

The Effect of Sexual Health Education on Men's Attitudes Towards Condom Use Among Youth Group in Jos, Nigeria

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Abstract

BACKGROUND/AIMS: Globally, unwanted pregnancies, unsafe abortions, and sexually transmitted infections continue to pose a significant public health challenge, with far-reaching personal and social consequences. To address these challenges, prioritizing a primary prevention strategy is crucial, the most widely supported strategy is condom use. This study aimed to determine the effect of health education on men's attitudes towards condom use in Jos, Nigeria.

MATERIALS AND METHODS: This is a quasi-experimental study utilizing 115 respondents as the sample. All the participants are members of the town fellowship youth group. In line with previous studies and the Multidimensional Condom Attitudes Scale, a sociodemographic questionnaire was used for data collection.

RESULTS: The majority were sexually active and had their first sex at the age of 18 years and below. In four out of the five attitude sub-scales (effectiveness, stigma, embarrassment about negotiation, and purchasing condoms), the results suggest a statistically significant difference between the pre-test and post-test scores for these sub-scales ($p < 0.01$). In comparing the pre and post-test scores for the pleasure associated with condom use, the results showed a non-statistically significant ($p < 0.06$) difference even with the mean post-test increase.

CONCLUSION: It is evident that providing sexual health education to the young sexually active men in this study has a positive effect and increases their attitude towards partner negotiation tactics and condom use. Further research is needed with a larger sample and a broader geographical area to help improve understanding of sexual health practices such as attitudes and pleasure associated with condom usage.

Keywords: Sexually transmitted infections, sexual health education, condom use attitude, young men

INTRODUCTION

Globally, unwanted pregnancies, unsafe abortions, and sexually transmitted infections (STIs) keep on posing a significant public health challenge, with far-reaching personal and social consequences.^{1,2} Each year, an estimated 374 million new cases of STIs are reported worldwide. The World Health Organization (WHO) reports that approximately one million new cases of STIs are acquired daily, and a considerable portion of these are asymptomatic.³ Several factors contribute to this persistent challenge, including insufficient condom use,⁴ inadequate

understanding of condom correct usage, fitting, and disposal methods, and, recently, the rise of drug resistance to conventional STI therapy.⁵

In Nigeria, where the human immunodeficiency virus (HIV) epidemic remains a critical concern, over 1.9 million individuals are currently living with HIV, with an adult prevalent rate of 1.4%;⁶ plateau state falls within the category of states with a medium prevalence rate (1.0 and 1.9%) which requires a targeted intervention to strengthen prevention and control measures.⁵ Among these measures, consistent and correct condom use is one of the best ways of reducing unwanted pregnancies,

To cite this article: Esmaeilzadeh S, Lagan LL, Inuwa A. The effect of sexual health education on men's attitudes towards condom use among youth group in Jos, Nigeria. Cyprus J Med Sci. [Epub Ahead of Print]

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Received: 13.06.2024
Accepted: 24.01.2025
Epub: 15.04.2025
Publication Date: xxxxxx

unsafe abortion, and the spread of STIs, including HIV.^{6,7} Male condoms are reported to be 98% effective in preventing STIs, teenage pregnancies, and unwanted pregnancies;⁸ however, their effectiveness is often reduced by errors during use and inconsistent application.^{9,10}

Despite the common awareness of the benefits of condoms among youth,¹¹ studies reveal that the use of condoms remains inconsistent, especially among the Nigerian youth.¹²⁻¹⁴ Identified barriers to consistent condom use include misconceptions, cultural stigmas, affordability, availability, latex allergies and perceptions of reduced sexual pleasure about condom use; furthermore, reliance on partners' decisions and societal mistrust of condoms increased these issues^{13,14} thereby exposing youth to a higher risk of impaired sexual and reproductive health outcomes such as unwanted pregnancies, teenage pregnancies, unsafe abortions and STIs including HIV/acquired immunodeficiency syndrome (AIDS).¹⁵

Psychosocial factors, especially attitude, are significant in determining condom use behaviors.^{16,17} Existing findings suggest that an individual's attitude toward using condoms significantly determines their actual use.¹⁸ Positive attitudes towards condoms are strongly linked with healthier sexual behaviors, including consistent and correct condom use; in contrast, a negative attitude often leads to reduced condom use,^{16,19,20} and engagement in harmful sexual practices such as unprotected intercourse with more than one partner.¹⁴ Importantly, studies reported sexual health education that did not address attitude often showed limited success in improving consistent and correct condom use.²¹

While alternative sources of sexual health information such as digital media and peer education are available to youth, these methods face challenges related to information accuracy, cultural influences, and individual education levels.^{22,23} Comprehensive sexuality education offers a more holistic and rights-based approach to addressing sexual and reproductive health issues. However, its implementation in Nigeria faces challenges such as cultural and/religious resistance, inadequate training, and policy gaps. Therefore, sexual health education delivered by health professionals using interactive lectures, group discussions, role play, and condom use demonstrations in the form of targeted interventions has a higher chance of providing education to address specific misconceptions and barriers. This, in addition to other benefits such as confidentiality and professionalism, suggests that this study utilized this approach.

Existing literature in Nigeria largely consists of non-interventional studies focusing on knowledge, barriers, and predictors of condom use.¹¹⁻¹⁵ Literature searches did not reveal any interventional study that explored the effectiveness of sexual health education in improving attitudes toward condom use. Although international studies have explored the impact of sexual health education on reducing sexual risks^{24,25} and self-efficacy for correct condom use,²⁶ there remains a research gap in addressing attitude-based interventions among young men in the Nigerian context.

Research Aim and Hypotheses

This study aims to determine the effect of sexual health education on men's attitudes toward condom use in Jos, Nigeria. The following hypotheses guided the study.

H0: There is no significant difference in participants' Multidimensional Condom Attitude Scale (MCAS) sub-scale scores for the reliability and effectiveness of condoms before and after the intervention.

H0: There is no significant difference in participants' MCAS sub-scale scores for pleasure associated with condoms before and after the intervention.

H0: There is no significant difference in participants' MCAS sub-scale scores for stigma associated with condoms before and after the intervention.

H0: There is no significant difference in participants' MCAS sub-scale scores for embarrassment about negotiation and use of condoms before and after the intervention.

H0: There is no significant difference in participants' MCAS sub-scale scores for embarrassment about purchasing condoms before and after the intervention.

MATERIALS AND METHODS

Study Design

The research used a quasi-experimental study design with a pre-test and post-test paired group pattern.

Study Place and Characteristic

The study was carried out at the Odus community in Jos, Nigeria, between September 2021 and December 2021. Odus is a community with a large youth population due to its closeness to the University of Jos. In addition, the participants are members of the town fellowship youth group, which brings together youth from different sections of the Odus community to discuss issues beneficial to the youth and the community.

Sample Size and Sampling Technique

The sample size was calculated using the Taro Yamane sample size formula. With a total youth population of 152, a 5% margin of error resulted in a sample of 110 participants. To ensure sufficient participant numbers and account for attrition, the sample size was increased by 10%, resulting in 121 participants. This decision was informed by a previous study with the same sample size,²⁵ which demonstrated a medium effect size. Participants were selected using convenience sampling, adhering to predefined inclusion and exclusion criteria.

Inclusion Criteria: Being 18 years old or above, male, and accepting to join the survey.

Exclusion Criteria: Had sexual health education or training for HIV/AIDS peer educator, unable to speak English, and not a town fellowship youth group member. Three participants voluntarily withdrew from the study, and three did not complete the training and the post-test; therefore, the final sample for the study was 115 participants.

Study Instruments

A sociodemographic and sexual profile questionnaire in line with previous related studies,^{11,14} was used to obtain sociodemographic information (5 items) and sexual profiles of the participants (9 items).

Multidimensional Condom Attitude Scale

Helweg-Larsen and Collins²⁷ developed the MCAS English version that measures condom attitudes in 5 different sub-scales, each with five items for a total of 25 items. The five sub-scales and the items are: (1) reliability and effectiveness of condoms (items 4, 6, 9, 14, and 20); (2) pleasure associated with condoms (items 2, 8, 15, 19, and 25); (3) stigma associated with condoms (items 3, 13, 18, 22, and 24); (4) embarrassment about negotiation and use of condoms (items 1, 7, 12, 16, and 21) and lastly, (5) embarrassment about purchasing condoms (5, 10, 11, 17, and 23). Reliability of the scale was established, indicating internal consistency in 3 different studies using both factor and confirmatory factor analysis in structural equation modeling, demonstrating adequate Cronbach's alpha values ranging from. Seventy-one to 94 for each factor. Construct and criterion validity for the MCAS was established as well.^{28,29} Some MCAS items are worded negatively, and the score must be reversed before adding and averaging the scores; the items were measured using a 7-7-point scale ranging from (1-strongly disagree) to (7-strongly disagree). After reversing the score for negatively worded items, the minimum score for each sub-scale is seven, and the maximum is thirty-five, and higher scores indicate more positive condom attitudes. Each sub-scale is scored separately; the sub-scale score is calculated as the sum of the five items divided by 5. The sub-scale score ranges from 1 (most negative attitude) to 7 (most positive attitude).

Research Process

Figure 1 shows the application phase of the research process, providing a comprehensive flowchart. The study's data collection and implementation process spanned six weeks: details of each week's activities are shown in the figure.

Research Intervention

The sexual health education was planned in 5 sessions, and intervention content was based on published research reviews and resources from

WHO, CDC and UNESCO^{3,22,23,30}, also, expert opinions from 2 public health nurses, 2 gynaecology and obstetrics nurses, and 1 internal medicine nurse were sought. The sessions were conducted using lectures, edutainment, brainstorming, an interactive group discussion format, PowerPoint, video/infographics presentations, demonstrations/hands-on activities, and role-play, designed to encourage participation and emphasize the educational content. The sexual health education consists of five pieces of content delivered once a week for week 3 and twice for weeks 4 and 5. The intervention for each piece of content took a period of 2 hours and was delivered by the second author. The details of the content of each session of the intervention are shown in the dossier, which is attached as supplementary material.

Ethical Considerations

Ethical approval for this study has been obtained from the Near East University Ethics Committee (approval number: 2020/79, date: 08.05.2020) and the town fellowship youth group management, as well as for the use of the MCAS. Informed consent was obtained from all participants, ensuring their confidentiality, voluntary participation, and right to withdraw at any point in the study.

Statistical Analysis

The Statistical Package for Social Sciences version 22.0 statistical program was used to evaluate the data. Data normality was assessed using the Kolmogorov-Smirnov test, revealing a non-normal distribution. The socio-demographic characteristics of the respondents were described using frequency and percentages. The Wilcoxon signed-rank test was used to analyze the intervention's effect on youth condom attitudes, with significance determined at $p < 0.05$.

RESULTS

Table 1 shows that 67.82% ($n=78$) of the participants were between 21-30 years old, 58.26% ($n=67$) were Nigerian, 69.56% ($n=80$) were single,

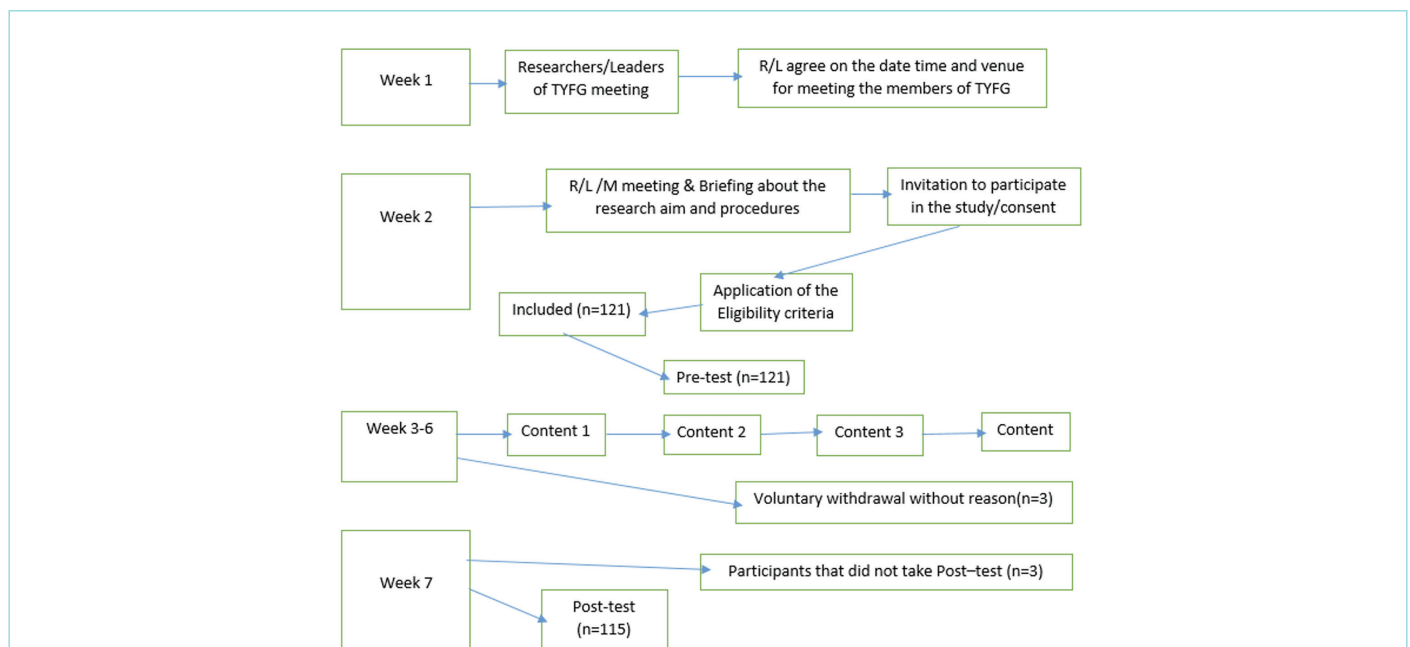


Figure 1. The Flowchart of the application phase of the research.

94.78% (n=109) had university education, and 44.34% (n=51) had middle-income level.

Based on the results in Table 2, 92.17% (n=106) of the participants had engaged in sexual intercourse previously, 60.0% (n=69) were sexually active in the last three months, 30.43% (n=35) had three or more partners in the previous three months, 71.30% (n=82) used condoms during intercourse, 44.34% (n=51) received condom information from school, 59.13% (n=68) used condoms to protect themselves from sexually transmitted diseases, 62.21% (n=75) usually had vaginal sex with condoms, and 60.86% (n=70) bought condoms from pharmacies.

The results provided in Table 3 above show the pre-test and post-test average and standard deviation scores of the participants from the MCAS sub-dimensions, the reliability and effectiveness of condoms sub-dimension had a pre-test (21 ± 0.23), and post-test (25.5 ± 0.20) score; the pleasure associated with condoms sub-dimension had a pre-test score of (18 ± 0.18) and a post-test score of (23.5 ± 0.18). The stigma associated with condom use sub-dimension had a pre-test (21 ± 0.25) and post-test (25 ± 0.28) score. On the aspect of embarrassment about negotiation and the use of the condom sub-dimension scale, the respondents had a pre-test (20 ± 0.24) and post-test (23 ± 0.21) score. Lastly, the respondents had pre-test (11 ± 0.15) and post-test (16.5 ± 0.13) scores on the Embarrassment about Purchasing Condoms Sub-dimension Scale. Across all sub-scales, the post-test scores are consistently higher than the pre-test scores. The lowest score was observed in embarrassment about purchasing condoms, which still indicates a negative attitude. The standard deviations across all sub-scales remain small, suggesting consistency in participants' responses in each sub-scale.

Table 4 above presents a comparison of median scores on different sub-scales related to condom attitudes and behaviours of the respondents before and after sexual health education. The p-value indicates the level of significance of the difference observed. In four out of the five attitude sub-scales (reliability and effectiveness, stigma associated with condom use, embarrassment about negotiation and use of condoms, and embarrassment about purchasing condoms), the results suggest a statistically significant difference between the pre-test and post-test scores for these sub-scales ($p < 0.01$). Hence, the null hypotheses were rejected for the aforementioned sub-scales. This shows the intervention had a notable impact on these aspects of participants' attitudes towards

condom use. However, when comparing the pre and post-test scores for the pleasure associated with condom use sub-scale of MCAS, the results indicate the difference is not statistically significant ($p < 0.06$) even though the median post-test score is greater than the median of the pre-test score, hence, the null hypothesis is not rejected for this sub-scale.

DISCUSSION

The study was carried out to examine the effect of sexual health education on men's attitudes towards condom use. Regarding sexual activity, the majority were sexually active. Among the sexually active cohorts, most engaged in sexual activity for the first time at the age of 18 years and below. The above results are consistent with previous studies on condom use.^{9,15}

The findings of the study showed a comparison of mean scores on different sub-scales related to condom attitudes and behaviours of the respondents before and after an intervention program. Participants demonstrated mixed attitudes: positive attitudes were observed regarding the reliability and effectiveness of condoms, the stigma associated with condom use, and embarrassment about negotiation and

Table 2. Sexual profile of participants (n=115)

Variables		n	%
Had sexual intercourse	Yes	106	92.17
	No	9	7.82
Sexual activities	Active in past 3 months	69	60.00
	Not active in past 3 months	46	40.00
Number of partners in last three months	0	42	36.52
	1	24	20.86
	2	14	12.17
	3+	35	30.43
Condom usage during intercourse	Yes	83	72.13
	No	32	27.82
Knowledge of condom usage	School	51	44.34
	Home	29	25.21
	Hospital	35	30.43
Reason of condom use	STDs prevention	68	59.13
	Pregnancy prevention	41	35.65
	Others	6	5.21
STDs History	Never	90	78.26
	Once	9	7.82
	Twice	16	13.91
General sex intercourse	Vaginal with condom	75	65.21
	Vaginal without condom	24	20.86
	Oral with condom	7	6.08
	Anal with condom	9	7.82
Site of purchase	Market	18	15.65
	Pharmacy	70	60.86
	Internet	21	18.26
	Others	6	5.21

STDs: Sexually transmitted diseases.

Table 1. Socio-demographics characteristics of participants (n=115)			
Variables		n	%
Age	18-20	30	26.08
	21-30	78	67.82
	31+	7	6.08
Race	Afro-American	23	20.00
	Nigerian	67	58.26
	Others	25	21.73
Marital status	Single	80	69.56
	Married	35	30.43
Education	University education	109	94.78
	Graduate studies	6	5.21
Economic status	Low	40	34.78
	Middle	51	44.34
	High	24	20.86

Table 3. Pre and post-test means of participants from MCAS sub-scales

Sub-scale			Pre-test			Post-test		
	Min.	Max.	Min.	Max.	Mean $\pm$ SD	Min.	Max.	Mean $\pm$ SD
Reliability and effectiveness of condoms	5	35	17	25	21.0 $\pm$ 0.23	20	31	25.5 $\pm$ 0.20
Pleasure associated with condoms	5	35	16	20	18.0 $\pm$ 0.18	18	29	23.5 $\pm$ 0.18
Stigma associated with condom use	5	35	15	27	21.0 $\pm$ 0.25	18	32	25.0 $\pm$ 0.28
Embarrassment about negotiation and use of condom	5	35	13	27	20.0 $\pm$ 0.24	16	30	23.0 $\pm$ 0.21
Embarrassment about purchasing condoms	5	35	7	15	11.0 $\pm$ 0.15	13	20	16.5 $\pm$ 0.13

MCAS: Multidimensional Condom Attitude Scale, SD: Standard deviation, Min.: Minimum, Max.: Maximum.

Table 4. Pre and post-test comparison of participants scores from MCAS sub-scales

Sub-scale	Pre-test			Post-test				
	Min.	Max.	Mean $\pm$ SD	Min.	Max.	Mean $\pm$ SD	Z	p-value
Reliability and effectiveness of condoms	17	25	21.0 $\pm$ 0.23	20	31	25.5 $\pm$ 0.20	-8.59	p=0.01
Pleasure associated with condoms	16	20	18.0 $\pm$ 0.18	18	29	23.5 $\pm$ 0.18	1.88	p=0.06
Stigma associated with condom use	15	27	21.0 $\pm$ 0.25	18	32	25.0 $\pm$ 0.28	-8.06	p=0.01
Embarrassment about negotiation and use of condom	13	27	20.0 $\pm$ 0.24	16	30	23.0 $\pm$ 0.21	-8.43	p=0.01
Embarrassment about purchasing condoms	7	15	11.0 $\pm$ 0.15	13	20	16.5 $\pm$ 0.13	-8.36	p=0.01

MCAS: Multidimensional Condom Attitude Scale, SD: Standard deviation, Min.: Minimum, Max.: Maximum.

use of condoms, while negative attitudes were observed in: pleasure associated with condom use, and embarrassment about purchasing condoms. The baseline attitude scores were lower compared to studies.^{27,31,32} Notably, the “embarrassment about purchasing condoms” sub-scale had the lowest score, indicating the most negative attitude among the participants; this agrees with Cho’s results but contrasts with Stevlana’s results, where positive attitudes were reported across all the MCAS sub-scales.

The intervention program designed using diverse teaching methodologies and resources was effective in improving attitudes across most MCAS sub-scales. Significant positive changes in perceived reliability and effectiveness of condoms were noted post-intervention, suggesting participants gained accurate information through group discussions and educational media used. This aligns with findings of^{32,33}, which reported a significant increase in the same MCAS sub-scale post-intervention. The intervention significantly reduced the stigma associated with condom use, reflecting changing perceptions of an open sexual culture among the youths in the study; this outcome is consistent with Dubova’s study but differs from Cho’s, where the stigma score remained static after the intervention. Strategies such as interactive group discussions utilized during the intervention sessions empowered the participants to learn the skills of negotiating condom use effectively, consequently increasing the participant’s positive attitude toward negotiation for condom use; this is supported by Aggleton and Warwick’s³⁴ assertion that active participation of subjects is critical in sexual health education, related studies³⁵ also showed increased negotiation frequency after

the intervention. Additionally, this finding is in line with a previous finding that shows practicing condom negotiation strategies result in increasing the likelihood of using condoms and behavioral intentions^{25,36}, while findings of Reils²⁶ show condom education intervention enhances young and late adolescents’ sexual partner communications.

Limited improvements were observed in pleasure associated with condoms; while the attitude shifts slightly from negative to positive, the change was not significant; this finding agrees with^{11,37} studies, where participants reported that condoms reduced sexual pleasure, which may be attributed to the age and preferences of the study participants, the finding also further aligns with previous research findings, that many youth provides loss of pleasure as justifications for not using condoms and the anticipation of partner rejection.³⁸ Regarding embarrassment about purchasing condoms, although there was a significant improvement in the participant’s score, the attitude still remained negative. Researchers result in two separate studies^{39,40} opined that embarrassment tendencies are affected by societal stigma; participants continued to feel uneasy about purchasing condoms despite gaining knowledge of youth-friendly services; further studies may address this issue by promoting more discrete access points and reducing societal prejudice.

Study Limitations

Considering the limitation of the study to a single site geographic location, the findings of the study may not be generalizable to the entire Jos Plateau and especially in settings with different cultural norms,

beliefs, and attitudes regarding condoms; however, this environment did offer a unique chance to connect with an underserved group of young, heterosexual, sexually active young adults with multiple sex partners as seen from the sexual profile of the respondents in the study. Notwithstanding these limitations, the originality of this study reflects the influence of the sexual health education undertaken by a young medical professional. Through the intervention, young men were able to learn how to use condoms and negotiate condom use; this culturally sensitive intervention addressed the main concerns of the population of young heterosexual men who are sexually active. It improved conversations and comfort levels surrounding condoms and made it possible to develop and disseminate condom promotion techniques throughout society.

Implications and Future Directions

The study indicates the effect of sexual health education on improving young men's attitudes toward condom use, mainly regarding reliability, stigma reduction, and negotiation. However, minimal changes in perceptions of pleasure and persistent embarrassment about condom purchase indicate the need for targeted interventions. Future interventions should emphasize peer education, community engagement, anonymous or youth-friendly condom access, and evidence-based messaging to address misconceptions. The findings demonstrate the significance of sexual health education in promoting healthier sexual behaviors and contributing to the limited evidence on peer-led approaches. Further research with larger samples and broader geographical coverage is recommended to deepen understanding and encourage widespread adoption of accurate sexual health practices.

CONCLUSION

The results of the study reveal significant improvements in several key areas, suggesting that the intervention addressed common barriers associated with respondents' attitudes on reliability and effectiveness, lessened the stigma attached to using condoms, and reduced the embarrassment of negotiating and using condoms, thereby contributing to more positive attitudes and behaviors regarding condom use. However, the analysis also indicates that the intervention did not significantly impact the attitude toward pleasure associated with condom use, even though the median post-test scores were higher than the mean pre-test scores. Regarding embarrassment about purchasing condoms, although there was a significant improvement in the participant's score after the intervention, the attitude remained negative. Therefore, future interventions could benefit from incorporating strategies to emphasize the positive aspects of sexual experiences involving condoms, thereby promoting more comprehensive and positive attitudes toward condom purchase and use among participants.

MAIN POINTS

- The study found a significant change in participants' attitudes towards the reliability and effectiveness of condoms post-intervention, indicating the success of the intervention.
- Participants' perceptions of the pleasure associated with condom use changed from negative to positive after the intervention, though the change was not statistically significant.
- One of the most encouraging findings was a significant positive shift in participants' attitudes toward the stigma associated with condom

use, signifying a potential for societal change and reduced condom barriers.

- Attitudes toward negotiating and using condoms among the participants increased after the intervention, implying that the youth gained condom negotiation skills.
- Although the participants' attitudes regarding purchasing condoms increased after the intervention, they remained negative, indicating a barrier that needs further intervention.

ETHICS

Ethics Committee Approval: Ethical approval for this study has been obtained from the Near East University Ethics Committee (approval number: 2020/79, date: 08.05.2020).

Informed Consent: Informed consent was obtained from all participants, ensuring their confidentiality, voluntary participation, and right to withdraw at any point in the study.

Footnotes

Authorship Contributions

Concept: S.E., A.I., L.L.L., Design: S.E., A.I., Data Collection and/or Processing: A.I., L.L.L., Analysis and/or Interpretation: S.E., A.I., L.L.L., Literature Search: S.E., A.I., L.L.L., Writing: S.E., A.I., L.L.L.

DISCLOSURES

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study had received no financial support.

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