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THE EFFECTIVENESS OF EDUCATION ON KNOWLEDGE AND ATTITUDES ABOUT HIV/AIDS THROUGH LEAFLETS AND VIDEOS ON STUDENTS AT SMAN 1 TARUMAJAYA BEKASI

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Abstract
HIV/AIDS cases remain a global health issue, including in Indonesia. Adolescents are a group that is vulnerable to HIV/AIDS transmission due to a lack of knowledge and inappropriate attitudes towards risky behavior and people living with HIV/AIDS. Based on observations at SMAN 1 Tarumajaya, it was found that 70% of 10 students had low levels of knowledge and 90% of 10 students showed poor attitudes towards people living with HIV/AIDS. Therefore, effective health education efforts are needed, one of which is through leaflets and videos. Methods this study used a quantitative method with a quasi-experimental design of the Two-Group Pretest-Posttest Design type. The sample consisted of 30 eleventh-grade students divided into two groups, with 15 students receiving education through leaflets and 15 students through videos. The Paired Sample T-Test was used because the data was normally distributed. Results the results of the study on the leaflet media group showed an increase in knowledge with a mean = -4.667 and a p-value = 0.000, while the increase in attitude had a mean = -6.600 and a p-value = 0.000. A p-value <0.05 indicates that there was a significant difference between the values before and after the educational intervention was given. It can be concluded that leaflets are effective in increasing students' knowledge and attitudes about HIV/AIDS. Meanwhile, in the video education group, the mean increase in knowledge was -3.867 with a p-value of 0.000, and the mean increase in attitude was -4.000 with a p-value of 0.000. This also indicates that there is a significant difference in knowledge and attitudes before and after the educational intervention. It can be concluded that both leaflets and videos are effective in increasing students' knowledge about HIV/AIDS. Discussion this study demonstrates that health education interventions using leaflet and video media can effectively improve knowledge and attitudes toward HIV/AIDS. The leaflet-based intervention showed greater effectiveness in shaping positive attitudes, likely due to repeated exposure and deeper comprehension of written information. These findings support the integration of printed educational media as a complementary strategy in HIV/AIDS prevention programs.

Keywords: Education; HIV/AIDS; Knowledge, Attitudes, Leaflets, Videos.

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INTRODUCTION

Human Immunodeficiency Virus (HIV) is a virus that infects white blood cells, causing sufferers to lose immunity so that they are very susceptible to various other diseases. Meanwhile, Acquired Immune Deficiency Syndrome (AIDS) is a set of symptoms caused by decreased immunity caused by HIV infection. Individuals infected with HIV need therapy using antiretroviral drugs (ARVs) to suppress the amount of HIV virus in the body, so that it does not progress to the AIDS stage, while those who already have AIDS need ARV therapy to prevent opportunistic infections from various pathogens that cause complication[1][2].

The common causes of HIV/AIDS in adolescence are adolescents who become drug addicts, especially syringe users, lack of knowledge about information about reproductive health, free sex, HIV/AIDS and other infections caused by sex. The lack of information adolescents have about reproductive health impacts their reproductive health knowledge[3].

Based on data from the Central Statistics Agency of West Java Province, there is an increase in the number of new cases of HIV/AIDS every year. In 2023, there will be 2,184 people diagnosed with HIV/AIDS, which is around 0.43% of the population of West Java, and this figure will jump to 3,075 people or around 0.60% in 2024. This indicates that there has been an increase of 40.8% from the previous year. In Bekasi City, the increase in new HIV/AIDS cases is also quite significant Referring to data from the Central Statistics Agency of Bekasi City, in 2023 there will be 142 people or around 0.59% of the total population, and this figure will increase to 214 people or around 0.90% in 2024. This increase is equivalent to 50.7% compared to the previous year. Meanwhile, in Bekasi Regency, in 2023 there will be 67 people or around 0.15% of the total population, and this figure will increase to 250 people or around 0.56% in 2024. This increase is equivalent to 273.1% compared to the previous year [4].

Efforts to prevent HIV/AIDS transmission can be carried out with the ABCDE formula, where A is abstinence, does not have sex before marriage, B is be faithful, meaning if you are married only in contact with your partner, C is a condom, meaning that if indeed methods A and B are not followed, a preventive tool must be used using condoms. D is drug no means prohibited from using drugs, E means education means providing education and correct information about HIV/AIDS, how it is transmitted, prevention and treatment [5].

Therefore, a deep understanding of the epidemiology of HIV, specific risk factors at the local level, as well as evaluation of the effectiveness of the programs that have been and are being implemented are essential to respond to this pandemic in Indonesia. With a holistic approach and cross-sectoral cooperation, it is hoped that these efforts can result in significant changes in reducing infection rates and improving the quality of life for all affected individuals [6].

Health promotion media is an effective means to convey health-related messages or information, making it easier for the audience to receive this information. Health education media includes all means that aim to convey information or messages from communicators, whether it is using print, electronic, or outdoor media. Thus, the recipient of information is expected to increase their knowledge which is expected to influence health behaviors in a better direction [7].

Based on observations made by researchers at SMAN 1 Tarumajaya, it is known that the level of students' knowledge about HIV/AIDS is still relatively low, namely 70% of 10 grade XI students, students do not know about the way HIV/AIDS is transmitted, while students' attitudes towards ODHA are still relatively poor, namely 90% of the 10 grade XI students interviewed. The results of the interview with one of the teachers revealed that there is still a lack of health education apart from the health center which is held once a year at SMAN 1 Tarumajaya, especially in reproductive health about HIV/AIDS cases. Therefore, researchers consider the importance of this problem to be researched.

Therefore, this study aims to determine the Effectiveness of Education on Knowledge and Attitudes About HIV/AIDS Through Leaflet and Video Media in Students of SMAN 1 Tarumajaya.

METHODS

Study design and setting

This study uses a quantitative approach with a pre-posttest quasi-experimental design with two groups. The intervention provided was in the form of health education to assess its effectiveness on

knowledge and attitudes about HIV/AIDS at SMAN 1 Tarumajaya, Bekasi. Respondents were divided into two groups, namely the group that received education through leaflet media and the group that received education through video media. Measurements were taken before (pre test) and after (post test) intervention. The research design can be seen in the following image:

Table 1 Research Design

Pre test	Education	Post test
01	X	03
02	Y	04

Description:
01 = Pretest measurement on the leaflet media group
02 = Pretest measurement in video media group
03 = Posttest measurement on the leaflet media group
04 = Posttest measurement in video media group

Population and Sample

The population in this study is all grade XI students of SMAN 1 Tarumajaya Bekasi which reaches 150 people, where each class consists of 30 students with different majors.

Inclusion criteria: Students from SMAN 1 Tarumajaya Bekasi and willing to be respondents, Students in class XI Package 2 Applied Biology, Students who can be engaged in communication.

The sample size in this study was 30 respondents from one class XI Package 2 Applied Biology Sciences. The reason for taking one class XI Package 2 of Applied Biology is because class XI has different majors, so the application of learning is also different, so it is feared because the difference in mindset in accepting understanding about HIV/AIDS is less than optimal. The sample was divided into 2 groups based on the attendance sequence number. Education about HIV/AIDS will be provided through leaflet media for 15 respondents and video media for 15 respondents.

Instrument

In this research, the author uses research instruments in the form of media leaflets and videos about HIV/AIDS. Before and after the education through media leaflets and videos, the researcher distributes knowledge and attitude questionnaires to see the effectiveness of the educational media. The questionnaire is filled out by the respondents through a questionnaire sheet that will be distributed to the respondents. The questionnaire as a test tool is designed to evaluate the effectiveness of educational media leaflets and videos about HIV/AIDS.

Procedure

Before the study was conducted, the researcher obtained ethical approval from the Ethics Committee of the Undergraduate Nursing Study Program at STIKes Abdi Nusantara Jakarta, as well as research permission from SMAN 1 Tarumajaya, Bekasi Regency. Once permission was granted, the researcher explained the objectives and duration of the study to the school authorities and potential participants. Subsequently, demographic data collection and respondent screening were conducted based on inclusion criteria. Respondents who met the criteria and were willing to participate were asked to sign an informed consent form, with both the researcher and participants holding the right to withdraw from the study at any time if they felt uncomfortable.

The study protocol was approved by the Institutional Ethics Committee. Participants provided informed consent prior to enrollment. The research procedure included:

1. Pretest : knowledge and attitudes about HIV/AIDS in respondents, which was done by distributing questionnaire sheets of questions from research instruments and letting participants read and answer on their own, then returning the answers to the researchers.
2. Intervention: prepare educational materials, then conduct educational interventions using leaflets and 10-15 minute videos
3. Posttest: participants completed the DMES again and submitted feedback regarding usability and effectiveness.

Data analysis

Data were analyzed using SPSS version 2 6.0 (IBM Corp., Armonk, NY, USA). Descriptive

statistics were used for participant characteristics. quantitative with a quasiexperimentdesign and a two-grouppretest-posttestdesign. The type of statistical test used is the Dependent T testbecause the data is distributed normally.

RESULTS AND DISCUSSION

Characteristics of Knowledge and Attitude

Table 2. Distribution of Knowledge Frequency and Pre and Post Attitudes

Knowledge	**Media Leaflet**			**Media Video**		
Pre	**Category**	**N**	**%**	**Category**	**N**	**%**
	Good	3	20,0%	Good	3	20,0%
	Not Good	12	80,0%	Not Good	12	80,0%
Post	**Category**	**N**	**%**	**Category**	**N**	**%**
	Good	15	100%	Good	15	100%
	Not Good	-	-	Not Good	-	-
Attitude	**Media Leaflet**			**Media Video**		
Pre	**Category**	**N**	**Median**	**Category**	**N**	**Median**
	Good	15	27	Good	15	27
	Not Good	-	-	Not Good	-	-
Post	**Category**	**N**	**Median**	**Category**	**N**	**Median**
	Good	15	35	Good	15	30
	Not Good	-	-	Not Good	-	-

Based on table 2, in leaflet media and video media, there was an increase in respondents' knowledge after being educated. Before the education (pre-test), most of the respondents had poor knowledge as many as 12 respondents (80.0%) with a correct answer score of <12 (<75%), and good knowledge as many as 3 respondents (20.0%) with a correct answer score of ≥12 (≥75%). After education (posttest), the majority of 15 respondents (100%) had good knowledge with a correct answer score ≥12 (≥75%). Meanwhile, after being educated both through leaflet media and video media, all respondents showed good attitudes as many as 15 respondents (100%) with a median score = 35 (media leaflet) and median = 30 (video media).

Bivariate Analysis Results

Table 3. Comparison of Pre Test and Post Test

	MEDIA LEAFLET			
	Mean	***Std. Deviation***	***Std. Error Mean***	***P-value***
Knowledge	-4,667	2,380	0,615	0,000
Atitude	-6,600	4,657	1,202	0,000
	MEDIA VIDEO			
	Mean	***Std. Deviation***	***Std. Error Mean***	***P-value***
Knowledge	-3,867	2,232	0,576	0,000
Atitude	-4,000	2,726	0,704	0,000

*Significant $p < 0.05$

Based on table 3, there is a significant difference between the pre and posttest scores in each media. In the leaflet media, the average increase in knowledge was -4.667 with (p-value = 0.000) and attitude was -6.600 with (p-value = 0.000). Meanwhile, in video media, the average increase in knowledge was -3,867 with (p-value = 0.000) and attitude was -4,000 with (p-value = 0.000).

Table 4. The Effectiveness of Educational Media Leaflets and Videos

	PENGETAHUAN			
	Mean	***Std. Deviation***	***Std. Error Mean***	***P-value***
Leaflet	13,53	1,060	0,274	0,855
Video	13,47	0,915	0,236	0,855
	SIKAP			
	Mean	***Std. Deviation***	***Std. Error Mean***	***P-value***
Leaflet	33,93	3,240	0,836	0,001
Video	30,73	1,280	0,330	0,002

Based on table 4, the average knowledge score on leaflet media was 13.53% and video media was 13.47% with (p-value = 0.855), this shows that there is no significant difference between education through leaflet media and video media. This means that education using leaflet and video media is equally effective in increasing knowledge. Meanwhile, in attitude, leaflet media had a higher average score of 33.93% compared to video media of 30.73% with values respectively (p-value = 0.001) in leaflet media, and (p-value = 0.002) in video media. This shows that there is a significant difference between education through leaflet media and video media

Discussion

Analysis results Before being given education (pre-test), most of the respondents showed poor knowledge as many as 12 respondents (80.0%) with a correct answer score of <12 (<75%), while only 3 respondents (20.0%) had good knowledge 15 respondents (100%) with a correct answer score ≥12 (≥75%). After the educational intervention (post test) was carried out, there was a significant increase in the respondents' knowledge. The majority of 15 respondents (100%) showed an increase in the knowledge score to a category of either the correct answer ≥12 or a score of ≥75%. These results show that both leaflet and video media can be an effective means of education in increasing students' knowledge about HIV/AIDS.This positive attitude can be in the form of increased empathy for people with HIV/AIDS (ODHA), increased awareness of the importance of responsible sexual behavior, and increased willingness to participate in prevention activities. The results of this analysis are in line with research [8] Video education increases knowledge in both categories (0%-66.7%) and positive attitudes (13.3%-100%).

In the group that used leaflet media, based ontable 5.3, the average increase in knowledge was -4,667 with a p-value = 0.000, while an increase in attitude was -6,600 with a p-value = 0.000. The p-value of ≤0.05 indicates that there is a significant difference between the value before and after the education a intervention is given. Meanwhile, in the group that received education through video media, the average increase in knowledge was -3.867 with a p-value = 0.000, and attitude increase of -4,000 with a p-value = 0.000. It also shows that there are significant differences in knowledge and attitudes before and after educational interventions are given.

In line with the research [9], which reveals a significant difference between knowledge before and after the educational intervention through leaflet media with a p-value of 0.000 (≤0.05). Also reveals a significant difference between knowledge and attitude before and after the intervention through video media with a p-value of 0.000 (≤0.05), thus it can be concluded that there is an effect of video media on knowledge and attitude [10].

The results showed that the average knowledge score in the group provided education through leaflet media was 13.53% with a p-value = 0.855, while in the group provided education through video media it was 13.47% with a p-value = 0.855. The p-value of >0.05 indicates that there is no significant difference between the effectiveness of education using leaflet media and video media on students' knowledge. This means that both media are equally effective in increasing students' knowledge about HIV/AIDS. Based on the knowledge in leaflet media, it shows a higher mean value, the reason is because leaflet media contains a short explanation with simple sentences accompanied by pictures, then by reading more often and repeatedly it will speed up the comprehension process. Meanwhile, video media can only be seen at a glance and cannot be read repeatedly. This finding states that both leaflet and video media are able to convey information clearly and easily understood by respondents. Thus, although the form of presentation is different, the two media have relatively equal effectiveness in increasing students' knowledge about HIV/AIDS.

Meanwhile, the results of the analysis of the attitude variables showed a significant difference between leaflet and video media. The average score of students' attitudes after being educated using leaflet media was 33.93%, while in video media it was 30.73%. In the leaflet media the p-value = 0.001 and in the video media the p-value = 0.002, both are ≤0.05, which means that there is a significant difference between education and improving student attitudes. However, when compared between the two, the average attitude score of respondents on leaflet media was higher than video media. This means that leaflet media is

more effective in shaping students' positive attitudes towards HIV/AIDS compared to video media.

The findings of this study are also in line with [11], stating that there is no significant difference between education using leaflet media and video media on knowledge with a p-value = 0.240. This means that education using leaflet and video media is equally effective in increasing students' knowledge about HIV/AIDS. Meanwhile, according to [12], the results show that video media is more effective than leaflet media on attitudes with a p-value = ≤0.05. The same thing was also conveyed by [13], that video media is more effective in improving students' attitudes about HIV/AIDS compared to leaflet media with a p-value = ≤0.05, where the results show that there is a significant influence.

Education through leaflet media and video media are both effective in increasing students' knowledge about HIV/AIDS, but in terms of attitudes, leaflet media has proven to be more effective than video media. The media leaflet provides an opportunity for students to understand the material more deeply, internalize positive values, and foster self-awareness of the importance of HIV/AIDS prevention. Therefore, in health promotion activities in schools, leaflet media can be used as the main alternative or combined with video media to obtain more optimal educational results, both in increasing knowledge and forming a positive attitude towards health problems.

Conflict of interest

All authors declare no conflict of interest.

Availability of data and materials

A confidentiality agreement with participants prevents us from sharing the data, therefore, dataset cannot be shared.

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