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Reliability of the 2020 School Health Profiles Principal and Lead Health Education Teacher Questionnaires

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Abstract

BACKGROUND: School Health Profiles assesses school health policies and practices among US secondary schools.

METHODS: The 2020 School Health Profiles principal and teacher questionnaires were used for a test-retest reliability study. Cohen's kappa coefficients tested the agreement in dichotomous responses to each questionnaire variable at 2 time points. The aggregate prevalence estimates between time 1 and time 2 were compared for each questionnaire item via overlapping 95%

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The findings and conclusions in this manuscript are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention or Westat.

Human Subjects Approval Statement

This study was approved by the Institutional Review Board at Westat, the contractor used for this study.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

confidence intervals. Chi-square tests examined whether the prevalence at time 2 differed between paper and web administration for both questionnaires.

RESULTS: For the principal (N = 50) and teacher (N = 34) data, there were no significant differences in the prevalence of any items between time 1 and time 2. For the principal survey, the mean kappa for 191 variables was 0.49. For the teacher survey, the mean kappa for 260 variables was 0.65. Overall, 60.7% of principal and 91.1% of teacher questionnaire items had at least “moderate” reliability.

CONCLUSIONS: School Health Profiles offers education and health agencies a reliable tool to monitor school policies and practices.

Keywords

school health profiles; policy; practice; reliability

A growing body of evidence shows that “healthier students are better learners” and that many health problems can be addressed successfully through programs, policies, and services at school.[1,2] The School Health Profiles (Profiles) is a system of surveys established in 1996 by the Centers for Disease Control and Prevention (CDC) to assess school health policies and practices among secondary schools in the United States.[3,4] Topics covered in Profiles questionnaires include health education, physical education and physical activity, nutrition services, the school environment, health services, family engagement, and community involvement. The surveys are conducted by state education and health agencies, and territorial, tribal, and local education agencies (hereafter “sites”), with technical assistance from CDC.

Profiles is conducted biennially in middle and high schools through 2 self-administered questionnaires, 1 completed by school principals, and 1 completed by lead health education teachers.[3] To date, Profiles questionnaires have never undergone a reliability assessment. Thus, the purpose of this study was to examine test-retest reliability of both the 2020 School Health Profiles School Principal Questionnaire (hereafter “principal questionnaire”) and the 2020 School Health Profiles Lead Health Education Teacher Questionnaire (hereafter “teacher questionnaire”) by administering the same questionnaire at 2 time points to principals and lead health education teachers. The results of this assessment allow CDC and other users of Profiles data to understand the quality of Profiles data and improve the questionnaires for future cycles.

METHODS

This test-retest study employed the same data collection procedures currently used by states and other sites that implement Profiles[3,5] to ensure that the data collected for the test-retest study were comparable to data collected during actual Profiles administration. Principals in selected schools were sent both the principal questionnaire and the teacher questionnaire. The principal was asked to complete the principal questionnaire and also asked to give the teacher questionnaire to the school’s lead health education teacher. If the school did not have a lead health education teacher, then the principal was asked to designate the staff person most knowledgeable about health education at the school.

Instrumentation

The current study used the same 2020 School Health Profiles principal and teacher questionnaires used by sites during their 2020 Profiles data collection (see https://www.cdc.gov/healthyyouth/data/profiles/questionnaires.htm). In addition, because some sites use web-based survey administration, the current study examined reliability using both paper and web-based (via SurveyMonkey) administration. Whether paper or web-based administration, each questionnaire was assigned a unique respondent identification number that allowed for matching time 1 and time 2 questionnaires for each respondent. Respondents were asked to provide their name, title, school name, district name, and telephone number, which were used for follow-up if needed, and to confirm that the respondent information matched for time 1 and time 2. Otherwise, personally identifiable information was not used for this study. The following 5 supplemental questions were added to the time 2 questionnaires to help determine whether any factors might explain or influence the questionnaire reliability:

- Several weeks ago, the *first* 2020 School Health Profiles (principal/lead health education teacher) questionnaire was completed for this school. Thinking back to that questionnaire, were you the person at this school that completed it?
- Often, when schools complete questionnaires such as this, they will print out or make a copy of the form that was completed. Did you, or the person who completed the *first* 2020 School Health Profiles Questionnaire, print out or make a copy of the completed questionnaire?
- When completing this *second* 2020 School Health Profiles Questionnaire, did you reference the copy of the first questionnaire that was completed?
- When completing this *second* 2020 School Health Profiles Questionnaire, did you reference any school records or information *that you did not use the first time* you completed the questionnaire?
- Since completing the first 2020 School Health Profiles Questionnaire, have any school health programs or policies asked about on this questionnaire changed?

Participants

A sample frame was constructed from the National Center for Education Statistics' Common Core of Data (CCD) from the 2017 to 2018 school year, and although this study used a convenience sample, the information provided on the CCD database allowed for the sample to include schools from different regions of the United States, from urban, suburban, and rural areas, and of varied enrollment sizes. The Census Bureau's American Community Survey[6] was used to identify the median household income of students attending each school to allow for a sampling frame that also included schools with varied socioeconomic status. Only regular public schools containing at least 1 of grades 6 to 12 were included for sampling. Originally, 300 schools were sampled with the expectation of yielding approximately 200 principal and lead health education teacher respondents. Because the study took place during the COVID-19 pandemic, challenges with data collection and nonresponse were expected, so an additional (reserve) sample of 100 schools was also

selected in case there was a need to increase the number of respondents. A true response rate is not practical to calculate given the sampling was a convenience sample which was not meant to be generalizable to any particular population. Instead, the goal was to include a geographically and economically diverse group of schools.

Procedures

Eight school districts sampled for this study required a research application before schools could be contacted for participation in the study. Five of these districts granted permission to conduct research in their district. In those 5 districts, district protocols were followed to contact schools for study participation. In school districts not requiring a research application, notification letters were sent directly to the superintendent 3 weeks before schools were contacted, allowing for questions or concerns to be addressed at the district level. Informational letters were then sent to principals and teachers describing the study, and 3 days later, a survey packet was mailed that included a letter describing the study and either the paper questionnaires (1 principal questionnaire and 1 teacher questionnaire) or information on how to complete the web-based version of the questionnaires. Efforts were made to encourage participation including follow-up postcards, emails, and telephone calls. Participation was voluntary. Two weeks after the receipt of a time 1 questionnaire via paper or web, the process was repeated for the time 2 questionnaire. Principals and teachers who completed the questionnaires received a token of appreciation.

Standard Profiles data processing protocols were used (eg, editing for logical inconsistencies).[5] Then, time 1 and time 2 matched questionnaires were linked. In total, there were 70 time 1 and time 2 usable principal questionnaires and 51 time 1 and time 2 usable teacher questionnaires.

Finally, the supplemental questions and the number of days that elapsed between the receipt of the time 1 and time 2 questionnaires were reviewed. Six records from the principal questionnaire data were removed because these respondents indicated that since completing the time 1 questionnaire, school health programs or policies asked about on the questionnaire had changed. None of the teacher respondents indicated that between time 1 and time 2, any school health programs or policies asked about on the questionnaire changed.

One record from the teacher questionnaire data was removed because the same respondent did not complete both the time 1 and time 2 questionnaires. For both questionnaires, records were dropped if the elapsed time between time 1 and time 2 was greater than 60 days because of concerns about having too wide of a time gap.[7] The resulting analytic sample sizes were 50 for the principal questionnaire and 34 for the teacher questionnaire.

Data Analysis

Cohen’s kappa coefficients were used to test the agreement in dichotomous responses to each questionnaire variable provided by respondents during time 1 and time 2. The kappa coefficient can be used to assess the observed agreement between measures provided by the same respondents on 2 occasions, and when positive, indicates that the agreement is more than 1 would expect by chance.[7–9] The magnitude of the coefficient reflects the strength of

agreement between the 2 observations.[7–9] Although the literature includes varying labels or cutoff points to describe kappa coefficients, the current paper used the following labels noted by Landis and Koch[9]: poor (<0.00), slight (0.00–0.20), fair (0.21–0.40), moderate (0.41–0.60), substantial (0.61–0.80), and almost perfect (0.81–1.00). The principal data included 14 of 205 total variables in which a kappa could not be generated because either a time 1 or time 2 prevalence was either 100% or 0%. Likewise, the teacher data included 4 of 264 total variables in which a kappa could not be generated for the same reason.

The aggregate prevalence estimates between time 1 and time 2 were compared for each questionnaire item. Non-overlapping 95% confidence intervals were used to determine whether differences in prevalence estimates were considered statistically significant. Finally, for each questionnaire item, a chi-square test examined whether the prevalence differed between paper and web administration for time 2 administration. Time 2 was used because only time 1 records that also matched with a time 2 response were included in this study. Due to the large number of comparisons, alpha was set at $p < .01$ for all statistical tests. Because of the very large number of variables (ie, 469 combined), purposefully selected findings are presented in tables herein; however, the summary findings (eg, mean kappas, kappa ranges) include all principal and teacher questionnaire variables. The variables (or groups of variables) selected were chosen because they are used by CDC programs as funding-related performance measures. The full tables are available from the authors upon request.

RESULTS

For the study, 26 principals and 12 teachers completed paper questionnaires, and 24 principals and 22 teachers completed web-based questionnaires. Except for 1 principal variable, there were no statistically significant web-paper differences in prevalence (all $p > .01$); therefore, the paper and web-based data were combined for subsequent analyses.

The sample comprised principal and teacher respondents, respectively, who were from schools in the Northeast (15.7% and 21.6%), Midwest (25.7% and 19.6%), South (48.6% and 51.0%), and West (10% and 7.8%) and were from city (35.7% and 43.1%), suburban (30.0% and 31.4%), town (7.1% and 5.9%), and rural (27.1% and 19.6%) schools. Participating principals were from schools with an average median household income of $57,387 (range was $18,240-$165,560) and with an average percentage of students eligible for free and reduced-price lunch of 57.7% (range was 2.4–100%). Participating teachers were from schools with an average median household income of $59,560 (range was $18,240–165,560) and with an average percentage of students eligible for free and reduced-price lunch of 60.1% (range was 2.4–100%).

Among teacher respondents, the major emphasis of respondents' professional preparation was primarily health and physical education combined (62.1%), but other professional preparation areas included health education (3.5%); physical education (17.2%); kinesiology, exercise science, or exercise physiology, home economics or family and consumer science, or biology or other science (6.9%); and public health, nutrition, or other (10.3%). Most (79.4%) were currently certified, licensed, or endorsed by the state to teach

health education in middle school or high school. The number of years respondents had been teaching health education courses or topics was 1 year (8.8%), 2 to 5 years (26.5%), 6 to 9 years (23.5%), 10 to 14 years (2.9%), and 15 or more years (38.2%).

Through the supplemental questions included on the time 2 principal questionnaire, 5 respondents indicated they had printed out or made a copy of the completed time 1 questionnaire. Three of those respondents noted that they referenced the time 1 completed questionnaire when completing the time 2 questionnaire. When completing the time 2 questionnaire, 3 principal respondents referenced any school records or information not also used to complete the time 1 questionnaire. Through the supplemental questions included on the time 2 teacher questionnaire, 2 respondents indicated they had printed out or made a copy of the completed time 1 questionnaire. One of those respondents noted that they referenced the time 1 completed questionnaire when completing the time 2 questionnaire. When completing the time 2 questionnaire, 1 teacher respondent referenced any school records or information not also used to complete the time 1 questionnaire. Respondents who printed out a time 1 completed questionnaire or referenced any school records remained in the analytic sample.

For both the aggregate principal data and teacher data, an examination of confidence intervals suggested there were no statistically significant differences in the prevalence of any policies or practices between time 1 and time 2 (Tables 1 and 2). For the principal survey, the mean kappa for 191 variables was 0.49, with a range of −0.13 to 1.00. More specifically, 4 (2.1%) of the variables exhibited poor reliability, 8 (4.2%) exhibited slight reliability, 63 (33.0%) exhibited fair reliability, 59 (30.9%) exhibited moderate reliability, 48 (25.1%) exhibited substantial reliability, and 9 (4.7%) exhibited almost perfect reliability.

For the teacher survey, the mean kappa for 260 variables was 0.65, with a range of −0.09 to 1.00. More specifically, 4 (1.5%) of the variables exhibited poor reliability, 3 (1.2%) exhibited slight reliability, 16 (6.2%) exhibited fair reliability, 75 (28.8%) exhibited moderate reliability, 116 (44.6%) exhibited substantial reliability, and 46 (17.7%) exhibited almost perfect reliability.

DISCUSSION

Principals and teachers participating in the test-retest study of CDC's School Health Profiles provided generally consistent survey responses at 2 points in time. Specifically, among questionnaires with usable data, this study found that 60.7% of items on the principal questionnaire and 91.1% of items on the teacher questionnaire had at least "moderate" reliability. Likewise, 29.8% of the principal items and 62.3% of the teacher items had "substantial" or "almost perfect" reliability. Several items on both questionnaires, however, had "poor," "slight," or "fair" reliability. Upon close examination, many of the items with low kappa coefficients had very low or very high prevalence, which is known to affect kappa coefficients.[10,11] In such cases there is inadequate distribution in the concordant pairs (eg, nearly all responses were in a time 1 "yes" and time 2 "yes" response cell but very few responses were in the time 1 "no" and time 2 "no" cell). In a small number of cases, however, the kappa was lower than researchers would prefer because of inconsistent

responses; that is, there were a higher number of responses in discordant pairs (eg, the cell designated as time 1 “yes” but time 2 “no”). It is important to review these items for modifications in future School Health Profiles questionnaires. Those items might need to be deleted or reviewed by school health personnel to identify if poor question wording or some other factor was the problem.

Limitations

This study used a convenience sample; however, the sample was diverse, with schools from all 4 census regions, with a wide range of neighborhood household incomes, and from urban, suburban, town, and rural schools. Though the participants were from a diverse sample of schools, the number of principal and teacher questionnaires was lower than expected, which likely affected several aspects of the study. For example, the sample sizes were not large enough to compare the findings by school characteristics. The lower sample sizes also may have resulted in less variability in some policies and practices. Illustratively, nearly all schools had a general policy prohibiting tobacco use, whereas almost no schools provided sexual health services to students at school. Kappa coefficients do not perform well when the prevalence is very high or very low.[10]

Although the findings show the aggregate prevalence of policies and practices did not vary between paper- and web-based survey administration, this study did not have a sufficient sample size to examine test-retest reliability separately by survey administration mode. Such a study would be useful in the future as web-based administration becomes more common. The lower-than-expected sample sizes were undoubtedly due to the impact of the COVID-19 pandemic, which was felt throughout the data collection process. The district approval processes were unusually slow in several districts, and there were district refusals due to the challenges being experienced at schools as a result of COVID-19. These delays and refusals caused an unexpected need to sample new districts and schools. School staff were also difficult to reach in spring 2021 (the early part of the data collection) due to closed school buildings where paper surveys were mailed. Furthermore, personnel were not in school buildings to contact during the summer of 2021, causing lost time and responses. In addition, with the study extending across a summer into fall, there could have been a change in personnel between spring 2021 and fall 2021 which meant starting with a new Time 1 mailing for some respondents. To minimize the effect of these conditions, records were dropped if the elapsed time between time 1 and time 2 was greater than 60 days.[7]

There also was difficulty getting time 1 teacher surveys to the correct respondent. Standard Profiles recruitment relies on principals to identify the best respondent to complete the teacher questionnaire. Missing time 2 questionnaires may have occurred because some principals and teachers misunderstood that both time 1 and time 2 questionnaires were required for their data to be used for the study. Finally, although not a limitation, it is important to note that this study was a test of reliability, not validity. A validity study would require access to school records that document various policies and practices.

IMPLICATIONS FOR SCHOOL HEALTH POLICY, PRACTICE, AND EQUITY

Profiles data are widely used to monitor school policies and practices at the state and local levels.[3,4] For example, in 2020 alone, 44 states, 28 school districts, 1 territory, and 1 tribe successfully conducted a Profiles survey (principal, lead health education teacher, or both). A recent study found substantial increases in how state, school district, territorial, and tribal programs are using Profiles data to identify professional development needs, plan and monitor programs, support health-related policies and legislation, and seek funding.[4] Quality data are critical in identifying disparities in school policies and practices across schools with different characteristics (eg, metropolitan status, region, or socioeconomic status of school families). The ability to reliably measure such policies and practices also is important so that broader federal, state, and local decisions can be made about the equitable distribution of resources dedicated to health education, physical education and physical activity, nutrition services, the school environment, health services, family engagement, and community involvement.

School Health Profiles offers states, tribes, territories, and local education agencies a tool to monitor what policies and practices are being implemented by schools. Such a tool allows for data-based decision making about what changes or resources might be useful to improve or sustain these activities.[4] This study found that overall, the 2020 School Health Profiles School Principal Questionnaire and the 2020 School Health Profiles Lead Health Education Teacher Questionnaire were reliable data collection tools that can be used to track policies and practices in schools.

In addition to being an important tool for states, tribes, territories, and local education agencies, Profiles data provide an opportunity for school health researchers to study school health policies and practices in jurisdictions nationwide. CDC documents which jurisdictions have participated in Profiles (www.cdc.gov/healthyyouth/data/profiles/pdf/2020/2020˙profiles˙participation˙history.pdf) and offers information about how to access and use Profiles data (www.cdc.gov/healthyyouth/data/profiles/requestingfiles.htm). Thus, knowing the 2020 School Health Profiles School Principal and Lead Health Education Questionnaires were reliable data collection tools, investigators can proceed with innovative research ideas to address gaps in what is known about school health policies and practices.

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Table 1.

Select 2020 School Health Profiles Principal Questionnaire Items: Kappa Coefficients and Time 1 and Time 2 Prevalence

Item	Kappa	Time 1% (95% CI)	Time 2% (95% CI)
Ever used the School Health Index or other self-assessment tool to assess the school's policies, activities, and programs for any of 7 school health topics *	0.38	64.0 (49.4–76.4)	68.0 (53.5–79.7)
During the past year, did the following activities:			
Reviewed the district's local wellness policy	0.65	76.0 (61.8–86.1)	70.0 (55.5–81.4)
Communicated to school staff about the district's local wellness policy	0.71	68.0 (53.5–79.7)	72.0 (57.6–83.0)
Communicated to parents and families about the district's local wellness policy	0.67	58.0 (43.6–71.2)	58.0 (43.6–71.2)
Developed an action plan that describes steps to meet requirements of the district's local wellness policy	0.71	44.0 (30.6–58.4)	42.0 (28.8–56.4)
School has 1 or more than 1 group (eg, school health council, committee, team) that offers guidance on the development of policies or coordinates activities on health topics	0.31	50.0 (36.0–64.0)	49.0 (35.0–63.2)
During the past year, partnered with community-based organizations to provide students with before- or after-school programming	0.46	36.7 (24.1–51.4)	46.0 (32.4–60.2)
Has a student-led club that aims to create a safe, welcoming, and accepting school environment for all youth, regardless of sexual orientation or gender identity	0.83	38.0 (25.3–52.5)	38.8 (25.9–53.5)
Engages in the following practices related to lesbian, gay, bisexual, transgender, or questioning (LGBTQ) youth:			
Identifies "safe spaces" (eg, a counselor's office, designated classroom, student organization) where LGBTQ youth can receive support from administrators, teachers, or other school staff	0.75	82.0 (68.3–90.6)	78.0 (63.9–87.6)
Prohibits harassment based on a student's perceived or actual sexual orientation or gender identity	−0.02	98.0 (86.3–99.7)	98.0 (86.3–99.7)
Encourages staff to attend professional development on safe and supportive school environments for all students, regardless of sexual orientation or gender identity	0.34	76.0 (61.8–86.1)	81.6 (67.8–90.4)
Facilitates access to providers not on school property who have experience in providing health services, including HIV/STD testing and counseling, to LGBTQ youth	0.14	56.0 (41.6–69.4)	40.0 (27.1–54.5)
Facilitates access to providers not on school property who have experience in providing social and psychological services to LGBTQ youth	0.25	64.0 (49.4–76.4)	56.0 (41.6–69.4)
All school staff received professional development on preventing, identifying, and responding to student bullying and sexual harassment	0.57	78.0 (63.9–87.6)	90.0 (77.6–95.9)
Has a designated staff member to whom students can confidentially report student bullying and sexual harassment	0.29	94.0 (82.4–98.1)	94.0 (82.4–98.1)
Uses electronic, paper, or oral communication to publicize and disseminate policies, rules, or regulations on bullying and sexual harassment	0.46	94.0 (82.4–98.1)	90.0 (77.6–95.9)
School has a comprehensive school physical activity program plan (CSPAP) and policies that support that plan †	0.66	96.0 (84.7–99.0)	98.0 (86.1–99.7)
Offered interscholastic sports to students	0.68	84.0 (70.6–92.0)	77.6 (63.3–87.4)
Had a joint use agreement for shared use of school or community kitchen facilities and equipment	0.56	14.3 (6.8–27.6)	14.3 (6.8–27.6)
Had a joint use agreement for shared use of school or community gardens	0.62	12.2 (5.4–25.3)	12.2 (5.4–25.3)
Had a tobacco-free school environment policy, including all tobacco products and electronic vapor devises	0.85	71.4 (56.8–82.6)	65.2 (50.0–77.9)
When foods or beverages are offered at school celebrations, fruits or non-fried vegetables were always or almost always offered	0.45	41.3 (27.7–56.4)	38.8 (25.9–53.5)

Item	Kappa	Time 1% (95% CI)	Time 2% (95% CI)
Among schools that allow the purchase of snacks or beverages from vending machines or a school store, canteen, or snack bar, school did not sell a select list of less healthy foods or beverages[‡]	0.54	68.8 (53.9–80.5)	63.0 (47.9–76.0)
Implemented strategies to promote healthy eating during the current school year:			
Priced nutritious foods and beverages at a lower cost while increasing the price of less nutritious foods and beverages	0.45	16.0 (8.0–29.4)	14.3 (6.8–27.6)
Provided information to students or families on the nutrition and caloric content of foods available	0.55	52.0 (37.9–65.8)	59.2 (44.6–72.3)
Served locally or regionally grown foods in the cafeteria or classrooms	0.63	48.0 (34.2–62.1)	42.9 (29.4–57.4)
Planted a school food or vegetable garden	0.63	22.0 (12.4–36.1)	28.6 (17.4–43.2)
Used attractive displays for fruits and vegetables in the cafeteria	0.45	64.0 (49.4–76.4)	57.1 (42.6–70.6)
Prohibited school staff from giving students food or food coupons as a reward for good behavior or good academic performance	0.61	32.7 (20.7–47.4)	30.6 (19.0–45.3)
Prohibited less nutritious foods and beverages from being sold for fundraising purposes	0.42	46.0 (32.4–60.2)	38.8 (25.9–53.5)
Prohibited advertisements for candy, fast food restaurants, or soft drinks in specific locations			
In school buildings	0.35	66.0 (51.4–78.1)	79.6 (65.5–88.9)
On school grounds, including on the outside of the school building, on playing fields, or other areas of the campus	0.28	54.0 (39.8–67.6)	79.6 (65.5–88.9)
There is a *full-time* registered nurse who provides health services to students at the school?	0.86	80.0 (66.1–89.1)	81.6 (67.8–90.4)
There is a *part-time* registered nurse who provides health services to students at your school?	0.78	22.4 (12.6–36.7)	26.5 (15.8–41.1)
School has a school-based health center	0.67	26.0 (15.4–40.3)	22.9 (12.9–37.4)
School provides the following services to students:			
Assessment for alcohol or other drug use, abuse, or dependency	0.11	18.0 (9.4–31.7)	14.3 (6.8–27.6)
Daily medication administration for students with chronic health conditions (eg, asthma, diabetes)	0.30	88.0 (75.2–94.7)	81.6 (67.8–90.4)
Stock rescue or “as needed” medication for any student experiencing a health emergency (eg, asthma episode, severe allergic reaction)	0.15	76.0 (61.8–86.1)	63.3 (48.6–75.9)
Case management for students with chronic health conditions (eg, asthma, diabetes)	0.52	72.0 (57.6–83.0)	65.3 (50.6–77.6)
Provide students with referrals to any organizations or health care professionals not on school property for sexual health related services[§]	0.71	35.4 (22.9–50.3)	34.0 (21.6–49.1)
Has a protocol that ensures students with a chronic condition that may require daily or emergency management (eg, asthma, diabetes, food allergies) are enrolled in private, state, or federally funded insurance programs if eligible	0.27	50.0 (36.0–64.0)	63.0 (47.9–76.0)
Provide referrals to any organizations or health care professionals not on school property for students diagnosed with or suspected to have any of the following chronic conditions:			
Asthma	0.71	48.0 (34.2–62.1)	51.0 (36.8–65.0)
Food allergies	0.80	48.0 (34.2–62.1)	51.0 (36.8–65.0)
Diabetes	0.80	48.0 (34.2–62.1)	51.0 (36.8–65.0)
Epilepsy or seizure disorder	0.76	48.0 (34.2–62.1)	49.0 (35.0–63.2)
Obesity	0.79	40.0 (27.1–54.5)	42.9 (29.4–57.4)
Hypertension/high blood pressure	0.79	44.0 (30.6–58.4)	47.9 (33.9–62.3)

Item	Kappa	Time 1% (95% CI)	Time 2% (95% CI)
Oral health condition	0.55	48.0 (34.2–62.1)	59.2 (44.6–72.3)
During the past 2 years, did any staff in your school receive professional development on sexual health services[//]	0.38	20.0 (10.9–33.9)	26.5 (15.8–41.1)
During the school year, did any of the following activities:			
Provided parents with information to support parent-adolescent communication about sex	0.36	20.0 (10.9–33.9)	14.3 (6.8–27.6)
Provided parents with information to support parent-adolescent communication about topics other than sex	0.55	48.0 (34.2–62.1)	46.9 (33.1–61.3)
Provided parents with information about how to monitor their teen (eg, setting parental expectations, keeping track of their teen, responding when their teen breaks the rules)	0.67	48.0 (34.2–62.1)	44.9 (31.3–59.3)
Provided parents with information to support one-on-one time between adolescents and their health care providers	0.22	18.0 (9.4–31.7)	24.5 (14.2–38.9)
Linked parents and families to health services and programs in the community	0.66	74.0 (59.7–84.6)	66.7 (51.8–78.8)
Provided parents with information about before- or after-school programs available in the community	0.39	66.0 (51.4–78.1)	71.4 (56.8–82.6)
Had a service-learning or mentoring program[¶]	0.67	82.0 (68.3–90.6)	79.6 (65.5–88.9)
During the past 2 years, students' families helped develop or implement policies and programs related to school health	0.70	36.7 (24.1–51.4)	50.0 (35.8–64.2)

N = 50 matched pairs. Because of the very large number of variables (N = 205), purposefully selected findings are presented on this table. The variables selected (or groups of variables) were chosen because they are used by CDC programs as funding-related performance measures.

CDC, Centers for Disease Control and Prevention; CI, confidence interval; HIV, human immunodeficiency virus; STD, sexually transmitted disease.

[*]Including physical education and physical activity, nutrition, tobacco-use prevention, alcohol- and other drug-use prevention, chronic health conditions, unintentional injury and violence prevention, and sexual health, including HIV, other STD, and pregnancy prevention.

[†]School has written plan for providing opportunities for students to be physically active before, during, and after school (i.e., a comprehensive school physical activity program plan [CSPAP]) as well as policies that support their plan including the following: (1) physical education (PE) staff received professional development on PE or physical activity, (2) parents were provided with information about PE and physical activity programs, (3) parents were involved as school volunteers in PE or physical activity programs, (4) the school had a joint use agreement for shared use of physical activity or sports facilities, and (5) the school assessed opportunities available to students to be physical active before, during, or after school.

[‡]Chocolate candy; other kinds of candy; salty snacks that are not low in fat; cookies, crackers, cakes, pastries, or other baked goods that are not low in fat; ice cream or frozen yogurt that is not low in fat; soda pop or fruit drinks that are not 100% juice; sports drinks; or energy drinks.

[§]Such as HIV, STD, or pregnancy testing, provision of condoms, condom compatible lubricants, or other contraceptives, or human papillomavirus (HPV) vaccine administration.

[//]Such as community specific information related to services, services adolescents should receive, laws and polices related to services, confidentiality, referral guides and referrals, best practices for providing services, and services that are inclusive of lesbian, gay, bisexual, and transgender students.

[¶]School implemented or community based positive youth development programs that include service learning and mentoring program.

Table 2.

Select 2020 School Health Profiles Lead Health Education Teacher Questionnaire Items: Kappa Coefficients and Time 1 and Time 2 Prevalence

Item	Kappa	Time 1 (%)	Time 2 (%)
Students are required to take 1 or more health education courses in grades 6 through 12	1.00	78.8 (60.7–89.9)	79.4 (61.6–90.3)
A required health education course is taught in the following grades (among schools with that grade):			
6th	1.00	26.7 (9.8–54.8)	29.4 (12.2–55.6)
7th	1.00	55.0 (32.6–75.6)	56.5 (35.3–75.6)
8th	0.90	40.0 (20.6–63.1)	42.9 (23.2–65.1)
9th	0.79	52.6 (30.1–74.2)	47.6 (26.9–69.1)
10th	0.30	11.8 (2.7–38.7)	25.0 (10.3–49.2)
11th	0.60	17.6 (5.4–44.4)	21.1 (7.7–46.0)
12th	0.60	17.6 (5.4–44.4)	21.1 (7.7–46.0)
Those who teach health education are provided with each of the following materials (among schools with someone who teaches health education):			
Goals, objectives, and expected outcomes for health education	__*	100.0	90.3 (72.7–97.0)
A chart describing the annual scope and sequence of instruction for health education	0.57	75.0 (54.9–88.1)	73.3 (54.0–86.6)
Plans for how to assess student performance in health education	0.55	72.4 (52.7–86.1)	74.2 (55.2–87.0)
A written health education curriculum	1.00	78.6 (58.6–90.5)	74.2 (55.2–87.0)
The health education curriculum addresses each of the following skills (among schools with a health education curriculum):			
Comprehending concepts related to health promotion and disease prevention to enhance health	—	100.0	93.3 (75.5–98.4)
Analyzing the influence of family, peers, culture, media, technology, and other factors on health behaviors	0.52	87.1 (69.1–95.3)	90.0 (71.9–96.9)
Using interpersonal communication skills to enhance health and avoid or reduce health risks	—	100.0	96.7 (78.0–99.6)
Using decision-making skills to enhance health	—	100.0	90.0 (71.9–96.9)
Using goal-setting skills to enhance health	0.53	93.5 (76.2–98.5)	83.3 (64.5–93.2)
Advocating for personal, family, and community health	0.29	96.8 (78.6–99.6)	83.3 (64.5–93.2)
Those who teach sexual health education are provided with each of 6 materials that address an approved health education scope and sequence, curriculum, pacing guides, teaching resources, strategies, and methods to support instruction (among schools with someone who teaches sexual health education)	0.64	76.0 (54.6–89.3)	62.1 (42.6–78.3)
Health education *instruction* is required for students in any of grades 6 through 12	1.00	78.1 (59.6–89.6)	81.8 (63.9–92.0)
Teachers tried to increase student knowledge on each of the following topics in a required course in any of grades 6 through 12[†]:			
Alcohol- or other drug-use prevention	0.53	81.8 (63.9–92.0)	85.3 (68.1–94.0)
Asthma	0.70	52.9 (35.6–69.6)	55.9 (38.3–72.1)
Chronic disease prevention (eg, diabetes, obesity prevention)	0.46	76.5 (58.5–88.2)	82.4 (64.8–92.2)

Item	Kappa	Time 1 (%)	Time 2 (%)
Emotional and mental health	0.46	82.4 (64.8–92.2)	85.3 (68.1–94.0)
Epilepsy or seizure disorder	0.65	38.2 (23.0–56.2)	57.6 (39.6–73.7)
Food allergies	0.65	50.0 (33.0–67.0)	61.8 (43.8–77.0)
Foodborne illness prevention	0.59	47.1 (30.4–64.4)	50.0 (33.0–67.0)
Human immunodeficiency virus (HIV) prevention	0.67	70.6 (52.5–83.9)	78.8 (60.7–89.9)
Human sexuality	0.60	73.5 (55.5–86.1)	75.8 (57.5–87.8)
Infectious disease prevention (eg, influenza [flu] prevention)	0.57	79.4 (61.6–90.3)	76.5 (58.5–88.2)
Injury prevention and safety	0.46	70.6 (52.5–83.9)	79.4 (61.6–90.3)
Nutrition and dietary behavior	0.72	81.8 (63.9–92.0)	90.6 (73.4–97.1)
Physical activity and fitness	0.84	87.5 (69.9–95.5)	91.2 (74.8–97.3)
Pregnancy prevention	0.70	67.6 (49.5–81.7)	78.8 (60.7–89.9)
Sexually transmitted disease (STD) prevention	0.74	73.5 (55.5–86.1)	81.8 (63.9–92.0)
Suicide prevention	0.60	76.5 (58.5–88.2)	88.2 (71.4–95.7)
Tobacco-use prevention	0.72	76.5 (58.5–88.2)	85.3 (68.1–94.0)
Violence prevention (eg, bullying, fighting, dating violence prevention)	0.47	79.4 (61.6–90.3)	88.2 (71.4–95.7)
Teachers taught each of 19 different tobacco-use prevention topics in a required course for students in any of grades 6 through 12[†]	0.94	50.0 (33.0–67.0)	47.1 (30.4–64.4)
Teachers taught each of 9 different alcohol- and other drug-use prevention topics in a required course for students in any of grades 6 through 12[†]	0.65	47.1 (30.4–64.4)	52.9 (35.6–69.6)
Teachers taught each of 22 different *sexual health* topics in a required course for students in grades 6 to 8 (among schools with any of grades 6–8)[†]	0.72	33.3 (15.1–58.4)	20.0 (7.3–44.2)
Teachers taught each of 22 different *sexual health* topics in a required course for students in grades 9 to 12 (among schools with any of grades 9–12)[†]	1.00	30.8 (11.4–60.6)	21.4 (6.6–51.1)
Teachers taught how to access valid and reliable health information, products and services related to HIV, other STDs, and pregnancy; how to obtain condoms; and preventive care (such as screenings and immunization) that is necessary to maintain reproductive and sexual health in a required course for students in grades 9 to 12 (among schools with any of grades 9–12)[†]	0.77	70.0 (35.9–90.7)	60.0 (28.3–85.0)
Teachers assessed the ability of students to engage in 7 sexual health promotion and pregnancy prevention skills in a required course for students in grades 6 to 8 or 9 to 12 (among schools with students in that grade span)[†]			
Grades 6 to 8	0.75	38.9 (19.0–63.3)	47.4 (25.8–69.9)
Grades 9 to 12	0.40	46.2 (21.4–73.0)	66.7 (39.2–86.1)
Teachers provided students with the opportunity to practice the following skills in a required course for students in any of grades 6 through 12[†]:			
Communication, decision-making, goal-setting, or refusal skills related to sexual health (eg, through role playing)	0.76	55.9 (38.3–72.1)	51.5 (34.1–68.6)
Analyzing the influence of family, media, and culture on sexual health	0.69	55.9 (38.3–72.1)	57.6 (39.6–73.7)
Accessing valid sexual health information, products, and services	0.64	50.0 (33.0–67.0)	54.5 (36.8–71.2)
Teachers implemented the following inclusive practices when providing sexual health education in a required course for students in grades 6 through 12 (among schools with someone who teachers sexual health education)[†]:			

Item	Kappa	Time 1 (%)	Time 2 (%)
Encouraged use of gender-neutral pronouns such as “they/them” during instruction to recognize gender diversity among students	0.75	46.2 (27.6–65.9)	46.2 (27.6–65.9)
Provided positive examples of lesbian, gay, bisexual, or transgender (LGBT) people and same-sex relationships	0.74	42.3 (24.4–62.5)	38.5 (21.4–59.0)
Encouraged students to respect others’ sexual and gender identities	0.60	76.9 (56.0–89.7)	69.2 (48.3–84.4)
Provided students with information about LGBT resources within the school	0.58	50.0 (30.8–69.2)	38.5 (21.4–59.0)
Identified additional LGBT resources available in the community or online	0.52	30.8 (15.6–51.7)	30.8 (15.6–51.7)
Teachers taught each of 22 different nutrition and dietary behavior topics in a required course for students in any of grades 6 through 12[†]	0.59	39.4 (23.7–57.6)	40.6 (24.5–59.0)
Teachers taught each of 13 physical activity topics in a required course for students in any of grades 6 through 12[†]	0.76	50.0 (33.0–67.0)	57.6 (39.6–73.7)
Teachers provided parents and families with health information designed to increase parent and family knowledge of each of the following topics[†]:			
HIV, other STD, or pregnancy prevention	0.70	23.5 (11.8–41.5)	33.3 (18.9–51.7)
Tobacco-use prevention	0.61	32.4 (18.3–50.5)	39.4 (23.7–57.6)
Alcohol- or other drug-use prevention	0.59	29.4 (16.1–47.5)	36.4 (21.3–54.7)
Physical activity	0.64	41.2 (25.4–59.0)	51.5 (34.1–68.6)
Nutrition and healthy eating	0.70	44.1 (27.9–61.7)	51.5 (34.1–68.6)
Asthma	0.45	20.6 (9.7–38.4)	39.4 (23.7–57.6)
Food allergies	0.58	23.5 (11.8–41.5)	36.4 (21.3–54.7)
Diabetes	0.45	20.6 (9.7–38.4)	39.4 (23.7–57.6)
Preventing student bullying and sexual harassment, including electronic aggression (i.e., cyber-bullying)	0.21	50.0 (33.0–67.0)	60.6 (42.4–76.3)
The lead health education teacher received professional development[‡] on each of the following topics[§]:			
Alcohol- or other drug-use prevention	0.75	33.3 (18.9–51.7)	47.1 (30.4–64.4)
Asthma	0.67	27.3 (14.3–45.7)	20.6 (9.7–38.4)
Chronic disease prevention (eg, diabetes, obesity prevention)	0.61	21.2 (10.1–39.3)	29.4 (16.1–47.5)
Emotional and mental health	0.85	72.7 (54.3–85.7)	73.5 (55.5–86.1)
Epilepsy or seizure disorder	0.70	24.2 (12.2–42.5)	29.4 (16.1–47.5)
Food allergies	0.57	24.2 (12.2–42.5)	21.2 (10.1–39.3)
Foodborne illness prevention	0.36	12.1 (4.4–29.3)	14.7 (6.0–31.9)
HIV prevention	0.54	24.2 (12.2–42.5)	32.4 (18.3–50.5)
Human sexuality	0.67	36.4 (21.3–54.7)	32.4 (18.3–50.5)
Infectious disease prevention (eg, flu prevention)	0.52	48.5 (31.4–65.9)	55.9 (38.3–72.1)
Injury prevention and safety	0.58	42.4 (26.3–60.4)	50.0 (33.0–67.0)
Nutrition and dietary behavior	0.65	31.3 (17.1–50.0)	32.4 (18.3–50.5)
Physical activity and fitness	0.63	54.5 (36.8–71.2)	52.9 (35.6–69.6)

Item	Kappa	Time 1 (%)	Time 2 (%)
Pregnancy prevention	0.60	24.2 (12.2–42.5)	29.4 (16.1–47.5)
STD prevention	0.70	24.2 (12.2–42.5)	32.4 (18.3–50.5)
Suicide prevention	0.61	69.7 (51.3–83.4)	55.9 (38.3–72.1)
Tobacco-use prevention	0.37	30.3 (16.6–48.71	32.4 (18.3–50.5)
Violence prevention (eg, bullying, fighting, dating violence prevention)	0.57	45.5 (28.8–63.2)	47.1 (30.4–64.4)
The lead health education teacher received professional development[‡] on each of the following topics[§]:			
Teaching students with physical, medical, or cognitive disabilities	0.43	66.7 (48.3–81.1)	55.9 (38.3–72.1)
Teaching students of various cultural backgrounds	0.69	63.6 (45.3–78.7)	52.9 (35.6–69.6)
Teaching students with limited English proficiency	0.76	57.6 (39.6–73.7)	44.1 (27.9–61.7)
How to support lesbian, gay, bisexual, and transgender students	0.80	36.4 (21.3–54.7)	32.4 (18.3–50.5)
Using interactive teaching methods (eg, role plays, cooperative group activities)	0.57	66.7 (48.3–81.1)	52.9 (35.6–69.6)
Encouraging family or community involvement	0.64	48.5 (31.4–65.9)	55.9 (38.3–72.1)
Teaching skills for behavior change	0.81	63.6 (45.3–78.7)	52.9 (35.6–69.6)
Classroom management techniques (eg, social skills training, environmental modification, conflict resolution and mediation, behavior management)	0.74	66.7 (48.3–81.1)	58.8 (41.0–74.6)
Assessing or evaluating students in health education	0.44	45.5 (28.8–63.2)	38.2 (23.0–56.2)
The lead health education teacher received professional development[‡] on each of the following topics related to teaching sexual health education[§]:			
Aligning lessons and materials with the district scope and sequence for sexual health education	0.64	47.1 (30.4–64.4)	35.3 (20.6–53.4)
Creating a comfortable and safe learning environment for students receiving sexual health education	0.75	38.2 (23.0–56.2)	38.2 (23.0–56.2)
Connecting students to on-site or community-based sexual health services	0.61	35.3 (20.6–53.4)	35.3 (20.6–53.4)
Using a variety of effective instructional strategies to deliver sexual health education	0.75	35.3 (20.6–53.4)	41.2 (25.4–59.0)
Building student skills in HIV, other STD, and pregnancy prevention	0.73	32.4 (18.3–50.5)	32.4 (18.3–50.5)
Assessing student knowledge and skills in sexual health education	0.80	35.3 (20.6–53.4)	32.4 (18.3–50.5)
Understanding current district or school board policies or curriculum guidance regarding sexual health education	0.68	38.2 (23.0–56.2)	35.3 (20.6–53.4)
Identifying appropriate modifications to the sexual health curriculum to meet the needs of all students	0.81	35.3 (20.6–53.4)	38.2 (23.0–56.2)
Engaging parents in sexual health education	0.70	29.4 (16.1–47.5)	23.5 (11.8–41.5)

Note: N = 34 matched pairs. Because of the very large number of variables (N = 264), purposefully selected findings are presented on this table. The variables selected (or groups of variables) were chosen because they are used by CDC programs as funding-related performance measures.

[*] Cannot calculate kappa because of inadequate data.

[†] During the current school year.

[‡] Such as workshops, conferences, continuing education, any other kind of in-service.

$\S$During the past 2 years.