



# A Review of Sex Education Impact in Health Promotion and Teenage Behavior

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**Article History:**

*Received on February 19, 2022*

*Accepted on November 23, 2022*

*Published on Jan 9, 2023*

## Abstract:

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**Introduction:** Enhancing young people's knowledge, attitudes, and behaviours regarding sexual and reproductive health and behaviours is one of the positive consequences of sexuality education. However, there are a lot of barriers to implement the program due to lack of understanding within the community and misperception of its objectives. To summarise the impact of sex education on health promotion and adolescent behaviour, a systematic review was done. **Methods:** A database search utilising PubMed, Scopus, and CINAHL was used to identify potential articles for reviewing. 36 articles were eligible for assessment based on the criteria of original papers in English language published between January 2011 and November 2021. **Results:** The systematic review revealed that sexuality education benefits the teenagers and students with regards to the prevention of unintended sexual intercourse, sexual harassment and other high-risk behaviours. **Conclusion:** There are multiple effective platforms and ways to incorporate sexual education into the school curriculum that can give benefits to teenagers, especially in preventing sexually transmitted diseases and unintended pregnancy.

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**Keywords:** Review, sex education, teenage

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## Introduction:

The exposure of teenagers with sexual initiation at an early age is associated with many health outcomes, including sexually transmitted diseases (such as human immunodeficiency virus and syphilis), maternal illicit drug use, pregnancy-related complications, maternal mortality and other psychosocial consequences like school dropout and rejection from the community (World Health Organization, 2020). In Malaysia, although the prevalence of teenage pregnancy is low relative to other countries, the figure might not suggest the real numbers. This is because many cases go unreported, and teenage mothers are more likely to engage in illegal miscarriages (Noordin et al., 2012). The Malaysia Welfare Department reports that about 111 of unmarried teenagers were pregnant with a recorded rate of 6 births per 1000 women aged 15-19 years. Furthermore, 18,847 pregnant girls aged 10 to 19 were recorded in Malaysian public health institutions in 2012, making up 3.2% of the projected 580,536 expecting moms that year (32 out of 1,000 pregnancies) (Nagandla & Kumar, 2020).

As they transition from infancy to maturity in the contemporary era of mass and digital media, too many teens are inundated with false information about romance and sex (UNESCO, 2018). Due to that, teenagers are becoming more interested in factual knowledge that will enable them to have secure, fruitful, and fulfilling lives. Sex education has long been seen as critical to the sexual health and wellbeing of teenagers by public health specialists and legislators (UNESCO, 2018). Sexual education equips the young with knowledge and life skills regarding respectful relationships and sexuality for health and wellbeing. Sex education is important to avoid sexual abuse, violent sexual actions, and dangerous practices (UNESCO, 2018). Furthermore, it can empower and navigate them in a world where unintended pregnancy, the transmission of (human immunodeficiency virus) HIV and other sexually transmitted diseases and gender-based violence are becoming a serious problem to their health and wellbeing (UNESCO, 2018).

Sexual education is a way to help lower the spread of infectious diseases like HIV because it raises HIV prevention awareness. In addition, the students should also be aware that they have the right to reject intercourse or request the use of a condom if they suspect that their partner had a sexually transmitted disease (Rose, 2014). The communities are gradually recognizing the necessity of providing teenagers with

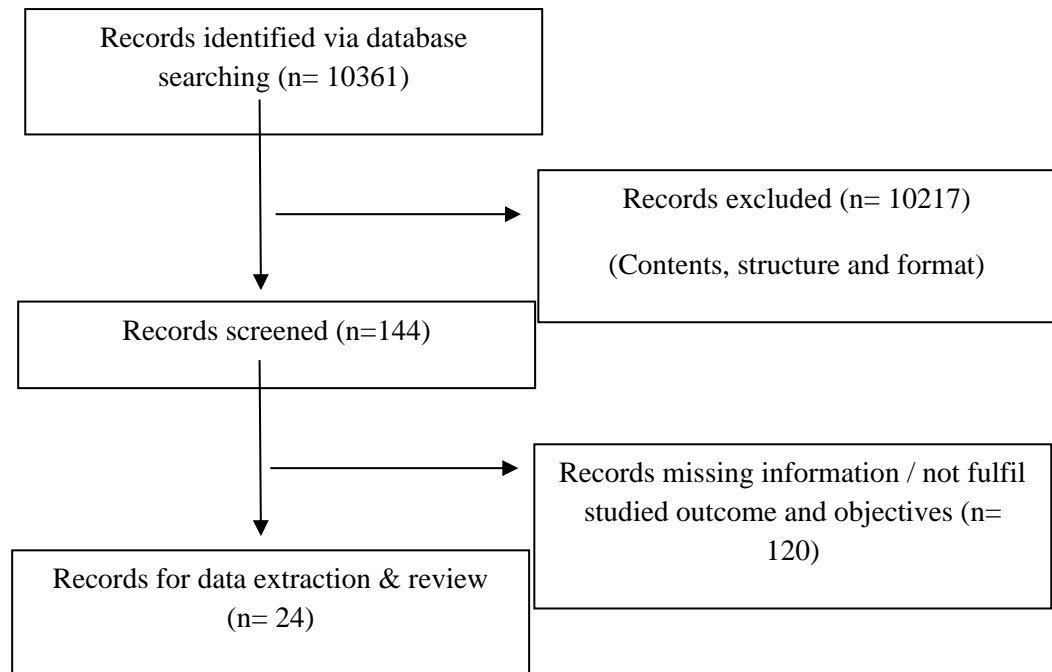
the information and skills to make accountable decisions in their lives. Moreover, public opinion polls have continuously expressed substantial support for comprehensive sex education in developed countries like the United States of America. (Kantor & Holstrom, 2019; Planned Parenthood Federation of America, 2018). Looking at the situation, Malaysia also needs to develop a reliable syllabus for the sexual education curriculum. Nonetheless, the issue is still widely debated in our community and challenging to be discussed due to socio religious stigma (Razali & Preference, 2021; Hazariah et al., 2020; Aalsma M.C. et al., 2013). Because of the potential positive outcome of sexual education on our teenagers, this article review will give us more information regarding the impact of sexual education on health promotion among teenagers and its associated factors.

## Materials and Methods:

The objective goal of this review paper is to determine how sex education affects the promotion of health among teenagers. From the database's debut in January 2011 through November 2021, three electronic databases (PubMed, CINAHL, and Scopus) were searched. The titles and abstracts found from the search approach for all databases were analyzed by four reviewers who then stratified the articles. The finalised papers were vetted by another independent reviewer with subject-matter knowledge. Any disagreements between the reviewers were resolved. The search strategy used the following MeSH (Medical Subject Headings) keywords: effects, outcome, sex, abortion, pregnancy, education, syllabus, curriculum, program, health, promotion, empowerment, teenage, youth, young people, secondary school students, behaviour, action, and attitude. The following research questions needed to be answered in this reviewing process: the impacts of sexual education on health promotion and teenagers' behaviours, as well as on the associated risk factors of sexual behaviour in teenagers. The inclusion criteria for this review include the paper format for the study required to be cross-sectional, case-control, or cohort and the articles were to be published in English within the stipulated time as mentioned previously. Exclusion criteria includes other paper formats such as case reports, case series, commentary, and randomised control trials. The first three reviewers performed data extractions using a common data extraction table to gather pertinent data from each qualifying study. The dataset included information on the study's features, site, design, sample size, eligibility requirements and outcome measures. The fourth reviewer conducted discussions to resolve any

differences in data extraction between the initial three reviewers. Any articles with insufficient or omitted information were eliminated. Articles that just addressed sexual assault or harassment without covering sexual education elements were also excluded. 144 articles that met the inclusion

requirements were included out of the initial 10361 articles found by the search process. After reviewing the data extraction results and finalisation, only 24 articles fulfil the eligibility criteria as summarised in Table 1.



Flow chart 1: Schematic flow for articles identification and extraction

## Results:

Based on 24 articles that fulfilled the eligibility criteria (Table I), all articles targeting the implementation of sexual educational programs at secondary school and adolescents. One article targeting lesbian, gay, bisexual, and transgender (LGBT) group and another three articles emphasis on the HIV and sexually transmitted disease to be incorporated in the program. One article suggests implementation of national law of mandating sex education in schools. The most common method to deliver the knowledge includes through curriculum syllabus, school-based programs, religious input, web-based education, media platforms, mobile health education and peer-to-peer education. All 24 articles list similar impact of better adolescent sexual health outcomes.

### Role of religious belief

Religious input is one of the components that can be incorporated in sexual education programs among adolescents. Research has shown that adolescent religiosity is negatively related to risky sexual behavior (Razali & Preference, 2021; Hazariah et al.,

2020; Aalsma M.C. et al., 2013). Religiosity is proven for lower sexual conservatism and sexual behavior (Aalsma M.C. et al., 2013). Spiritual and religious input not only been practised by school educators, in fact had been practiced among health care providers in dealing with teenagers with high-risk sexual behaviours (Hazariah et al., 2020). In fact, it has been a trend among healthcare professionals to positively incorporated Islamic beliefs into sexual health education session (Hazariah et al., 2020). According to research, an effective relationship between socio-sexual attitudes and religion should be understood for effective tactics of sexual health promotion (Aalsma M.C. et al., 2013).

### Impact of sexual education

Sexual education if properly delivered would provide impactful preventive measures in rescuing the teenagers from high-risk behaviours (Table I). This is reflected in higher sexual health awareness and literacy among the youths and therefore allow them to experience safe sexual practice (Akuiyibo et al., 2021; Lameiras-Fernández et al., 2021; Narkarat et al., 2021). This will prevent sexually transmitted infections and human immunodeficiency virus transmission, lower

the risk of adolescent pregnancy, reduce the frequency of sexual intercourse and even delay the onset of sexual debut (Ramírez-Villalobos D et al., 2021; Evans R et al., 2020; Martin et al., 2020). Even if they practice sexual intercourse, they are more aware to use contraceptive methods such as barrier method, oral contraceptive pills and practice monogamous relationship (Yau et al., 2020; Wado et al., 2019; Yakubu et al., 2019). If they develop symptoms suggestive of genital infections, they are also more

ready to seek for medical attention and undergone screening (Scull TM et al., 2018; Layzer C et al., 2017; Li C et al., 2017; Breuner et al., 2016). Overall, they become more confidence in themselves, feel more positive about themselves and therefore avoiding themselves from drug abuse, alcoholism, nicotine addiction and sexual risky behaviours (Jonas et al., 2016; Oman et al., 2016; Jørgensen et al., 2015; Taylor M et al., 2014; Aalsma M.C. et al., 2013; Morrison-Beedy et al., 2013).

Table 1: List of Articles Fulfilled Searched Objectives for Sexual Education

No	Author and Year	Study place	Population	Description	Impact
1.	Akuiyibo <i>et al.</i> , 2021	Northwestern states of Nigeria	Young people aged 15–24 years	HIV/AIDS education been incorporated in sexual education	Prevention of risky behavior, better health awareness among youths
2.	Lameiras-Fernández <i>et al.</i> , 2021.	Multiple sites	Adolescent (10 schools)	Combination of learning experiences aimed at facilitating voluntary behaviour  Online supports interventions  Less threatening, awkward, or embarrassing	Including social, emotional, mental, physical, and other elements Decrease in dangerous behaviours  Enjoyable and safe sexual experiences Knowledge about preventing STIs and other diseases, which has increased
3.	Narkarat <i>et al.</i> , 2021.	Rural Thailand	Female school-going adolescents	Mobile health education on sexual and reproductive health information among female school-going adolescents	Increase sexual and reproductive health literacy
4.	Ramírez-Villalobos D <i>et al.</i> , 2021.	Morelos, Mexico	Seventy-five public schools	Comprehensive education in sexuality (CES) in public secondary school	Reduction in STI Delay sexual debut, lower the risk of adolescent pregnancy, reduce the frequency of sexual intercourse
5.	Evans R <i>et al.</i> , 2020.	Multiple sites	Black adolescents	Primary prevention programs which are directly aimed at encouraging abstinence or safer sexual behaviour	Promote the utilization of medical testing and treatment services.  Increasing sexual health self-efficacy and knowledge Improvements in abstinence & condom use

				Reduce the risk of (HIV) infection	
6.	Martin <i>et al.</i> , 2020.	Multiple sites	Web-based participatory interventions among young people	Online support interventions	Reduction in STI
7.	Paton <i>et al.</i> , 2020.	Multiple sites	Sex & relationship educations among teenagers	Laws mandating sex education in schools	Reduction of teen pregnancy and sexually transmitted illnesses like HIV. Reduction in drug and alcohol usage, as well as use of other substances
8.	Rabbitte M., 2020.	United states	Youth in school	Targeting lesbians, gays, and bisexuals	Reduction is sexual risk behavior
9.	Scull TM <i>et al.</i> , 2020.	United states	High school students	Media literacy education (MLE) to teenagers	Increased self-efficacy about their own sexual act Lowered hazardous sexual acts and increased intentions to use a condom if they choose to have sex
10.	Yau <i>et al.</i> , 2020.	Thailand	423 students aged 15 through 19 years	Educational programs towards targeted selected groups.	Reduce dangerous sexual acts including promiscuity and sporadic condom use. Increase test for HIV
11.	Crocker <i>et al.</i> , 2019.	Australia	Stakeholder perceptions of the Australian Positive Adolescent Sexual Health (PASH) Conference	Internet has become one of the major health- related information  Strengthening the school and family context, empowering youth building skills	Better adolescent sexual health outcomes
12.	Wado <i>et al.</i> , 2019.	Five east African countries	Adolescents	Multi-sectoral approaches to addressing adolescent pregnancy	Delay in onset of sexual activity Reduction in unwanted and unintended birth. Postponing intercourse, having fewer sexual partners.

13.	Yakubu <i>et al.</i> , 2019.	Adolescent girls	Northern Ghana	Educational intervention program on sexual abstinence based on the health belief model amongst adolescent girls	Some knowledge and commitment to prevent conception
14.	Scull <i>et al.</i> , 2018.	United states	Adolescent Sexual Health Promotion in Middle School	Increased their interest and curiosity in sex and relationships	Increased use of contraception, a delay in the commencement of sexual activity  Increased adolescent's intention to use contraception  More confidence in one's ability to communicate with their spouse
15.	Scull TM <i>et al.</i> , 2018.	United states	Older adolescents attending community college	Media Literacy Education for Adolescent Sexual Health Promotion in Middle School	More conscious of the impact of a lack of conscience on sexual behaviour decisions  significant increase in sexual health awareness
16.	Layzer C <i>et al.</i> , 2017.	United states	11th- and 12th-grade students are trained by school health educators	Peer-to-Peer Sexual Health Education	Awareness to use condoms or other birth control methods themselves or with a partner.
17.	Li C <i>et al.</i> , 2017.	Eastern, central, and western parts China	130 colleges, undergraduates aged 18 ~ 25	School-based sexuality education, sexual knowledge and sexual behaviors	More positive sexual practices and reproductive health outcomes
18.	Breuner <i>et al.</i> , 2016.	Unites states	Clinical guidance for paediatrician	Sexual anatomy, STI, sexual activity, orientation, abstinence, contraception	Allow adolescents to make safe choices about healthy relationships, responsible sexual activity, and their reproductive health
19.	Jonas <i>et al.</i> , 2016.	South African	School-going adolescents	Sexual risk behaviors and substance use education	Reduction of teen pregnancies and sexually transmitted illnesses like HIV Decrease in the use of alcohol, cigarettes, and other narcotics as drugs of abuse



20.	Oman <i>et al.</i> , 2016.	California, Maryland, and Oklahoma	Youth from 44 residential group homes	Numerous venues, including community centers, schools, and health clinics, are available for the delivery of sexual health programs.	Improve knowledge, attitudes, self-efficacy, and sexual behaviours intentions
21.	Jørgensen <i>et al.</i> , 2015.	General Danish population	Youth aged 15–29 years	A web-based sexual behaviour questionnaire	Reduction of teen pregnancies and sexually transmitted illnesses like HIV
22.	Taylor M <i>et al.</i> , 2014.	KwaZulu-Natal, South African	816 high school students	Teenage Pregnancy Prevention Program for high school students	Increase condom usage among sexually active students More students expressed a desire to discuss teenage pregnancy with their partner and to use condoms
23.	Aalsma M.C. <i>et al.</i> , 2013.	United states	328 young women to assess the role of religion and socio-sexual	Emphasis on socio-sexual cognitions and religiosity on adolescent sexual behavior	Positive effect requires strong religious belief
24.	Morrison-Beedy <i>et al.</i> , 2013.	Northeastern United states	738 sexually active urban adolescent girls	Sexual risk-reduction (SRR) intervention, supplemented with postintervention booster sessions, targeting low-income, urban, sexually active teenage girls	Sexual risk and unwanted pregnancies in adolescent girls can be minimized Self-efficacy Towards Contraception

## Discussion:

Any set of educational activities aimed at encouraging voluntary behaviour that promotes sexual health is considered a sexual education (Lameiras-Fernández *et al.*, 2021). This may be done by implementing sexual health interventions, which includes primary prevention programmes targeted at promoting abstinence or safer sexual act in order to lower the chance of contracting HIV infection and other sexually transmitted infections (STIs) as well as unintended pregnancy (Evans *et al.*, 2020). Any information that covers knowledge on sexual health and concept including sexual anatomy, sexually transmitted infection, sexual activity, orientation, abstinence, and contraception should be covered (Breuner *et al.*, 2016).

According to Lameiras-Fernandez *et al.* (2002), the effectiveness of sex education programmes primarily focused on the reduction of risky behaviours and outcomes, such as sexual transmitted diseases (STDs), unintended pregnancies, and unexpected paternity/maternity as public health outcomes. In fact, the major goal of abstinence-only programmes is to assist young adults in preventing unexpected pregnancies and sexually transmitted diseases. This is based on the idea that although using contraceptives simply lowers the risk, abstinence eliminates it. Additionally, Scull *et al.* (2018) asserted that, in addition to increasing the use of contraceptives, sexual health treatments may cause a delay in the initiation of sexual activity. Furthermore, research revealed that early sexual initiation is a strong indicator of teenage

pregnancy, contraceptive non-use, and HIV infection (Wado et al, 2019).

By promoting sexual health in a way that includes not only the biological but also the psychological and emotional aspects of sexuality, comprehensive sexual education initiatives help young people have enjoyable and safe sexual experiences in the future (Lameiras-Fernández et al., 2021). Sexual health goals, sexual health knowledge, and sexual health self-efficacy were all found to be strongly correlated with health intervention in psychological outcomes research (Evans et al. 2020). Additionally, compared to the control group, students received education on sexual health reported higher levels of self-efficacy for using contraception and speaking with their partner at the post-test (Scull et al, 2018). Sexual communication is essentially a protective factor against dangerous sexual behaviour, even though it is frequently seen as taboo in our culture. This is due to the increased likelihood of safer sex among teenagers who can discuss sexual issues with their partners or a doctor. In fact, talking to a doctor will help them get more precise information on sexual health.

There are numerous things that can influence a person's sexual behaviour. The most common factors are education and socioeconomic status. As cited by Wado et al. (2019) poor knowledge of sexual and reproductive health services and lack of education has contributed to unintended pregnancy among youth in the sub-Saharan African. Jonas et al. (2016) also mentioned that a few research have investigated the factors that contribute to the teen pregnancy and other sexual risk behaviours, such as low contraceptive use and poor knowledge of contraceptives. In South Africa, even contraceptives are readily available at the public healthcare setting for free, but the number of girls who use it is very minimal and this can be explained by the poor knowledge of contraceptives. Furthermore, among sexually experienced Thai adolescents, a lack of awareness of premarital sexual practise may lead to the dissemination of risky sexual behaviour such as promiscuity, inconsistent condom usage, and reluctance to test for HIV (Yau et al., 2020).

Other than that, socioeconomic status also can affect the sexual behaviour among youth. Adolescent girls are vulnerable to early sexual debut and intergenerational intercourse because of poverty and low prospects for future economic success, according to Wado et al. (2019). According to research, those who live in poor neighbourhoods, adolescent girls from low-income families (Wado et al., 2019) and low-income urban settings are more likely to have unwanted pregnancies, STIs and HIV (Morrison et al.,

2013). Substance abuse including alcohol, cigarettes, and other drugs, is quite common among teenagers, according to David et al. (2020). Teenage sexual risk-taking behaviour has been linked to substance misuse. A further point made by Jonas et al. (2016) was that substance use (particularly marijuana and cocaine) continue to reflect individual-level risk factors related with teenagers' sexual behaviours, including use of contraception, safe sex practises and teenage pregnancy.

Strong religious belief also plays a significant role in affecting sexual behaviour in adolescent. Reduced religiosity, according to Aalsma et al. (2013), influences the accumulation of sexual experience by lowering sexual conservatism and results in higher sexual risk behaviour. According to a study, higher levels of religiosity in adolescents are associated with fewer sexual partners, a later age for first coitus, and a lower percentage of sexual intercourse with an unknown partner. They are also associated with a longer wait for the first sexual encounter and fewer sexual encounters (Aalsma et al., 2013). Other than that, genders and sexual minority youth such as lesbians, gays, and bisexuals, have been linked to sexual risk behaviour. These youth are noted to have more sexual partners, a younger sexual debut age, drinking before sex, and a lower use of condoms and contraceptives (Rabbitte, 2020).

## Conclusion:

Sexuality education should be implemented starting at primary school in view of its benefits to students specifically and society generally. Nevertheless, the format of education should always be revised to incorporate a spiritual approach and be suitable according to the developmental age of the children and students. It should fulfil the main objectives of preventing any high-risk behaviour, sexually transmitted diseases, unintended pregnancy and psychological distress among students and teenagers. Indeed, there are multifactorial factors contributing to sexual behaviour among teenagers. Therefore, in order to contribute to the establishment of a useful and successful sexuality education programme worldwide, awareness and active involvement particularly among families, teachers, community leaders, religious authorities, and community leaders should be strengthened further.

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