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The Effectiveness of Video and Booklet Media in HIV/AIDS Health Education for Adolescents: A Quasi-Experimental Study.

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The Effectiveness of Video and Booklet Media in HIV/AIDS Health Education for Adolescents: A Quasi-Experimental Study.

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Abstract

Health education is an important strategy to improve HIV/AIDS prevention in adolescents, but the effectiveness of educational media can vary. This study aims to compare the effectiveness of video media and booklet media in HIV/AIDS health education in adolescents. The study used a quasi-experimental pretest–posttest design with a control group, involving 60 students (30 in each of the video media and booklet media groups). Knowledge, attitudes, and practices related to HIV/AIDS were measured before and after the intervention using a standardized questionnaire, and the data were analyzed to determine baseline equivalence and differences in outcomes between groups at pretest and posttest, with a significance level of 5%. The results showed that both groups had equivalent baseline means, indicated by no significant differences in the pretest knowledge (p=0.770), attitudes (p=0.802), and practices (p=0.715). After the intervention, the posttest mean knowledge of the video media group (86.03±4.916) was higher than that of the booklet media group (82.97±4.902) and was significantly different (p=0.019). In the attitude and action variables, the posttest mean of the video media group was also higher, but the difference was not significant (attitude: 84.73±5.595 vs 83.33±6.019; p=0.355; action: 84.67±5.713 vs 82.67±6.397; p=0.207). These findings indicate that both media are effective in improving post-intervention outcomes, with video media superior, especially in increasing knowledge. Conclusion: Video media is more effective than booklets in increasing HIV/AIDS knowledge in adolescents, while there is no significant difference in effectiveness between the two media in attitudes and actions.

Keywords: HIV/AIDS; adolescents; health education; video media; booklet; quasi-experimental.

INTRODUCTION

HIV (Human Immunodeficiency Virus) is a virus that attacks the human immune system and can lead to AIDS. HIV attacks a type of white blood cell that helps fight infection. AIDS (Acquired Immunodeficiency Syndrome) is a collection of symptoms and infections that arise from damage to the human immune system caused by HIV infection.

The World Health Organization (WHO) and the United Nations Programme on HIV/AIDS (UNAIDS) have issued a warning to three Asian countries, China, Vietnam, and Indonesia, which are currently experiencing the highest rates of HIV infection. According to 2017 WHO data, 6.9 million people worldwide were living with HIV. According to UNAIDS data, an estimated 38 million people worldwide were HIV-positive by 2020.

According to the Indonesian Ministry of Health (2019), the number of people living with HIV in Indonesia, as reported from 2005 to 2019, has increased every year. The cumulative number of HIV cases reported until June 2019 was 349,882, while the number of AIDS cases reported from 2005 to 2019 was relatively stable every year. The cumulative number of AIDS cases from 1987 to June 2019 was 117,064 people. The highest cumulative percentage of AIDS was in the 20-29 age group (32.1%), followed by the 30-39 age group (31%), 40-49 years (13.6%), 50-59 years (5.1%), and 15-19 years (3.2%). The percentage of AIDS in men was 58% and in women 33%. Meanwhile, 9% did not report gender. The most common risk factors for transmission are through heterosexual risky sexual relations (70.2%), use of non-sterile injection equipment (8.2%), followed by homosexuality (7%), and perinatal transmission (2.9%).

Based on data from the health profile of North Sumatra districts/cities in 2017, there was an increase in new cases of HIV/AIDS, namely from 1,352 cases in 2016 to 2,211 cases in 2017. Thus, it can be estimated that there will be an increase of around 184-185 cases every month. Based on 2017 data, the districts/cities in North Sumatra with the highest number of people living with new HIV/AIDS

are Medan City with 1,333 HIV cases (or around 60.29% of the total cases in North Sumatra), Deli Serdang Regency with 177 cases (8.01%), and South Tapanuli Regency with 152 cases (6.87%). Until the end of 2017, 26 districts/cities reported the discovery of new cases of HIV/AIDS. The number of HIV cases in Langkat was 6 cases, and there was 1 case of AIDS.

One of the factors contributing to the high incidence of HIV/AIDS among adolescents is a lack of knowledge and information, which increases their risk of contracting HIV/AIDS. This knowledge will influence their behavior and actions. Therefore, comprehensive knowledge about HIV/AIDS is crucial for increasing awareness and changing risky behaviors.

Based on a preliminary study at SMK Negeri 1 Stabat, it was found that the school did not offer a reproductive health biology course, an important subject that provides knowledge and helps identify adolescent needs to implement reproductive health laws that respect adolescent rights. From the results of random interviews with 30 grade 10 students at SMK Negeri 1 Stabat, data was obtained that 86% of students did not understand HIV/AIDS and therefore did not know how to deal with it.

One way to educate the wider public about COVID-19 prevention measures while maintaining physical distancing is through online learning, a form of distance learning that specifically combines electronic and internet-based technology. Distance learning processes and methods have become a new normal, enabling the delivery of summaries via computer or smartphone screens. Online information delivery is not limited to information technology but can also be applied to the health sector.

Providing health education to adolescents requires selecting appropriate methods and media. This ensures adolescents can fully absorb the material presented. To ensure educational material is easily understood, teaching aids are needed. One example is video, a tool or medium that can re-enact movements and messages using specific effects, thus reinforcing the learning process and capturing the audience's attention. Another medium that can be used is print media, such as booklets. These media prioritize visual messages, typically consisting of images and a few words.

Based on the data description, the researcher is interested in conducting a study on the effectiveness of providing online health education through video and booklet media on adolescents' HIV/AIDS knowledge at SMK N 1 Stabat.

Research methods

Study Design

This study used a quasi-experimental pretest–posttest design with a control group, involving two independent groups: the experimental and control groups. Both groups received measurements of their levels of knowledge, attitudes, and practices regarding HIV/AIDS before the intervention (pretest) and after the intervention (posttest) so that changes in knowledge, attitudes, and practices scores could be compared both within and between groups. The experimental group received an intervention in the form of health education via video, while the control group received health education via booklets. Therefore, the difference in the average change in knowledge scores between the two groups can reflect the relative effectiveness of the two educational media. This design was chosen because it allows researchers to evaluate the effect of the health education intervention in field conditions that do not allow full randomization of individuals, while still maintaining comparability between groups through random grouping procedures at the class level.

Sample Design

The target population in this study was all students of SMK Negeri 1 Stabat. In comparison, the accessible population consisted of 10th-grade students at SMK Negeri 1 Stabat, which, at the time of the study, numbered 176 students. The research sample was defined as a subset of the accessible population that met the inclusion criteria and was selected to represent the population's characteristics regarding HIV/AIDS knowledge, attitudes, and practices. The sample size was determined using the sample calculation formula for the hypothesis test of the mean of two populations by considering the combined standard deviation, a significance level of 95%, a power of 80%, and the minimum clinical difference expected based on previous research, so that a minimum requirement of 28 respondents per group was obtained. To anticipate the possibility of missing data and incomplete questionnaires, the sample size was increased by approximately 10%, resulting in each group having 30 students. The

sampling frame was derived from the list of 10th-grade students obtained from the school, and the sample units were selected by assigning classes to the experimental and control groups using a predetermined sampling technique.

Research Process

The research process was carried out in three stages: preparation, intervention implementation, and data collection and analysis. During the preparation stage, the researcher obtained research permits from higher education institutions and schools, coordinated educational activity scheduling, prepared intervention media (HIV/AIDS educational videos and HIV/AIDS booklets), and prepared the questionnaire instrument in an online form. The researcher also explained the objectives, procedures, benefits, and potential disadvantages to potential respondents, then obtained consent to participate before assigning students to the research group and created an online communication group to facilitate the intertest and posttest administration.

In the implementation phase, respondents first completed a pretest questionnaire on HIV/AIDS knowledge through a Google Form link shared in their respective communication groups. The experimental group then received an intervention in the form of online health education using videos about HIV/AIDS shared through an online link. In contrast, the control group received health education through the distribution of HIV/AIDS booklets in digital format. After the intervention was completed and within the same timeframe for both groups, the researcher distributed the posttest questionnaire again via Google Forms and ensured that all respondents completed it. In the completion phase, the collected data were checked for completeness, scored, transferred to a master table, and analyzed using statistical software in accordance with the predetermined analysis plan.

Instrument

The main instruments used in this study were a knowledge questionnaire on HIV/AIDS adapted from previous research by (Mukti et al., 2018) and two types of health education media: educational videos and educational booklets. The knowledge questionnaire contained 34 statements, 15 attitude questions, and 10 action questions related to key aspects of HIV/AIDS, with true or false answer choices; a score of 1 was given for a correct answer and a score of 0 for an incorrect answer, so that the total score reflects the level of knowledge, attitudes, and actions of the respondents. This instrument had previously undergone validity testing using the product-moment correlation and reliability testing using the Cronbach's alpha coefficient. It was declared valid and reliable for measuring adolescent knowledge of HIV/AIDS. The HIV/AIDS educational video was adopted from the Ministry of Health of the Republic of Indonesia's official health promotion and community empowerment materials. At the same time, the booklet was compiled and designed by researchers using word-processing software, with content commensurate with the video, including definitions, transmission methods, prevention, and the impact of HIV/AIDS on adolescents. Thus, the questionnaire serves as a measure of the dependent variable (knowledge), while the video and booklet serve as intervention tools representing the independent variables in this study.

Data Analysis

The data collected through the online questionnaire were first edited to assess response completeness and consistency, then scored by summing item scores to obtain pretest and posttest knowledge scores for each respondent. The calculated scores were then transferred to an electronic worksheet to create a master table and tabulated as frequency distributions and cross-tabulations as needed for the analysis. Univariate analysis was used to describe respondents' characteristics and to categorize the distribution of knowledge, attitudes, and practices regarding HIV/AIDS into good (76–100%), sufficient (60–75%), and poor (less than 60%). In contrast, a bivariate analysis was used to test the hypothesis that knowledge, attitudes, and practices differ between groups receiving education via videos and those receiving education via booklets.

To test the difference in knowledge between two independent groups, the nonparametric Mann–Whitney test was used because the knowledge score data did not meet the assumptions of normality and homogeneity of variance required by the independent-samples t-test. Before the main test, a normality test was performed using the Kolmogorov–Smirnov test and a homogeneity test using the Levene test; if the significance value of the normality and homogeneity tests was less than the α limit of 0.05, the

data were considered non-normally distributed and/or inhomogeneous, so the analysis was continued with the Mann–Whitney test. In addition, to assess the extent of improvement in student understanding after the intervention, the NGain score was calculated by comparing the difference between pretest and posttest scores and the theoretical maximum score, and then categorized into levels of improvement (low, medium, high) as commonly used in educational research. All statistical analyses were performed using SPSS version 22 software with a significance level of 0.05.

Ethics Declaration

This study adhered to ethical principles of human research, including respect for respondent autonomy, data confidentiality, and the principle of benefit. Prior to data collection, the researcher explained to potential respondents the purpose, procedures, benefits, potential risks, and their rights during the study, including the right to refuse or discontinue participation at any time without consequence, in accordance with the principles of respect for persons and informed consent. Consent to participate was obtained by signing or completing a consent form after respondents understood the information provided, and only students who provided consent were included in the study.

Respondents' identities were kept confidential by omitting personal names from the questionnaire and using only numeric codes, thereby ensuring that the analyzed data remained anonymous. The information collected was securely stored and accessed only by the researcher and supervisor for research purposes, and the analysis results were reported in aggregate form without identifying specific individuals. This study also sought to maximize benefits to respondents by providing relevant health education on HIV/AIDS prevention for adolescents and, at the same time, minimize potential risks, such as discomfort during questionnaire completion, through online delivery and flexible scheduling.

RESULTS AND DISCUSSION

The characteristics of the respondents in this study are presented to illustrate the basic profile equivalence between the experimental group that received education through video media and the control group that received education through booklets. The characteristics presented include age, gender, and parental occupation, considering that these factors have the potential to influence the level of knowledge and acceptance of information about HIV/AIDS in adolescents. The presentation of the frequency distribution and the percentage for each category is expected to show that both groups were in relatively comparable conditions before the intervention, so that any differences in results can be attributed more to differences in the educational media used. Detailed characteristics of respondents in both groups are presented in Table 1.

Table 1. Respondent characteristics

Characteristics	Experimental Group (Video Media)		Control Group (Media Booklet)	
	f	%	f	%
Age				
15	23	76.7	21	70.0
16	7	23.3	9	30.0
Gender				
Man	11	36.7	15	50.0
Woman	19	63.3	15	50.0
Parents' job				
Farmer	4	13.3	5	16.7
Laborer	2	6.7	1	3.3
Trader	5	16.7	1	3.3
Private employees	2	6.7	2	6.7
civil servant	1	3.3	2	6.7
Self-employed	16	53.3	19	63.3

Total	30	100	30	100

According to Table 1, the majority of respondents in both groups were 15 years old. In the experimental group, the majority of respondents were 15 years old, namely 23 people (76.7%), while 16-year-olds numbered 7 people (23.3%). A similar pattern was also observed in the control group, where 21 respondents were 15 years old (70.0%), and 9 were 16 years old (30.0%). This indicates that the two groups have a relatively comparable age composition, with a predominance of early adolescents aged 15 years.

In terms of gender, the experimental group was dominated by 19 female respondents (63.3%), while 11 males (36.7%) participated. In contrast, the control group had a balanced gender distribution, with 15 males and 15 females (50.0%). Thus, there was a slight difference in gender proportions between the two groups, but both groups still represented male and female students.

The characteristics of parental occupations indicate that the majority of respondents' parents in both groups were self-employed. In the experimental group, parents with self-employed jobs numbered 16 people (53.3%), followed by 5 traders (16.7%), 4 farmers (13.3%), 2 private employees (6.7%), 2 laborers (6.7%), and 1 civil servant (3.3%). Meanwhile, in the control group, parents' occupation as self-employed also dominated with 19 people (63.3%), followed by 5 farmers (16.7%), 2 private employees (6.7%), 2 civil servants (6.7%), 1 trader (3.3%), and 1 laborer (3.3%). Overall, both groups had a relatively similar distribution of basic characteristics, especially in terms of age range and the dominance of parental occupation as self-employed, thus supporting the comparability of the experimental and control groups in this study.

Table 2. Knowledge of Respondents' Attitudes and Actions regarding HIV/AIDS

Variables	Intervention (Video Media)				Control (Media Booklet)			
	Pretest		Posttest		Pretest		Posttest	
	f	**%**	**f**	**%**	**f**	**%**	**f**	**%**
Knowledge								
Good	3	10.0	29	96.7	2	6.7	28	93.3
Enough	7	23.3	1	3.3	9	30.0	2	6.7
Not enough	20	66.7	0	0.0	19	63.3	0	0.0
Attitude								
Good	5	16.7	28	93.3	7	23.3	27	90.0
Enough	8	26.7	2	6.7	6	30.0	3	10.0
Not enough	17	56.7	0	0.0	17	46.7	0	0.0
Action								
Good	4	13.3	29	90.0	5	16.7	27	96.7
Enough	7	23.3	1	10.0	7	23.3	3	3.3
Not enough	19	63.3	0	0.0	18	60.0	0	0.0

Based on Table 2, it can be seen that both the intervention group (video media) and the control group (booklet media) experienced an increase in respondents' knowledge, attitudes, and actions regarding HIV/AIDS after being given education. In terms of knowledge, before the intervention, most respondents (66.7%) were in the poor category, 10.0% in the good category, and 23.3% in the sufficient category. After the video media intervention, almost all respondents (96.7%) were in the good category, with only 3.3% in the sufficient category, and none in the poor category. A similar pattern occurred in the control group, where, before education, most respondents were also in the poor knowledge category (63.3%), with only 6.7% in the good category and 30.0% in the sufficient

category. However, after education using the booklet media, the proportion in the good category increased to 93.3%, the sufficient category to 6.7%, and no respondents remained in the poor category.

Regarding the attitude variable, before the intervention, the majority of respondents in both groups were in the poor attitude category, namely 56.7% in the intervention group and 46.7% in the control group. In comparison, good attitudes were still relatively low (16.7% and 23.3%). After education, there was a significant shift towards the good attitude category, with 93.3% of respondents in the intervention group showing a good attitude and only 6.7% showing a fair attitude. In contrast, in the control group, 90.0% had a good attitude, 10.0% had a fair attitude, and no respondents were in the poor attitude category. This indicates that HIV/AIDS education through both types of media was able to improve respondents' attitudes towards HIV/AIDS.

Regarding the action variable, before the intervention, most respondents in both groups were in the poor action category (63.3% in the intervention group and 60.0% in the control group), with a low proportion in the good action category (13.3% and 16.7%). After the intervention, a clear improvement was observed: in the intervention group, 90.0% of respondents were in the good action category, and only a small proportion were in the adequate category, whereas in the control group, 96.7% reached the good action category and almost none were in the inadequate category. Overall, this table shows that both video media and booklets were effective in increasing knowledge, forming more positive attitudes, and encouraging better actions related to HIV/AIDS, with a shift in categories from inadequate and adequate to a dominant good category in both groups.

Table 3. Effectiveness of using video media and booklet mediaabout HIV/AIDS

Variables	Treatment (Video Media) Mean±SD (n= 30)	Δ Mean Change ± SD	Control (Media Booklet) Mean±SD (n= 30)	Δ Mean Change ± SD	p-value between groups
Knowledge					
Pretest	51.73 ± 14.007	37,723 ± 9,091	50.63 ± 14.947	32.34 ± 10.045	0.770
Posttest	86.03 ± 4.916		82.97 ± 4.902		0.019
Attitude					
Pretest	52.93 ± 19.898	31.8 ± 14.303	51.60 ± 21.126	31.73 ± 15.107	0.802
Posttest	84.73 ± 5.595		83.33 ± 6.019		0.355
Action					
Pretest	53.33± 20,398	31.34 ± 14.685	51.33 ± 21.772	31.34 ± 15.375	0.715
Posttest	84.67 ± 5.713		82.67 ± 6.397		0.207

The mean difference between the video and booklet media groups (between-groups) on the pretest and posttest was analyzed using an independent t-test at α=0.05.

Based on Table 3, the mean pretest scores of knowledge, attitudes, and actions between the video media group and the booklet media group were relatively equal, as indicated by the p-values between groups of 0.770 (knowledge), 0.802 (attitude), and 0.715 (action), respectively, so it can be assumed that there was no significant difference in initial conditions between the two groups before the intervention. In the posttest phase, the mean knowledge in the video media group (86.03 ± 4.916) was higher than the booklet media group (82.97 ± 4.902), and the difference was statistically significant (p = 0.019), indicating that video media was more effective in increasing knowledge than booklets.

In the attitude and action variables, although the posttest mean of the video media group tended to be slightly higher than the booklet media group (attitude: 84.73 ± 5.595 vs 83.33 ± 6.019; action: 84.67 ± 5.713 vs 82.67 ± 6.397), the difference between groups in the posttest was not statistically significant, p = 0.355 for attitude and p = 0.207 for action, respectively. The mean change value (Δ) in both groups indicated an increase across all variables. Still, the magnitude of the increase in attitudes and actions was relatively similar between video media and booklet media. In contrast, the increase in knowledge tended to be greater in the video media group.

DISCUSSION

This study shows that HIV/AIDS health education using video media and booklets can improve respondent achievement, as evidenced by higher posttest scores in both groups compared to pretest scores. The equivalence of initial conditions between groups is also evident in the absence of differences in the pretest mean for knowledge, attitudes, and actions between the video and booklet media groups ($p>0.05$), so differences in posttest results can be attributed more to exposure to the educational media provided. These findings reinforce the idea that structured educational interventions are an important factor in improving adolescents' understanding of HIV/AIDS and have the potential to influence affective domains and preventive behavior.

In the knowledge domain, the video media group showed better results than the booklet media group after the intervention, as indicated by a significant difference in posttest means ($p=0.019$). This can be explained by the fact that video is an audiovisual medium that combines visual and auditory stimuli, thereby facilitating message acceptance, increasing attention, and strengthening information retention. Theoretically, engaging more senses when receiving information will improve memory and understanding of the material, so audiovisual media are often superior in improving cognitive aspects, especially factual understanding regarding the definition, transmission, and prevention of HIV/AIDS. In line with this, an intervention study in Indonesia that compared video with e-leaflets also showed a significant increase in knowledge after the intervention, confirming that video is an effective educational medium for increasing knowledge among young people.

In contrast to knowledge, the difference in posttest scores between groups for the attitude and action variables was not statistically significant (attitude: $p=0.355$; action: $p=0.207$). This finding indicates that changes in attitudes and actions are not solely determined by media format but are also influenced by the internalization of values, social norms, personal experiences, and peer and family support. Attitudes and actions generally require repeated reinforcement and opportunities for practice; therefore, although videos can improve understanding quickly, their impact on attitudes and actions may not differ significantly from that of booklets if the booklets have clear, relevant content and can be reread for reinforcement. This result is in line with the findings of Yuliasih et al. (2025), who found that both video and e-leaflets improve knowledge, attitudes, and practices after intervention, and that differences between media do not always appear across all outcome domains.

From an implementation perspective, booklets have the advantage of being re-accessible at any time, making them effective for reinforcing educational messages. Videos, on the other hand, are superior in capturing attention and simplifying the delivery of complex messages. Therefore, HIV/AIDS education strategies for adolescents can consider using video as the primary medium to improve HIV/AIDS literacy (cognitive domain), accompanied by booklets to strengthen understanding and facilitate consistency of attitudes and actions. With this approach, educational programs not only increase knowledge but also have a greater chance of producing more stable changes in attitudes and actions.

This research is supported by research from Yuliasih et al (2025), which revealed that media through videos and e-leaflets were proven to increase knowledge, attitudes, and practices significantly, without significant differences in knowledge increases between groups, but with significant differences in changes in attitudes and practices, so that both were considered effective but had different strengths in influencing behavioral aspects.(Yuliasih et al., 2025). Research from Siswati et al, (2022) the results of this study showed that both videos and e-leaflets increased knowledge and attitudes, but the increase in knowledge and attitude scores in the video group was significantly higher than the e-leaflet group (e.g. knowledge $P=0.046$; attitude $P=0.034$), so the researchers concluded that audiovisual education is more effective than e-leaflets in improving adolescent knowledge and attitudes related to the intergenerational cycle of malnutrition.(Siswati et al., 2022). Research by Calderon et al. (2011) showed that the average post-intervention knowledge score was significantly higher in the video group (78.5% correct) than in the counseling group (66.3% correct; $P<0.01$), and acceptance of HIV testing was also greater in the video group (51% vs. 22%; $P<0.01$). The researchers concluded that pre-test HIV educational videos were not only more effective in increasing adolescents' knowledge about HIV, but also more effective in encouraging their participation in HIV testing than face-to-face counseling, making videos worthy of consideration as an alternative or complement to conventional counseling in emergency services.(Calderon et al., 2011). The results of Rahmawati & Mulyanto's (2025) research

showed a significant increase in the level of knowledge after the intervention, with a p-value of 0.000 (<0.05), so it was concluded that animated video media was effective in increasing students' knowledge about HIV and was recommended as an alternative media for adolescent health education, especially regarding sexuality and HIV/AIDS prevention.(Rahmawati & Mulyanto, 2025).

The results of this study indicate that HIV/AIDS health education using videos and booklets was equally effective in improving adolescents' knowledge, attitudes, and actions, as evidenced by a shift in the pretest category from mostly "poor" to almost entirely "good" in the posttest across both groups. These findings imply that structured educational interventions in school settings are crucial for strengthening adolescent health literacy and encouraging better HIV/AIDS prevention behaviors.

Specifically, video media proved more effective in increasing knowledge than booklets, as indicated by a higher mean posttest knowledge score and a statistically significant difference between the two groups ($p = 0.019$). This indicates that audiovisual media that combine visual and audio elements are more effective at attracting attention, facilitating understanding, and strengthening adolescents' retention of information on the definition, transmission methods, and prevention efforts of HIV/AIDS. Therefore, health promotion programs in schools, community health centers, and health offices need to prioritize the use of video as the primary medium when the goal of the intervention is to increase adolescents' knowledge about HIV/AIDS.

On the other hand, although no significant differences were found in attitudes and actions between the video and booklet groups, both media were still effective in improving respondents' attitudes and actions, as the majority of students in both groups were in the "good" category after the intervention. This finding implies that changes in attitudes and behaviors regarding HIV/AIDS prevention are likely determined not only by the type of media but also by the process of internalization of values, social norms, environmental support, and repeated reinforcement, so that booklets remain relevant as companion media that can be reread and serve as reminders for adolescents.

For educational institutions, the results of this study emphasize the importance of incorporating HIV/AIDS education into school programs, particularly in vocational high schools (SMK) that do not yet have reproductive health courses. Schools can use digital videos and booklets in guidance and counseling services, school health unit activities, and extracurricular programs to provide students with accurate and engaging information about HIV/AIDS. Meanwhile, for policymakers in education and health, these findings provide an empirical basis for developing HIV/AIDS education policies and intervention packages based on video and booklets that can be widely implemented, especially in areas with a high HIV/AIDS caseload.

This study also opens the door to further research to evaluate the long-term effects of video and booklet use on adolescent attitudes and behaviors, and to test the effectiveness of combining the two media across contexts and with different adolescent populations. With the development and implementation of sustainable interventions, it is hoped that HIV/AIDS education through appropriate media can contribute to reducing risky behaviors and HIV/AIDS incidence among adolescents.

CONCLUSION AND SUGGESTIONS

Conclusion

This study concluded that HIV/AIDS health education through video and booklet media effectively increased adolescents' knowledge, attitudes, and actions, as reflected in changes in respondent categories from predominantly less at the pretest to the majority at the posttest in both groups. Specifically, video media proved to be superior in increasing knowledge compared to booklets, indicated by the average posttest knowledge score of the video group of 86.03 ± 4.916 which was higher than the booklet group of 82.97 ± 4.902 with a statistically significant difference of $p = 0.019$, so that audiovisual media can be positioned as the main alternative for improving cognitive domains related to HIV/AIDS. In the attitude and action variables, the mean posttest score of the video group (attitude 84.73 ± 5.595; action 84.67 ± 5.713) was slightly higher than the booklet group (attitude 83.33 ± 6.019; action 82.67 ± 6.397), but the difference was not statistically significant, $p = 0.355$ for attitude and $p = 0.207$ for action. Thus, scientifically, it can be stated that there is no significant difference in effectiveness between video and booklet media in terms of attitude and action. However, both are equally able to direct the majority of respondents to the good category. This finding indicates that the form of educational media does not solely determine changes in the affective and behavioral domains

but is also influenced by internalization processes, environmental support, and continuous message reinforcement.

Suggestion

Further research is recommended, with a longer follow-up period, to assess the sustainability of changes in attitudes and practices following educational interventions and to test the effectiveness of the combined video and booklet media. Research across different settings and adolescent populations, such as high schools, Islamic boarding schools, and communities outside of school, is also needed to assess the generalizability of these findings and to refine more comprehensive and sustainable HIV/AIDS education strategies.