievement. Furthermore, the most recent census of school-based health centers

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Authors' Note

The findings and conclusions in this article are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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identified 2,315 centers (Love et al., 2016). Centers provide primary care, mental health, dental services, and, in some localities, sexual and reproductive health care.

Research on the effectiveness of school nurses and clinics has suggested benefits to health outcomes (Ethier et al., 2011; McNall, Lichty, & Mavis, 2010), improved achievement (Murray, Low, Hollis, Cross, & Davis, 2007), and reduced financial burden (Wang et al., 2014). McNall and colleagues (2010) found that across a 2-year period, students who used a school-based health center reported greater health satisfaction, more physical activity, and better nutrition. Ethier and colleagues (2011) demonstrated in the Project Connect intervention that a school-based referral program improved the ability of school nurses to connect students with sexual and reproductive health service providers. Additionally, a growing number of schools in urban areas are providing school-based sexually transmitted disease (STD) screening (e.g., Asbel, Newbern, Salmon, Spain, & Goldberg, 2006; Nsuami & Cohen, 2000). These findings suggest that the delivery of services through nurses and clinics and schools can improve student health outcomes; however, little research has examined student use of school clinics and nurses.

Past research on school-based health centers has found that student demographic characteristics influence use. One study of eight school-based health centers between 2000 and 2003 found that Black, uninsured, and students with attention deficit/hyperactivity disorder or asthma were more likely to use services, whereas White younger, rural students with health insurance or infections were more likely to be sent home (Wade et al., 2008). These findings suggest potential patterns of use that could influence the effectiveness of services for improving public health and provide direction for expanding services; however, as of yet, there are no published nationally representative studies that describe students' use of nursing services or school clinics. Moreover, the association between use of services and student characteristics remains understudied. This study addresses this gap by (a) providing representative estimates of access and use of school clinics and school nurses; (b) exploring the association between demographic characteristics, access, and use of clinics or nursing services; and (c) examining the association between sexual risk behaviors with access and use of school-based sexual and reproductive health services.

## Method

### Participants

As part of efforts to evaluate the Get Yourself Tested public health campaign—a nationwide social marketing campaign to increase STD testing, decrease stigma, and increase communication about STD testing—researchers at the Centers for Disease Control and Prevention (CDC) partnered with GfK (previously known as *Gesellschaft für Konsumforschung*)-Knowledge Panel to conduct a nationwide survey of attitudes and sexual behaviors, including access and use of sexual and general health services (McFarlane et al., 2015). GfK is one of the world's largest market and consumer research firms, which includes managing a panel of over 50,000 respondents recruited through address-based sampling and random-digit dialing methods (GfK-Knowledge Panel, 2012). Households without Internet access are provided access by GfK. Panelists in the GfK-Knowledge Panel typically complete one 10- to 15-min survey per week and are incentivized for longer

surveys. However, some online commentators have criticized the panel for inadequate compensation as well as the personal nature of some of the questions (e.g., <https://thespecter.net/blog/technology/gfk-knowledgepanel-is-a-scam/>). CDC contracted with GfK to complete the survey used in these analyses with institutional review board approval.

In August–September 2013, adolescents and young adults aged 15–25 years ( $N = 4,017$ ) were recruited through the GfK-Knowledge Panel. Adolescents aged 15–17 years were reached through parents (with informed consent and assent), and individuals aged 18–25 years were contacted directly. Only data from participants who reported currently being enrolled in high school were analyzed ( $n = 1,111$ ) for this article.

Half of the students were male (50.4%). Mean age was 16 years ( $SD = 1.24$ ). Median range of parent reported income was between US\$60,000 and US\$74,999. The majority (64%) of participants reported their race/ethnicity as White, non-Hispanic; 18% Latino/Latina or Hispanic; 8% Black or African American, non-Hispanic; and 10% other, non-Hispanic, or multiracial, non-Hispanic.

## Measures

**School health clinics and school nurses.**—Respondents attending high school at the time of the survey were asked to report on “What have you gone to your school nurse or clinic for?” Students were given a list of services including chronic disease, immunizations, and reproductive services that are commonly delivered in schools; the text of how these services were presented is shown verbatim in Table 1. Students were asked to indicate use of these services. Prior to the list of services, students were allowed to select “We don’t have a clinic or nurse at school” or “We have a nurse or clinic, but I have never been.” For purposes of the logistic regression presented in Table 2, these items were used to estimate students’ access and use of services. Students who reported “We don’t have a clinic or nurse at school” were categorized as not having access, while students reporting “We have a nurse or clinic but I have never been” were categorized as never having used services. Students who reported using at least one sexual or reproductive health services were coded as having used sexual health or reproductive health services. Because students were asked about nursing and school clinic services together in a single item, we were unable to report results separately for nurses and clinics.

**Demographics.**—Demographics included student reported health insurance coverage, race/ethnicity, gender, age, and parent-reported income. Health insurance coverage was dichotomized for students with and without coverage, with “do not know” as missing. Race/ethnicity was dummy coded comparing non-White and White non-Hispanic students. Gender was dummy coded with male as the reference category; age and income were treated continuously.

**Sexual risk behaviors.**—The overall questionnaire included numerous items on sexual risk behavior and attitudes. We performed a subset of analyses focused on sexually experienced high school students who reported past oral, vaginal, or anal intercourse as well as access to a school clinic or nurse ( $n = 136$ ). These analyses examined the association between use of school clinics and nurses for sexual/reproductive health services,

demographic characteristics, and sexual risk behaviors, including student report of ever having sex without a condom, having more than four sexual partners, and sexual initiation before the age of 13.

Sexual experience was dichotomized based on one question, “There are many different kinds of behaviors that could be considered sexual. Thinking back on your whole life, check which of these you have ever done” with six nonexclusive response options: “kissing,” “touching another person sexually [touching breast, vagina, and penis],” “giving oral sex [putting your mouth on someone else’s penis or vagina],” “receiving oral sex [someone else’s mouth on your penis or vagina],” “vaginal intercourse [a penis inserted into a vagina],” and anal intercourse [a penis inserted into an anus].” Students who reported oral, vaginal, or anal sex were categorized as sexually experienced.

Participants who reported vaginal or anal sex also reported on the age of sexual debut with the question “How old were you when you had sexual intercourse for the first time?” This item was dichotomized with 1 indicating sexual debut *on or before the age of 13* and 0 indicating *after the age of 13*. Sex without a condom was surveyed with 1 item: “Have you ever had sexual intercourse without using a condom?” This item was kept dichotomous with 1 being *yes* and 0 being *no*. Participants were asked about number of partners with one question, “With how many people have you had sexual intercourse in your life?” Participants who reported more than four partners were dichotomized as 1 meaning *higher risk* and 0 meaning *lower risk*.

## Results

Analyses were conducted using SAS, Version 9.3, *proc survey* procedures. The majority of students reported having access to some type of school clinic and/or nurse, 89.32% (95% confidence interval [CI] = [86.85, 91.81]). Additionally, 65.56% (95% CI = [61.04, 70.08]) of students with access reported using a least one service from a school clinic or nurse (Table 1). Of students with access, the most cited reason for use was sickness (50.16%), followed by injury (27.07%) and checkup or sports physical (23.56%; Table 1). Logistic regressions (Table 2) showed that younger students and non-White students were more likely to report having access to services than older and White students, respectively. The regression predicting students’ overall use of school clinic and/or nurse did not reveal any significant findings.

Nearly 7% of students with access (6.87%, 95% CI = [4.32, 9.41]) reported using a school health center or a nurse for a comprehensive sexual health checkup, birth control, STD tests, sex-related information, or condoms. Of the nearly quarter (22.55%, 95% CI = [19.21, 25.91]) of high school students reported ever having oral, vaginal, or anal intercourse, 14.08% (95% CI = [6.66, 21.50]) reported using a clinic or nurse for the sexual and reproductive health services described above. Among sexually experienced students, logistic regressions showed that income was inversely related to use of school-based sexual/reproductive health services, and non-White students were more likely to report using school-based sexual/reproductive health services (Table 2) after controlling for the other covariates. No significant differences by sexual risk behaviors emerged.

## Discussion

These results demonstrate that among a nationally representative sample of 15- to 25-year-old adolescents and young adults, many high school students have access and use school clinics or nurses, although not uniformly. A sizable proportion of high school students have access and a majority use these resources for injuries, chronic conditions, and illnesses, but few students reported using school clinics or nurses for sexual/reproductive services, even though research suggests that schools are an appropriate venue (Ethier et al., 2011).

These findings suggest that younger and racial/ethnic minority students are more likely to report access to a clinic or nurse; however, there were no differences in students' reported use. Non-White and lower income sexually experienced students were more likely to report using sexual/reproductive health services. These findings suggest that provision of health services via schools may be effective in reaching underserved racial/ethnic minority youth for general services. Because sexually experienced minority youth particularly use school-based services for sexual and reproductive health services, school-based health services may also be a useful strategy in reducing sexual health disparities.

The infrequent use of school clinics or nurses for sexual/reproductive health demonstrates a missed opportunity for HIV, STD, and pregnancy prevention, particularly considering that teens are at greater risk for STD and report higher levels of sexual risk behavior (Sales et al., 2012). Past research has shown that teens with access to school-based health centers are more likely to get reproductive preventative care and less likely to get pregnant (Ethier et al., 2011). Future studies can identify barriers to school clinics or nurses for sexual/reproductive health services such as costs, policies, attitudes, or provider characteristics.

Relying on self-report prevented this study from fully investigating barriers to access that might be dependent on the policy climate or mode of service delivery. School-based health services are likely to differ depending on the structure of the school and policy environment. Specifically, school-based health centers and nurses in certain states or localities are prohibited from providing sexual/reproductive health services. In addition to policy prohibitions, depending upon local confidentiality policies and procedures, students may have different privacy concerns whether they are seeing a school nurse or being seen at a school clinic.

This study examined access to nurses and clinics using a very broad definition of ever having used a nurse or clinic. Future studies should consider other time frames and methods for measuring access. It is likely that some students may have had access previously but currently lack access or students may differ in terms of their patterns of use throughout high school or during individual school years. Diary studies or medical record analyses may allow researchers to examine patterns in use that differentiate health outcomes or needs. Furthermore, in-depth investigation on students' patterns of use, including different providers, could help to identify mechanisms for reducing health-care costs and potential cost benefits of school nurses, school clinics, and primary-care services.

Despite these limitations, this is the only study to provide an estimate of how many students are using school clinics and nurses. Our findings suggest that there are important

student characteristics that may impact access and use of school clinics and nurses. Still, future research is needed in order to better understand the relationship between student characteristics, barriers to access, and use of school-based clinics and nurses.

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**Table 1.**

High School Students' Reported Usage of School-Based Health Services Among Students With Access.

Services	Percentage	95% CI
Sickness (like a fever or infection)	50.16	[45.30, 55.02]
An injury (like a broken bone or cut)	27.07	[22.71, 31.44]
A checkup or sports physical	23.56	[19.25, 27.86]
Immunizations (shots)	16.78	[12.72, 20.85]
Information about my health	14.67	[10.77, 18.57]
Ongoing illness (like asthma or diabetes)	11.71	[8.11, 15.31]
Information about sex	5.38	[3.04, 7.73]
Condoms	4.84	[2.60, 7.08]
A sexual health checkup (a complete examination including sexually transmitted disease(STD)/HIV tests, birth control, and education about sexual health)	3.11	[1.21, 5.01]
Birth control	2.92	[1.08, 4.75]
A test or treatment for an STD	2.61	[0.83, 4.39]

Note.  $n = 702$ . Data are from a nationally representative sample collected in 2013. CI = confidence interval.



**Table 2.**

Demographic Correlates of Access and Use of School-Based Health Services.

Demographic Variable	Access to Services <sup>a</sup> (n = 1,105)		Use of Any Service <sup>b</sup> (n = 702)		Use of Service for Sexual or Reproductive Health, Among Sexually Experienced Students <sup>c</sup> (n = 136)	
	aOR	95% CI	aOR	95% CI	aOR	95% CI
Gender ( <i>Female</i> = 1)	0.69	[0.41, 1.16]	1.16	[0.77, 1.74]	2.21	[0.46, 10.65]
Race ( <i>Non-White</i> = 1)	2.19*	[1.13, 4.25]	1.17	[0.77, 1.80]	4.42*	[1.04, 18.74]
Insurance ( <i>Uninsured</i> = 1)	1.02	[0.53, 1.98]	0.77	[0.47, 1.28]	0.71	[0.15, 3.42]
Income	0.99	[0.95, 1.03]	0.97	[0.92, 1.01]	0.69*	[0.57, 0.84]
Age	0.80*	[0.67, 0.96]	1.03	[0.88, 1.19]	1.16	[0.85, 1.60]
Previous sex without a condom (1/0)					1.92	[0.41, 9.00]
Four or more sexual partners (1/0)					3.21	[0.54, 19.20]
Sexual initiation before age 13 (1/0)					0.74	[0.15, 3.54]

Note. aORs are reported from logistic regression with all of the variables included in one model (i.e., controlling for each other). Data are from a nationally representative sample collected in 2013. aOR = adjusted odds ratios; CI = confidence interval.

<sup>a</sup> Student did not select "my school does not have a nurse or clinic," among all students.

<sup>b</sup> Student reported using school health services for at least one of the services listed in Table 1, among students with access.

<sup>c</sup> Student reported using school health services for information about sex, condoms, a sexual-health checkup, birth control, or a test or treatment for a sexually transmitted disease.

\* *p* Value is significant at .05.