

# Impact of Youth Clubs on Contraception and Sexual Practices in Young People and Adolescents: A Systematic Review in Africa

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## Abstract

Youth and adolescence are times in life when everyone needs more information and services in the areas of sex education, reproductive health and managing the risks associated with sexuality. Youth work centres play an essential role in providing this information and service to young people and teenagers. The aim of this study was to review the scientific studies available on the impact of youth work centres on contraception and sexual practices among young people and adolescents. We carried out an automatic search on PubMed using an equation and a manual search on Google Scholar using keywords and the bibliographic references of the studies generated by the automatic search. Using this strategy, 4831 articles were identified, of which 2685 were eliminated as duplicates. A further 2146 articles were screened by reading titles, abstracts and full texts. In the end, 36 articles met the inclusion criteria. These articles studied the impact that sex education can have on young people's contraception and sexual practices. From an in-depth analysis of the articles selected, it emerged that sex education programmes contributed to the adoption of contraceptive methods by adolescents in almost 86% of cases, and were effective in 85% of cases. Sex education programmes and youth work centres are important precursors in changing adolescent behaviour.

## Keywords

Impact, Youth Work Centre, Contraception, Sexual Practices

## 1. Introduction

In Africa, discussion of sexual matters is taboo. Even within families, parents avoid discussing these subjects in front of their children, and severely restrict any discussion that children have in this area. Yet children need sex education to help them cope with puberty.

The taboo nature of sexuality is not without consequences for the general population, but particularly for teenagers. As a result, there are high rates of unwanted pregnancies, abortions and early pregnancies, leading to school drop-outs. According to Beninese statistics, 20% of teenage girls have a very early reproductive life, including 5% who are pregnant with their first child and 15% who have already given birth [1]. This phenomenon is not without consequences for school statistics. Benin recorded 2763 pregnancies for 301,821 girls enrolled, *i.e.* 0.92% of girls attending school [2].

To make up for the lack of education provided by the family and to avoid these disastrous consequences, youth work centres (Love and Life Centres, Convivial Centres, etc.) have been set up in Africa for several decades. These centres are the ideal place for sex education, where contraceptive methods and good sexual behaviour are taught. As with any intervention, it is important to assess its impact on the target populations in order to better guide policies in achieving its objective. With this in mind, this systematic review aims to assess the impact of youth work centres on contraception and sexual practices among adolescents and young people through sex education in the current literature.

## 2. Method

The writing of this systematic review was guided by the PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) guidelines and checklist [3].

### 2.1. Search Strategy and Selection Criteria

Following the PRISMA recommendations, we searched the CENTRAL, PubMed/Medline, Embase, PsycINFO, CINAHL, and Google Scholar databases, as well as published and unpublished documents up to 31 December 2024. During the searches, keyword combinations were established using the PICOTS method (Patients, Intervention, Comparison, Outcome, Time, Study). These are: Youth activity centre (sex education), contraception (contraceptive method, use of condoms), sexual practices (sexual behaviour, sexual activity).

### 2.2. Inclusion and Non-Inclusion Criteria

#### 2.2.1. Inclusion Criteria

This work takes into account randomised controlled trials published between 2014 and 2024, looking at the impact of sex education on contraception and sexual practices among young people in Africa.

In terms of intervention, this review takes into account only studies that dealt

with sex education. Specifically, any study that has evaluated the impact of any programme that supports young people in the area of sexuality will be considered as dealing with sexual education teaching knowledge, skills, behaviours and values that help people to protect themselves, maintain respectful social and sexual relationships, make responsible choices and understand and protect the rights of others.

In terms of Outcome, the studies included in this review must establish a relationship between sex education and contraceptive use and/or a reduction in risky sexual behaviour.

Finally, to be included, articles must be available in full text and written in French or English.

### **2.2.2. Criteria for Non-Inclusion**

This work will not take into account.

- Non-randomised studies.
- Studies published before 2014.
- Studies that have not established an association between sex education and contraception/sexual practices of young people.

## **3. Selection of Studies**

Following the standards for writing a systematic review, we grouped together all the articles from all the search strategies applied to the different databases, which made it possible to eliminate duplicates.

After eliminating duplicates, the authors of this article read the titles and abstracts in order to exclude articles that were clearly not relevant according to the pre-established criteria.

Finally, the articles selected at the previous stage were subjected to a complete reading in order to definitively retain those included in this work.

## **Data Extraction**

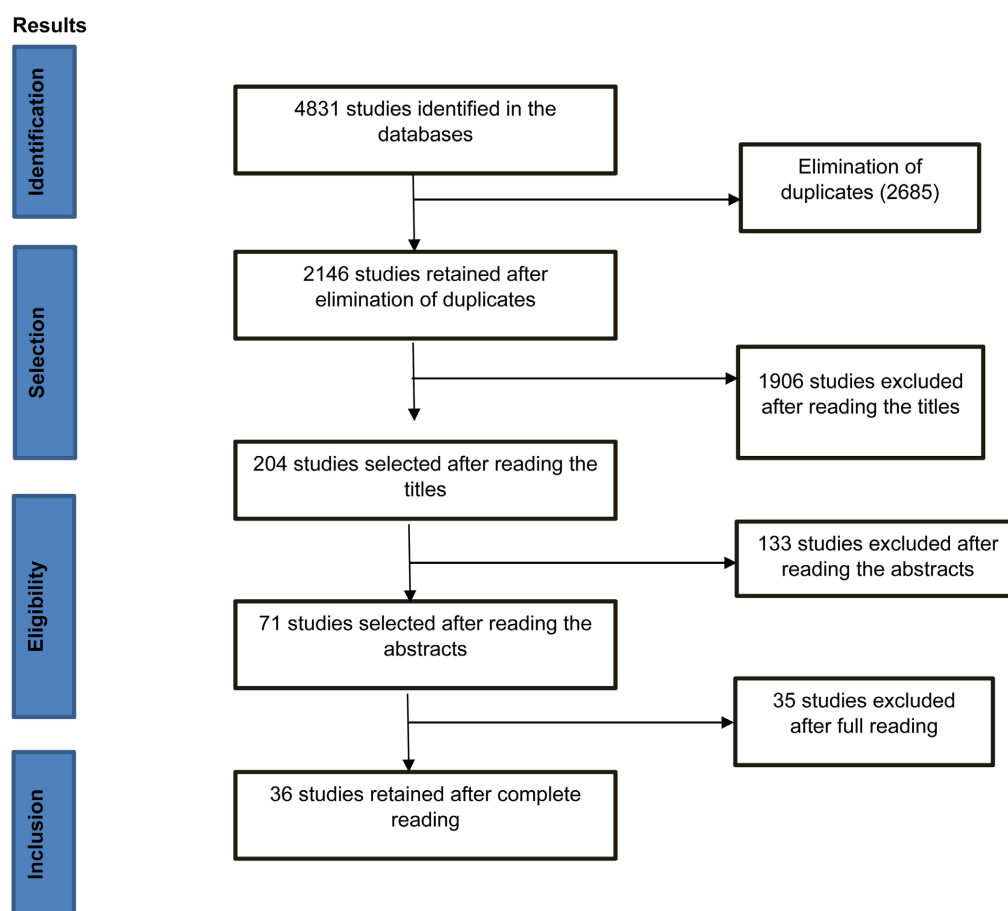
This stage, which consists of collecting and transcribing the data from the individual studies included, was carried out using an electronic data extraction form (MS Excel file). It was carried out with rigorous care by two different authors.

## **4. Data Analysis**

We identified 4831 studies in the various scientific databases, including 2685 duplicates. After elimination, reading the titles excluded 1906 of the remaining 2146 studies. Reading the abstracts of the 204 studies retained in the previous stage enabled us to retain 71 studies, which served as the basis for the complete reading stage. The final stage enabled us to include the 36 studies retained for this study.

### **4.1. Sex Education and Contraception for Young People**

Of the 36 articles selected for this study, 22 dealt with sex education for young



**Flow diagram:** PRISMA flowchart illustrating the selection process for studies found during the literature search.

**Figure 1.** PRISMA flowchart illustrating the selection process for studies found the during the literature.

people and their use of contraceptive methods. Each of these articles evaluated a sex education programme for young people (**Figure 1**).

Of these 22 studies, 19 (86.36%) found that sex education programmes implemented in countries reduced the risk of adolescents having sex without contraceptive methods and significantly improved the quality of young people's behaviour with regard to condom use. These studies therefore conclude that sex education programmes or youth work centres are important precursors in changing adolescent behaviour.

However, three additional studies yielded findings that contradicted those of the previously cited research. These studies did not observe any statistically significant differences in contraceptive method use between the group of adolescents who participated in the intervention and the control group. Admittedly, the young people in the intervention group showed a marked increase in interest in using contraceptive methods, but no change was demonstrated in the actual adoption of contraception [4]-[6].

These analyses show that sex education programmes are almost 86% effective in encouraging teenagers to adopt contraceptive methods.

## 4.2. Sex Education and Sexual Practices of Young People

As for the link between sex education and young people's sexual practices, 19 of the 36 articles included in this study established it.

Of these 19 studies, 11 articles found that sex education programmes improve young people's knowledge of sexual and reproductive health and enable them to avoid unwanted pregnancies by reducing risky sexual behaviour. The work of these authors shows that sex education programmes have a positive impact on the adoption of healthy behaviours by young adolescents.

Similarly, the work of Bauermeister *et al.* and Tarandeep *et al.* found that in addition to enabling young people to adopt healthy sexual behaviour, sex education programmes led them to reduce the number of sexual partners from the plural to the singular [7] [8].

Going further, Mary B Adam (2014), Lohan *et al.* (2022) and Rew *et al.* (2022) have shown that sex education programmes improve young people's sexual abstinence [9]-[11].

On the other hand, Moataz *et al.* (2020) and Thabang *et al.* (2019) found that these education programmes improve young people's knowledge of sexuality, but that this knowledge alone does not systematically lead to changes in adolescent behaviour [1].

## 4.3. Means and Sites for the Effectiveness of Sex Education Programs

Regarding the means used and the sites (places dedicated to sexual education), 9 articles out of the 36 selected for this work found sites and means for the effectiveness of the interventions.

Two studies found that sex education programs implemented in schools and universities are more effective and have a greater impact on adolescents' sexual and reproductive health behaviors than programs delivered in non-academic settings [1] [2].

Six studies found autonomous intervention programmes without direct contact between educators and adolescents to be more effective. These studies prove that programmes facilitated through the internet/web page, social networks, educational video programmes and messaging programmes are very effective. From these studies, it appears that technology-based education programmes quickly achieve their objectives. However, this success depends on young people's access to NICTs.

## 4.4. Successful Sex Education and the Qualities of Educators

For successful and optimal sexuality education, some of the studies selected addressed the quality of educators. The impact of sex education programmes therefore depends on the experience of the trainers [12] [13].

Of the four studies that looked at this aspect, one study found that education provided by experts was the most effective modality for reducing sexual risk com-

pared with education provided by peers and or co-delivered by peers and experts [14]. As for Jennifer Manlove *et al.* (2021), the most effective education was that in which young parent educators were paired with expert health educators [15]. According to these two studies, the expertise of the educators is essential to the effectiveness of the programmes. In addition to expertise, O'Donnell *et al.* (2017) and Madkins *et al.* (2019) find, respectively, parental involvement in the home and the pursuit of community and academic opportunities to be necessary in promoting healthy behaviours in adolescents [13] [16].

#### 4.5. Sustainability of the Effects of Sex Education

Sex education programmes are designed to have short-, medium- and long-term effects. Of the 36 studies included in this study, 5 examined the durability of the effects expected from these programmes.

Of these 5 studies, 4 found that the effects of sex education programmes were modest and temporal on contraception and sexual practices in young adolescents [3] [17] [18].

Only one study, carried out in China in 2015 by Yang *et al.*, found the effects of sex education programmes to be sustainable [17]. In his analyses, he noted that the initial moderate effect of the intervention was not only maintained but actually strengthened over time. This durability could be the result of the target population, which is teenage female entertainment workers.

### 5. Perspectives

In the existing literature, and among the articles selected, 10 studies made suggestions for the effectiveness of future sex education programmes. According to these studies, to ensure the lasting effectiveness of sex education programmes, it is necessary to:

- Involve young people in sexuality education programmes before their puberty ages [13] [19] [20].
- Make sexuality education programmes robust and fully powerful [7] [21] [22].
- Adopt innovative strategies to increase the use of female condoms, adapted for young illiterates [23] [24].
- Innovate new content or additional features to boost condom use [25].
- Developing future programmes based on behavioural theories [26].

### 6. Discussion

The aim of this study was to evaluate the impact of youth work centres on the contraceptive and sexual practices of adolescents. Nineteen (19) studies demonstrated the effectiveness of sex education programmes in these centres on young people's contraceptive practices, compared with only three studies that found sex education programmes to be ineffective [4]-[6]. The lack of effect in these studies may be due to the size of the sample, as in the case of Vayngortin *et al.*, where there were only 79 participants, or to the addition of another effectiveness crite-

rion, such as the avoidance of sex while under the influence of alcohol [4].

In terms of the adoption of good sexual practices, sixteen studies have demonstrated the effectiveness of sex education programmes in reducing risky behaviour, compared with three studies which have shown that these programmes increase adolescents' level of knowledge but do not lead them to change their behaviour [4] [12] [27]. The conclusion of ineffectiveness of sexual interventions by these three studies is the result of the longest follow-up period. These studies would have concluded that sex education programmes are effective if the effects are felt over the long term.

With regard to the qualifications of educators, all the studies that have looked at this aspect have found that the expertise of educators is necessary for the success and effectiveness of sex education programmes [14] [15]. This conclusion is justified by the fact that in any field, expertise is required for good cost-effectiveness.

This study also addresses the means and sites for the effectiveness of sex education programmes. Two studies showed that programmes delivered physically in schools and universities are effective, while six studies showed that those delivered online via social networks, educational videos and web pages are effective. No conclusion can be drawn here, as none of these studies made a comparison between interventions implemented physically and those implemented online.

In terms of the durability of the expected effects of sex education programmes, four studies showed that the effects are temporal [5] [13] [28] [29]. This conclusion may be due to the follow-up time of 3 to 9 months used in these studies. In fact, these authors conclude that the effects are long-lasting over this short follow-up period. In contrast, Xiushi Yang *et al.* (2015), who took a follow-up time of over a year, found that the initial moderate effect of the intervention was not only maintained but actually strengthened over time.

## 7. Limitations of the Study

A key strength of this systematic review lies in the inclusion of thirty-five comprehensive research studies on a recent and relevant topic within the Sahel region.

The review was conducted using multiple search engines to ensure a thorough and exhaustive selection of relevant studies.

However, a notable limitation is the methodological heterogeneity across the included studies.

## 8. Conclusion

Youth work centres have a number of objectives, including contraception and good practice among young people. According to the existing literature, these activity centres have a positive impact on young people in terms of sexual and reproductive health, and more specifically on the adoption of contraceptive methods and good sexual practices. This effectiveness will be achieved if sex education programmes are implemented in schools/universities and through social networks by experts in the field.

## Authors' Contributions

Mr Yves Roland S. BOKOSSA is the lead author and carried out the literature search, critical appraisal and thematic analysis of the documents in question. N'Pkingou Théodore Nadakou participated in planning the study, analysing the data and writing the reports.

Evariste Agbomakounzo and Nicolas Gafan participated in the planning of the study, bibliographical research and drafting of the text. Thierry Armel Adoukonou, Daouda Gbadamassi, Evelyne Soclo provided advice on the qualitative review of the literature and made substantial modifications to the text. All authors read and approved the final manuscript.

## Availability of Data and Equipment

All the articles included in this study are available in the "References" section.

The complete search strategy, as well as the original thematic analysis spread sheet, can be obtained on request from the corresponding author.

## Funding

The study has not received any funding.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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## Appendix

### Summary Table

Author, Year	Country	Size	Population	Intervention	Results	Observations
Janet Yuen-Ha Wong <i>et al.</i> , 2021	China	781	Single students aged 18 and over	Interactive intervention on sexual health		-Condom use consistency was 5% higher in the intervention group than in the control group. MCAS scores at 3-month follow-up were significantly higher in the intervention group than in the control group
AD Bryan <i>et al.</i> , 2016	UNITED STATES	198	Single undergraduate students, mean age = 18.6 years	Condom promotion in one session or control (stress management)		-Safer sex intervention increased condom use intention scores immediately after testing (3.21 vs. 4.29; $p = 0.05$ ). It also increased condom use at last intercourse at 6 weeks (68% vs. 43%) and 6 months (68% vs. 49%) among women who had intercourse during follow-up ( $p < 0.01$ ).
Scarlett Bergam <i>et al.</i> , 2022	South Africa	21	Adolescent, average age 16.6 years	Sex education		Access to sex education reduces stigma around adolescent sexual reproductive health
Elizabeth Kemigisha <i>et al.</i> , 2019	Uganda	1096	Students from 33 primary schools			-The proportion of students who had ever had sexual intercourse increased from 9% to 12.1% in the intervention group, compared to 5.2% to 7.4% in the control group between the start and the end of the study, but not statistically significant -Large improvements in sexual and reproductive health (SRH) knowledge in intervention schools (AOR: 2.18, 95% CI: 1.66 - 2.86) and no significant differences in self-esteem, body image or gender equity norms
Carey Pike <i>et al.</i> , 2023	South Africa	2791	Girls, not pregnant and in grades 8 - 10 (ages 13 - 17)	Sex education (SKILLZ program)		Evidence-based, peer-led sexuality education for adolescent girls in South African secondary schools was suboptimal
Krystal Madkins <i>et al.</i> , 2019	UNITED STATES	445	participants in the KIU! intervention	Online Sex Education (KIU program!)		KIU! program represents the future of primary HIV prevention among MSM. Given that the program is perceived as useful, engaging and impactful among participants, the only remaining hurdle is finding community and academic outlets to promote it.

## Continued

Maria Lohan <i>et al.</i> , 2018	Northern Ireland				<p>-3% of the sample reported unprotected intercourse at baseline (3.6% intervention and 2.5% control) and approximately 5% reported unprotected intercourse at follow-up 9 months later (5.4% intervention, 5.6% control).</p> <p>-A 50% increase in unprotected sex in the intervention group (3.6% to 5.4%), compared to more than double the unprotected sex in the control group (2.5% to 5.6%).</p> <p>-The effects were stronger with a shorter-term follow-up of 5 months with a difference between groups of 2.6%.</p> <p>-a decrease in the percentage of unprotected intercourse among men in the intervention group, but an increase in the number of women in the intervention arm was evident</p>
Roy F Oman <i>et al.</i> , 2018	UNITED STATES	1036	Young households (average age = 16.1 years)	Sex Education (The Power Through Intervention Choices (PTC))	<p>-At 6-month follow-up, participants in the intervention group had significantly lower odds of having recent intercourse without using a contraceptive method (adjusted odds ratio [OR] = 0.72; 95% confidence interval [CI] = 0.52, 0.98).</p> <p>At the 12-month follow-up assessment, participants in the intervention group had significantly lower odds of ever being pregnant or becoming pregnant (OR = 0.67; 95% CI = 0.46, 0.99).</p>
Ibrahim Yakubu <i>et al.</i> , 2019	Ghana	363	High school students aged 13 to 19		<p>-the mean scores of knowledge and control attitude were respectively (87.58 and 194.12).</p> <p>-Sexual abstinence in the control group was 84.4% and the intervention 97.3%. Educational interventions resulted in a significant difference in sexual abstinence between intervention and control groups (OR = 13.89, 95% confidence interval (2.46 - 78.18, <math>p &lt; 0.003</math>).</p>

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Rebecca Firestone <i>et al.</i> , 2016	Liberia	1157	young women and men aged 15 to 35	Intensive sex education (Healthy Actions)	<p>-learners in the Healthy Actions intervention group were 12% less likely to report never using a condom with a regular partner in the past month compared with the control group (<math>p = 0.02</math>)</p> <p>-Learners who received Healthy Actions were 13% more likely to use any form of modern contraception than learners at control sites (<math>p &lt; 0.001</math>), with the largest increase in use of contraceptive implants</p> <p>Learners at Healthy Actions sites were 45% more likely to have received an HTC (<math>p &lt; 0.001</math>).</p>
Julie S Downs <i>et al.</i> , 2018	Ohio, Pennsylvania and West Virginia.		Sexually active adolescent girls aged 14 to 19	Therapeutic intervention; vs Driving Skills for Life	<p>-Participants in the Seventeen Days group reported higher perceived self-efficacy in condom acquisition after 6 months than those in the driving group.</p> <p>This finding holds after controlling for baseline self-efficacy scores and other variables.</p>
Thabang Manyapelo <i>et al.</i> , 2019	South Africa				<p>-Overall, the intervention had some success, particularly in encouraging young men to avoid drunken sex.</p> <p>-However, no effect was obtained in terms of increasing intentions associated with other behaviors such as condom use, HIV testing, and avoiding sex with intoxicated people.</p> <p>Further development and testing of this program is recommended before larger-scale implementation can be considered.</p>
José A Bauermeister <i>et al.</i> , 2015				YMSM Program	<p>-improvements in secondary outcomes (eg, reductions in risky sexual behaviors)</p> <p>-a reduction in the number of sexual partners of YMSM after a 30-day follow-up</p>

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Lauren Tingey <i>et al.</i> , 2017	Indian America	267	Native American adolescents aged 13 to 19	reproductive health intervention	<p>-A greater proportion of RCL participants intended to use a condom after the intervention compared to control participants, particularly younger adolescents (13 - 15 years; RR = 1.42, p = 0.007) and sexually inexperienced adolescents (RR = 1.44, p = 0.01);</p> <p>-these differences were attenuated during additional follow-up</p> <p>-RCL intervention had a significant impact on condom use self-efficacy and response effectiveness.</p>
EC Brousseau <i>et al.</i> , 2020		232	Incarcerated women wishing to avoid pregnancy	Introduction to contraception	<p>-Contraceptive use was higher in the intervention group (56% vs. 42%, p = 0.03), but significant</p> <p>-No differences between groups in rates of pregnancy, STIs or continuation of contraception after release, which were generally low (21%).</p>
Lydia O'Donnell <i>et al.</i> , 2017	Latin America			Bilingual, culturally targeted media sex education called Salud y éxito	<p>-Compared to controls, 12 months after the intervention (spring of 8th grade), Salud-100 youth reported lower sexual risks (touching, AOR 1.46, CI 1.19 - 0.84, p &lt; 0.001; lifetime sexual intercourse (AOR 0.74, CI 0.61 - 0.90, p &lt; 0.01) and sexual intentions (AOR 0.78, CI 0.63 - 0.96, p &lt; 0.05).</p> <p>-Consistent with a dose-response relationship, the results of Salud-50 are between those of Salud-100 and the control schools.</p>
Slawa Rokicki <i>et al.</i> , 2017	Ghana	756	Female students aged 14 to 24 in Accra, Ghana, in 2014	Sex education (one-way intervention, one interactive intervention and one control).	<p>-the one-way intervention increased knowledge by 11 percentage points (95% confidence interval [CI] = 7, 15) compared with a control baseline of 26%</p> <p>-the interactive intervention increased knowledge by 24 percentage points (95% CI = 19, 28), compared with a control baseline of 26%.</p> <p>-unidirectional (odds ratio [OR] = 0.14; 95% CI = 0.03, 0.71) and interactive (OR = 0.15; 95% CI = 0.03, 0.86) interventions reduced reported pregnancies for sexually active participants.</p>

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Tarandeep Anand <i>et al.</i> , 2020	Thailand				<p>-the intervention did not result in significant changes in attitudes toward condom use, condom use self-efficacy, and behavioral intentions</p> <p>-participants reported a significant reduction in the number of sexual partners and an increase in condom use behaviors</p>
AC Schuyler <i>et al.</i> , 2016	South Africa	296	Students	Use of the female condom (FC)	<p>-Two-thirds of women reported using FC</p> <p>-Most women (n = 30/39) applied the information learned during the interventions to negotiate with their partners</p> <p>-Women reported that practicing FC insertion increased their confidence</p> <p>-Twelve women failed to convince their male partners to use CF</p>
Xiushi Yang <i>et al.</i> , 2015	China		Entertainment workers in China	HIV knowledge, protection motivation, behavioral skills and social influences of risk reduction	<p>-control group participants reported greater reduction/increase in risky/protective behaviors 3 months after the intervention, the strong initial effect quickly faded and completely disappeared 12 months after the intervention.</p> <p>-In contrast, the initial moderate effect of the intervention was not only maintained but actually strengthened over time.</p>
Mary B Adam, 2014	Kenya	182	University students	Human Immunodeficiency Virus (HIV) Prevention Program	<p>-slope coefficients for four variables showed reliable change in the expected direction: abstinence from oral, vaginal, or anal sex in the past two months, attitudes toward condoms, HIV testing, and ability to refuse</p> <p>-The intervention demonstrated non-zero slope coefficients in the expected direction on 12 of the 13 dependent variables.</p>
Alexandra Morales <i>et al.</i> , 2014	Spain	832	Spanish university students aged 14 to 18	COMPAS Program (Spanish acronym for Competencies for Adolescents with Healthy Sexuality)	<p>-Experts achieved improved knowledge and attitudes towards HIV and condom use</p> <p>-Experts working with their peers have only succeeded in increasing knowledge about HIV.</p> <p>-The magnitude of the effect of changes indicates a greater positive change in the program when applied by experts than by experts and peers.</p>

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Jennifer Manlove <i>et al.</i> , 2021	Texas	Students in grades 8 - 10 in 57 classes from three schools	Re: MIX, a complete sex education program	<p>At post-test, compared to control students, Re: MIX students</p> <ul style="list-style-type: none"> <li>-were more likely to intend to use hormonal or long-acting contraceptive methods if they had had sex</li> <li>-had better knowledge about reproductive health</li> <li>-had more confidence in their ability to ask and give</li> <li>-were more likely to know where to get contraception</li> </ul>
Maria Lohan <i>et al.</i> , 2022		6561 Students (aged 14 - 15) in UK schools	Gender transformative approach to engage adolescents in ESR to prevent unprotected sex	<ul style="list-style-type: none"> <li>-2648 (86.62%) of 3057 in the intervention group avoided unprotected intercourse versus 2768 (86.41%) of 3203 in the control group (adjusted odds ratio [aOR] 0.85 [95% CI 0.58 - 1.26], <math>p = 0.42</math>).</li> <li>-Significantly more intervention students used reliable contraception at last intercourse compared to control students</li> <li>-no significant difference between groups for sexual abstinence</li> </ul>
Taraneh Shafii <i>et al.</i> , 2019	Washington	272 Female patients at the STI Clinic in Seattle, Washington, aged 14 to 24 years who reported unprotected vaginal intercourse in the past 2 months	Interactive Computer-Based Interventions (ICBI)	<p>The intervention group reported compared to the control group:</p> <ul style="list-style-type: none"> <li>-a 33% lower rate of unprotected vaginal intercourse (without condom use) [IRR = 0.67, 95% CI: 0.44 - 1.02];</li> <li>-29% fewer sexual partners [IRR = 0.71, 95% CI: 0.50 - 1.03];</li> <li>-48% fewer STIs [IRR = 0.52, 95% CI: 0.25 - 1.08].</li> </ul> <p>Compared with the control group, women in the intervention reported:</p> <ul style="list-style-type: none"> <li>-a lower rate of unprotected vaginal intercourse (no birth control) [IRR = 0.80, 95% CI: 0.47 - 1.35]</li> <li>-two times fewer unwanted pregnancies (<math>n = 5</math>)</li> </ul> <p>In exploratory analyses, women participating in the intervention reported:</p> <ul style="list-style-type: none"> <li>-fewer partners [IRR = 0.71, 95% CI: 0.50 - 1.00]</li> <li>-a significantly lower rate of condomless vaginal intercourse [IRR = 0.50, 95% CI: 0.30 - 0.85]</li> </ul>

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Dana Rotz <i>et al.</i> , 2022	Texas	594	Young mothers aged 14 to 20,	Steps to Success, a 2-year home visiting program	<p>-women in the Steps to Success group were more likely to use long-acting reversible contraceptives (effect size = 0.18, <math>p = 0.066</math>), particularly young teenage mothers aged 14 to 18 years (effect size = 0.34, <math>p = 0.010</math>)</p> <p>- Steps to Success reduced the incidence of unprotected sex among young teenage mothers (effect size = -0.25, <math>p = 0.035</math>).</p> <p>- Steps to Success did not improve outcomes in other areas.</p> <p>-CARRII participants showed significant reductions in the rate of unprotected intercourse from pretreatment (88.9%) to posttreatment (70.6%) (<math>p &lt; 0.04</math>) and 6-month follow-up (51.5%) (<math>p = 0.001</math>); and risk rates of AEP from pretreatment (66.7%) to posttreatment (32.4%) (<math>p = 0.001</math>) and 6-month follow-up (30.3%) (<math>p = 0.005</math>).</p> <p>-EP participants demonstrated no significant changes on all 3 variables at any time point</p> <p>-higher program usage is linked to change.</p>
Karen Ingersoll <i>et al.</i> , 2018				Contraceptive and Alcohol Risk Reduction Internet Intervention (CARRII)	
Lynn Rew <i>et al.</i> , 2022	Austin, Texas and Columbus, Ohio	602	Homeless youth, aged 18 - 24	Brief intervention to promote responsible substance use and safe sexual behaviors among homeless youth (YEH)	<p>This brief intervention had significant effects on YEH in promoting healthy attitudes and behaviors</p>
Wai Han Sun <i>et al.</i> , 2017	China	196	Mainland students in Hong Kong SAR	Peer-led sex education delivered through social media as the intervention and an existing online sexual health website as the control	<p>-intervention group participants reported more satisfying online experiences (<math>p &lt; 0.001</math>) and a higher level of online visit frequency (<math>p &lt; 0.001</math>).</p> <p>-They also had more positive comments than the control group.</p> <p>-For outcome assessment, within-group analysis showed significant improvement in attitude toward condom use (<math>p = 0.02</math>) and behavioral skills (<math>p &lt; 0.001</math>) in the intervention group, but not in the control group.</p> <p>-increased frequency of online visits was associated with better behavioral intention to use contraceptives (<math>p = 0.05</math>), better behavioral skills (<math>p = 0.02</math>), and more frequent condom use (<math>p = 0.04</math>).</p>

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Melissa J Kottke <i>et al.</i> , 2023	America	685	Self-identified African American women, aged 14 - 19, who had been sexually active with a male partner in the past 6 months	Sex education program called 2gether	Participants in the 2gether intervention were more likely to report using condoms plus contraception overall, adjusted relative risk (aRR) = 1.61 (95% CI 1.15 - 2.26) and condoms plus an implant or intrauterine device (IUD) specifically, aRR = 2.11 (95% CI 1.35 - 3.29) in the previous 3 months compared with those receiving SOC. 2gether participants were also more likely to report using condoms plus an implant or IUD at their last sexual intercourse and consistently over the previous 3 months
Tatyana Vayngortin <i>et al.</i> , 2020		79	Sexually active women aged 14 - 21 in an urban pediatric emergency department	Long-acting reversible contraceptives (LARCs)	<p>-At baseline, 17.7% of participants were somewhat or very interested in the intrauterine device (IUD) or implant.</p> <p>-After watching the video, 42.3% were somewhat or very interested in the IUD and 35.7% in the implant.</p> <p>-Among those who watched the video, there was a significant increase in interest in using an IUD or implant (<math>p &lt; 0.001</math>).</p> <p>-Compared with controls, adolescents who watched the video were also significantly more likely to report wanting an IUD (<math>p &lt; 0.001</math>) or an implant (<math>p = 0.002</math>). A total of 46% were reached for follow-up. Of these, 16% had initiated a LARC method after their ED visit (<math>p = \text{NS}</math>).</p>
Jennifer Manlove <i>et al.</i> , 2020		1304	Black and Latina women aged 18 - 20	App-Based Teen Pregnancy Prevention Program	<p>-Participants who received the intervention were 7.6 percentage points less likely (<math>p = 0.001</math>) to report having sex without a hormonal or long-acting contraceptive method</p> <p>-Intervention participants also scored 7.1 percentage points higher on contraceptive knowledge (<math>p = 0.000</math>) and were 5.7 percentage points more likely to be confident about using a contraceptive method during each sexual intercourse (<math>p = 0.027</math>).</p>

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Michele L Ybarra <i>et al.</i> , 2017	UNITED STATES		Sexual minority men aged 14 - 18	Guy2Guy (G2G), the first comprehensive HIV prevention program	<p>-Among participants who were sexually active at baseline, intervention participants were significantly more likely to report having been tested for HIV (adjusted odds ratio = 3.42, <math>p = 0.001</math>)</p> <p>-They were also less likely than control youth to be abstinent (adjusted odds ratio = 0.48, <math>p = 0.05</math>).</p> <p>-CSAs were significantly lower for those participating in the intervention compared with the control group at the end of the intervention (incident rate ratio = 0.39, <math>p = 0.04</math>)</p>
Amy J Starosta <i>et al.</i> , 2016		422		Web-based intervention	<p>-The intervention improved condom use intentions and attitudes toward condoms for 3 condom attitude subscales.</p> <p>-Post-intervention attitudes significantly predicted condom use at 3-month follow-up, and this relationship was mediated by condom use intentions immediately after the intervention.</p>
Richard Crosby <i>et al.</i> , 2015	UNITED STATES		Young Black Men (YBM) aged 15 - 23	Brief sex education program	<p>-Mean baseline error rates were 1.32 and 1.13 for young men randomized to the intervention and control conditions, respectively.</p> <p>-Follow-up rates were 1.11 and 3.59 for young men randomized to the intervention and control conditions, respectively.</p> <p>-Controlled outcomes produced a significant effect on the influence of group assignment on the difference score (baseline to follow-up) in condom use error rate (<math>\beta = 0.13</math>; <math>p = 0.02</math>).</p>
Moataz A, <i>et al.</i> , 2020	Morocco	210	Young Moroccans aged 16 to 30		<p>-Knowledge alone does not systematically lead to changes in behavior.</p>