

Effect of Video-Based Health Education on Adolescents Knowledge of Risky Sexual Behavior and STDs

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ABSTRACT

Introduction: Adolescents are a vulnerable group to risky sexual behavior due to biological, psychological, and social changes that occur during the transition to adulthood. Limited knowledge about the dangers of risky sexual behavior and sexually transmitted diseases (STDs) can increase the risk of reproductive health problems, sexually transmitted infections, and unintended pregnancies. Therefore, appropriate educational strategies are needed to improve adolescents knowledge regarding reproductive health. One effective approach is the use of video-based health education, which can present information in an engaging and easily understandable format. **Objective:** This study aimed to determine the effect of video-based health education on adolescents knowledge about the dangers of risky sexual behavior and sexually transmitted diseases. **Method:** This study employed a quantitative method with a pre-experimental design using a one-group pre-test and post-test approach. The research was conducted among students of SMKN 1 Kawali in 2025. The sample consisted of students who met the inclusion criteria and were selected using a total sampling technique. Data were collected using a structured questionnaire to measure adolescents knowledge before and after the intervention. The data were analyzed using the Wilcoxon test. **Results:** The results showed an increase in adolescents knowledge after receiving video-based health education. Statistical analysis using the Wilcoxon test indicated a significant difference between pre-test and post-test scores, with a p-value < 0.05. **Conclusion:** Video-based health education has a significant effect on improving adolescents knowledge about the dangers of risky sexual behavior and sexually transmitted

diseases. Therefore, the use of video as an educational medium can be considered an effective strategy in health promotion programs for adolescents.

Keywords: back pain, pregnant women, third trimester, warm compress

Introduction

Adolescence is often considered a transitional stage from childhood to adulthood. During this phase, individuals experience significant growth and development marked by the emergence of secondary sexual characteristics, which continue until sexual maturity is achieved. Throughout this period, adolescents undergo various changes, including biological, cognitive, psychological, social, and emotional developments. These changes place adolescents in a transitional phase that makes them more susceptible to environmental influences and more likely to develop new behavioral patterns. One of the behaviors frequently observed among adolescents is engagement in risky sexual activities. Risky sexual behavior includes having unprotected sexual intercourse, having multiple sexual partners, or engaging in sexual activity under the influence of alcohol or drugs, all of which can increase the risk of sexually transmitted infections (STIs), including HIV, as well as unintended pregnancies (Mardiani, 2024).

Factors contributing to risky sexual behavior and sexually transmitted diseases among adolescents include age, gender, level of knowledge, peer influence, and the role of mass media (Alfiah, 2023). Among these factors, lack of knowledge is considered a primary contributor, as adequate understanding of reproductive health can help reduce the prevalence of such problems. In the era of globalization and rapid advancement of information technology, adolescents are increasingly exposed to information related to risky sexual behavior and sexually transmitted diseases, which may further complicate the health challenges they face (Imanuddin, 2023). One of the serious threats to reproductive health is cervical cancer, particularly among women of reproductive age, which is largely caused by infection with the Human Papillomavirus (HPV) transmitted through sexual contact. According to WHO (2020), More than 95% of cervical cancer cases are caused by persistent Human Papillomavirus (HPV) infection. In Indonesia, this disease is the second leading cause of cancer-related deaths among women, with approximately 36,633 new cases and 21,003 deaths reported each year (John B F, 2023). The age at first sexual intercourse is an important risk factor, with adolescent girls being more vulnerable. Studies indicate that engaging in sexual intercourse before the age of 20 can increase the risk of HPV infection by two to three times, as the cervical tissue, which is still developing, is more susceptible to damage (Ramadhaningtyas, 2023).

Sexually transmitted diseases (STDs) continue to be a significant global public health problem. According to a report from the World Health Organization (WHO), in 2020 there were more than one million new STD cases occurring every day worldwide, with an estimated 374 million new infections annually caused by chlamydia, gonorrhea, syphilis, and trichomoniasis (Lubis, A., 2023). In Indonesia, the number of people living with HIV/AIDS is estimated to reach approximately 540,000 individuals, with a cumulative total of 142,009 AIDS cases reported as of September 2022. The age group of 20–29 years accounts for the largest proportion, representing 32% of cases. From January to September 2023, the Indonesian Ministry of Health recorded 515,455 cases of sexually transmitted diseases (STDs), including 454,723 HIV cases, the majority of which occurred in individuals aged 25–49 years, accounting for 69.9%. Based on gender distribution, HIV cases were more prevalent among

men (69%) than women (31%). Data from the Indonesian Child Protection Commission (KPAI) and the Ministry of Health of the Republic of Indonesia in 2023 indicated that 62.7% of adolescents in Indonesia had engaged in premarital sexual intercourse, resulting in approximately 20% unintended pregnancies and 21% abortion cases (Kemenkes RI, 2023). Specifically in the West Java Province, the cumulative number of HIV/AIDS cases reached 70,267 as of October 2022. Meanwhile, in Ciamis Regency, there were 1,691 recorded cases of sexually transmitted diseases (STDs), with women accounting for 85% of the cases and men 15%, along with 79 deaths due to AIDS reported up to 2020 (Dinas Kesehatan Ciamis, 2020).

Efforts to prevent the dangers of risky sexual behavior and sexually transmitted infections among adolescents can be achieved through health education in schools. Schools serve as a primary environment for shaping adolescents mindsets and behaviors (Lette, 2024). With the advancement of technology, video media is increasingly used in health education because it can deliver information in a more engaging and easily understandable way. This type of educational approach is particularly important for preventing risky sexual behavior among adolescents, especially at this stage when their ability to comprehend information is still developing. Therefore, video-based education can help improve understanding, enhance motivation, and promote more positive attitudes and behaviors (Teja, 2025)

Several studies have shown that health education can improve adolescents understanding of the dangers of risky sexual behavior and sexually transmitted diseases. For example, a study conducted by Marpaung & Silaen (2025) A study conducted at SMA Negeri 21 Medan reported a significant increase in students' knowledge, rising from 27.8% before the educational intervention to 84.7% afterward. A preliminary study conducted at SMKN 1 Kawali revealed that the school had never previously organized health education sessions regarding the dangers of risky sexual behavior, resulting in many students having limited knowledge on the topic. Interviews conducted with ten students showed that six students had no knowledge at all about the dangers of risky sexual behavior, four students had a moderate understanding, and only one student had previously participated in educational activities related to this topic. Therefore, the researcher was interested in conducting a study on the effect of video-based health education on adolescents knowledge levels regarding the dangers of risky sexual behavior and sexually transmitted diseases at SMKN 1 Kawali.

Objective

This study aimed to determine the effect of video-based health education on adolescents knowledge about the dangers of risky sexual behavior and sexually transmitted diseases.

Method

This study employed a quantitative approach with a pre-experimental design, specifically a one-group pretest–posttest model. The purpose of this design was to assess changes in adolescents knowledge regarding the dangers of risky sexual behavior and sexually transmitted diseases after participating in video-based health education. Therefore, knowledge assessment was conducted twice: before the intervention (pretest) and after the intervention (posttest), in order to clearly observe any changes in participants' knowledge levels. The study population consisted of all tenth-grade students at SMK Negeri 1 Kawali, with a total of 90 respondents participating in the research. The respondents were selected using proportionate stratified random sampling to ensure that the sample represented each existing stratum proportionally.

Data in this study were collected using a questionnaire specifically developed to measure adolescents understanding of the dangers of risky sexual behavior and sexually transmitted diseases. The instrument had undergone validity and reliability testing to ensure that the questionnaire could produce accurate and consistent data. The questionnaire was administered initially to assess the participants baseline knowledge and then distributed again after the intervention to evaluate changes in adolescents knowledge levels. The intervention implemented in this study consisted of video-based health education designed to enhance adolescents understanding of issues related to risky sexual behavior and sexually transmitted diseases.

The collected data were analyzed using univariate analysis to describe the characteristics of respondents and the distribution of adolescents knowledge both before and after receiving the video-based health education intervention. This analysis included the presentation of data in the form of frequencies and percentages. Furthermore, bivariate analysis was conducted to identify the effect of video-based health education on adolescents knowledge levels. The statistical test used was the Wilcoxon Signed Rank Test, as the normality test indicated that the data were not normally distributed and were paired (pretest and posttest). The results were considered statistically significant if the p-value was < 0.05, indicating a meaningful change in knowledge before and after the intervention. This study was conducted at SMK Negeri 1 Kawali in October 2025.

Result

Table 1. Characteristics of Adolescents

No	Characteristics	Frequency (f)	Percentage (%)
1	Gender		
	Male	39	43.3
	Female	51	56.7
	Total	90	100
2	Age		
	15 Years	32	35.6
	16 Years	56	62.2
	17 Years	2	2.2
	Total	90	100

Based on table 1, in terms of gender distribution, the majority of respondents were female, totaling 39 individuals (43.3%). Based on age, most respondents were 16 years old, accounting for 56 individuals (62.2%).

Table 2. Respondents Knowledge About the Dangers of Risky Sexual Behavior and Sexually Transmitted Diseases Before Video-Based Health Education

Knowledge Category	Frequency (f)	Percentage (%)
Good	16	17.8
Fair	42	46.7
Poor	32	35.6
Total	90	100

From table 2, it can be seen that among the 90 respondents in this study, the majority of pretest results were categorized as moderate, totaling 42 respondents (46.7%). Meanwhile, the minority of respondents were in the good category, consisting of 16 individuals (17.8%).

Table 3. Respondents Knowledge About Risky Sexual Behavior and Sexually Transmitted Diseases After Receiving Video-Based Health Education

Knowledge Category	Frequency (f)	Percentage (%)
Good	75	83.3
Fair	15	16.7
Poor	0	0
Total	90	100

From table 3, it can be observed that among the 90 respondents in this study, the majority of posttest results were categorized as good, totaling 75 individuals (83.3%). In contrast, only a small number of respondents were classified in the moderate category, amounting to 15 individuals (16.7%).

Table 4. Respondents Knowledge About the Dangers of Risky Sexual Behavior and Sexually Transmitted Diseases Before and After the Implementation of Video-Based Health Education

Knowledge	Frequency (f)	Percentage (%)	P-value
Increased	73	81.1	0.000
Unchanged	17	18.9	
Decreased	0	0.0	
Total	90	100	

Based on table 4, the results of the Wilcoxon test show a p-value of less than 0.05, indicating a statistically significant difference in adolescents knowledge levels before and after participating in video-based health education. This finding suggests that the intervention successfully improved adolescents understanding of the dangers of risky sexual behavior and sexually transmitted diseases, as reflected in the data analysis. The majority of respondents, specifically 73 individuals (81.1%), experienced an increase in their knowledge after receiving the video-based health education.

Discussion

Notoatmodjo (2018) which states that the depth of an individual's knowledge is greatly influenced by how easily they can access relevant information. Prior to the implementation of the animated video-based health education program, the level of knowledge among students at SMK Negeri 1 Kawali showed considerable variation. As shown in Table 1, out of a total of 90 respondents involved in the study, the majority 42 individuals (46.7%) were categorized as having a moderate level of knowledge. This condition indicates that most adolescents at the school had not yet developed a comprehensive understanding of the dangers of risky sexual behavior and sexually transmitted diseases.

The low level of knowledge among adolescents prior to the intervention may be related to their stage of cognitive development. In general, adolescents are not yet fully able to understand risks solely through verbal explanations; therefore, they require concrete illustrations to comprehend abstract concepts and better understand information such as the transmission of risky sexual behavior and sexually transmitted diseases (Atiqah *et al.*, 2024). These findings are also consistent with the perspective of the World Health Organization (2020), which emphasizes that adolescents aged 10 to 19 years often cannot fully understand the long-term consequences of their actions. As a result, their understanding of risky sexual behavior tends to remain limited prior to the implementation of appropriate intervention efforts.

In terms of gender, variations in knowledge levels prior to the intervention appear to be influenced by differences in roles and experiences between male and female adolescents. Generally, male adolescents tend to demonstrate greater curiosity about sexuality, which encourages them to seek information from various sources. In contrast, female adolescents often limit their access to such information due to feelings of embarrassment and the influence of prevailing social norms. Consequently, the level of understanding of reproductive health among both groups tends to remain suboptimal. (Alfiah, 2023).

These findings are supported by the perspective of the World Health Organization (2020), which highlights that adolescents are among the age groups most vulnerable to sexually transmitted infections (STIs). The main contributing factors include limited reproductive health education and difficulties in accessing sexual health services. In this study, respondents aged 15 to 17 years did not fully understand the mechanisms of risky sexual behavior and the modes of STI transmission. They may not have been aware that STIs can spread not only through penetrative sexual intercourse but also through oral sex, contact with bodily fluids, or even through sharing contaminated needles.

From an age perspective, adolescents in the middle stage of development appear to be more prepared to absorb health-related information because their cognitive abilities are more mature. Educational approaches that are adjusted to the developmental stage of adolescents are generally easier to understand and can contribute to improved comprehension. In addition, as individuals grow older, their cognitive capacity and patterns of thinking continue to develop, allowing the knowledge they acquire to become more comprehensive and in-depth (Ko *et al.*, 2021).

After the video-based education was delivered, both male and female adolescents showed an improvement in their level of knowledge. This finding indicates that gender was no longer a major differentiating factor after the intervention, as the increase in knowledge was more influenced by the method and medium of information delivery rather than by individual characteristics. The increase in knowledge observed in this study was a direct result of the health education intervention. Such educational efforts are expected to encourage positive transformations in individuals' knowledge, attitudes, and behaviors in order to achieve better health outcomes (Sumarwati *et al.*, 2022). This finding is also consistent with the theory proposed by Notoatmodjo (2018), which explains that knowledge is formed through the process of sensory perception, particularly through the eyes and ears. Information received through more than one sense tends to produce a stronger and more effective learning impact.

A study conducted by Wahyudi (2023) A study also demonstrated that video has advantages in delivering health information through the combination of visual and audio elements, which facilitates better understanding compared to other methods. In addition, interactive educational videos are easily accessible through various platforms and can enhance participation and comprehension through features such as quizzes, simulations, and interactive content. Based on the researcher's observations, the provision of health education on the dangers of risky sexual behavior and sexually transmitted diseases using video media had a substantial impact on improving respondents' knowledge. The difference in scores before and after the intervention indicates that video was effective in capturing respondents' attention and facilitating the delivery of health-related information.

Based on table 4, there is a significant impact of video-based education in improving adolescents understanding of the dangers of risky sexual behavior and sexually transmitted diseases. This is reflected in the difference in knowledge levels before and after the

intervention, with the highest frequency showing that 73 respondents (81.1%) experienced an increase in knowledge. The results of the Wilcoxon test showed a p-value of 0.000 ($p < 0.05$), indicating that the alternative hypothesis (H_a) was accepted and the null hypothesis (H_0) was rejected. These findings further confirm the effectiveness of video media in enhancing adolescents understanding of the dangers of risky sexual behavior and sexually transmitted diseases.

The effectiveness of this video-based education is consistent with findings from previous studies, which indicate that Rohman et al (2025) which explains that presenting material through animations, moving images, and narration helps adolescents understand abstract concepts more concretely, such as the mechanisms of STI transmission or sexual risk factors. The visual and audio characteristics of video can strengthen the ability to absorb and retain the material presented. These findings are also supported by Sumarwati et al (2022), which emphasizes that video as a medium is informative, promotive, and preventive, as it can attract adolescents attention, interest, and motivation in understanding reproductive health issues. The visualization of the impacts of sexually transmitted diseases and risky behaviors enhances the internalization of knowledge, which contributes to the increase in post-test scores observed in this study.

According to Notoatmodjo (2018), video as an audiovisual medium can stimulate both visual and auditory senses, making it more effective than textual media or conventional lectures. This is particularly relevant for adolescents, who tend to learn visually and require engaging media to maintain their focus. These findings are also consistent with a study conducted by Rohman *et al* (2025) which states that adolescents have a high level of curiosity but still possess limited understanding of risks. Visual educational media such as videos help them comprehend the risks and consequences of sexual behavior in a more realistic manner. The videos used in this study demonstrated the causes, modes of transmission, and dangers of sexually transmitted diseases, making the information easier to relate to everyday life and contributing to the improvement of knowledge scores.

At SMKN 1 Kawali, the implementation of the intervention proceeded smoothly because the educational materials were prepared in accordance with the students' needs. The use of these videos increased learning motivation, captured students' attention, and helped them better understand the health messages delivered, which aligns with the characteristics of adolescents as the target audience. However, based on the experience during the study, several limitations should be noted. The 35-minute duration limited the opportunity to present the material in greater depth and to conduct a more comprehensive assessment of knowledge. In addition, this study involved only tenth-grade students, which means that the findings may not fully represent the knowledge levels of students in other grades, thereby limiting the generalizability of the results.

Conclusion

Before the implementation of the video-based educational intervention, the respondents knowledge levels were predominantly in the moderate category, with the highest frequency recorded among 42 respondents (46.7%). After the educational intervention, a substantial improvement was observed, with the highest frequency shifting to the good knowledge category, reaching 75 respondents (83.3%). The results of the Wilcoxon statistical test showed a p-value of 0.000 (< 0.05), indicating a statistically significant improvement in adolescents knowledge after the intervention. Therefore, it can be concluded

that video-based health education is effective in improving adolescents knowledge and understanding of the dangers of risky sexual behavior and sexually transmitted diseases.

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