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The Effect of Health Education Using the Think-pair-share Method on Adolescents' Knowledge and Attitudes Regarding HIV/AIDS Prevention

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ABSTRACT

Introduction: The incidence rate of HIV/AIDS among adolescents remains significantly high in the health sector. One contributing factor is the lack of knowledge and awareness among adolescents regarding the causes and prevention of HIV/AIDS. This study aims to determine the effect of health education using the Think-pair-share method on adolescents' knowledge and attitudes towards HIV/AIDS prevention in Karangtinggil Village.

Methods: This study used a pre-experimental design with a one-group pre-test and post-test approach. The study population included all 40 adolescents in Karangtinggil Village, selected through total sampling. Data were collected using a structured closed-ended questionnaire on knowledge and attitudes. After data tabulation, analysis was conducted using the Wilcoxon signed-rank test.

Results: Adolescents who had good knowledge about HIV/AIDS prevention increased from 10% to 85%, and respondents with positive attitudes increased from 32.5% to 95%. The statistical test showed a significance level of $p < 0.001$ (with a significance threshold of $p < 0.05$).

Conclusion: There is an influence of the think-pair-share method of health education on the level of knowledge and attitudes of adolescents regarding HIV/AIDS prevention in Karangtinggil Village.

Keywords: AIDS, Attitude, Health education, HIV, Knowledge, Safety (K3), Think-pair-share

INTRODUCTION

HIV (Human Immunodeficiency Virus) is a type of virus that attacks human white blood cells, causing a decrease in the body's immune system. Meanwhile, Acquired Immune Deficiency Syndrome (AIDS) is a collection of symptoms that arise due to a decrease in the body's immune system as a result of HIV infection. AIDS appears after the virus (HIV) attacks our immune system for five

to ten years or more. The spread of HIV among adolescents is a serious public health issue, especially in developing countries, including Indonesia. Data shows that adolescents are a group vulnerable to risky behaviors, such as unprotected sex, intravenous drug use, and a lack of understanding about HIV prevention (Rahman, 2023).

According to data from (WHO, 2021), living with HIV/AIDS worldwide in 2021. Meanwhile, the cumulative number of HIV cases in Indonesia reported as of March 2021 was 427,201. The number of reported AIDS cases was 1,677 (Kemenkes, 2021). As of 2022, HIV/AIDS cases were found in five provinces with the highest number of HIV cases based on 2022 data, one of which was East Java with a total of 71,909 HIV cases (PIMS, 2022). Lamongan Regency also experienced an increase in the 2016-2020 period, reaching a continuously rising number, namely 149 HIV and 24 AIDS cases (I Denny, 2024). Based on a preliminary study or initial survey conducted on December 15, 2024, through interviews with 10 adolescents encountered in Karangtinggil Village, Lamongan District, it was found that 6 adolescents (60%) did not understand HIV/AIDS, while 4 adolescents (40%) stated that HIV is a sexually transmitted disease caused by a virus due to promiscuity. From this data, it can be concluded that most adolescents in Karangtinggil Village still do not understand HIV/AIDS.

One of the main causes of this problem is the lack of effective educational programs on the level of knowledge and attitudes towards HIV/AIDS prevention among adolescents. Adolescents are a high-risk group for HIV/AIDS infection. This is due to their high curiosity and poor behavior, which makes them willing to take risks. In line with the research (Marshalita, 2020) Teenagers lack information about HIV/AIDS, coupled with behavioral changes that lead to negative things such as promiscuity and drug use, which are the most common causes of the spread 18 of the virus (Sumartini & Maretha, 2020). The impact of low knowledge and attitudes towards HIV prevention is enormous, both individually and socially. The lack of accurate and relevant information about HIV/AIDS, coupled with the curiosity of adolescents, has led them to become one of the populations with high-risk behavior. In addition, HIV/AIDS among adolescents not only has a negative physical impact but can also affect their mental health, emotions, economic status, and social well-being in the long term. As a result, HIV infection rates among adolescents are increasing, which has the potential to reduce their quality of life in the long term. Adolescents infected with HIV often face various challenges, both in terms of health, social, and psychological aspects, such as stigma, discrimination, and difficulties in undergoing long-term treatment (Tantri Arini, 2021).

There are several ways to prevent HIV/AIDS transmission according to the WHO, known as the ABCDE concept, namely: A (Abstinence): do not have sex outside of marriage, B (Be Faithful): be faithful to one sexual partner, C (Condom): using condoms during sex, D (Drug No): no drug use, E (Education): providing accurate education and information about HIV/AIDS, prevention methods, transmission, and treatment (Nurlindawati et al., 2023). From these

concepts, providing education or health education plays a very important role in increasing adolescents' knowledge and attitudes towards HIV/AIDS prevention. Good and positive awareness and knowledge of HIV/AIDS are very important for HIV/AIDS prevention (Zhang et al., 2022). One of the learning models that can be used in health education is the think-pair-share learning model. The think-pair-share learning model is a cooperative learning model that can create effective and enjoyable learning, reduce boredom levels , and provide motivation and improve learning outcomes (Darwis N, et al, 2024). Think-pair-share is a method that provides respondents with space to think, respond, and foster a spirit of mutual assistance within a group (Kertati, I, Et al, 2023). Think-pair-share learning encourages respondents to play an active role, where there is a process of thinking individually first (Think), followed by a discussion stage in groups after thinking individually (Pair), and finally sharing the results of the discussion with others (Share). The purpose of the Think-pair-share learning model is to give respondents time to think and respond so that they can improve their ability torespond to questions, foster a spirit of mutual assistance, and provide opportunities for respondents to work independently as well as collaborate with other respondents (Ni Putu, Et al, 2015).

Regarding the influence of health education on knowledge levels, the researchers concluded that the average knowledge level of respondents before receiving health education was 80.70. The average knowledge level of respondents after receiving health education was 84.00, indicating an increase in knowledge before and after receiving health education. There is an effect of health education on the knowledge level of Grade XII students at SMKS X Jakarta about HIV/AIDS (Nurlindawati et al., 2023). Research on counseling on adolescent knowledge and attitudes shows that health education can have a significant effect on current attitudes. This is because adolescents are very active in seeking information from various media, thereby increasing their knowledge and understanding of HIV/AIDS transmission (Fitriani et al., 2022). By optimizing the think-pair-share learning method in health education, it is hoped that adolescents will have better knowledge and a positive attitude towards preventing the spread of HIV/AIDS. Therefore, the researcher was interested in conducting research on "The Effect of Think-pair-share Health Education on Improving Adolescents' Knowledge and Attitudes Towards HIV/AIDS Prevention in Karangtinggil Village".

METHOD

This study is a quantitative study with a pre-experimental design using a one group pre test-post-test approach. This study was conducted from December 2024 to May 2025 in Karangtinggil Village, with a total population of 40 adolescents. This study used a total sampling technique with a sample of 40 adolescents. The independent variable in this study was health education using the think-pair-share method, while the dependent variables were knowledge and attitude levels. The research instrument used a questionnaire on knowledge and prevention attitudes adopted from the study (Nugrahawati, 2019). Before the treatment, respondents

were given a pre-test in the form of a questionnaire to measure their level of knowledge and attitude towards HIV/AIDS prevention. After that, they were given a one-time 90-minute intervention in the form of health education using the think-pair-share method, which consisted of activities such as taking notes and thinking (think), forming groups (pair), and paying attention to other respondents during the process of sharing opinions between groups (share). Following this, a post-test was conducted using a questionnaire to measure knowledge and attitudes toward HIV/AIDS prevention. The data obtained from the study were edited, coded, scored, and tabulated, then analyzed using the Wilcoxon test, and the results were presented.

RESULTS

Respondent Characteristics

Based on Table 1 above, the gender indicator shows that a small proportion (45%) of respondents were male and the majority (55%) were female. Furthermore, based on the age of the 40 adolescent respondents, 45% of adolescents were aged between 12 and 15, the majority (47.5%) were aged between 16 and 18, and a small proportion (7.5%) were aged between 19 and 21. Based on whether or not the respondents had received health education, 40% of adolescents had received health education, while the majority (60%) had not.

Knowledge and Attitude of Adolescents Before and After Being Given HIV/ AIDS Prevention Health Education

Table 2. shows that before being given health education on HIV/AIDS using the think pair share method, the results showed that a small proportion of adolescents (10%) had a good level of knowledge, 37.5% had an adequate level of knowledge, and the majority (52.5%) had poor knowledge. After being given health education using the think pair share method about HIV/AIDS, the results show that almost all (85%) have a good level of knowledge and a small portion (2.5%) have a poor level of knowledge.

Based on Table 2, it shows that before being given health education using the think pair share method about HIV/AIDS, the results showed that a small number of adolescents (32.5%) had good preventive attitudes, while the majority (67.5%) had poor preventive attitudes. After receiving health education on HIV/AIDS using the think pair share method, the results of the showed that almost all (95%) had a good attitude toward HIV/AIDS prevention, while a small portion (5%) had a bad attitude.

Table 1. Respondents Characteristics

Variables	n	(%)
Gender		
Male	18	45%
Female	22	55%
Age		
12–15 years	18	45%
16–18 years	19	47.5%
19–21 years	3	7.5%
HIV/AIDS Health Education		
Ever	16	40%
Never	24	60%
Total	**40**	**100%**

Table 2. The Knowledge and Attitude of Adolescents Before and After Being Given HIV/ AIDS Prevention Health Education

Variable	Category	Pre-Test		Post-Test	
		n	(%)	n	(%)
Knowledge	Good	4	10%	34	85%
	Fair	15	37.5%	5	12.5%
	Insufficient	21	52.5%	1	2.5%
Total		**40**	**100%**	**40**	**100%**
Attitude	Good	13	32.5%	38	95%
	Poor	27	67.5%	2	5%
Total		**40**	**100%**	**40**	**100%**

Table 3. The Effect of Think-Pair-Share Health Education on The Knowledge and Attitudes of Adolescents About HIV/AIDS Prevention

Variable	Category	n	Median (min-max)	Mean ± s.d	p value
Knowledge	Pre test	40	54(38-83)	57,88±11,813	0,000
	Post test	40	81(54-100)	82,10±8,348	
Attitude	Pre test	40	49(41-73)	49(41-73)	0,000
	Post test	40	74(50-89)	74(50-89)	

The Effect of Think Pair Share Health Education on The Level of Knowledge and Attitudes of Adolescents About HIV/AIDS Prevention in Karangtinggil Village.

Based on Table 3, it shows that the level of knowledge before being given think pair share media health education about HIV/AIDS prevention in Karangtinggil Village obtained a mean value of 57.88, which is sufficient with a minimum value of 38 and a maximum of 83. After the think pair share health education on HIV/AIDS prevention in Karangtinggil Village, the mean score was 82.10, which is good, with a minimum score of 54 and a maximum score of 100. The difference between the pre-test and post-test means was 24.22.

Meanwhile, the mean score for attitudes before the media think pair share health education on HIV/AIDS prevention in Karangtinggil Village was 51.38, which is considered adequate, with a minimum score of 41 and a maximum score of 73. After the media think pair share health education on HIV/AIDS prevention in Karangtinggil Village, the mean score was 72.85, which is considered good, with a minimum score of 50 and a maximum score of 89. The difference between the pre-test and post-test mean scores was 21.47.

Based on the results of the Wilcoxon signed rank test, p=0.000, where p so H1 is accepted, which means that there is an effect of think pair share media health education on the level of knowledge and attitudes of adolescents about HIV/AIDS prevention in Karangtinggil Village.

DISCUSSION

The level of knowledge of adolescents before being given health education using the Think-pair-share method on HIV/AIDS prevention in Karangtinggil Village

The results showed that 40 adolescents had a low level of knowledge before being given health education using the Think-pair-share method on HIV/AIDS prevention. Based on general data, most respondents were aged 16–18 years, which is the middle adolescence period that tends to show aggressive behavior and unstable emotions, thus affecting their ability to comprehend the material provided. HIV/AIDS prevention efforts include primary prevention through education to increase knowledge and skills related to HIV/AIDS, including providing information to reduce risk factors and prevent transmission of the disease (Munali, 2019).

Health counseling is a form of public health education, which aims to convey health messages to individuals, groups, or communities so that they gain better health knowledge and attitudes (Mulyawan, 2023).

This aligns with the theory that age is a factor influencing knowledge. As age increases, an individual's comprehension and thinking patterns develop, leading to enhanced knowledge acquisition. Health education among adolescents effectively improves knowledge. Prior to education, most adolescents had low knowledge levels, but after receiving health education, the majority achieved good knowledge categories. These findings confirm that health education plays an important role in increasing adolescents' knowledge about HIV/AIDS prevention (Devirya, 2022). Based on the above theory, adolescents' level of knowledge about HIV/AIDS prevention was still lacking before they were given health education using the think-pair-share method. Providing health education is very important to increase a person's knowledge; if a person is not given health education, their knowledge will not change.

Attitudes of adolescents before being given health education using the think-pair-share method on HIV/AIDS prevention in Karangtinggil Village

The results of the study show that 40 adolescents had poor attitudes before being given health education using the think-pair-share method on HIV/AIDS prevention. Based on the general data in Table 4.3, it shows that almost all of them had never received health education on HIV/AIDS prevention. This will affect a person's attitude towards the material presented, resulting in a poor attitude.

A person's attitude is influenced by various factors, such as personal experience, culture, people who are considered important, mass media, as well as educational and religious institutions. Nowadays, information is also very easy to obtain through the internet, so that adolescents can form attitudes based on various sources outside of teachers or educators. Attitudes are not always immediately apparent, but are usually interpreted from closed behaviors such as the way a person speaks, interacts, responds to problems, and shows concern for something. Attitudes are internal reactions that reflect tendencies to act, in the form of likes or dislikes towards something. As exposure to information

and experiences increases, a person's attitudes can change and develop, especially when receiving consistent education and supportive environmental influences (Prayitno & Bachrun, 2022).

This is in line with the previous theory that good knowledge will support good attitudes as well. Knowledge is also a factor that reinforces attitude change. Attitudes are evaluative statements about objects, people, or events. They reflect a person's feelings toward something. Attitudes may also result from behavior, but attitudes are different from behavior. Attitude is a tendency to take action towards an object in a way that indicates signs of liking or disliking the object. Attitude can also be interpreted as part of behavior. Attitude is always associated with behavior that is within reasonable and normal limits, which is a response or reaction to a stimulus (Aw et al., 2023).

Based on the above description, attitudes play an important role, especially among adolescents who have poor attitudes toward HIV/AIDS prevention. Attitudes help individuals understand various information that needs to be applied in daily life.

The level of knowledge of adolescents after being given health education using the Think-pair-share method on HIV/AIDS prevention in Karangtinggil Village

The results of the study show that 40 adolescents who received health education using the Think-pair-share method on HIV/AIDS prevention experienced a change from previously having low knowledge levels to almost all having good knowledge levels. The change in adolescents' knowledge levels about HIV/AIDS prevention through health education using the Think-pair-share method is because the information provided can increase adolescents' knowledge about HIV/AIDS prevention, thereby helping to form healthy and clean living habits. Based on research conducted (Studi et al., 2025). The TPS method makes the learning process more active and less boring because it provides opportunities for respondents to work independently and collaboratively. The goal is to improve the ability to respond to questions, foster a spirit of mutual assistance, and encourage active involvement in the learning process (Andi Sulistio & Nik Haryanti, 2022).

The researchers assumed that after providing health education using the think-pair-share method, knowledge about HIV/AIDS prevention would increase. This was supported by the study (Bintang & Susanti, 2024) in which the researchers concluded that health education or counseling had a significant effect on the level of knowledge among teenagers at SMA N 2 Batam. The more information adolescents obtain about HIV/AIDS, the lower the rate of HIV transmission among adolescents, so it is hoped that adolescents can participate in HIV/AIDS prevention, starting with participating in health counseling or health education programs.

Health education using the think-pair share method on HIV/AIDS prevention can influence the knowledge of adolescents in Karangtinggil Village, thereby increasing their knowledge of HIV/AIDS prevention. Knowledge helps a person understand something that brings various information that needs to be applied in daily life.

The attitudes of adolescents after being given health education using the think-pair-share method on HIV/AIDS prevention in Karangtinggil Village

The results of the study show that 40 adolescents who were given health education using the think-pair-share method on HIV/AIDS prevention experienced a change. Previously, almost all of them had a bad attitude, but now almost all of them have a good attitude. This technique encourages respondents to think individually (Think), then discuss it in small groups (Pair), and finally share the results of the discussion with other groups (Share). The TPS method makes the learning process more active and less boring because it provides opportunities for respondents to work independently and collaboratively. This is in line with research showing that after receiving health education at youth health posts, people's attitudes changed for the better.

The results of this study are in line with the theory explained by (Notoatmodjo, 2019), which states that someone with a good attitude will practice good behavior, and to turn an attitude into a real action or behavior, supporting factors or conditions are needed, including: facilities, infrastructure, and support from others. This aligns with the research findings, where after the intervention, both attitude scores and practice scores increased.

It can be concluded that the results of the above research are in accordance with the theory proposed by Nototmodjo that a person with a good attitude will embody good practices and that in order to embody an attitude so that it becomes a change in attitude and concrete action, supporting factors or conditions are needed, namely: facilities, infrastructure, and other support. This is in accordance with the research, where, after being given health education using the think-pair-share method, attitudes towards HIV/AIDS prevention improved.

The effect of think-pair-share health education on the level of knowledge and attitudes of adolescents about HIV/AIDS prevention in Karangtinggil Village

The results of the study show that before being given health education using the think-pair-share method, the majority of adolescents had poor knowledge and attitudes about HIV/AIDS prevention, and after being given health education using the think-pair share method, the majority of adolescents had good knowledge and attitudes about HIV/AIDS prevention.

The Think-Pair-Share (TPS) health education method is a type of cooperative learning designed to influence the interaction patterns of respondents (Zaidah & Hidayatulloh, 2024). Think-pair-share (TPS) is a type of cooperative learning designed to influence the interaction patterns of respondents (Andi Sulistio dan Nik Haryanti, 2022). The increase in knowledge in this group was influenced by the high enthusiasm of the respondents during the counseling session using leaflets. Leaflets have the advantage of being practical, economical, easy to understand, and allowing participants to learn independently in a more relaxed manner. The results of this study are in line with the findings of Asrina et al. (2023) who stated that leaflets as a health education medium have a significant effect on increasing knowledge related to

sexually transmitted infections or HIV/AIDS.

Based on the results of the research and the theoretical concepts above, it can be seen that think-pair-share media health education has a significant effect on adolescents' knowledge and attitudes regarding HIV/AIDS prevention. This is because think-pair-share health education can provide experiences that influence the level of knowledge and attitudes regarding HIV/AIDS prevention. In addition to health education, support from the surrounding environment, ranging from health workers to peers, also influences the level of knowledge and attitudes regarding HIV/AIDS prevention.

CONCLUSION

Based on the results of the research conducted by the researcher in May 2025, the following conclusions can be drawn: Before being given health education using the Think Pair Share method, more than half of the adolescents in Karangtinggil Village had insufficient knowledge and attitudes related to HIV/AIDS prevention. After the intervention, almost all adolescents showed improvement with good levels of knowledge and attitudes. Thus, there was a significant effect between before and after the provision of health education using the Think Pair Share method on the improvement of adolescents knowledge and attitudes in HIV/AIDS prevention. This study is expected to help the nursing profession develop and become more respected, as it can provide input on the application of the Think Pair Share health education method to improve adolescents knowledge and attitudes about HIV/AIDS prevention. In addition, this study can also provide insight for the nursing profession in applying research methodology related to health knowledge, communication, and biology.

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