



The Effect of Audiovisual Education about HIV/AIDS on HIV/AIDS Knowledge in Senior High School 1 Rasau Jaya Students

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ARTICLE INFORMATION

Received: December 25, 2024

Revised: December 28, 2024

Available online: August 2025

KEYWORDS

Adolescents; Audiovisual education; HIV/AIDS; Knowledge

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ABSTRACT

Adolescents are vulnerable to various health risks, including HIV/AIDS. Kubu Raya Regency had a significant increase in HIV/AIDS cases, highlighting the need for health education. This study analyzes the effect of audiovisual education about HIV/AIDS on the HIV/AIDS knowledge in Senior High School 1 Rasau Jaya students. It was a pre-experiment with a one-group pre-test and a post-test design without using a control group. The population was 488 students of the 11th and 12th grades of Senior High School 1 Rasau Jaya, with a sample size of 60 students. Data collection was conducted offline by providing audiovisual education about HIV/AIDS and distributing questionnaires. The instrument for knowledge of HIV/AIDS used the 18-item HIV Knowledge Questionnaire (HIV-KQ-18). Data analysis used the Wilcoxon test. The respondents were 15-19 years old, male (63.3%), and 12th grade (51.7%). They had been exposed to information about HIV/AIDS (86.7%), the most common source of information being the internet (60.7%). The median pre-test knowledge score was 50.00, increasing to 77.70 in the post-test. The Wilcoxon test resulted in $p=0.000$ ($p<0.05$), indicating a difference in HIV/AIDS knowledge before and after audiovisual education about HIV/AIDS in students. Therefore, there was a significant effect of audiovisual education about HIV/AIDS on HIV/AIDS knowledge in students. In conclusion, Audiovisual education about HIV/AIDS affects HIV/AIDS knowledge in Senior High School 1 Rasau Jaya students. These findings underscore the importance of innovative educational approaches, like audiovisual media, in enhancing adolescents' understanding of HIV/AIDS.

INTRODUCTION

Adolescents are individuals in the transitional phase from childhood to adulthood, and during this time, they are full of complex physical, emotional, and social changes (Hapsari, 2019). According to the World Health Organization (WHO), adolescents are between 10 and 19 years old (WHO, 2022). Adolescents are in a phase where they are more vulnerable to various health risks, especially in terms of sexual and reproductive health, including the risk of HIV/AIDS (Faridah, 2020).

Human immunodeficiency virus (HIV) is a virus that works by weakening the human body's immune system, leading to the disease known as Acquired Immunodeficiency Syndrome (AIDS). AIDS is a collection of medical conditions that indicate a decline in the immune system, often accompanied by opportunistic infections and cancer. Until now, AIDS has not been curable (Kemenkes, 2018).

It is estimated that around 39 million people were living with HIV by the end of 2022, with the number of individuals ranging from 33.1 to 45.7 million (WHO, 2023). Based on the integrated HIV and AIDS recording and reporting system (*Sistem Informasi HIV AIDS* or SIHA) in the Executive Report on the

Development of HIV AIDS and Sexually Transmitted Infections (STIs) Disease for the first quarter of 2022, West Kalimantan Province has 10,859 people living with HIV (Kemenkes, 2021).

Data from the Ministry of Health Republic Indonesia in 2022 showed that West Kalimantan was among the top 20 provinces with the highest number of people living with HIV/AIDS (PLWHA) in Indonesia (Kemenkes, 2022). Based on the report from the Kubu Raya District Department of Health Office, there was a significant increase in incidence rates of HIV/AIDS, from 0.70% in 2019 to 1.10% in 2020. This figure far exceeded the 2020 Strategic Plan (*Rencana Strategis* or *Renstra*) target of only 0.21% (Dinkes Kubu Raya, 2020).

The lack of knowledge among adolescents about HIV/AIDS poses a serious threat. It highlights the need for intervention, as this lack of knowledge becomes a significant challenge in combating the disease. Limited knowledge can lead to misconceptions about PLWHA, encouraging risk behaviors. Further, it can increase the chances of HIV transmission (Nurwati and Rusyidi, 2019). The highest incidence rate of AIDS was in the age group of 20-49 years (Kemenkes, 2021). The incubation period of HIV takes about 5-10 years. Thus, the first contact with HIV was most likely to occur during adolescence (Husaini, Panghiyangani and Saputra, 2017). So, providing health education to adolescents is crucial to prevent the spread of HIV/AIDS.

Interventions through audiovisual media have become an urgent necessity for health education among adolescents (Rahmawati, 2018). The educational video, a groundbreaking initiative at both national and international levels, demonstrates a strong content validity index (CVI) ranging from 0.8 to 1.00, with agreement rates of 80% to 100%. Expert input is also critical to enhance the quality of the video (Vasconcelos *et al.*, 2023). Audiovisual media, such as films, videos, and infographics, enhanced adolescents' knowledge about child marriage (Dewie, *et al.* 2022). Audiovisual resources have gained increasing attention in education due to their potential to improve students' learning experiences. A previous study also highlighted that these resources provided valuable insights and supported students' intention to utilize them within a conceptual framework (Al-Marroof *et al.*, 2022). Thus, it is essential to incorporate audiovisual tools to facilitate effective learning and engagement. This study analyzes the effect of audiovisual education about HIV-AIDS on the HIV/AIDS knowledge in Senior High School 1 Rasau Jaya students. The research potentially contributes insights and knowledge for readers and future researchers related to the influence of audiovisual education on the knowledge levels of HIV/AIDS.

METHOD

This research was a pre-experiment with a one-group pre-test and a post-test design without using a control group. The population was 488 students of the 11th and 12th grades of Senior High School 1 Rasau Jaya, with a sample size of 60 students. This research was conducted at Senior High School 1

Rasau Jaya in July 2024. Data collection was undertaken offline by providing audiovisual education about HIV/AIDS and distributing questionnaires. The instrument for knowledge of HIV/AIDS used the 18-item HIV Knowledge Questionnaire (HIV-KQ-18), which was adapted into Indonesian by Arifin *et al.* (2023). The results of the data normality test showed that one of the data sets was not normally distributed ($p < 0.05$), so an alternative test was conducted using the Wilcoxon Signed Rank test. Ethical approval has been obtained from the Ethics Review Board (ethical clearance certificate number: 5773/UN22.9/PG/2024) of the Faculty of Medicine, Universitas Tanjungpura, ensuring adherence to research protocols. Ethical considerations included respecting human dignity, privacy, and subject confidentiality. It also ensured justice, inclusivity, and balanced harm and benefits.

RESULT

The results included the characteristics of respondents by age, class, sex, exposure to information about HIV/AIDS, and the source of information. In addition, the respondents' knowledge scores before and after audiovisual education about HIV/AIDS were analyzed based on age, sex, class, and exposure to information about HIV/AIDS. Furthermore, the Wilcoxon test results were used to determine the effectiveness of audiovisual education about HIV/AIDS on HIV/AIDS knowledge in students.

Table 1. Characteristics of Respondents by Age

Characteristics of Respondents	Min	Max	Mean	n
Age	15	19	16.70	60

Table 1 shows the respondents' age range of 15-19 years and an average age of 16.70.

Table 2. Characteristics of Respondents by Class, Sex, Exposure to Information about HIV/AIDS, and The Source of Information

Characteristics of Respondents		Frequency	Percentage (%)
Class	11'th grade	29	48.3%
	12'th grade	31	51.7%
Sex	Male	38	63.3%
	Female	22	36.7%
Exposure to Information about HIV/AIDS	Exposed	52	86.7%
	Not Exposed	8	13.3%
Sources of Information	Friends	7	11.5%
	Television	7	11.5%
	Internet	36	60.7%
	Others	10	16.4%
Total		60	100%

Table 2 demonstrates that half of the respondents are in the 12th grade, 31 students (51.7%). In addition, most respondents are male, 38 students (63.3%). Moreover, 52 students have been exposed to information about HIV/AIDS (86.7%), the most common source of information being the internet (60.7%).

Table 3. Knowledge Scores Before and After Audiovisual Education about HIV/AIDS by Age, Sex, Class, and Exposure to Information about HIV/AIDS

Respondent Characteristics	Median Pre-Test	Mean Pre-Test	Median Post-Test	Mean Post-Test
Age				
15 Years	55.50	57.37	77.70	79.57
16 Years	52.75	53.49	77.70	77.73
17 Years	44.40	50.16	77.70	79.44
18 Years	50.00	43.70	74.95	74.25
19 Years	50.00	50.00	88.80	88.80
Sex				
Male	50.00	49.80	77.70	77.87
Female	50.00	52.74	77.70	78.99
Class	50.00	49.57	77.70	77.72
11th Grade	55.00	52.11	77.70	78.80
12th Grade				
Exposure to Information about HIV/AIDS				
Exposed to Information	50.00	52.20	77.70	79.22
Not Exposed to Information	38.85	42.31	69.40	72.18

The age group with the highest average pre-test score was 15 years old, with a score of 57.37, while the highest post-test score was in the 19-year-old group with a score of 88.80. Female students had higher average pre-test and post-test scores than male students, with 52.74 in the pre-test and increasing to 78.99 in the post-test. In addition, respondents in the 12th grade had an average pre-test score of 52.11, higher than the 11th grade. Both experienced an increase in knowledge, with post-test scores of 78.80 for 12th-grade students and 77.72 for 11th-grade students. Among students who had been exposed to information about HIV/AIDS, there was an increase in knowledge, with a pre-test score of 52.20 and a post-test score of 79.22 (Table 3).

Table 4. Wilcoxon Test Results on the Influence of Audiovisual Education about HIV/AIDS on HIV/AIDS Knowledge

Knowledge Scores	n	Median	Min-Max	Positive Rank	Negative Rank	<i>p</i>
Pre-Test	60	50.00	27.7-77.7	30.50	0.00	0.000
Post-Test	60	77.70	55.5-100			

The median pre-test knowledge score was 50.00, increasing to 77.70 in the post-test. The Wilcoxon test resulted in $p=0.000$ ($p<0.05$), thus H_0 is rejected, indicating a difference in HIV/AIDS knowledge before and after audiovisual education about HIV/AIDS in students. Descriptive analysis showed an average positive rank of 30.50 and a negative rank of 0.00, meaning increased HIV/AIDS knowledge. Therefore, there was a significant effect of audiovisual education about HIV/AIDS on HIV/AIDS knowledge in Senior High School 1 Rasau Jaya students (Table 4).

DISCUSSION

The age range of respondents in this research was 15-19 years, categorized as the adolescent age group (Table 1), with the highest average scores of HIV-AIDS knowledge after audiovisual education about HIV/AIDS being in students aged 19 years, with an average of 88.80 (Table 3). It is in line with the factors

influencing knowledge, according to Notoatmodjo (2018), age affects a person's comprehension and mindset. As people age, their comprehension and mindset develop, improving their knowledge.

In addition, most respondents were 12th-grade students (Table 2). The 12th-grade students had a higher average pre-test score (52.11) compared to 11th-grade students (49.57) (Table 3). It demonstrates that 12th-grade students already had a better fundamental understanding of HIV/AIDS before participating in this investigation. It may be caused by factors such as previous learning experiences, cognitive maturity, or exposure to HIV/AIDS information outside the school environment. In line with the research by Suprayitna, Fatmawati and Albayani (2020), age, education, and environment affected adolescent knowledge about HIV/AIDS. However, both groups showed a significant increase in knowledge after the intervention, with post-test scores reaching 78.80 for the 12th and 77.72 for the 11th grades, indicating that audiovisual education about HIV/AIDS was efficacious in improving students' understanding of HIV/AIDS, regardless of their initial level of knowledge. This finding aligns with the research by Ramadhani and Ramadani (2020), which showed that audiovisual media effectively enhanced adolescents' knowledge. Thus, this paper's significant increase in HIV/AIDS knowledge indicates that the health educational program designed for this study has successfully achieved its objectives.

Moreover, most respondents in this study were male (Table 2). However, this research showed an interesting difference between male and female students regarding knowledge levels before and after the intervention. Female students had higher average pre-test and post-test scores than male students (Table 3). It is in line with the research by Berek *et al.* (2019), which demonstrated that female adolescents tended to have a more comprehensive understanding of HIV/AIDS compared to male adolescents. It may be due to social and cultural factors that provide more opportunities for girls to access information and discuss topics related to reproductive health, including HIV/AIDS.

Most Senior High School 1 Rasau Jaya students were exposed to Information about HIV/AIDS (86.7%), mostly sources of information from the internet (Table 2). This finding is in line with the study by Kuriawati and Kurniawati (2019), which indicated that adolescents independently used the internet to seek information about HIV/AIDS. Most accessed the internet daily for an average of 2-5 hours and had been doing so for more than 2 years. Respondents in this study who had previously obtained information, whether through the internet or other sources, tended to have a higher HIV/AIDS knowledge (average pre-test score of 52.20) and experienced a more significant increase in knowledge after intervention (average post-test score of 79.22) compared to students who had never been exposed to information about HIV/AIDS (Table 3). Therefore, the initial exposure to information from various sources can serve as a strong foundation for enhancing students' understanding of HIV/AIDS.

There was a variation in the initial level of knowledge before intervention among students. The median score of knowledge about HIV/AIDS in respondents before audiovisual education about HIV/AIDS was

50.00, with the maximum score being 77.7, and the minimum being 27.7 (Table 4). It indicated a significant knowledge gap regarding HIV/AIDS among students, with a low average score. Which found a significant difference in the initial level of respondents' knowledge about HIV-AIDS before health education. In addition, the findings of Widarma *et al.* (2017) pointed out that almost half of adolescents had insufficient knowledge about HIV/AIDS before health education (48.7%). Thus, it indicates that most students do not yet have a comprehensive understanding of HIV, its transmission methods, and effective prevention. Therefore, it is necessary to implement an HIV/AIDS education program, which will be a crucial first step in raising students' awareness and knowledge, as well as increasing their skills to protect themselves from the risk of exposure to HIV/AIDS.

After audiovisual education about HIV/AIDS, there was a significant increase in knowledge about HIV/AIDS (Table 4). It is in line with the research by Sabhita *et al.* (2022), which found that the educational video method significantly impacted the increase in knowledge and changes in adolescents' attitudes towards health. The median knowledge score increased to 77.70, with a range of scores between 55.5 and 100. This increase indicated that audiovisual media, which involve both auditory and visual aspects, had successfully stimulated better understanding among the learners. The video media effectively activate various senses, making the information conveyed easier to remember and understand (Nadek *et al.* 2014).

There was a significant effect of audiovisual education about HIV/AIDS on HIV/AIDS knowledge in Senior High School 1 Rasau Jaya students (Table 5). This finding is in line with the research by Sabhita *et al.* (2022), which showed that the use of videos as a health education medium was efficacious in improving understanding and changing adolescents' attitudes towards HIV/AIDS. The study by Anggraini *et al.* (2022) also indicated a very significant relationship between the use of video learning methods and the increase in knowledge and changes in adolescents' attitudes towards HIV/AIDS. This research proves that audiovisual media can be an effective medium to achieve one of the goals of the three main programs of the School Health Unit (SHU), which is to improve the health status of students. The SHU at Senior High School 1 Rasau Jaya should continue to develop the HIV/AIDS education program by utilizing various innovative media. Audiovisual media can motivate students to adopt healthy behaviors by providing engaging and easily understandable information.

CONCLUSION

Audiovisual education about HIV/AIDS affects HIV/AIDS knowledge in Senior High School 1 Rasau Jaya students. Future research could include affective aspects such as attitudes and behaviors, using a

longitudinal design to observe long-term changes, and considering family support and the school environment. More comprehensive instruments with simple questionnaire language should be developed so students can easily understand.

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