



Sex Education for LGBTQ+ Adolescents

Ceili Charley¹ · Annika Tureson¹ · Linzie Wildenauer¹ · Kristen Mark² 

Accepted: 18 April 2023 / Published online: 8 May 2023

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2023

Abstract

Purpose of Review This paper summarizes the current research on the impact of abstinence-only sex education programs on LGBTQ+ adolescent health in the USA. We also seek to explore the current barriers to implementing comprehensive sex education, as well as discuss the future of LGBTQ+ adolescent health by outlining crucial components of LGBTQ+-inclusive sex education.

Recent Findings The US sex education debate is centered on two approaches: abstinence-only and comprehensive. Abstinence-only sex education emphasizes risk reduction through abstaining from sexual behavior and has been found to be ineffective in promoting healthy sexual behavior among adolescents, compared to comprehensive sex education which centers on disseminating inclusive and medically accurate information. Abstinence-only sex education is taught through a heteronormative framework that excludes and devalues the experiences of LGBTQ+ adolescents. LGBTQ+ individuals are at increased risk for negative health outcomes as compared to their cisgender heterosexual counterparts. Lack of knowledge regarding safe sexual practices and consent, coupled with the shame and fear-based messaging promoted by abstinence-only sex education, further contributes to the health disparities experienced by LGBTQ+ youth.

Summary The content and inclusivity of sex education has important implications for the health of LGBTQ+ youth. Abstinence-only sex education further compounds the health disparities experienced by LGBTQ+ adolescents by erasing LGBTQ+ representation and leaving out crucial information on diverse, non-heterosexual sex practices. Numerous barriers exist to implementing comprehensive, inclusive sex education including funding, policies, teacher training, and attitudes toward sex and LGBTQ+ individuals. To address these health disparities, we must listen to and amplify the voices of LGBTQ+ youth to promote safe, comprehensive, and LGBTQ+-inclusive content within our sex education system in the USA.

Keywords LGBTQ+ health · Sex education · Abstinence

Introduction

The approach to adolescent sex education is an area of contentious debate in the USA. Although sex education was formally introduced into public school curriculum beginning in the 1970s, the content of sex education is not federally mandated or regulated [1]. The US sex education debate is primarily centered on two differing approaches: abstinence-only education and comprehensive education.

Abstinence-only sex education (also referred to as abstinence-only-until-marriage) focuses exclusively on avoiding sexual behavior before marriage and teaches adolescents that non-marital sex leads to negative social, physical, and psychological outcomes [2]. Abstinence-only education does not include risk-reduction content such as contraception, and is shame-based, incomplete, and often inaccurate [3]. Furthermore, the cis- and hetero-normative framing of abstinence-only sex education promotes gender and sexuality stereotypes. Conversely, comprehensive sex education seeks to provide medically accurate information that covers a broad range of topics including but not limited to abstinence, sexual consent, contraception, and STIs [4].

A study published in 2019 analyzed the US sex education debate through the lens of health policy and sex education experts [5]. While both abstinence-only and comprehensive sexual health education proponents share the

✉ Kristen Mark
kpmark@umn.edu

¹ University of Minnesota Medical School, Minneapolis, MN, USA

² Institute for Sexual and Gender Health, Department of Family Medicine and Community Health, University of Minnesota Medical School, Minneapolis, MN, USA

common objective of achieving optimal sexual and reproductive health for adolescents, they differ in their approach of risk avoidance (abstinence) versus risk reduction (contraception coverage) [5]. Abstinence-only advocates posit that teen sex is problematic behavior that should not be normalized. Thus, linking early sexual activity to negative lifelong consequences is a key teaching strategy in abstinence-only sex education [5]. In contrast, comprehensive sex education advocates argue teen sex should be destigmatized and normalized so individuals can make informed decisions about their sexual activity. Comprehensive sex education emphasizes empowerment through information, rights-based education centered on bodily autonomy, and inclusivity of cultural diversity, including trans and queer identities [5]. The scientific evidence has consistently found that abstinence-only programs are not only ineffective, but they threaten fundamental human rights [6–9], whereas comprehensive sex education programs are supported as effective across a range of outcomes. For example, one study found comprehensive sex programs to be effective in delaying first sex and lowering rates of STIs and unintended pregnancy among non-married heterosexual adolescents [10].

A crucial aspect of the sex education debate is the inclusion of content centered on LGBTQ+ adolescent health. Compared to heterosexual and cisgender youth, LGBTQ+ adolescents tend to engage in more sexual risk behaviors and experience more adverse health outcomes [11–13], making it particularly important to improve their education in this area. The 2017 Youth Risk Behavior Survey reported that LGBTQ+ youth reported significantly higher rates of forced sex, dating violence, earlier sexual debut, more sexual partners, and were less likely to use barrier methods like condoms in comparison to their cisgender heterosexual peers [12, 14]. Additionally, LGBTQ+ youth reported higher incidences of suicidal thoughts, suicide attempts, bullying, and alcohol and drug use [12, 14]. It is important to consider the implications of sex education on LGBTQ+ adolescent health to better understand and dismantle the health disparities experienced by gender and sexual minorities.

Per the statewide Minnesota Student Survey (MSS), the number of LGBTQ+ identifying youth has been growing. When surveying grades 8, 9, and 11 regarding their sexual orientation and gender identity, MSS found a 12% increase in LGBTQ+ identifying students between the survey years 2019 and 2022 [53]. This increase in LGBTQ+ identifying students emphasizes the importance of creating inclusive sex education content that represents the needs of the diverse student population it reaches.

Note that inclusivity, in the context of this paper, will refer to inclusion of LGBTQ+ relevant topics presented in a non-discriminatory manner.

Abstinence-Only Sex Education for LGBTQ+ Adolescents

Abstinence-only sex education lacks relevant, medically accurate information. However, it also lacks inclusion. Abstinence-only programs are presented through a heteronormative lens, relying heavily on fear and shame-based tactics that are damaging for LGBTQ+ health [15–17]. As of 2017, only 6.7% of students reported having some form of LGBTQ-inclusive sex education [18], and as of 2019, only 10 states have policies in place that require sex education content to be inclusive to the LGBTQ+ community [19]. Exclusion of LGBTQ+ content not only hinders queer and trans youth, but all youth are disadvantaged by the lack of inclusive and relevant content to help inform sexual decision-making [20].

Specific to the transgender and gender expansive populations within the LGBTQ+ community, sex education often ends up being gender-segregated based around cis-normativity and the gender binary. The split classroom teaching style was found to exacerbate gender dysphoria and create barriers to feeling open to true gender expression [21, 22]. Gender segregation in the classroom also limits the extent to which adolescents understand each other's experiences with puberty and sexual development, limiting opportunities for empathy or understanding of each other's experiences. Puberty, which can be a difficult time for youth in general, was found to be an especially difficult topic for trans-identifying individuals. The lack of gender inclusive curricula has led trans-identifying youth to seek out their own information, which sometimes leads to exposure to harmful stereotypes, furthering their feelings of isolation and decreased self-esteem. This is often exacerbated by a lack of recognition in sex education [21, 22]. Additionally, the lack of reliable information has led to delayed understanding of trans youths' experience, leading to later gender affirming treatment [21, 22]. It has been shown that after gender-affirming genital surgery, trans individuals worried less about gender discrimination and victimization, felt more supported and sexually satisfied, and had a better overall quality of life [23]. Thus, providing inclusive sex education to explain the available options to trans youth earlier in their education could be a key factor in improving their self-esteem, mental health, and sexual wellbeing.

In addition, the shame-based scare tactics utilized in many abstinence-only sex education curricula have left students afraid of sexual encounters because they were never taught how to safely participate in sexual activity [21], resulting in a decrease in feeling open to asking questions or turning to a trusted adult for advice. By making sexual health something to be ashamed of, the ability to

navigate consent (how to say no to sex, but also how to say yes) is diminished. This has great implications for the safety of all adolescents, but particularly for the safety of LGBTQ+ individuals, demonstrated by the high prevalence of sexual trauma and victimization through coercion experienced by these groups [24]. Due to the exclusion of LGBTQ+ relationships in sex education, many queer individuals lack the language and norms to draw from, making it more difficult to navigate and seek consent during sex [24].

Receiving LGB-affirming information has been shown to decrease homophobia as well as broaden students' knowledge on gender and gender norms [25, 26]. This expansion of understanding not only provides LGBTQ+ students the chance to feel seen, but oftentimes provides them with a better school culture, both of which have the potential to vastly improve their mental health outcomes [27].

In a study that interviewed young adults from marginalized populations about their experiences with abstinence-only sex education, LGBTQ+ individuals reported dissatisfaction toward abstinence-only sex education, as well as an overall lack of emotional safety due to the reliance on fear and shame from the curricula and educators [16]. LGBTQ+ youth are left feeling invisible, unimportant, uninformed, uncomfortable, shamed, and demeaned when their sex education not only ignores their existence, singling them out as different, but instead focuses on abstinence, sexually transmitted infections, and pregnancy, leaving them without relevant, medically accurate knowledge on how to go about sex or relationships safely [20, 21, 28].

Many LGBTQ+ students described the experience of teachers stopping conversations about sexual minorities, classifying non-heterosexual sex as dangerous, leading to LGBTQ+ identifying students feeling the need to hide themselves and not ask questions to avoid discovery and harassment [16]. In fact, in one study, LGBTQ+ individuals felt the shame so deeply that they felt the need to “live a double life” and/or “try to be straight” due to the alienation provoked by the curriculum [21]. The stigmatization that occurs due to the heteronormative lens of abstinence-only sex education is presented through increased LGBTQ+ youths' feelings of rejection and disconnection from the school, as well as contributing to the increased health problems seen in gender and sexual minority students such as substance abuse, mental health challenges, increased violence, and poorer sexual health [7, 8]. Discrimination-based sex education policies do not just impact the information students receive about their sexual and relational health. These messages have an impact on the entire education experience for LGBTQ+ individuals, potentially leading to decreases in GPAs and minimization of educational aspirations due to the feelings of isolation [29]. Additionally, lesbian and gay youth have lower odds of experiencing bullying and suicidal thoughts

as the number of schools in their area teaching LGBTQ-inclusive sex education increases, and bisexual youth were less likely to report depressive symptoms [27]. Specifically, with every 10% increase in the number of schools teaching LGBTQ-inclusive sex education in a state, a 20% reduction in suicidality was reported [27].

The heteronormative framing of abstinence-only sex education excludes crucial information regarding diverse body types and sexualities. Due to the lack of inclusive medical information, many LGBTQ+ youth seek out alternative resources for information [17, 21, 22, 56]. Alternative sources of information often include friends, porn, experienced partners, physicians, parents, and trial and error [15, 28]; yet, it has been found that seeking sexual health information from early partners increases the risk of exploitation and violence [30]. Another study showed that lesbian and bisexual girls and women tend to rely on trial and error or social media groups as their main source of information [30]. In fact, sexual and gender minority adolescents are five times more likely to search for sexual health information online than their heterosexual counterparts [29]. Yet, we know that relying on finding accurate health information online tends to result in a lot of misinformation and is incredibly difficult to sort through the differences between accurate and inaccurate information [31].

Overall, when policies and practices are LGBTQ+-supportive, the odds of adverse sexual health, mental health, and physical health outcomes for LGBTQ+ students are lower [26, 29, 32]. Comprehensive sex education is one of the most effective ways to empower youth to take care of their sexual and relational health [33]. By integrating comprehensive and inclusive sex education into schools, this can decrease discrimination through normalizing diversity and providing accurate information on the spectrum of sexual and gender identity that exists [26, 29].

Barriers to Comprehensive Sex Education for LGBTQ+ Adolescents

While there is much evidence of the benefits of implementing comprehensive, inclusive sex education for LGBTQ+ adolescents, there are currently many barriers that prevent this from happening across the country. Based on the literature, these barriers include limited funding, restrictive policies, lack of teacher training, and attitudes of those that have influence on sexual education curriculum.

The US government has a history of involvement in sexual education, which can be seen through funding and policies. Since the 1990s, the US federal government has put almost \$2 billion into abstinence-only sex education, even though multiple studies have reported abstinence-only sex education is not only ineffective, but can have adverse

effects on adolescents, specifically LGBTQ+ individuals [34, 35]. In 2008, funding for comprehensive sex education was increased slightly when former President Obama decreased funding for abstinence-only sex education through requiring all federally funded programs to be evidence-based [36]. However, this was reversed when President Trump cut over \$200 million from comprehensive, evidence-based sex education programs and replaced it with \$277 million for abstinence-only sex education in his proposed 2018 budget [1, 37]. Funding is often a determining factor for the delivery of sex education programming and when a governmental administration does not support inclusion and diversity or respect human rights, sexual health education efforts for all students suffer.

As of May 2017, the Guttmacher Institute reported that only 12 states are required to include LGBTQ+ topics like sexual orientation in school sex education; 9 of these states require the communication of these topics be non-discriminatory against sexual minorities, whereas the other 3 require only negative information on homosexuality be shared and/or a positive emphasis be put on heterosexuality [38]. State-wide government regulation of sex education poses an ethical issue for sex educators, where they are put in a difficult position of having to withhold important, inclusive, and comprehensive information or breach the regulations and fear repercussions that usually surround the suspension of important funding in other areas [39].

Another barrier to implementing comprehensive sexual education is the lack of teacher training. Multiple studies have found proper teacher training as the top factor in the quality of sexual education and yet, studies have found teacher discomfort and inadequacy in addressing sex education topics [33, 40–42]. Even when given professional development that focuses solely on the abstinence-only approach, teachers are often not adequately prepared to teach comprehensive sex education with inclusion of LGBTQ+ topics [33]. For example, the Montana Office of Public Instruction reported that only 19% of Montana educators responsible for sex education had received professional training in this topic, and only 12% had received professional training to teach on LGBTQ+ topics [43]. When Montana's health and physical education teachers responsible for teaching sexual education were surveyed, only a quarter felt comfortable teaching LGBTQ+ topics. These teachers listed "lack of training" and "lack of experience with 'LGBT' content" as the most significant barriers to teaching sexual education [33].

Teachers require training to increase their comfort levels and knowledge with LGBTQ+ topics [33]. Students have reported feeling their teachers would be "unfit" to answer questions about LGBTQ+ health [20]. Teachers have reported difficulty addressing these topics is difficult as they do not feel comfortable discussing "homosexuality" [44]. Teachers also reported often shortening or skipping topics

they were not comfortable with or felt the students would not be comfortable learning [16].

Attitudes of those who have influence on sex education curriculum are also a barrier to comprehensive and inclusive sexual education. Attempts to add LGBTQ+-inclusive content to sex education have been met with resistance from parents, school boards, and politicians [35, 45]. Parents are more likely to withhold comprehensive or any sex education at all from their children if they are unsure of their child's sexual orientation or if they know their child identifies as LGBTQ+ [46, 47]. Supporters of abstinence-only sex education may hold back important and medically accurate information about contraception and other "risk-reduction" approaches, as they think this could endorse/legitimize adolescent sexual activity [48]. Many teachers in North America hold negative attitudes toward LGBTQ+ adolescents, and a majority are against including LGBTQ+ topics into their classroom [44, 49]. Students have reported their teachers did not create a "safe" environment for questions; when students asked questions the teachers were not comfortable answering, the teachers would refuse to answer in a way that publicly shamed the student that asked [16].

Future of Sex Education for LGBTQ+ Adolescents

It is imperative to listen to the voices of LGBTQ+ individuals when creating a curriculum for sex education that will be beneficial for all. For heterosexual individuals, comprehensive sex education is positively correlated with contentment and sexual satisfaction, but the same is not true for their LGBTQ+ counterparts [19]. Additionally, heterosexual individuals perceive their sex education as more inclusive than their LGBTQ+ counterparts [19], clearly demonstrating that comprehensive does not necessarily mean inclusive. This misalignment of what is comprehensive and what is inclusive underscores the importance of having a diverse set of voices at the table when creating school-based sex education curricula.

Research has shown that regardless of a child's sexual identity, mothers will provide information through a heterosexual lens and fathers will actively endorse, or push for, heterosexuality [20], leaving the child to look to school or unregulated outside resources (such as the internet) for relevant information. Yet, LGBTQ+ youth often feel their school-based sex education was equally inapplicable to them which led them to tune out and seek the information elsewhere [22, 50], highlighting the importance of an inclusive, comprehensive school-based sex education that can be relied upon for providing medically accurate information.

LGBTQ+ youth would also benefit from earlier presentation of sex education content. Sexual and gender identity

expression and identity development is underway far before sex education begins in the USA. As a result, a common request from the LGBTQ+ community is for sex education (specifically information regarding gender, puberty and in-depth discussions of a variety of types of healthy relationships) to start as early as first or second grade to combat gender dysphoria and promote positive identity development, as well as potentially decrease negative sexual health outcomes associated with the trial and error approach to learning that is often utilized early on [21, 22, 51, 52].

Transgender youth are an example of a group that would benefit greatly from earlier sex education. On average, transgender youth tend to keep their gender identity to themselves until 10 years after they have been internally acknowledging their gender identity [51]. By starting these sex education discussions earlier, transgender individuals could begin processing their identity at an earlier age, while potentially experiencing less gender dysphoria along the way.

Another argument for earlier implementation is presenting sex education prior to the start of sexual activity. LGBTQ+ youth are more likely to have earlier sexual debuts than cisgender heterosexual youth [12, 14]. Additionally, lesbian and bisexual adolescents are less likely to receive sex education prior to their first sexual encounter [3]. As LGBTQ+ youth are starting to engage in sexual activity prior to receiving their sex education, they are less likely to benefit from the sexual health information [3].

Currently, both abstinence-only and comprehensive school-based sex education curricula are lacking, to varying degrees, in content essential to optimize LGBTQ+ youth health outcomes. When asked what they would like to see in the curriculum, sexual minority individuals highlighted the importance of having representative role models across the sexual and gender spectrum to aid in reduction of feelings of invisibility and shame and to minimize feelings of difference from their peers [21]. More specifically, gender minority youth want to have the information presented to them by someone who identifies similar to themselves due to a lack of trusting information that comes from a cisgender or heterosexual perspective [56]. Trans and non-binary youth, specifically, indicated the importance of including developmentally appropriate content covering puberty-related gender dysphoria, puberty blockers, and medical/non-medical gender affirming interventions [50]. It is imperative to structure the delivery of puberty content inclusively and to include the aforementioned subtopics to make sure all individuals in the course are receiving information they can apply to their specific experience.

LGBTQ+ individuals also want the curriculum to call attention to the emotional aspect of sex and relationships, delving deeper into understanding how pleasure, desire, and emotions all interact to create a sexual experience [21, 22,

50, 56]. Including pleasure in sex education is still a point of contention, even though one of the top reasons adolescents engage in sex is “because it feels good” [54]. Not only does pleasure-inclusive sex education improve relationships and healthy sexual development, but it is also suggested to improve sexual health outcomes, like reducing rates of STIs and pregnancy [55]. Additionally, expanding the definition of pleasure could increase inclusion in sex education. By focusing on how pleasure can feel different for different individuals, rather than just focusing on how to have sex, the discussion can move away from its heteronormative framework and move toward an exploration of what is pleasurable to youth as individuals [55].

Consent is also believed to be worthy of its own section in sex education as well [22, 50]. Doing so would provide all youth, not just those identifying as LGBTQ+, the ability to better understand the nuances often involved in sexual encounters and how to prepare for and deal with them in a safe, consensual way.

In addition, LGBTQ+ individuals highlighted the importance of including medically accurate information about fertility, STI prevention and available treatments, and different forms of contraception [22, 50, 56]. It would be ideal to pair different forms of contraception with an explanation of the different sexual identities and different sexual acts that can be performed, surpassing the binary penis in vagina definition of sex currently used in many curriculums as the standard [21, 22, 50]. This information would better prepare LGBTQ+ youth to practice safe sex within the context of their own relationships and experiences that will take place outside of that standard definition. However, including this information in the overall curriculum will also benefit heterosexual-identifying individuals, providing them with that same broadening base of knowledge when approaching any potential sexual experience. In conclusion, all youth would benefit greatly from more inclusive, comprehensive sex education that provides them with medically accurate, relevant information starting at an earlier age.

Compliance with Ethical Standards

Conflict of Interest The authors declare no competing interests.

References

1. Huber VJ, Firmin MW. A history of sex education in the United States since 1900. *Int J Educ Reform*. 2014;23:25–51.
2. Alford S. Sex education programs: definitions & point-by-point comparison. Advocates for Youth, 2001. <https://www.advocatesforyouth.org/resources/fact-sheets/sex-education-programs-definitions-and-point-by-point-comparison/>. Accessed 23 Sept 2023
3. Bodnar K, Tornello SL. Does sex education help everyone?: sex education exposure and timing as predictors of sexual health

- among lesbian, bisexual and heterosexual young women. *J Educ Psychological Consult.* 2019;29(1):8–26.
4. Bruener CC, Mattson G. Committee on Psychosocial Aspects of Child and Family Health. Sexuality education for children and adolescents. *Pediatrics.* 2016;138:e1–e11.
 5. Kramer AS. Framing the debate: the status of US sex education policy and the dual narratives of abstinence-only versus comprehensive sex education policy. *Am J Sex Educ.* 2019;14:490–513.
 6. Kirby D. Emerging answers 2007: research findings on programs to reduce teen pregnancy and sexually transmitted diseases. Washington, DC: National Campaign to Prevent Teen and Unplanned Pregnancy; 2007.
 7. Santelli J, Grilo SA, Lindberg LD, Speizer I, Schalet A, Heitel J, et al. Abstinence-only-until-marriage policies and programs: an updated position paper of the Society for Adolescent Health and Medicine. *J Adolesc Health.* 2017;61:400–3.
 8. Santelli JS, Kantor LM, Grilo SA, Heck CJ, Rogers J, Ott MA, et al. Abstinence-only-until-marriage: an updated review of U.S. policies and programs and their impact. *J Adolesc Health.* 2017;61:273–80.
 9. Trenholm C, Devaney B, Fortson K, Quay K, Wheeler J, Clark M. Impacts of four Title V, Section 510 abstinence education programs. Final report. Princeton, NJ: Mathematica Policy Research, Inc.; 2007.
 10. Kohler PK, Manhart LE, Lafferty WE. Abstinence-only and comprehensive sex education and the initiation of sexual activity and teen pregnancy. *J Adolesc Health.* 2008;42:344–51.
 11. Rasberry CN, Condrón DS, Lesesne CA, Adkins SH, Sheremenko G, Kroupa E. Associations between sexual risk-related behaviors and school-based education on HIV and condom use for adolescent sexual minority males and their non-sexual-minority peers. *LGBT Health.* 2017;5:69–77.
 12. Rasberry CN, Lowry R, Johns M, Robin L, Dunville R, Pampati S, et al. Sexual risk behavior differences among sexual minority high school students - United States, 2015 and 2017. *Morb Mortal Wkly Rep.* 2018;67:1007–11.
 13. Kann L, Olsen EO, McManus T, Harris WA, Shanklin SL, Flint KH, et al. Sexual identity, sex of sexual contacts, and health-related behaviors among students in grades 9–12 - United States and selected sites, 2015. *MMWR Surveill Summ.* 2016;65:1–202.
 14. Kann L, McManus T, Harris WA, Shanklin SL, Flint KH, Queen B, et al. Youth risk behavior surveillance — United States, 2017. *MMWR Surveill Summ.* 2018;67:1–114.
 15. Heels SW. The impact of abstinence-only sex education programs in the United States on adolescent sexual outcomes. *Perspectives.* 2019;11:3.
 16. Hoefer SE, Hoefer R. Worth the wait? The consequences of abstinence-only sex education for marginalized students. *Am J Sex Educ.* 2017;12:257–76.
 17. Naser SC, Clonan-Roy K, Fuller KA, Goncy EA, Wolf N. Exploring the experiences and responses of LGBTQ+ adolescents to school based sexual education. *Psychol Sch.* 2022;59:34–50.
 18. Kosciw JG, Greytak EA, Zongrone AD, Clark CM, Truong NL. The 2017 National School Climate Survey: the experiences of lesbian, gay, bisexual, transgender, and queer youth in our nation's schools. New York: GLSEN; 2018.
 19. Evans R, Widman L, Goldey K. The role of adolescent sex education in sexual satisfaction among LGB+ and heterosexual young adults. *Am J Sex Educ.* 2020;15:310–35.
 20. Estes ML. “If there’s one benefit, you’re not going to get pregnant”: the sexual miseducation of gay, lesbian and bisexual individuals. *Sex Roles.* 2017;77:615–27.
 21. Hobaica S, Kwon P. “This is how you hetero:” sexual minorities in heteronormative sex education. *Am J Sex Educ.* 2017;12(4):423–50.
 22. Hobaica S, Schofield K, Kwon P. “Here’s your anatomy...good luck”: transgender individuals in cisnormative sex education. *Am J Sex Educ.* 2019;14:358–87.
 23. Ozata B, Yuksel S, Noyan H, Avayu M, Yildizhan E. EPA-0185 - effects of sex reassignment surgery on quality of life and mental health in transsexuals. *Eur Psychiatry.* 2014;29:1–1.
 24. Heer B, Brown M, Cheney J. Sexual consent and communication among the sexual minoritized: the role of heteronormative sex education, trauma, and dual identities. *Fem Criminol.* 2021;16:701–21.
 25. Tabac AR, Johns MM, Zubizarreta D, Haneuse S, Tan ASL, Austin SB, et al. Associations between sexual orientation, sex education curriculum, and exposure to affirming/disaffirming LGB content in two US-based cohorts of adolescents. *Sex Educ.* 2022; <https://doi.org/10.1080/14681811.2022.2072286>.
 26. Keller L. Adolescents deserve better: what the Biden-Harris administration and congress can do to bolster young people’s sexual and reproductive health. *Guttmacher Pol Rev.* 2021;24:8–13.
 27. Proulx CN, Coulter RWS, Egan JE, Matthews DD, Mair C. Associations of lesbian, gay, bisexual, transgender, and questioning—inclusive sex education with mental health outcomes and school-based victimization in U.S. high school students. *J Adolesc Health.* 2019;64:609–14.
 28. Mata D, Korpak AK, Sorensen BL, Dodge B, Mustanski B, Feinstein BA. A mixed methods study of sexuality education experiences and preferences among bisexual, pansexual, and queer (bi+) male youth. *Sex Res Soc Policy.* 2022;19:806–21.
 29. Crowell C. Anti-gay sex education: a lasting tool for discrimination? *Law Sex.* 2019;28:45–57.
 30. Epps B, Markowski M, Cleaver K. A rapid review and narrative synthesis of the consequences of non-inclusive sex education in UK schools on lesbian, gay, bisexual, transgender and questioning young people. *J Sch Nurs.* 2021;10598405211043394.
 31. Kanuga M, Rosenfeld WD. Adolescent sexuality and the internet: the good, the bad, and the URL. *J Pediatr Adolesc Gynecol.* 2004;17:117–24.
 32. Kaczowski W, Cooper AC, Li J, Robin L. The association of LGBTQ-supportive school health policies and practices with sexual health outcomes. *LGBT Health.* 2022;9:384–92.
 33. Sondag KA, Johnson AG, Parrish ME. School sex education: teachers’ and young adults’ perceptions of relevance for LGBT students. *J LGBT Youth.* 2020;19:247–67.
 34. Donovan MK. The looming threat to sex education: a resurgence of federal funding for abstinence-only programs? *Guttmacher Pol Rev.* 2017;20:44–7.
 35. Sexuality Information and Education Council of the United States. A history of abstinence-only-until-marriage (AOUM) funding. SIECUS Sex Ed for Social Change, 2019. <https://siecus.org/wp-content/uploads/2019/05/AOUM-Funding-History-Report-5.2019.pdf>. Accessed 23 Sept 2023
 36. Feldman Farb A, Margolis AL. The teen pregnancy prevention program (2010–2015): synthesis of impact findings. *Am J Public Health.* 2016;106:S9–S15.
 37. Fox AM, Himmelstein G, Khalid H, Howell EA. Funding for abstinence-only education and adolescent pregnancy prevention: does state ideology affect outcomes? *Am J Public Health.* 2019;109:497–504.
 38. Guttmacher Institute. Sex and HIV education, 2022. <https://www.guttmacher.org/state-policy/explore/sex-and-hiv-education>. Accessed 23 Sept 2023
 39. Kantor LM, Santelli JS, Teitle J, Balmer R. Abstinence-only policies and programs: an overview. *Sex Res Soc Pol.* 2008;5:6–17.
 40. Hammig B, Ogletree R, Wycoff-Horn MR. The relationship between professional preparation and class structure on

- health instruction in the secondary classroom. *J Sch Health*. 2011;81:513–9.
41. Price JH, Dake JA, Kirchofer G, Telljohann SK. Elementary school teachers' techniques of responding to student questions regarding sexuality issues. *J Sch Health*. 2003;73:9–14.
 42. Rhodes DL, Kirchofer G, Hammig BJ, Ogletree RJ. Influence of professional preparation and class structure on sexuality topics taught in middle and high schools. *J Sch Health*. 2013;83:343–9.
 43. Montana Office of Public Instruction. Montana health enhancement standards model curriculum guide for K-12 health and physical education. Health Enhancement and Safety Division. 2016; https://opi.mt.gov/Portals/182/Page%20Files/Health%20%26%20Physical%20Education/HE_ModelCurriculumGuide.pdf. Accessed 23 Sept 2023
 44. Kennedy C, Covell K. Violating the rights of the child through inadequate sexual health education. *Int J Child Rights*. 2009;17:143–54.
 45. Boushka B. Homosexuality should be discussed in high schools. In: Wells KR, editor. *Teenage sexuality: opposing viewpoints*. Detroit, MI: Greenhaven Press; 2006. p. 183–92.
 46. Feinstein B, Thomann M, Coventry R, Macapagal K, Mustanski B, Newcomb M. Gay and bisexual adolescent boys' perspectives on parent-adolescent relationships and parenting practices related to teen sex and dating. *Arch Sex Behav*. 2018;47:1825–37.
 47. Mustanski B, Greene G, Ryan D, Whitton S. Feasibility, acceptability, and initial efficacy of an online sexual health promotion program for LGBT youth: the Queer Sex Ed intervention. *J Sex Res*. 2015;52:220–30.
 48. Atkins DN, Bradford WD. The effect of state-level sex education policies on youth sexual behaviors. *Arch Sex Behav*. 2021;50:2321–33.
 49. Roffman DM. A model of helping schools address policy options regarding gay and lesbian youth. *J Sex Educ Ther*. 2000;25:130–5.
 50. Haley SG, Tordoff DM, Kantor AZ, Crouch JM, Ahrens KR. Sex education for transgender and non-binary youth: previous experiences and recommended content. *J Sex Med*. 2019;16:1834–48.
 51. Olson-Kennedy J, Cohen-Kettenis PT, Kreukels BP, Meyer-Bahlburg HF, Garofalo R, Meyer W, et al. Research priorities for gender nonconforming/transgender youth: gender identity development and biopsychosocial outcomes. *Curr Opin Endocrinol Diabet Obes*. 2016;23:172–9.
 52. Rabbitt M. Sex education in school, are gender and sexual minority youth included?: a decade in review. *Am J Sex Educ*. 2020;15:530–42.
 53. Minnesota Student Survey Interagency Team. Minnesota Student Survey 2019, 2022. Roseville, MN: Minnesota Department of Education, 2019, 2022.
 54. Herbenick, D. Sex, love, intimacy, and orgasm: integrating Sex Ed and new findings from the National Survey of Sexual Health Behavior. Presented at: National Sex Ed Conference; December 5, 2014; New Jersey.
 55. Koepsel ER. The power in pleasure: practical implementation of pleasure in sex education classrooms. *Am J Sex Educ*. 2016;11(3):205–65. <https://doi.org/10.1080/15546128.2016.1209451>.
 56. Bradford NJ, DeWitt J, Decker J, Berg DR, Spencer KG, Ross MW. Sex education and transgender youth: 'trust means material by and for queer and trans people'. *Sex Educ*. 2019;19:84–98.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.