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Trends in the teaching of sexual and reproductive health topics and skills in required courses in secondary schools, in 38 US states between 2008 and 2018

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Abstract

Information about state and local education policies regarding sexually transmitted infections, including human immunodeficiency virus, and unintended pregnancy prevention is available, yet less is known about school-level implementation of such policies. We examine trends in the percentage of US secondary schools teaching sexual and reproductive health (SRH) topics in a required course in Grades 6–8 and 9–12, including healthy relationships, sexual abstinence, condoms and condoms with other contraceptive methods. We analyze representative data from 38 states across six cycles of School Health Profiles (2008–18) assessed through self-administered questionnaires completed by lead health teachers. Logistic regression models examined linear trends in the percentages of schools teaching topics for Grades 6–8 and 9–12, separately. Trends were calculated for states having representative data for at least three cycles, including 2018. During 2008–18, it was more common to have increases in teaching how to obtain condoms, correct condom use and use condoms with other contraceptive methods in Grades 6–12 than decreases. More states showed decreases in teaching abstinence in Grades 6–12 than increases.

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Supplementary data

Supplementary data are available at *HEAL* online

Conflict of interest statement

The authors declare that there are no potential conflicts of interest with respect to the research, authorship or publication of this article. The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention or the US Public Health Service Commissioned Corps.

Most states had no change in teaching SRH topics across grades. Findings suggest some improvement in school-based SRH education, yet efforts are needed to improve comprehensive, developmentally appropriate content.

Introduction

Adolescents often engage in behaviors that increase their risk for adverse health outcomes, such as sexually transmitted infections (STIs), including human immunodeficiency virus (HIV), and unintended pregnancy and related outcomes [1]. According to data from the Centers for Disease Control and Prevention's (CDC) 2019 national Youth Risk Behavior Survey, 38.4% of students in Grades 9–12 had ever had sex and 8.6% had had sex with ≥4 persons during their life [1]. Among sexually active students (i.e. previous 3 months) (27.4%), only 54.3% had used a condom the last time they had sex [2]. High school students also report adverse lifetime experiences related to inter-personal relationships, including physical (8.2%) and sexual (8.2%) dating violence and forced sex (7.3%) [1]. Such data underscore the need to build knowledge and skills to prevent or avoid STIs/HIV and unintended pregnancy, as well as promote healthy sexuality and relationships from adolescence through adulthood [3].

Schools, a key venue for providing sexual and reproductive health (SRH) education in cost-effective ways that reach large groups of youth during crucial developmental years [4], are positioned to help provide medically accurate, developmentally appropriate and culturally inclusive information and skills. School-based health education programs addressing healthy relationships, sexual abstinence, condoms and contraception may promote positive health behaviors that contribute to overall SRH [5–7]. Specifically, robust evidence indicates that well-designed and well-implemented HIV/STI and pregnancy prevention programs can delay first sexual intercourse, reduce the number of sex partners and increase condom use [5–15], in addition to improving academic outcomes and social and emotional competencies [16, 17]. Studies have also found strong parental support for school-based health education that addresses a comprehensive set of SRH topics in both elementary and secondary grades [18–20].

Despite the benefits of comprehensive SRH education and parental support for such programs in schools, state laws and related school district policies that influence required educational content for school-based programming vary widely [21–25]. In 2021, the Guttmacher Institute reported that 35 states and the District of Columbia (DC) required schools to address healthy romantic and sexual relationships [22]. Thirty-nine states and DC required the provision of abstinence information; 28 states required abstinence to be emphasized [22]. Data from a 2016 nationally representative survey of US school districts found that fewer than half of districts (41%) had adopted policies requiring schools to follow curricula standards based on the National Sex Education Standards, which outline minimal essential content and skills [26]. Moreover, from 2000 to 2016, the percentage of school districts requiring middle schools to teach HIV prevention decreased [26].

Although variations in state laws and local district policies regarding requirements for SRH education are documented [21–25], less is known about how schools implement SRH

topics within the contexts of curriculum and instruction. Most data come from adolescents' self-reports suggesting declines over the past decade in receipt of formal school-based sex education about a variety of topics (e.g. birth control, STIs and saying no to sex) [27]. School-level data, which offer a complementary systems perspective, are more limited. One study, using reports from health education teachers), found minimal progress toward increasing the number of topics covered in SRH education, was published nearly a decade ago [4].

To our knowledge, our study is the first to update and extend the work by Kann *et al.*, assessing trends in middle and high school education about healthy relationships, sexual abstinence, condoms and other contraceptive methods. We specifically consider the period 2008–18 during which changes in nationwide priorities [24] shifted between sexual risk avoidance and sexual risk reduction programming to address STIs/HIV and pregnancy [28–31]. This study contributes to the fields' understanding of the school-level implementation of SRH education in required courses amidst a critical period in addressing adolescent sexual health.

Methods

We used data from six cycles (2008–18) of the School Health Profiles (hereafter called Profiles), a national surveillance system operated by the CDC biennially since 1996. Profiles assesses school health policies and practices in US states, school districts and territories. The CDC funds health or education agencies in each jurisdiction to conduct the surveys using standardized questionnaires, sampling methods and data collection procedures [21]. Profiles is conducted using a repeated cross-sectional design; each cycle's sample is independent of previous samples. Most juris-dictions draw samples of schools from sampling frames that include all secondary public schools (Grades 6–12); however, some conduct a census by inviting all secondary schools in the jurisdiction, rather than just a sample, to participate. Although Profiles collects data from representative samples of public schools in states, school districts and territories, we limit our analysis to state-level data. Weighted data for each state is representative of secondary schools in the state that enroll students in any of Grades 6–12 [21].

Each state administers surveys using paper-and-pencil scannable booklets or web-based questionnaires completed by principals and lead health education teachers (i.e. person designated as most knowledgeable about health education) in each sampled school. In states conducting paper-and- pencil surveys, two self-administered questionnaires (principal and teacher) are mailed to each sampled school. In states conducting web-based surveys, a unique survey link is emailed directly to respondents. Participation is voluntary and confidential. This study includes data from only the teacher questionnaire, which includes all items related to SRH education [21].

Measures

The Profiles teacher survey collects data regarding SRH topics taught in a required course in secondary schools, with topics assessed separately for adolescents in Grades 6–8 and 9–12 [21]. A required course is defined as any classroom instruction on health topics, including

instruction that occurs outside of health education courses, that students must receive for graduation or promotion [21]. This study examines whether the following eight SRH topics were taught in a required course, each measured separately using dichotomous yes/no response options, among all sampled schools: (i) how to create and sustain healthy and respectful relationships; (ii) benefits of being sexually abstinent; (iii) efficacy of condoms; (iv) importance of using condoms consistently and correctly; (v) how to obtain condoms; (vi) how to correctly use a condom; (vii) the importance of using a condom at the same time as other contraceptive methods to prevent both STIs and unintended pregnancy and (viii) methods of contraception other than condoms (e.g. intrauterine device [IUD] or implant; shot, patch, ring; or birth control pills). Teaching the benefits of sexual abstinence has been assessed for Grades 6–8 and 9–12 since 2008. Three condom-specific topics (efficacy, importance and how to obtain) have been assessed since 2008 (for Grades 9–12) and 2010 (for Grades 6–8). Teaching how to correctly use a condom has been assessed since 2010 for Grades 6–8 and 9–12. Teaching the importance of using a condom at the same time as other contraceptive methods and how to create and sustain healthy relationships has been assessed for Grades 6–8 and 9–12 since 2012. Methods of contraception other than condoms have been assessed for Grades 6–8 and 9–12 since 2016.

Data analysis

Following standard practice for Profiles [21], data from participating states with a response rate of ≥70% for each survey year were weighted to be representative of secondary schools in the state. For states that employed sampling, data were weighted to account for likelihood of school selection and non-response. For states that employed a census, results were weighted to account for non-response. To be included in the trend analysis, states needed ≥3 years of data so that linear trends could be calculated. States must have obtained weighted data in 2018 and at least two other years during 2008–16 (see Supplementary A). We were unable to calculate linear trends regarding teaching about methods of contraception other than condoms since this item was not added until 2016, but we have included it in this study given its relevance for addressing adolescent SRH outcomes. The analysis included 38 states. Response rates and sample sizes each year for the lead health education teacher surveys varied by state; in 2018, for example, sample sizes ranged from 72 to 581, and response rates ranged from 70% to 94%.

Medians and ranges across states for the percentage of secondary schools teaching each SRH topic were calculated by year. That is, we calculated the percentage of schools in each state that taught the specific SRH topic and then calculated the median of those percentages and provided the minimum and maximum percentages. In a separate analysis, for each state, significant ($P < 0.05$) linear changes in teaching each SRH topic based on data available during 2008–18 were assessed using unadjusted logistic regression models, run separately for Grades 6–8 and 9–12. SRH topics taught in a required course served as the dependent variable, and a linear time component was the independent variable.

Results

In 2018, for Grades 6–8, the SRH topics with the highest median percentage of schools teaching them were how to create and sustain healthy relationships (75.7%, range 36.6–94.4%) and the benefits of being sexually abstinent (73.1%, range 28.9–93.4%) (Table I). The median percentage of schools that taught each condom topic (efficacy, importance, how to obtain and correct use) spanned from 28.2% (range 0.0–56.0%) for how to correctly use a condom to 50.1% (range 16.7–81.4%) for the efficacy of condoms. The median percentage of schools that taught the importance of using a condom with other contraceptive methods and methods of contraception other than condoms was 45.4% (range 11.3–72.6%) and 48.3% (range 14.6–79.4%), respectively. In previous years, a similar pattern in terms of the most and least prevalent topics was observed. For example, from 2008 to 2016, the topic taught in the highest median percentage of schools was teaching the benefits of being sexually abstinent, and from 2010 to 2016, the median percentage of schools teaching how to correctly use a condom was the lowest.

For Grades 9–12, findings by SRH topic were similar to those observed for Grades 6–8, although the median percentages were generally higher (Table I). In 2018, the topics taught in the highest median percentage of secondary schools were how to create and sustain healthy relationships and the benefits of being sexually abstinent (both approximately 93.0%, range 57.0–100.0%). The median percentage of schools that taught about condom topics and skills spanned from 62.7% (range 9.0–92.6%) for how to correctly use a condom to 82.3% (range 43.2–98.9%) for the efficacy of condoms. The median percentage was 80.5% for teaching the importance of using a condom with other contraceptive methods (range 31.5–100.0%) and 82.1% for methods of contraception other than condoms (range 41.7–98.9%). Like Grades 6–8, similar patterns were found in previous years.

Table II summarizes linear trends for seven topics by grade level, presenting the number and percentage of states with increases, decreases or no change in the percentage of secondary schools teaching about the SRH topics over time. State-specific trends are presented in Supplement A. For Grades 6–8, the majority of the 38 states had no significant linear change for five of the seven topics examined. For how to obtain condoms and how to correctly use a condom, nearly half of states had no change for each (44.7%), but about half had linear increases (47.4%). Likewise, nearly half of states (44.7%) had linear increases related to teaching about the importance of using condoms with other contraceptive methods. For each topic, fewer than 20% of states had significant decreases, except for the benefits of being sexually abstinent, for which 36.8% of states had decreases.

In Grades 9–12, the most common (>60%) trend across all topics was no significant linear change. For how to obtain condoms and how to correctly use a condom, about one-third of states had linear increases (28.9% and 31.6%, respectively). Slightly more states had linear increases related to teaching about the importance of using condoms with other contraceptive methods (36.8%). For each topic, fewer than 11% of states had significant decreases, except for the benefits of being sexually abstinent, for which 13.2% had decreases.

Discussion

We examined trends during 2008–18 in US secondary schools' teaching of SRH topics related to healthy relationships, sexual abstinence, condoms, and contraception in required courses for Grades 6–8 and 9–12. These findings update a previous analysis of comprehensive SRH topics delivered in schools and indicate modest improvements in addressing adolescent STIs/HIV and unintended pregnancy prevention, most notably in condom-related topics, during the last decade [6]. Across states, we observed more increases than decreases in the percentage of schools teaching several SRH topics; yet having no linear changes in SRH topic instruction for both Grades 6–8 and 9–12 was most common. Trends in the percentage of schools teaching SRH topics varied by grade level and topic, usually with a lower median percentage of schools including SRH topics in Grades 6–8 as compared to 9–12. This finding indicates a gap in the implementation of sexual health standards and guidance, which suggest that these topics should be addressed in middle school in a developmentally appropriate manner [32, 33]. Furthermore, because most SRH education occurs during Grades 9–12 due to credit or graduation requirements [26], it is not unexpected to see higher median percentages of schools providing instruction for older adolescents.

Across states, most schools taught how to create and sustain healthy relationships in Grades 6–12. While the majority of states had no change in teaching how to create and sustain healthy relationships across grade levels, about one-quarter of states had increases for this topic among high schools. Increases may reflect growing attention to how psychosocial factors, including relationship dynamics, contribute to healthy sexual development. Recent reviews of the literature [29] and commentaries from adolescent health experts [28, 31] underscore that relationship skills are an important component of SRH education, in addition to STI/HIV and unintended pregnancy prevention [29].

Linear decreases in teaching about the benefits of sexual abstinence were observed in many states for both Grades 6–8 (36.8%) and 9–12 (13.2%), yet it remained one of the most common of all SRH topics with the highest median percentage of schools over time. Teaching content and skills to avoid and abstain from sexual behavior, namely prior to initiation of sexual activity and together with other risk reduction practices, is important for comprehensive SRH education [10, 33, 34]. However, teaching about sexual abstinence while excluding content and skills for accessing health services and using condoms and contraception for sexually active adolescents does not align with quality standards for SRH education [35].

Our findings indicate that between about one-quarter and one-half of states showed increases in teaching about obtaining condoms, using condoms correctly and the importance of using condoms in Grades 6–12. Such trends are promising, given the need to include developmentally appropriate condom instruction before the initiation of sexual activity [5–8, 36]. Previous research has found protective associations between being taught how to use a condom in a K-12 school setting and STI testing and diagnoses among sexually active males [37]. Further evidence from a randomized controlled trial found that a comprehensive school-based curriculum implemented in Grades 9 and 10, which included condom topics,

was associated with a reduction in vaginal sex without a condom or birth control among students who were not sexually experienced at baseline [36]. This evidence highlights the importance of teaching condom-related topics prior to the initiation of sexual activity and in younger grades (9th and 10th).

More states experienced more increases in condom skill-building topics than condom efficacy or the importance of using condoms consistently and correctly, which may indicate a shift toward schools' focus on using skill-based instruction that goes beyond transmitting facts or rote memorization of information to change behavior [38]. Instruction about condom efficacy without a skills component may be more common as part of abstinence instruction and highlights condoms as risky or inadequately protective [39]. Given that condom-use motivation, self-efficacy and decision-making skills are associated with improved condom use among adolescents [40, 41], explicit opportunities to practice and master SRH skills in required courses, ideally sooner rather than later, are essential [42]. Increasing trends in teaching the importance of using condoms at the same time as other contraceptive methods illustrate progress toward reaching the recommended strategy to prevent both unintended pregnancy and STIs among sexually active individuals [43]. However, opportunities to strengthen teaching about condom use remain, particularly in Grades 6–8. Some states had decreases in the percentage of schools teaching condom-related topics, and no significant change was common despite room for improvement in the median percentage of schools addressing each topic. This was especially the case in Grades 6–8 where the median percentage of schools teaching each topic in 2018 was <50%.

Collectively, our findings suggest that teaching key SRH topics across grade levels remains largely unchanged in a majority of US states in recent years, but some improvements in teaching condom topics and skills through required courses are evident. One possible explanation for our study's results is that some SRH topics reported were subject to ceiling effects, given especially the high median estimates among delivery in Grades 9–12. Nonetheless, changing trends in condom-specific topics and skills, especially in Grades 6–8, may be reflective of the shifting priorities between sexual risk avoidance and risk reduction throughout the study period and have influenced topics taught in school-based programming. Future areas of research building upon our results are needed to inform school-level policies and practices related to SRH education.

First, understanding the extent to which state laws and district policies influence STIs/HIV, pregnancy and SRH education, including which topics and skills are integrated into required courses at the school level, is needed. Furthermore, studies exploring the relationship between SRH education that included the eight topics studied herein and others (e.g. giving or receiving consent and utilizing health services) and how instructional practices impact adolescent health outcomes are crucial [23]. This will require continued monitoring of how schools implement SRH education and course requirements and examining how such learning experiences impact adolescent behavior and health status. This research would also help to connect findings from surveillance of adolescents' reports of the formal sex education they received [27] with school-level measures.

Second, considering barriers to classroom-based instruction (e.g. lack of instructional time, staff training needs and competing academic priorities) [44, 45], researchers need a better understanding of how multiple strategies could increase the prevalence of SRH education about a variety of important topics. For example, using professional development to improve teachers' health-related content knowledge and instructional competencies [46–48] or co-facilitation models, where health services staff help deliver SRH topics together or separately from classroom teachers, may influence the delivery of specific SRH topics (e.g. how to use condoms) and could improve adolescents' awareness of the importance and availability of condoms or contraception [49–51]. The documented success of school condom-availability programs and the effect on increasing adolescents' awareness and use of condoms [52] warrants investigation to understand if and how condom availability paired with class-room skill-building could improve engagement in protective SRH behaviors [53].

This study should be interpreted within the context of certain limitations. Profiles data represent public middle and high schools from states included in the analysis ($n = 38$); therefore, these results are not generalizable to secondary schools in states with no data or to private or elementary schools. Although every state included in this study's trend analysis had weighted data from 2018 and at least two other survey years during 2008–16, not every state had data from each survey year, so the trend analyses for each variable are not entirely comparable. Due to the large number of states and variables in this study, for simplicity, trend analyses were restricted to linear trends only. The inclusion of quadratic or higher-order trends might have revealed more complex patterns in teaching SRH topics by grade level over time.

Data are based on self-report by lead health education teachers or their designees, and both over- and underreporting is possible. Profiles only presents responses from lead health education teachers, and the data do not assess the quality of instruction. We cannot determine if topics were medically accurate, developmentally appropriate or culturally inclusive, nor can we determine the instructional time allotted for each SRH topic or if interactive pedagogy was used to scaffold learning across grade levels [54]. There may also be other topics, beyond the eight examined in this study, that are necessary for comprehensive SRH education and could be considered in future analyses. Finally, the definition of 'required course' used in this study also limits our understanding of the settings in which SRH topics were taught. A required course may be a health education class, but it could also be a science or physical education class.

Our findings enhance the understanding of SRH education in US secondary schools. Some findings, such as increases in teaching about condom-use topics in a number of states, are promising, yet room for improvement remains. It is important to continue monitoring the scope and sequence of how schools address SRH topics to identify specific gaps and ensure comprehensive instruction. Examining and addressing implementation barriers and facilitators may also help ensure quality education is provided for all students.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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References

1. U.S. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance System – MMWR SS Tables United States and Selected Sites, 2019. Morb Mortal Wkly. Atlanta, GA: U.S. Department of Health and Human Services, 2020.
2. Szucs LE, Lowry R, Fasual A et al. Condom and contraceptive use among sexually active high school students—Youth Risk Behavior Survey, United States, 2019. Morb Mortal Wkly 2020; 69: 11–8.
3. U.S. Department of Health and Human Services. HIV National Strategic Plan for the United States: A Roadmap to End the Epidemic 2021–2025. Washington, DC: U.S. Department of Health and Human Services, 2021.
4. Kirby D. Emerging Answers 2007: Research Findings on Programs to Reduce Teen Pregnancy and Sexually Transmitted Diseases. Washington, DC: Power to Decide (formerly The National Campaign to Prevent Teen and Unplanned Pregnancy), 2007, 1–204.
5. Kirby D. The impact of abstinence and comprehensive sex and STD/HIV education programs on adolescent sexual behavior. Sex Res Social Policy 2008; 5: 1–10.
6. Kann L, Brener N, McManus T et al. HIV, other STD, and pregnancy prevention education in public secondary schools—45 states, 2008–2010. Morb Mortal Wkly 2012; 61: 222–8.
7. Kirby D, Coyle K, Alton F et al. Reducing Adolescent Sexual Risk: A Theoretical Guide for Developing and Adapting Curriculum Based Programs. Washington, DC: ETR Associates, 2011.
8. Coyle K, Kirby D, Marin C et al. Draw the line/respect the line: a randomized trial of a middle school intervention to reduce sexual risk behaviors. Am J Public Health 2004; 94: 843–51. [PubMed: 15117710]
9. Denford S, Abraham C, Campbell R et al. A comprehensive review of reviews of school-based interventions to improve sexual-health. Health Psychol Rev 2017; 11: 33–52. [PubMed: 27677440]
10. Spriggs A, Halpern C. Timing of sexual debut and initiation of postsecondary education by early adulthood. Perspect Sex Reprod Health 2008; 40: 152–61. [PubMed: 18803797]
11. Wang T, Lurie M, Govindasamy D et al. The effects of school-based condom availability programs (CAPs) on condom acquisition, use and sexual behavior: a systematic review. AIDS Behav 2018; 22: 308–20. [PubMed: 28625012]
12. Chin H, Sipe A, Elder S et al. The effectiveness of group-based comprehensive risk-reduction and abstinence education interventions to prevent or reduce the risk of adolescent pregnancy, human immunodeficiency virus, and sexually transmitted infections: two systematic reviews for the guide to community preventive services. Am J Prevent Med 2012; 42: 272–94.
13. Mavedzenge S, Luecke E, Ross D. Effective approaches for programming to reduce adolescent vulnerability to HIV infection, HIV risk, and HIV-related morbidity and mortality: a systematic review of systematic reviews. J Acquir Immune Defic Syndr 2014; 66: S154–69. [PubMed: 24918591]
14. Robin L, Dittus P, Whitaker R et al. Behavioral interventions to reduce incidence of HIV, STD, and pregnancy among adolescents: a decade in review. J Adolesc Health 2004; 34: 3–26. [PubMed: 14706401]
15. Lopez L, Bernholc A, Chen M et al. School-based interventions for improving contraceptive use in adolescents. Cochrane Database Syst Rev 2016; 6: 465–1858.
16. Greenberg M, Weissberg R, O'Brien M et al. Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning. Am Psychol 2003; 58: 466–74. [PubMed: 12971193]

17. Bradley B, Greene A. Do health and education agencies in the United States share responsibility for academic achievement and health? A review of 25 years of evidence about the relationship of adolescents' academic achievement and health behaviors. J Adolesc Health 2013; 52: 523–32. [PubMed: 23535065]
18. Barr E, Moore M, Johnson T et al. New evidence: data documenting parental support for earlier sexuality education. J Sch Health 2014; 84: 10–7. [PubMed: 24320147]
19. Eisenberg M, Bernant D, Bearinger L et al. Support for comprehensive sexuality education: perspectives from parents of school-age youth. J Adolesc Health 2008; 42: 352–9. [PubMed: 18346660]
20. Kantor L, Levitz N, Syed EU. Parents' views on sex education in schools: how much do democrats and republicans agree? PLoS One 2017; 12: 1–9.
21. U.S. Centers for Disease Control and Prevention. School Health Profiles 2018: Characteristics of Health Programs among Secondary Schools. Atlanta, GA: U.S. Department of Health and Human Services, 2019.
22. The Guttmacher Institute. Sex and HIV Education. 2021. Available at https://www.guttmacher.org/state-policy/explore/sex-and-hiv-education. Accessed: 22 December 2021.
23. Hall W, Jones B, Witkemper K et al. State policy on school-based sex education: a content analysis focused on sexual behaviors, relationships, and identities. Am J Health Behav 2019; 43: 506–19. [PubMed: 31046882]
24. Hall K, Sales J, Komro K et al. The state of sex education in the United States. J Adolesc Health 2016; 58: 595–97. [PubMed: 27210007]
25. SIECUS: Sex Ed for Social Change. 2021 State of Sex Education Legislative Overview. Washington, DC: SIECUS: Sex Ed for Social Change, 2021.
26. U.S. Centers for Disease Control and Prevention. Results from the School Health Policies and Practices Study 2016. Atlanta, GA: U.S. Department of Health and Human Services, 2017.
27. Lindberg L, Kantor L. Adolescents' receipt of sex education in a nationally representative sample, 2011–2019. J Adolesc Health 2022; 70: 290–97. [PubMed: 34743916]
28. Schalet A, Santelli J, Russell S et al. Invited commentary: broadening the evidence for adolescent sexual and reproductive health and education in the United States. J Youth Adolesc 2014; 43: 1595–610. [PubMed: 25200033]
29. Goldfarb E, Lieberman L. Three decades of research: the case for comprehensive sex education. J Adolesc Health 2020; 68: 13–27. [PubMed: 33059958]
30. Feldman Farb A, Margolis A. The teen pregnancy prevention program (2010–2015): synthesis of impact findings. Am J Public Health 2016; 106: S9–15.
31. De Leon R, Allegrante J. Strengthening comprehensive sexuality education anew: a commentary. J Sch Health 2020; 90: 825–9. [PubMed: 32896899]
32. U.S. Centers for Disease Control and Prevention. Health Education Curriculum Analysis Tool (HECAT). 2021. Available at: https://www.cdc.gov/healthyyouth/hecat/index.htm. Accessed: 22 December 2021.
33. SIECUS: Sex Ed for Social Change. Guidelines for Comprehensive Sexuality Education: Kindergarten-12th Grade. 2004. Available at: https://siecus.org/wp-content/uploads/2018/07/Guidelines-CSE.pdf. Accessed: 22 December 2021.
34. Jemmott J, Jemmott J, Fong G. Efficacy of a theory-based abstinence-only intervention over 24 months: a randomized controlled trial with young adolescents. Arch Pediatr Adolesc Med 2010; 164: 152–9. [PubMed: 20124144]
35. Santelli H, Kantor L, Grilo A et al. Abstinence-only-until-marriage: an updated review of US policies and programs and their impact. J Adolesc Health 2017; 61: 273–80. [PubMed: 28842065]
36. Coyle K, Anderson P, Laris B et al. A group randomized trial evaluating high school FLASH, a comprehensive sexual health curriculum. J Adolesc Health 2021; 68: 686–95. [PubMed: 33583683]
37. Dodge B, Reece M, Herbenick D. School-based condom education and its relations with diagnoses of and testing for sexually transmitted infections among men in the United States. Am J Public Health 2009; 99: 2180–2. [PubMed: 19833985]

38. The World Health Organization. Skills for Health: Skills-based Health Education including Life Skills: An Important Component of a Child-friendly/Health-promoting school. 2003. World Health Organization. Available at: https://apps.who.int/iris/handle/10665/42818. Accessed: 18 October 2021.
39. Landry D, Darroch J, Singh S et al. Factors associated with the content of sex education in US public secondary schools. Perspect Sex Reprod Health 2003; 35: 261–2. [PubMed: 14744658]
40. Black D, Sun P, Rohrbach L et al. Decision-making style and gender moderation of the self-efficacy–condom use link among adolescents and young adults: informing targeted STI/HIV prevention programs. Arch Pediatr Adolesc Med 2011; 165: 320–5. [PubMed: 21464380]
41. Sheeran P, Abraham C, Orbell S. Psychosocial correlates of heterosexual condom use: a meta-analysis. Psychol Bull 1999; 125: 90–132. [PubMed: 9990846]
42. Igras A, Macierira M, Murphy E et al. Investing in very young adolescents' sexual and reproductive health. Glob Public Health 2014; 9: 555–69. [PubMed: 24824757]
43. Gavin L, Moskosky S, Carter M et al. Providing quality family planning services: recommendations of CDC and the US Office of Population Affairs. Morb Mortal Wkly 2014; 63: 1–54.
44. Buston K, Wight D, Hart G et al. Implementation of a teacher-delivered sex education programme: obstacles and facilitating factors. Health Educ Res 2002; 17: 59–72. [PubMed: 11888044]
45. Douglas J, Fenton K. Understanding Sexual Health and Its Role in More Effective Prevention Programs. Los Angeles, CA: Sage Publications, 2013.
46. Clayton H, Brener N, Barrios L et al. Professional development on sexual health education is associated with coverage of sexual health topics. Pedagogy in Health Promot 2018; 4: 115–24.
47. Jones S, Brener N, McManus T. The relationship between staff development and health instruction in schools in the United States. Am J Health Educ 2004; 35: 2–10.
48. Szucs LE, Rasberry CN, Jayne PE, et al. School district-provided supports to enhance sexual health education among middle and high school health education teachers. Teach Teach Educ 2020; 92: 1–12.
49. Brewin D, Koren A, Morgan B et al. Behind closed doors: school nurses and sexual education. J Sch Nursing 2014; 30: 31–41.
50. Westwood J, Mullan B. Teachers' and pupils' perceptions of the school nurse in relation to sexual health education. Sex Educ 2009; 9: 293–306.
51. Borawski E, Tufts K, Trapl E et al. . Effectiveness of health education teachers and school nurses teaching sexually transmitted infections/human immunodeficiency virus prevention knowledge and skills in high school. J Sch Health 2015; 85: 189–96. [PubMed: 25611941]
52. Andrzejewski J, Liddon N, Leonard S. Condom availability programs in schools: a review of the literature. Am J Health Promot 2019; 33: 457–67. [PubMed: 30068218]
53. Formby E, Hirst J, Owen J et al. 'Selling it as a holistic health provision and not just about condoms…' Sexual health services in school settings: current models and their relationship with sex and relationships education policy and provision. Sex Educ 2010; 10: 423–35.
54. Herbert P, Lohrmann D. It's all in the delivery! An analysis of instructional strategies from effective health education curricula. J Sch Health 2011; 81: 258–64. [PubMed: 21517865]

Table I.

Overall medians and ranges of percentages of secondary schools that taught sexual and reproductive health topics and skills in a required course in any of Grades 6, 7, or 8 or Grades 9, 10, 11, or 12 during the surveyed school year, 38 states,[a] School Health Profiles 2008–18

Topics taught	2008 Median % (Range)	2010 Median % (Range)	2012 Median % (Range)	2014 Median % (Range)	2016 Median % (Range)	2018 Median % (Range)
Grades 6, 7, or 8						
How to create and sustain healthy relationships	–	–	73.5 (39.6–95.4)	76.2 (38.2–94.7)	73.9 (35.3–95.0)	75.7 (36.6–94.4)
Benefits of being sexually abstinent	83.7 (59.6–93.6)	79.1 (44.6–92.4)	75.6 (46.9–95.2)	79.2 (40.9–96.5)	76.5 (37.4–92.6)	73.1 (28.9–93.4)
Efficacy of condoms	–	50.7 (19.5–84.5)	51.0 (15.6–75.6)	49.0 (23.8–79.1)	50.3 (16.6–73.0)	50.1 (16.7–81.4)
Importance of using condoms consistently and correctly	–	38.2 (8.1–72.3)	41.0 (0.0–67.5)	41.3 (13.0–72.9)	41.2 (7.1–68.0)	45.4 (11.3–72.6)
How to obtain condoms	–	27.0 (1.9–64.6)	24.6 (0.0–47.2)	28.4 (7.7–57.0)	30.5 (0.0–55.7)	36.9 (2.9–58.3)
How to correctly use a condom	–	20.5 (0.0–63.1)	18.9 (0.0–40.2)	24.9 (4.7–54.7)	23.6 (0.9–50.0)	28.2 (0.0–56.0)
Importance of using condom with other contraceptive methods to prevent STIs and unintended pregnancy	–	–	33.7 (13.1–60.7)	40.4 (12.7–73.2)	42.9 (5.5–81.7)	45.4 (6.3–73.2)
Methods of contraception other than condoms	–	–	–	–	45.3 (11.5–71.7)	48.3 (14.6–79.4)
Grades 9, 10, 11, or 12						
How to create and sustain healthy relationships	–	–	91.6 (45.8–100.0)	92.2 (58.0–100.0)	93.0 (57.9–100)	92.5 (67.9–100.0)
Benefits of being sexually abstinent	91.6 (66.6–100.0)	95.3 (65.1–100.0)	95.1 (69.0–100.0)	94.1 (60.4–100.0)	93.5 (57.4–100.0)	92.9 (57.5–100.0)
Efficacy of condoms	85.2 (61.0–100.0)	84.3 (37.4–98.1)	82.1 (48.1–100.0)	81.0 (44.6–100.0)	81.1 (46.6–99.2)	82.3 (43.2–98.9)
Importance of using condoms consistently and correctly	78.5 (54.3–100.0)	78.4 (26.8–96.6)	75.4 (39.0–100.0)	73.5 (40.0–100.0)	77.1 (32.7–97.5)	79.8 (25.5–98.2)
How to obtain condoms	67.2 (40.0–95.6)	63.9 (12.4–94.4)	61.0 (0.0–92.9)	60.6 (30.8–96.4)	67.1 (19.4–94.4)	67.6 (12.8–94.7)
How to correctly use a condom	–	61.1 (10.1–89.9)	52.4 (0.0–88.2)	55.7 (28.4–93.3)	59.6 (11.5–91.9)	62.7 (9.0–92.6)
Importance of using condom with other contraceptive methods to prevent STIs and unintended pregnancy	–	–	68.5 (0.0–96.9)	78.0 (38.2–100.0)	78.0 (30.7–100.0)	80.5 (31.5–100.0)
Methods of contraception other than condoms	–	–	–	–	78.7 (43.6–99.2)	82.1 (41.7–98.9)

[a]Teacher questionnaire data are not presented for Arizona, Arkansas, Colorado, Connecticut, Indiana, Iowa, Louisiana, Missouri, Nevada, Oklahoma, Texas, or Wyoming.

Table II.

Summary of linear time effects in the percentage of secondary schools that taught seven sexual and reproductive health topics and skills[a] in a required course in Grades 6, 7, or 8 and Grades 9, 10, 11, or 12 during the surveyed school year, 38 states,[b] School Health Profiles 2008–18

Topics taught	States with statistically significant linear increases, No. (%)	States with statistically significant linear decreases, No. (%)	States with No statistically significant linear change, No. (%)
Grades 6, 7, or 8			
How to create and sustain healthy relationships	6 (15.8)	5 (13.2)	27 (71.1)
Benefits of being sexually abstinent	1 (2.6)	14 (36.8)	23 (60.5)
Efficacy of condoms	6 (15.8)	6 (15.8)	26 (68.4)
Importance of using condoms consistently and correctly	11 (28.9)	5 (13.2)	22 (57.9)
How to obtain condoms	18 (47.4)	3 (7.9)	17 (44.7)
How to correctly use a condom	18 (47.4)	3 (7.9)	17 (44.7)
Importance of using condom with other contraceptive methods to prevent STIs and unintended pregnancy	17 (44.7)	1 (2.6)	20 (52.6)
Grades 9, 10, 11 or 12			
How to create and sustain healthy relationships	9 (23.7)	1 (2.6)	28 (73.7)
Benefits of being sexually abstinent	2 (5.3)	5 (13.2)	31 (81.6)
Efficacy of condoms	3 (7.9)	4 (10.5)	31 (81.6)
Importance of using condoms consistently and correctly	4 (10.5)	4 (10.5)	30 (78.9)
How to obtain condoms	11 (28.9)	3 (7.9)	24 (63.2)
How to correctly use a condom	12 (31.6)	0 (0.0)	26 (68.4)
Importance of using condom with other contraceptive methods to prevent STIs and unintended pregnancy	14 (36.8)	1 (2.6)	23 (60.5)

Note: Percentages may not total to 100% because of rounding.

[a] Methods of contraception other than condoms not included due to insufficient data collection cycles to compute linear trends (2016 and 2018 only).

[b] Teacher questionnaire data are not presented for Arizona, Arkansas, Colorado, Connecticut, Indiana, Iowa, Louisiana, Missouri, Nevada, Oklahoma, Texas or Wyoming.