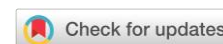


The Effectiveness of Audiovisual-Based Reproductive Health Education in Preventing Risky Sexual Behavior Among Junior High School Adolescents in Urban Communities

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ABSTRACT

Background: Adolescence is a transitional period from childhood to adulthood characterized by psychological instability and increased susceptibility to negative influences when adequate supervision and education are lacking. Inadequate reproductive health knowledge may increase the likelihood of engaging in risky sexual behaviors. This study aimed to analyze the effect of reproductive health education delivered through audiovisual media on the prevention of risky sexual behavior among junior high school adolescents in urban areas.

Methods: A quantitative study with a pre-experimental one-group pretest-posttest design was conducted among 33 junior high school students. Data were collected using a questionnaire assessing efforts to prevent risky sexual behavior. Participants received reproductive health education through audiovisual media. Data were analyzed using the Wilcoxon signed-rank test.

Results: Among the participants, most were 13 years old (63.6%), Christian (63.6%), and had two siblings (48.5%). Before the intervention, 66.7% of respondents demonstrated a moderate level of risky sexual behavior prevention efforts, while 33.3% were categorized as poor. After the intervention, 81.8% of respondents achieved a good level of prevention efforts and 18.2% remained in the moderate category. The Wilcoxon signed-rank test showed a statistically significant improvement in prevention efforts following the intervention ($Z = -4.916$, $p < 0.001$).

Conclusion: Reproductive health education delivered through audiovisual media significantly improved the prevention of risky sexual behavior among junior high school adolescents in urban areas. Audiovisual media can be considered an effective educational approach for promoting reproductive health awareness and preventive behaviors among adolescents.

INTRODUCTION

Risky sexual behavior among adolescents remains a major public health concern because it may lead to unintended pregnancy, sexually transmitted infections, psychological problems, and adverse social consequences (Ahn & Yang, 2023; Shangase et al., 2021). Adolescence is a critical developmental period characterized by curiosity, emotional instability, and susceptibility to peer influence, making adolescents particularly vulnerable to engaging in risky sexual activities when appropriate reproductive health education is lacking (Hegde et al., 2022).

Various reproductive health education programs have been implemented to improve adolescents' knowledge and preventive behaviors. Previous studies have demonstrated that health education interventions can increase awareness of reproductive health and reduce risky behaviors among adolescents (Meherali et al., 2021; Putri et al., 2025). Conventional educational approaches, including lectures, posters, and printed leaflets, have been widely used in schools (Hasanica et al., 2020; Suwarni et al., 2015). However, these methods often face limitations in maintaining students' attention and engagement, particularly among younger adolescents who are increasingly exposed to digital technology and multimedia content.

Recent studies have highlighted the potential of audiovisual media as an innovative educational strategy. Audiovisual learning combines visual and auditory stimulation, allowing information to be delivered more interactively and effectively than traditional methods (Yeh, 2022). Educational videos have been reported to improve knowledge retention, increase learner engagement, and encourage positive health-related behavioral changes among adolescents (Nagy-Pénzes et al., 2022). Despite these advantages, evidence regarding the effectiveness of audiovisual reproductive health education in preventing risky sexual behavior among junior high school students, particularly in urban settings, remains limited.

Urban adolescents face unique challenges due to greater exposure to digital media, social networking platforms, and diverse social environments that may influence sexual attitudes and behaviors (Fajobi et al., 2026). Although reproductive health education has been widely promoted, few studies have specifically evaluated the effectiveness of audiovisual-based interventions in strengthening preventive behaviors among junior high school adolescents in urban communities. Therefore, this study contributes to the existing literature by examining the impact of audiovisual reproductive health education on the prevention of risky sexual behavior in this population. The objective of this study was to analyze the effect of reproductive health education delivered through audiovisual media on the prevention of risky sexual behavior among junior high school adolescents in urban areas.

METHODS

Design and samples

This study employed a quantitative approach using a quasi-experimental pretest-posttest design to evaluate the effect of reproductive health education delivered through audiovisual media on the prevention of risky sexual behavior among adolescents. The study was conducted in SMP 2 Tomohon, Kakaskasen 1, North Tomohon District, Tomohon City, North Sulawesi, Indonesia. Data collection was carried out from August to September. A total of 33 junior high school students participated in the study. Participants were selected using purposive sampling based on predetermined inclusion and exclusion criteria. Participants were selected using a purposive sampling technique. The inclusion criteria were junior high school students enrolled in the selected schools in Tomohon City, North Sulawesi; aged 12–14 years; able to read and understand the Indonesian language; willing to participate in the study with parental or guardian consent; and present during both the pretest and posttest assessments. The exclusion criteria included students who were absent during the educational intervention or posttest assessment, did not complete the questionnaire at either stage of data collection, had cognitive or communication impairments that could affect their participation, or withdrew from the study before its completion.

Research instrument and data collection

Data were collected using a structured questionnaire designed to assess adolescents' efforts to prevent risky sexual behavior. The questionnaire consisted of items related to reproductive health knowledge and preventive behaviors. Prior to data collection, respondents completed a pretest questionnaire to assess baseline prevention efforts. Subsequently, participants received reproductive health education through audiovisual media in the form of educational videos. After the intervention, a posttest questionnaire was administered to evaluate changes in prevention efforts among participants.

Data analysis

Descriptive statistics were used to summarize respondents' demographic characteristics, including age, religion, and number of siblings. Frequencies and percentages were calculated for categorical variables. The effectiveness of the audiovisual reproductive health education intervention was analyzed using the

Wilcoxon signed-rank test because the data were paired and not assumed to be normally distributed. Statistical significance was determined at a p-value of less than 0.05.

Research Process

The research process consisted of four stages. First, respondents who met the inclusion criteria were recruited and informed about the study objectives and procedures. Second, participants completed the pretest questionnaire. Third, reproductive health education was delivered through audiovisual media. Finally, participants completed the posttest questionnaire to assess changes in their prevention efforts regarding risky sexual behavior. The collected data were then coded, entered, and analyzed statistically.

Ethical consideration

This study was conducted in accordance with ethical principles for research involving human participants. Permission to conduct the study was obtained from the relevant school authorities. Participants and their parents or guardians were provided with information regarding the study objectives, procedures, potential benefits, and confidentiality of the data. Written informed consent was obtained before participation. Respondents were assured that their participation was voluntary and that all collected information would be kept confidential and used solely for research purposes.

RESULTS

A total of 33 junior high school students participated in this study. The majority of respondents were 13 years old (63.6%), followed by 12 years old (27.3%) and 14 years old (9.1%). Most respondents were Christian (63.6%), while the remaining were Muslim (36.4%). Regarding the number of siblings, nearly half of the respondents had two siblings (48.5%), followed by single children (27.3%), three siblings (12.1%), and more than three siblings (12.1%).

Table 1. Respondent Characteristics (n = 33)

Characteristic	Category	f	%
Age	12 years	9	27.3
	13 years	21	63.6
	14 years	3	9.1
	Total	33	100
Religion	Christian	21	63.6
	Muslim	12	36.4
	Total	33	100
Number of Siblings	Only child	9	27.3
	Two siblings	16	48.5
	Three siblings	4	12.1
	> Three siblings	4	12.1
	Total	33	100

Before the intervention, most respondents demonstrated a moderate level of risky sexual behavior prevention efforts (66.7%), while 33.3% were categorized as having low prevention efforts. After receiving reproductive health education through audiovisual media, the majority of respondents improved to a good category (81.8%), while 18.2% remained in the moderate category.

Table 2. Pre-test of Risky Sexual Behavior Prevention Efforts (n = 33)

Category	f	%
Poor	11	33.3
Moderate	22	66.7
Good	0	0
Total	33	100

Table 3. Post-test of Risky Sexual Behavior Prevention Efforts (n = 33)

Category	f	%
Poor	0	0
Moderate	6	18.2
Good	27	81.8
Total	33	100

Table 4. Wilcoxon Signed-Rank Test of Prevention Efforts

Variable	n	Mean Rank	Sum of Ranks	Z	p-value
Post-test vs Pre-test	33	15.80	474.00	-4.916	< 0.001

The results of the Wilcoxon signed-rank test showed a statistically significant difference between pre-test and post-test scores ($Z = -4.916$, $p < 0.001$). This indicates that reproductive health education delivered through audiovisual media significantly improved adolescents' efforts to prevent risky sexual behavior.

DISCUSSION

The findings of this study demonstrated a statistically significant improvement in adolescents' preventive efforts against risky sexual behavior after the implementation of reproductive health education through audiovisual media ($Z = -4.916$, $p < 0.001$). This indicates that audiovisual-based educational intervention had a strong positive effect in enhancing adolescents' behavioral responses related to sexual risk prevention. The significant increase observed in post-test scores can be explained by the nature of audiovisual learning, which integrates visual and auditory stimuli to optimize information processing. This multimodal approach increases attention and engagement, which are critical factors in adolescent learning. When health information is presented in an audiovisual format, abstract concepts related to reproductive health become more concrete and easier to understand (Nørgaard et al., 2023). As a result, adolescents are more likely to internalize the information and translate it into preventive attitudes and behaviors. This is consistent with cognitive learning theory, which emphasizes that meaningful learning occurs when learners actively process information through multiple sensory channels (Ahmed Khan et al., 2023).

The improvement in preventive behavior is also supported by the characteristics of adolescents, who tend to respond more positively to interactive and technology-based learning methods. Adolescents in urban settings are frequently exposed to digital media, making audiovisual interventions more familiar and acceptable compared to traditional methods such as lectures or printed materials (Al Hussaini & Arcelus-Ulibarrena, 2023; Suing et al., 2023). This familiarity may increase receptiveness to health messages and enhance behavioral change (Zhang et al., 2020). Furthermore, audiovisual media can present real-life scenarios and consequences of risky sexual behavior, which may strengthen emotional engagement and risk perception among adolescents (Paulus, 2025).

The results of this study are in line with previous research reporting that audiovisual-based health education is more effective in improving adolescents' reproductive health outcomes compared to conventional approaches (Khasanah et al., 2024). Studies have shown that multimedia interventions significantly increase knowledge retention and encourage healthier behavioral intentions (Hsu et al., 2022). Similarly, the learning experiences involving both seeing and hearing result in higher retention rates compared to passive learning methods (Kooloos et al., 2020; Steed et al., 2022). These findings support the effectiveness of audiovisual media as an educational strategy in adolescent health promotion. However, some variations in findings across studies may be attributed to differences in intervention design, duration of exposure, and the quality of audiovisual materials used. Environmental factors such as peer influence, family communication, and access to digital content may also contribute to differences in behavioral outcomes. In urban areas, where adolescents are exposed to a wide range of information sources, the impact of structured educational interventions may vary depending on their ability to compete with informal digital content.

This study is limited by its quasi-experimental one-group pretest-posttest design, which does not include a control group, thereby limiting causal inference. The relatively small sample size may also restrict generalizability. In addition, the use of self-reported questionnaires may introduce response bias, as participants may overreport socially desirable behaviors. Future studies are recommended to employ randomized controlled trial designs with larger sample sizes to strengthen evidence of effectiveness. Further research should also examine the long-term impact of audiovisual interventions and compare different digital media formats to identify the most effective approach for adolescent reproductive health education.

CONCLUSION

The study concludes that reproductive health education delivered through audiovisual media is effective in improving adolescents' efforts to prevent risky sexual behavior. The intervention enhances adolescents' understanding and supports positive behavioral change by providing information in an engaging and easily comprehensible format. This finding provides scientific justification for the use of audiovisual-based learning as an innovative approach in adolescent reproductive health education, particularly in school settings where interactive and technology-based methods are more acceptable to students. In practice, it is recommended that schools and adolescent health programs integrate audiovisual media into reproductive health education activities to improve student engagement and learning outcomes. For future research, it is suggested that more rigorous study designs with larger and more diverse samples be conducted, as well as further exploration of the long-term impact of audiovisual interventions and the role of environmental factors such as family and peer influence on adolescent reproductive health behavior.

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CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest

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