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Effects of Abstinence-based Sexual Education compared to Evidence-based Sexual Education in K-12 Schools

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The Effects of Abstinence-based Sexual Education compared with Evidence-based Sexual Education in K-12 Schools: A Literature Review

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Abstract

Background: Historically, sexual education in the United States has been abstinence-based (ABSE), meaning that sexual education is centered around encouraging adolescents to abstain from sexual activity outside of wedlock. On the other hand, evidence-based sexual education (EBSE) includes abstinence in its curriculum but does not emphasize it, instead highlighting contraception and prevention strategies. Additionally, EBSE teaches adolescents about healthy relationships, attitudes towards sexuality, gender roles, and provides resources for sexual and reproductive health services. Supplying adolescents in K-12 schools with access to evidence-based sexual education may not only decrease teen pregnancy rates and incidence of sexually transmitted infections (STIs) but instill confidence in the adolescent of their knowledge of sexual health and personal identity.

Purpose: The purpose of this systematic review is to synthesize the literature comparing the effects of abstinence-based sexual education versus evidence-based sexual education on sexual health in K-12 schools in the United States of America.

Results: 22 peer-reviewed articles were retrieved through a database search of CINAHL Complete and MEDLINE Complete.

Conclusions: The studies reviewed displayed compelling evidence for the implementation of comprehensive sexual education in the United States, and against abstinence-based sexual education. Abstinence-based sexual education does not decrease the risk for teenage pregnancy or delay age of sexual debut, as it intends to. In contrast, it was found that evidence-based sexual education increases the likelihood of contraception use at first sexual encounter and has shown reductions in risky sexual behavior.

Introduction

According to the Centers for Disease Control and Prevention, the United States of America has a significantly higher teenage pregnancy rate than other developed countries and there are racial/ethnic disparities among teen birth rates (2021). Additionally, nearly half (45.5%) of new STI infections occur in young people aged 15-24 (CDC, 2021). These statistics reveal a potential gap in the sexual education that American adolescents are receiving, which negatively impacts their sexual health. The World Health Organization defines sexual health as "a state of physical, emotional, mental, and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. [It] requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination, and violence" (para. 1, 2019).

An evidence-based sexual education is a positive, holistic emphasis on healthy sexual development (Berglas et al., 2014). Leung et al. defines EBSE as an "age-appropriate, culturally relevant approach to teaching about sex and relationships by providing scientifically accurate, realistic, non-judgmental information" (1.1, 2019). EBSE covers the same topics as ABSE, but also includes issues such as relationships, attitudes towards sexuality, sexual roles, gender relations, and the social pressures to be sexually active; and information about sexual and reproductive health services, and training in communication and decision-making skills (Leung et al., 2019). Many evidence-based educators are concerned with health behaviors and health outcomes (Santelli et al., 2017). The clearest difference between EBSE and ABSE is that EBSE focuses on sexual health while ABSE focuses on sexual risk (Kantor & Lindberg, 2020).

Abstinence-based sexual education is required in 42 states and recommended in 3 states (Garg & Volerman, 2021). ABSE teaches abstinence from sexual activities before marriage and believes that this approach is the only way to avoid teenage pregnancy and STIs among adolescents (Hindman & Yan, 2015). Many abstinence-based educators are concerned with issues of character and morality (Santelli et al., 2017). According to Santelli et al. 2017, ABSE teaches that a mutually faithful monogamous relationship in the context of marriage is the expected standard of the human sexual activity. ABSE programs reflect the strong moral and religious beliefs of their authors (Schalet et al., 2014).

The history of sexual education in America is important to know in order to understand current sexual education policies and to develop better sexual education for future generations. In the 1960's, during the "sexual revolution", federal legislature on sexual education became more progressive and in 1966 the United States Department of Education funded 645 agencies to develop comprehensive sexual education programs with birth control emphasized in the curriculum (Rabbitte & Enriquez, 2019). In 1971, President Richard Nixon showed public support for comprehensive sexual education in all schools, even stating that "sex is a healthy part of life" (Rabbitte & Enriquez, 2019). Comprehensive sexual education was promoted until the 1980's when the HIV epidemic caused a turn to abstinence based sexual education (Rabbitte & Enriquez, 2019). The Adolescent Family Life Act was passed in 1981 to promote chastity and self-discipline among sexual education to adolescents (Rabbitte & Enriquez, 2019). In 1996, a welfare reform act enacted Title V of the Social Security Act which provided states that adopted abstinence-based education with grants; $2 million dollars was spent on abstinence-based education and the amount of grants grew significantly from 1996 to 2006 (Rabbitte & Enriquez, 2019). $177 million dollars were allocated in the federal budget for abstinence-based programs

in the United States in 2008 (Rabbitte & Enriquez, 2019). In 2010, President Barack Obama cut funding to abstinence-based sexual education programs and increased funding for comprehensive sexual education programs (Rabbitte & Enriquez, 2019). Abstinence-based sexual education was first enacted due to states wanting a financial incentive and the nation's worries of HIV outbreaks since the 1980s. According to Swartzendruber & Zenilman (2010), the incidence of HIV hasn't decreased the 1990s. In fact, in 2020 150,000 adolescents aged 10-19 were newly infected with HIV (UNICEF, 2021). These statistics indicate a need for reform among sexual education.

A Healthy People 2030 goal is to "increase the proportion of adolescents who get formal sex education before 18 years", specifically "sex education focused on delaying sex, using birth control, and preventing sexually transmitted infections (STIs)" (Office of Disease Prevention and Health Promotion [ODPHP], n.d.). According to the National Survey of Family Growth, only 52.7% of adolescents received formal education on delaying sex, birth control methods, and prevention of STIs and HIV/AIDS before they were 18 years old, reported between 2015-2017. Healthy People hopes to raise this percentage to 59.1% by 2030. This goal could be specified further to include the topics of EBSE, which would strengthen the effectiveness of this goal. It is hopeful that sexual education is a priority within healthcare on the governmental level.

Methods

Foreground Research Question

In K-12 schools in the United States, what is the effect of abstinence-based sexual education on sexual health compared with evidence-based sexual education?

Information Sources

Data and supporting information were received through a comprehensive search of research based on the current state of sexual health among American adolescents, the two main forms of sexual education: abstinence-based and evidence-based, and disparities among American sexual education curriculum. Research was completed through the databases CINAHL Complete and MEDLINE Complete, in addition to a manual internet search for statistics from WHO, CDC, and other trusted health sources.

Search Strategy

Within the CINAHL database, subject headings with Boolean operators and no field specification were used to identify preliminary sources. The key words used in all searches were: *sex education,* AND *abstinence.* The inclusion criteria for the databases searched were articles that contained the keywords, had full text PDF available, written in English, based in the United States, and peer reviewed. Articles excluded from the review were any written before 2011, except for three articles due to their significance and relativity to this review.

Inclusion/Exclusion Criteria

Articles from CINAHL Complete and MEDLINE Complete that met the search strategy were included for initial review. Articles were included if content was related to abstinence-based sexual education, evidence-based sexual education, underserved and misrepresented groups in sexual education, and/or policy regarding sexual education. Articles were excluded if the full text was unavailable, if the study or research was not at least partially based in the United States, if the research was conducted in private schools, or if the research did not focus on comparing or evaluating ABSE or EBSE.

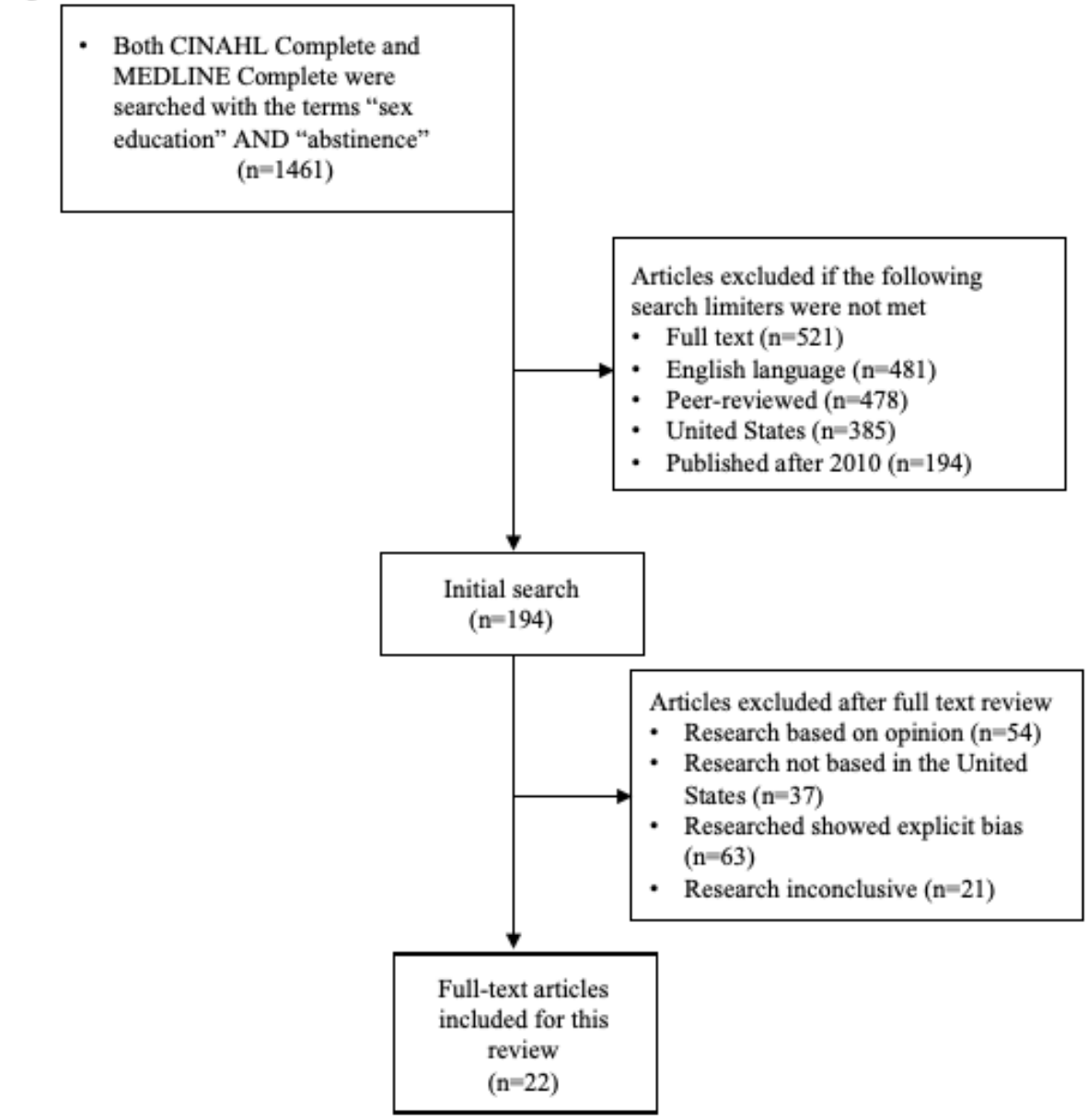
Data Extraction

Information and data included for systematic review were collected and organized independently by the primary author. The information was organized by author(s), year published, country, type of research, main points of the article, and the level of evidence found within the article. This extracted data is synthesized and depicted by Table 1.

Search Results

Through the outlined search strategy, 1461 articles were found through CINAHL Complete and MEDLINE Complete databases. These sources were refined through multiple exclusion and inclusion criteria, resulting in 194 articles in the initial search. The articles were then reviewed in their full-text version; 54 articles were found to be based on opinion, 37 articles were not based on research in the United States, 63 articles showed explicit bias, and 21 articles included inconclusive research. A total of 22 peer-reviewed articles are included in this systematic review. The selection process of included studies is displayed by a PRISMA flow-diagram in Figure 1.

Figure 1. Selection Process of Included Studies.



Results

Characteristics of Included Studies

Study type. 22 articles were included in this systematic review, and all 22 articles either addressed sexual health related to abstinence-based sexual education or evidence-based sexual education or provided insight into the many disparities in the American sexual health education curriculum. Of the 22 studies, 11 were qualitative research (Strasberger, 2010; Ballan & Freyer, 2017; Berglas et al., 2014; Garg & Volerman, 2021; Kantor & Levitz, 2017; Kantor & Lindberg, 2020; Leung et al., 2019; Santelli et al., 2017; Schalet et al., 2014; Streur et al., 2019; Swartzendruber & Zenilman, 2010), 6 were cross-sectional surveys (Cheedalla & Burke, 2020; Gesselman et al., 2020; Lauren et al., 2019; Lindberg et al., 2019; Scull et al., 2019; Widman et al., 2018), 2 were correlational research (Rabbitte & Enriquez, 2019; Stanger-Hall & Hall, 2011), 1 was a cluster-randomized trial (Constantine et al., 2015), and 1 was difference-in-differences research (Carr & Packham, 2017).

Study population. The total number of participants was unable to be calculated since two studies studied the parents of adolescents (Kantor & Levitz, 2017) and adult researchers and policy directors of adolescent sexual health (Berglas et al., 2014). Total adolescent participants were 662,966 from seven studies (Stanger-Hall, 2011; Cheedalla et al., 2020; Gesselman & Vitzthum, 2020; Lauren et al., 2019; Lindberg et al., 2019; Streur et al., 2019; Widman et al., 2018).

Major Findings of Included Studies

Evidence for Evidence-based Sexual Education. Extensive evidence was found displaying that EBSE has a positive impact on preventative behaviors at sexual debut. According to Leung et al. (2019) evidence-based sexual education does not lead to earlier sexual debut or risky sexual behaviors, in fact 2/3 of the EBSE programs evaluated showed reductions in risky

sexual behaviors. EBSE increases the likelihood of contraceptive use at first sexual intercourse compared to those who do not receive EBSE (Cheedalla et al., 2020). Schalet et al. (2014) found that EBSE helps some young people delay initiation of sexual intercourse. There is support for EBSE from public opinion and health professionals, such as the American Academy of Pediatrics, American Psychology Association, American Public Health Association, American Medical Association (Hindman & Yan, 2015), the United Nations Educational Scientific and Cultural Organization (UNESCO) and World Health Organization (WHO) (Rabbitte & Enriquez, 2019). These organizations view EBSE as a human right and support EBSE that is free of stigma, emphasizes contraception in the prevention of STIs and teenage pregnancies, and is reviewed regularly for inaccuracies (Rabbitte & Enriquez, 2019). Despite support for EBSE from major American health organizations, the United States has a history of viewing sexuality in adolescents as "taboo". We as a country can look to other developed countries such as the Netherlands and Denmark for guidance in shifting America's view on adolescent sexuality. The Netherlands and Denmark have seen better overall sexual and reproductive health outcomes after fostering national dialogue and policies to support youth in their sexual development (Schalet et al., 2014). Healthy sexuality is crucial to the positive, holistic development of adolescents and should not be ignored (Leung et al., 2019).

Evidence against Abstinence-based Sexual Education. Stanger-Hall (2011) identified Arizona, Arkansas, Florida, Georgia, Indiana, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Montana, North Dakota, Ohio, Oklahoma, Tennessee, Texas, Utah, and Wisconsin as states that require abstinence-only sexual education to be taught in public schools. Though this source is from 2011, the states listed above still are required to teach abstinence-only sexual education in 2021. Emphasis on abstinence education is positively correlated with

teen pregnancy (Stanger-Hall, 2011). Additionally, states that require abstinence-only sexual education are associated with higher rates of STIs than states that do not require abstinence-only education. Of the 10 states with the highest gonorrhea rates among teenagers, 9 of them require abstinence-only education (Rabbitte & Enriquez, 2019). It is a belief among abstinence-only educators that informing adolescents of pregnancy prevention and contraception resources will encourage them to participate in sexual activities. Not providing adolescents with this health information to induce them to be abstinent is inherently coercive and does not reduce sexual activity among adolescents (Santelli et al., 2017). Additionally, if healthcare providers withhold information regarding contraception to induce adolescents to practice abstinence, it can be seen as a violation of beneficence, which is to do good and avoid harm (Santelli et al., 2017). According to Cheedalla & Burke (2020), programs that teach abstinence do not delay sexual debut or decrease teen pregnancy risk. In a 2017 Cochrane meta-analysis of 13 abstinence-only education programs, there was no impact on sexual initiation, frequency of sexual activities, number of sexual partners, condom use, or unprotected vaginal sex (Santelli et al., 2017). In comparison, a 2012 meta-analysis by the Center of Disease Control (CDC) of 66 comprehensive risk reduction programs showed positive effects on frequency of sexual activities, number of sexual partners, frequency of unprotected sex, use of protection (condoms or hormonal contraception), teen pregnancy, and STIs (Schalet et al., 2014). In this same study, the CDC found insufficient scientific evidence for change in adolescent behaviors or outcomes in abstinence-based programs (Schalet et. Al 2014). Based on these studies, abstinence-based sexual education is not effective in preventing teen pregnancy, STIs, or other risky sexual behaviors. Abstinence-based sexual education is not as strong as an evidence-based sexual curriculum because abstinence-based sexual education is based on years of political disputes that

have led to the imposition of policies based on ideology rather than science (Hindman & Yan, 2015).

Evidence for Abstinence-based Sexual Education. In the articles reviewed, there was not substantial evidence supporting abstinence-based education. This paragraph contains the few points I found to explain why abstinence-based sexual education is supported in some circles. Some American parents feel that it is their job and responsibility to protect their children from sex by making decisions for them and withholding information about sex (Berglas & Freyer, 2017), so ABSE aids parents in keeping their children "in the dark" regarding sexual knowledge. Abstinence is the only 100% effective way to prevent pregnancy and STIs, but over 40% of American students are not practicing abstinence (Rabbitte & Enriquez, 2019).

Media's Role in Sexual Exposure and Education. Due to most American schools teaching ABSE, adolescents turn to the Internet to "fill in the gaps" of their sexual education and to find positive or neutral sexual information (Gesselman & Vitzthum, 2020). Even if adolescents are not actively seeking sexual information from media, 75% of prime-time programs contain sexual content, so youth are exposed to possibly inaccurate or unrealistic sexual information (Strasberger, 2010). Additionally, sexually active teenagers are overrepresented in media, skewing the perception of adolescent sexuality and placing pressure on adolescents to initiate sexual activities early (Scull et al., 2019). Strasberger (2010) found that early exposure to sexual content doubled the risk of teen pregnancy.

Underserved and Misrepresented Groups in Sexual Education: Adolescents with Intellectual and Developmental Disabilities. There are many discrepancies related to the sexual education that adolescents with disabilities receive, or rather, do not receive. Young women with intellectual disabilities (ID) or developmental disabilities (DD) are less likely to receive

HIV/AIDS education, sexual health education, and preventative sexual services (Ballan & Freyer, 2017). This lack of sexual education is due to caregivers and health providers viewing adolescents with ID/DD as asexual or incapable of experiencing sexual desire (Streur et al., 2019). Since adolescents with ID or DD do not receive a beneficial sexual education, sexually active adolescents with ID/DD have a greater risk of receiving STIs and 40% of adolescent females with an ID/DD have experienced a pregnancy compared to 18% of adolescents of average mental ability (Ballan & Freyer, 2017). Due to a lack of evidence-based sexual education that includes information on consent and forms of abuse, females with ID/DD can be at a greater risk of relational or sexual abuse than those without disabilities (Ballan & Freyer, 2017). To set adolescents with ID/DD up for success in their sexual health and development, they should receive a trauma-informed sexual health education that includes lessons on accurate vocabulary to identify physical aspects of one's body, anger and fear, assertiveness training, friendship, intimacy, side effects of medications (such as hormonal contraception), and social and protective skills (Ballan & Freyer, 2017). Researchers recommended teaching adolescents with ID/DD about consent and boundaries so that if they were to experience abuse, they would have the tools necessary to protect themselves and self-report the abuse. Many women with ID/DD develop sexually earlier than women without ID/DD, which makes sexual health education even more necessary to their holistic development.

Underserved and Misrepresented Groups in Sexual Education: Racial and Ethnic Minorities. In America, the highest amount of new HIV cases annually is among African Americans (57%) and Hispanics/Latinos (20%) (Schalet et al., 2014). Specifically, the incidence rate of new HIV for African American females is 38.1/100,000 which is 20 times the HIV rate among White females, 1.9/100,000 (Schalet et al., 2014). These statistics highlight the effects of

racial and ethnic disparities in the American sexual health education curriculum. In a 2017 study, the STI rate among Native American women was 47.7% higher than the general population and had the second highest rate of Gonorrhea among all races/ethnicities (Lauren et al., 2019). Protecting Our Future Generation is the 1st program focused on teaching self-care skills to Native American women who endure significant sexual health disparities (Lauren et al., 2019). Programs such as Protecting Our Future Generation could be monumental in providing additional sexual tools necessary to underrepresented races and ethnicities.

Underserved and Misrepresented Groups in Sexual Education: Lesbian, Gay, Bisexual, Transgender, Questioning Adolescents. Current LGBTQ+ and non-gender-conforming adolescents "come out" earlier than prior generations (Schalet et al., 2014) which indicates a need for inclusion of LGTBQ+ adolescents in sexual education. Six southern states prohibit sex educators from discussing LGBTQ+ identities and relationships and 13 states require schools to use heteronormative language (Garg & Volerman, 2021). The use of heteronormative language in abstinence-based sexual education stigmatizes LGBTQ+ youth as those who engage in "deviant" and "unnatural" behavior (Santelli et al., 2017). Mississippi is the only state that requires schools to separate students by gender when learning about sexual health, which excludes non-binary and transgender students (Garg & Volerman, 2021). Without a sexual education that includes topics of gender identity, LGBTQ+ relationships, and decreasing stigma, LGBTQ+ miss out on the opportunity to form useful sexual health skills that their heterosexual peers develop (Garg & Volerman, 2021). The effects of LGBTQ+ adolescents receiving a heteronormative sexual health education are troublesome. Compared to heterosexual adolescents, LGBTQ+ youth are four times more likely to be forced to engage in sexual intercourse, three times more likely to experience sexual violence, and half as likely to use a condom during sexual

intercourse (Garg & Volerman, 2021). According to Schalet et al. (2014), LGBTQ+ students that attend schools that teach abstinence-based sexual education are more likely to be victims of harassment in the form of anti-LGBTQ+ remarks. Due to the stigmatizing sexual education that LGBTQ+ adolescents receive in most schools, 78% of gay and lesbian youth and 65% of bisexual youth turn to the Internet for sexual health information (Gesselman & Vitzthum, 2020).

Underserved and Misrepresented Groups in Sexual Education: Female Stereotypes and Inequities. Abstinence-based sexual education includes gender stereotypes of male aggressiveness and female passivity in its curriculum, which leads to negative sexual outcomes such as reduced likelihood of condom and contraceptive use (Santelli et al., 2017). There is a sexual double standard that encourages and celebrates heterosexual sexual experience in adolescent boys but stigmatizes adolescent girls for engaging in sexual activities (Schalet et al., 2014). This double standard perpetuates a stereotype that the wishes and desires of men are more important than those of females which reduces the negotiating power of women within sexual encounters and romantic relationships (Schalet et al., 2014). The Center of Disease Control (CDC) reports approximately 1.5 million cases of dating violence among high school students annually, and the highest rates of violence and sexual coercion are associated with LGBTQ+ youth and female adolescents (Schalet et al., 2014). Furthermore, ABSE assumes that abstinence is a conscious choice that each adolescent makes, which discounts youth that have experienced forced first sexual intercourse in the form of intimate partner violence, sexual abuse, rape, and/or molestation (Santelli et al., 2017). ABSE dismissing youth who did not have the choice to remain abstinent leads to feeling of unworthiness and shame, which can cause future sexual dysfunction and guilt about sex (Santelli et al., 2017).

Underserved and Misrepresented Groups in Sexual Education: Male Stereotypes and Inequities. The sexual double standard is a double edge sword, which implicates that adolescent boys should always desire sexual activities and never say "no" to sexual opportunities, even if it involves risky behavior (Schalet et al., 2014). Lindberg et al. (2019) found that parents are less likely to discuss sexual health topics with their sons than their daughters. The traditional masculine stereotypes that ABSE supports include expecting adolescent boys to be tough, have status in society, not behave in "feminine" ways, and to have regular heterosexual intercourse. These expectations of male youth put them at risk for an increased number of sexual partners, engagement in more unprotected vaginal sexual intercourse, and less self-efficacy and consistency in condom use (Schalet et al., 2014). Moreover, these masculine gender norms are associated with violence in romantic relationships such as perpetrated violence or sexual coercion (Schalet et al., 2014). The gender norm of boys being tough stigmatizes their emotional needs and vulnerabilities and prevents them from development of truly intimate friendships and romantic relationships (Schalet et al., 2014).

Table 1

Author(s)	Year Published	Country	Type of Research	Main Points	Level of Evidence
Victor C. Strasberger	2010	United States	Qualitative research	Since most sex education is abstinence only, children learn a lot about sex from the media (music, internet, social media).	Level 6
Ballan, M. S., & Freyer, M. B.	2017	United States	Qualitative research	Women with ID/DD in the foster care system require a trauma-informed sexual education due to increased rates of abuse in foster children.	Level 6
Berglas, N. F., Constantine, N. A., & Ozer, E. J.	2014	United States and International	Qualitative research-interviews	Rights-based approach to sex education.	Level 4
Carr, J. B., & Packham, A.	2017	United States	Difference-in-differences research	Abstinence-based education effects on STDs, abortions, and unintended pregnancies.	Level 5
Cheedalla, A., Moreau, C., & Burke, A. E.	2020	United States	Cross-sectional survey	Comprehensive sex education associated with increased odds of contraceptive use at first intercourse.	Level 3b
Constantine, N. A., Jerman, P., Berglas, N. F., Angulo-Olaiz, F., Chou, C.-P., & Rohrbach, L. A.	2015	United States	Cluster-randomized trial	Rights-based curriculum produced greater knowledge of sexual health, positive attitudes about sexual relationship rights, greater communication about sex and relationships with parents, and greater self-efficacy to manage risky situations.	Level 3a
Garg, N., & Volerman, A.	2021	United States	Qualitative research	Which states require different policies regarding EBI or AB sex education, including LGBTQ policies.	Level 6
Gesselman, A. N., Druet, A., & Vitzthum, V. J.	2020	Africa, America, Asia, Europe, Oceania	Cross-sectional survey	How women all around the world use technology for sexual purposes- dating apps, sexual health, etc.	Level 2b
Hindman, D. B., & Yan, C.	2015	United States	Correlational research	Comparing the knowledge gap and the belief gap related to abstinence education.	Level 5
Kantor, L., & Levitz, N.	2017	United States	Qualitative research	Importance of sexual education to Republican vs Democratic	Level 5

				parents.	
Kantor, L. M., & Lindberg, L.	2020	United States	Qualitative research	The importance of including pleasure in sex education.	Level 6
Lauren, T., Catherine, S., Rachel, C., Hima, P., Angelita, L., Shauntel, L., Laura, M., Anna, S., Anne, R., Mariddie, C., & Charlotte, G.	2019	United States	Cross-sectional survey	Discusses the disparities related to STIs among Native American women due to decreased sex education.	Level 2b
Leung, H., Shek, D. T. L., Leung, E., & Shek, E. Y. W.	2019	United States, United Kingdom, Hong Kong, Mainland China, and Taiwan	Qualitative research	Data showing increased abortions, unintended pregnancies, and STIs in English-speaking and Chinese-speaking countries calls for government involvement in sex education.	Level 6
Lindberg, L. D., Maddow-Zimet, I., & Marcell, A. V.	2019	United States	Cross-sectional survey	Inclusive and comprehensive sex education is needed for males due to rates of sexual onset before age 13.	Level 2b
M Scull, T., V Malik, C., M Keefe, E., & Schoemann, A.	2019	United States	Cross-sectional survey	"Media Aware Parent" program improves communication between parents and children, which may enforce EBI sex education.	Level 2b
Rabbitte, M., & Enriquez, M.	2019	United States	Correlational research	Role of school nurses in sex education; sex education policies.	Level 5
Santelli, J. S., Kantor, L. M., Grilo, S. A., Speizer, I. S., Lindberg, L. D., Heitel, J., Schalet, A. T., Lyon, M. E., Mason-Jones, A. J., McGovern, T., Heck, C. J., Rogers, J., & Ott, M. A.	2017	United States	Qualitative research	The effects of abstinence only until marriage sex education on funding, psychological and physical health, gender stereotypes, efficacy in preventing STIs and unintended pregnancies, and more.	Level 5
Schalet, A. T., Santelli, J. S., Russell, S. T., Halpern, C. T., Miller, S. A., Pickering, S. S., Goldberg, S. K., & Hoenig, J. M.	2014	United States	Qualitative research	A holistic approach to sex education, which may address topics that EBI sex education can leave out, such as gender and LGBTQ.	Level 6
Stanger-Hall, K. F., & Hall, D. W.	2011	United States	Correlational research	Incidence of teenage pregnancies and births are positively correlated with the	Level 3a

				degree of abstinence education across states.	
Streur, C. S., Schafer, C. L., Garcia, V. P., Quint, E. H., Sandberg, D. E., & Wittmann, D. A.	2019	United States	Qualitative research	Women with spina bifida rarely get sex education from providers. Importance of sex education for those with disabilities.	Level 4
Swartzendruber, A., & Zenilman, J. M.	2010	United States	Qualitative research	Politicizing sex education results in lessened healthcare.	Level 6
Widman, L., Golin, C. E., Kamke, K., Burnette, J. L., & Prinstein, M. J.	2018	United States	Cross-sectional survey	Digital sex education can be effective in short-term knowledge among young girls.	Level 2b

Discussion

The most consistent findings among the literature are that evidence-based sexual education reduces risky sexual behavior among adolescents and that abstinence-based sexual education does not decrease teenage pregnancy or incidence of STIs among adolescents. Evidence-based sexual education is essential for the development of adolescents into sexual beings. EBSE helps to establish healthy behaviors and develop norms and values for fostering positive perspectives around sex, sexuality, and relationships (Schalet et al., 2014).

Moving forward, there are many key elements to consider when planning an effective evidence-based approach to sexual education. According to Stanger-Hall, sexual education should be split into a social studies component to include ethics, behavior, decision making, and future planning; and a science component to include human reproductive biology, and the pathophysiology and prevention of STIs and pregnancy (2011). A rights-based approach is a perspective that aims to achieve goals related to empowerment, sexual assertiveness, and self-determination, not just to lower pregnancy and STI rates (Berglas et al., 2014). The goal with a rights-based approach is that adolescents will feel confident, responsible, and informed regarding

sexual health which will lower pregnancy and STI rates. Implementing evidence-based sexual education that includes a rights-based approach would help guide adolescents in their sexual identity and growth to decrease adverse sexual health outcomes. According to the National Survey of Family Growth, EBSE topics should include how to say "no" to sexual interactions, information on different forms of birth control and where to get access to birth control, how to use condoms and other contraceptives, and information related to STIs and HIV/AIDS (Cheedalla & Burke, 2020). Additionally, students should be taught anatomy and physiology, healthy relationships, hygiene, positive self-image, how to handle uncomfortable situations, and health resources available to them (Rabbitte & Enriquez, 2019). It should be taught that pleasure is a part of being a sexual being (Berglas et al., 2014) and that sex should not be used in manipulative and harmful ways (Kantor & Lindberg, 2020). According to Kantor & Lindberg, ignoring pleasure in sexual education can lead to reduced condom and contraceptive use and increased sexual coercion (2020). All adolescents deserve the possibility to have pleasurable and safe sexual experiences free of coercion, discrimination, and violence (Leung et al., 2019). In the analysis of the articles in this review, it was recommended that comprehensive sexual education should begin earlier in the adolescent's life than current practices allow. The age of sexual initiation is low in the United States (before age 14) (Lindberg et al., 2019), so sexual education should begin earlier to reduce risky sexual behaviors, unprotected sex, having multiple sexual partners, using substances before sexual acts, teen pregnancy and STIs (Scull et al., 2019). According to Kantor & Levitz, most adults believe that middle school is the most appropriate time to begin sexual education (2017).

To produce a sexual health education that is well-rounded and applicable to every diverse American student, it must account for the underserved and misrepresented students. Sexual

education that includes information on gender identities and LGTBQ+ relationships may aid in decreasing the incidence of HIV/AIDS amongst adolescents and to de-stigmatize LGTBQ+ relationships. Incorporating information about LGBTQ+ relationships would benefit all youth by allowing them to learn about their peers and how to advocate for them (Garg & Volerman, 2021). Nurses must lobby to their state government for the removal of the requirement of ABSE and heteronormative and LGBTQ+ discriminatory language. If a national level of EBSE standardization was implemented, it would remove geographical barriers that exclude racial/ethnic minorities and lower socioeconomic students (Garg & Volerman, 2021).

Nurses, especially school nurses, are in the unique position to advocate for legislation that enhances the sexual health and well-being of their students and patients. Nurses should raise awareness among parents, teachers, staff, and administrative personnel about evidence-based sexual education. This can be accomplished through presentations at school PTA meetings, faculty, school board, and community meetings, monthly newsletters, and by lobbying for evidence-based sexual education. Furthermore, nurses should fight for the opportunity to be the sexual health educators within schools, instead of teachers who may lack the necessary background in clinical and community health. If sexual education were taught by professionals in the field, students may be less likely to receive a sexual education that is tainted with bias and inappropriate undertones.

Limitations. Limitations of this review include that I may not have found every article that pertains to the topic of sexual education, evidence-based sexual education, abstinence-based sexual education, and sexual health of American adolescents. Similarly, the articles I found may have contained biases that I am not aware of or that coincided with my own implicit biases. Fourteen out of the 22 articles included in this review did not include primary research

conducted by the authors. These articles mainly used statistics from previous studies to justify their conclusions, which may reduce the strength of this review.

Conclusion

Based on the current state of sexual health in American adolescents, a sexual health education reform is necessary. Based on the research evaluated in this review, EBSE is shown to be most effective in keeping American adolescents holistically healthy. Evidence-based sexual education is shown to increase use of contraception at first sexual encounter (Cheedalla et al., 2020), which may help to decrease teen pregnancy rates. Additionally, EBSE decreases the incidence of risky sexual behavior and delays sexual debut (Leung et al., 2019), which may decrease rates of STIs among adolescents. In comparison, abstinence-based sexual education is positively correlated with teen pregnancy (Stanger-Hall & Hall, 2011), it does not delay sexual debut (Cheedalla et al., 2019), and it increases incidence of unprotected vaginal sex (Schalet et al., 2014). For future studies, more research trials need to be implemented with a group that is taught ABSE and a group that is taught EBSE, and the following sexual health effects documented. Further research should include diverse populations, including the misrepresented groups discussed in this review. This would provide more clear, concrete evidence of which form of sexual health education is effective for a diverse population of American adolescents. Nurses can promote implementation of EBSE by educating parents and staff on its tenets and efficacy, and by advocating to local, state, and national governments for the health of their patients.

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