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Effectiveness of Health Education Using Peer Education and Audio Visual Methods on the Level of Knowledge of Teenage Girls About HIV/AIDS

Mayasari Putri Ardela[1*], Rahma Kusuma Dewi[2], Siti Aminah[3], Meirna Eka Fitriasnani[4]
[1,2,3,4] *Department of Midwifery, Faculty of Health Sciences, Universitas Kadiri, Indonesia*
**Corresponding Author: mayasari.ardela@unik-kediri.ac.id*

ABSTRACT

Adolescents are a risk group for transmission of HIV/AIDS. HIV has infected the population of productive age between 15-24 years. One of the factors causing adolescent vulnerability to HIV is lack of knowledge. For this reason, prevention efforts need to be made by providing health education. This study aims to determine the difference in the level of knowledge and effectiveness of health education, peer education methods and audio-visual methods on the level of knowledge of adolescent girls about HIV/AIDS in Senior High School 1 Kandat, Kediri Regency, East Java.The research design uses True Experimental Design with Pre Test-Post Test Group Design. The sample number of 72 respondents taken with the Proportionate Stratified Random Sampling technique was then divided into 2 groups, namely the peer education group and the audio-visual group, each group consisting of 36 respondents. Statistical tests used using the Wilcoxon Test. The results showed a significant difference in the level of knowledge before and after health education was carried out with peer education methods and audio-visual methods (P-value 0.000). The conclusion of this study is that both health education methods can increase adolescent knowledge about HIV/AIDS. In choosing a health education method, it needs to be considered because the method used is one of the success factors in education.

Keywords: adolescents, audio-visual methods, HIV/AIDS, knowledge, peer education methods

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BACKGROUND

HIV/AIDS (Human Immunodefeciency Virus/Acquired Immunodefeciency Virus Syndrome) is a disease that continues to grow and become a global problem that plagues the world, including in Indonesia. New case reports continue to increase every year, but it is difficult to know the true number of HIV (Human Immunodefeciency Virus) infections (Ministry of Health, 2021).

Adolescents are a risk group for HIV/AIDS transmission, because adolescence is a time when individuals are at the highest social mobility because it will open opportunities for them to be exposed to various social, cultural, cultural, and physical and psychological changes. As a result, these adolescents have a high vulnerability to transmission of various types of diseases, one of which is HIV/AIDS. The causative factor is lack of knowledge about HIV/AIDS (Ariyanti, 2020).

Immunodefiency Virus (HIV) is a group of retroviruses that have the ability to duplicate, print and insert genetic material to cause Acquired Immunodeficiency Syndrome (AIDS), a disease that can weaken a person's immune system and is the cause of opportunistic infections. Until now there has not been found a way to cure AIDS. This disease is transmitted through the patient's body fluids through sexual intercourse, blood transfusions, the use of syringes alternately and transmission from pregnant women to the fetus through the placenta and the breastfeeding process. This disease can be prevented by not using syringes alternately, not having free sexual intercourse, not having blood transfusions with people living with HIV (PLHIV), and mothers giving birth with sectio caesaria and mothers not breastfeeding their babies directly (Budhy, 2018).

The number of people with HIV/AIDS globally is 38 million people in the world with 690 AIDS-related deaths (UNAIDS, 2020). HIV infection among children and adolescents in 2020 was 2.8 million children and adolescents living with HIV. A total of 120,000 children and adolescents died from AIDS-related causes (UNICEF, 2020). In Indonesia, it is estimated that there are 543,100 people with HIV and AIDS (PLHIV) in 2020 (Ministry of Health, 2020). People with HIV/AIDS in Kediri Regency, East Java, will increase in 2023. Based on data from the Kediri Regency Health Office, the number of HIV/AIDS sufferers in 2023 will be 255 cases. This number increased compared to the previous 2022 recorded 238 cases.
There are still many cases of HIV/AIDS that occur in Indonesia, all this is due to limited access to information which has an impact on low knowledge about HIV/AIDS in adolescents. One of the efforts made to prevent the transmission of HIV/AIDS is by providing good knowledge and understanding of HIV/AIDS in adolescents. This is done by providing health education to adolescents.

Midwives as midwifery care service providers have a role as educators who focus on health education which is considered a function within the scope of midwifery practice (Soetjiningsih. 2018). One way to prevent and overcome HIV/AIDS is through health education, both to people with HIV/AIDS and to the community, including adolescents (Ministry of Health of the Republic of Indonesia, 2021). In health education, a method is needed that is able to increase the focus of student learning as the target.

Health education with active learning methods can use the peer educator method which is one of the active learning methods and in accordance with adolescent development, where adolescents can provide support and influence on their peers (Bastable, 2018). In peer educators, adolescents adopt the role of the teacher in the learning process. This media also requires teenagers to learn from each other and teach in their groups (Purwanti, 2019). In addition, efforts to overcome HIV/AIDS can be done by utilizing information and communication technology which is currently growing. The potential to utilize technology for health, especially to overcome the considerable spread of HIV/AIDS (Utami, 2016).

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Audio visual media has advantages compared to other media because it can present moving images in addition to the accompanying sound and audio-visual media can display a phenomenon that is difficult to see in reality. While the weakness of video media is that it is only able to serve well for those who are able to think abstractly and require special questions in its presentation (Daryanto, 2011).

In this study, researchers conducted health education using peer education methods and audio-visual methods. Researchers are interested in conducting research at Sekolah Menengah Atas 1 Kandat, Kediri Regency, East Java because there are many negative influences that can occur, both from friends and their environment. The transition from adolescence to adulthood is very easy to influence and curiosity is very high to try negative things such as smoking, drinking, drugs and even casual sex. As a result of it all can cause several health problems, especially HIV/AIDS which is very vulnerable to occur in adolescents. The rise of HIV/AIDS transmission among the community, especially in adolescents due to promiscuity and the use of syringes. This is due to lack of knowledge about HIV/AIDS. So researchers are very interested in raising the topic.

METHODS

The research design used in this study is True Experimental Design with Pre Test-Post Test Group Design. This study was conducted by observing twice, namely before treatment (pre test) and after treatment (post test). This study aims to compare the different levels of knowledge and effectiveness of health education about HIV/AIDS with peer education methods and audio-visual methods at Senior High School 1 Kandat, Kediri Regency, East Java.

The population in this study was all 185 students of Senior High School 1 Kandat, Kediri Regency, East Java class X-XI. The research sample was calculated using the Slovin formula so that a total sample of 72 respondents was divided into 2 groups. The first group was given treatment in the form of health education about HIV/AIDS with peer education methods and the second group was given treatment in the form of health education about HIV/AIDS with audio visual methods, each group consisted of 36 respondents. The study was conducted in February 2024.

Health education procedures with the peer education method, researchers involve teachers to select prospective peer educators who will help provide health education about HIV/AIDS. Then the researcher as a facilitator who provided material about HIV/AIDS to 4 prospective peer educators who had been selected previously. Furthermore, the researchers divided 4 groups of peer education methods with 1 peer educator in each group who would provide health education materials about HIV/AIDS for 20 minutes. While in the audio-visual group, respondents were shown a video with a duration of 20 minutes. Educational materials about HIV/AIDS originating from the website of the AIDS Mitigation Commission (KPA), which include understanding, the process of HIV occurrence, modes of transmission, risk factors, the journey of HIV to AIDS, activities that cannot transmit HIV, VCT testing and treatment, prevention and explanation related to signs of HIV symptoms. Independent variable measurements were carried out before health education about HIV/AIDS (pre test), while post test was carried out 7 days after.

The test was used to determine the difference in the level of knowledge before and after the intervention with the Wilcoxon test. While the difference in effectiveness between peer education methods and audio-visual methods was tested with the Mann Whitney test with $\alpha = 0.05$.

RESULTS

Characteristics of Respondents

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Data from the results of the following study describe the distribution and characteristics of respondents from each group which includes age and sources of information obtained about HIV/AIDS presented in the following table.

Table 1. Characteristics of Respondents

Characteristics of Respondents	Peer Education Group		Audio Visual Group		Total	
	n	%	n	%	n	%
Age						
15 years	12	33%	11	30%	23	32%
16 years	16	45%	14	40%	30	42%
17 years	8	22%	11	30%	19	19%
Total	**36**	**100%**	**36**	**100%**	**72**	**100%**
Obtaining Resources						
Never	34	94,4%	33	91,6%	67	93%
Ever						
• TV	0	0%	1	2,7%	1	1,3%
• Social media	1	2,7%	1	2,7%	2	2,7%
• Internet	1	2,7%	1	2,7%	2	2,7%
Total	**36**	**100%**	**36**	**100%**	**72**	**100%**

Based on respondent characteristic data, it is known that most of the respondents are 16 years old (42%) and related to getting previous information about HIV/AIDS knowledge, most respondents have never received health education about HIV/AIDS, which is 67 (93%) respondents.

Analysis of the Level of Knowledge of Students Before and After Receiving Health Education about HIV/AIDS in the Peer Education Method Group

The data below describes the characteristic results of the research variables, namely the level of knowledge of adolescent girls before (pre test) and after (post test) 76 health education about HIV/AIDS was carried out using peer education methods. The results are presented in tabular form as follows.

Table 2. Level of Knowledge of Students Before and After Receiving Health Education with Peer Education Method

Knowledge Level	Pre test		Post test		Z	P-value
	n	%	n	%		
Good	7	19,4%	30	83,3%		
Enough	22	61,2%	6	16,7%	-4,686	0,000
Less	7	19,4%	0	0%		

Based on table 2, it can be interpreted that the level of knowledge of respondents before being given health education mostly had sufficient knowledge as many as 22 (61.2%) respondents. Meanwhile, after being given health education with peer education methods, there was an increase in the number of knowledge levels both in respondents as many as 30 (83.3%) respondents and there was a decrease in the number of knowledge levels by 6 (16.7%) respondents with sufficient knowledge levels and no one with less knowledge levels.

From the results of statistical calculations with the Wilcoxon Signed Rank Test test in the peer education method group, it was found that the Z value was -4.686 with the p value was 0.000 ($p < 0.05$), which means that there is a significant difference between the pre-test and post-test health education scores in the peer education method group. These results indicate that the provision of health education using peer education methods has a positive effect on the level of knowledge of respondents about HIV/AIDS.

Analysis of the Level of Knowledge of Students Before and After Receiving Health Education about HIV/AIDS in the Audio Visual Method Group

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The data below describes the characteristic results of the research variables, namely the level of knowledge of adolescent girls before (pre test) and after (post test) 76 health education about HIV/AIDS was carried out using audio visual methods. The results are presented in tabular form as follows.

Table 3. Level of Knowledge of Students Before and After Receiving Health Education with Audio Visual Methods

Knowledge Level	Pre test		Post test		Z	P-value
	n	%	n	%		
Good	2	5,6%	23	63,8%		
Enough	25	69,4%	11	30,6%	-4,978	0,000
Less	9	25%5,6%	2	5,6%		

Based on table 3, it can be interpreted that the level of knowledge of respondents before being given health education mostly had sufficient knowledge as many as 25 (69.4%) respondents, respondents who had a level of knowledge less than 9 female students (25%) and good as many as 2 (5.6%) respondents. Meanwhile, after being given health education with audio-visual methods, there was an increase in the number of knowledge levels both in respondents as many as 23 (63.8%) respondents, and there was a decrease in the number of knowledge levels less by 2 female students (5.6%) and 11 (30.6%) who had sufficient knowledge levels.

Based on the results of statistical calculations with the Wilcoxon Signed Rank Test test in the audio visual group, the Z value was -4.978 with a p value of 0.000 ($p < 0.05$), meaning that there was a significant difference between the pre-test and post-test scores of health education in the audio-visual group. These results indicate that the provision of health education using audio-visual methods also has a positive effect on the level of knowledge of respondents about HIV/AIDS.

Differences in the Effectiveness of Health Education between Peer Education Method and Audio Visual Method on the Level of Knowledge of Respondents about HIV/AIDS

To determine the difference in the effectiveness of health education between peer education and audio-visual methods on the level of knowledge of adolescent girls, statistical testing was carried out using the Mann-Whitney Test, namely the difference in pre-test and post-test scores between the peer education group and the audio-visual group.

Table 4. Results of Differences in the Effectiveness of Peer Education and Audio Visual Methods

Groups	Difference Group of Post Test-Pre Test			Mann-Whitney Test Results
	Good	Enough	Less	
Peer education methods	23	-16	-7	0,143
Audio visual methods	21	-14	-7	

Table 4 shows that after health education, most of the two methods can increase knowledge for good. While the results of the Mann-Whitney Test show that the significance value is 0.143 (0.143 > 0.05), which means that there is no significant difference between the use of health education peer education methods and audio-visual methods in increasing adolescent girls' knowledge about HIV/AIDS. This means that peer education methods are comparable to audio-visual methods in increasing knowledge about HIV/AIDS.

DISCUSSION

Health Education about HIV/AIDS with Peer Education Method to the Level of Knowledge of Respondents

From the results of the pre-test the level of knowledge of HIV/AIDS shows that most

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respondents have a sufficient level of knowledge. This shows that respondents have a lack of information obtained so that health education about HIV/AIDS is needed to increase respondents' knowledge. While the results of the health education post test by peer education showed an increase in the number of respondents who had a good level of knowledge and there was a decrease in respondents who had sufficient knowledge. This proves that the health education provided can increase respondents' knowledge.

The results showed that the level of knowledge after being given health education with peer education methods increased the number of good knowledge levels and decreased the number of sufficient knowledge levels. Meanwhile, the Wilcoxon test results show a signification value of 0.000 ($p < 0.05$) and a Z value of -4.686 which means that there is a significant difference in the level of knowledge of HIV/AIDS before and after receiving health education with peer education methods.

According to Riyanto and Budiman (2013) that information obtained both formal and non-formal can have a short-term influence so as to produce changes or increase in knowledge. In addition, the change in the level of knowledge is caused by respondents getting additional information or knowledge from peer educators through health education. Knowledge is the result of knowing a person about objects through his senses and health education is all planned efforts to influence others, whether individuals, groups, or society, so that they do what is expected by health education actors (Notoatmodjo, 2012).

Peer education is an experiential group method where this group guarantees two-way communication between extension workers and groups, so that between peer educators and groups will be active and interactive (Shahariman in Egger et al, 1996). Peer educators are selected based on the same age and grade, so it causes a feedback response easily because the person who provides information is his own friend. Talking about the problem of HIV/AIDS is inseparable from the problem of sex. Sex issues are widely considered taboo and usually teenagers are embarrassed to talk about it. This is supported by the opinion of Harahap and Andayani (2019) in their research that health education conducted by peer educators has advantages such as easier to convey sensitive messages in it, and can make respondents comfortable when discussing so that respondents are not embarrassed when telling their personal problems.

This research is in line with research conducted by Sari (2020) which shows there is an increase in knowledge on peer education methods. Another study that supports this research is research conducted by Harahap and Andayani (2019) showing that knowledge before and after in health education groups about tackling HIV/AIDS with peer education methods significantly increased with a p value of 0.000.

Health Education about HIV/AIDS with Audio Visual Method to the Level of Knowledge of Respondents

From the results of the pre-test, it shows that most respondents have a sufficient level of knowledge. So that this group also needs health education about HIV/AIDS to increase the knowledge of female students. While the post-test results show that there is an increase in knowledge, the number of respondents who have a good level of knowledge and there is a decrease in respondents who have a sufficient level of knowledge. These results show that there is a significant change in the level of knowledge even though there are still respondents who have less knowledge, so that the education provided can increase respondents' knowledge in the audio-visual group.

According to Notoatmodjo (2012), tools are called health education media because these tools are media to convey health information and these tools are used to facilitate the receipt of health messages for the public. There is an increase in the level of knowledge because respondents get information or knowledge through tools in the form of videos made by researchers. Videos are packaged attractively and using language that is easy to

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understand so that the information seen and heard is easily understood by the group. The video is played once for 20 minutes without any interaction between extension workers and groups, this can make respondents get bored quickly so naturally there are still respondents.

The results showed that the level of knowledge after being given health education with audio-visual methods increased the number of good knowledge levels and decreased the number of sufficient knowledge levels. From the results of the Wilcoxon test showed a signification value of 0.000 ($p < 0.05$) and a Z value of -4.978 which means that there is a significant difference in the level of knowledge of HIV/AIDS in female students before and after receiving health education with audio-visual methods. Changes in the level of knowledge are influenced by the factor of information obtained previously as well as in peer education groups.

Audio visual is a didactic group method where the target party is not given the opportunity to be active, and this method is useful in helping to stimulate vision and hearing (Shahariman in Egger et al, 1996). There is a difference in the level of knowledge of respondents because respondents get additional information or new knowledge through stimulation of vision and hearing from videos made by researchers so that respondents are enthusiastic about participating in education. Researchers argue that health education provided by audio-visual methods can attract the attention of respondents. This can be proven when the education takes place, respondents focus on seeing and hearing the presentation of the video given by the researcher, and the content of the information in the video is also easy to understand. This is in line with the research of Sulastri, et al (2012) that health education with audio visual further increases respondents' knowledge about BSE in efforts to detect early breast cancer because the use of video media has a more impact on health education, namely attracting target attention so that it can increase knowledge, influence public opinion, introduce new ways of life in the health sector and cover urban areas and rural communities.

According to Puspitarini (2021) the advantages of audio-visual methods include being able to attract the attention of respondents, with video vocal tape recording devices a large number of respondents can obtain information from experts / specialists, difficult demonstrations can be easily prepared and recorded, save time and recordings can be played repeatedly, loud weak sounds can be adjusted, presenters can set where to stop image movement, The room does not need to be darkened in the time of serving it. However, in the opinion of researchers, education with audio visual can make respondents bored quickly because there is no interaction between extension workers and respondents.

Analysis of the Effectiveness of Health Education on the Level of Knowledge of Young Women About HIV/AIDS

The effectiveness value of peer education methods and audio-visual methods was obtained by comparing the results of the Man Whitney test. From the results of Man Whitney's test between peer education methods and audio-visual methods that there is no significant difference between the use of health education peer education methods and audio-visual methods in increasing adolescent girls' knowledge about HIV/AIDS, but related to increasing knowledge of each method is different.

One of the factors that support the success of health education is the factor of the method used when education, the right method is very helpful in achieving efforts to change goals. The method used in peer education groups is the experiential group method where this group guarantees two-way communication between peer educators and groups, so that between peer educators and groups will be active and interactive. While the method used in the audio-visual group is the didactic group method where in this group respondents are not given the opportunity to be active and researchers direct targets to get information through the senses of sight and hearing (Shahariman in Egger et al, 2020).

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CONCLUSION

Based on the results of the study, it was concluded that there were differences in the level of knowledge of adolescent girls about HIV/AIDS before and after health education was carried out with peer wducation methods and audio-visual methods. Both methods are equally effective in increasing students' knowledge about HIV/AIDS.

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