Development of Reproductive Health Knowledge and Attitudes in Adolescents in Palu City Through Education Programs

[1]Hamidah, [2]Bakhrani A. Rauf, [3]Nurlita Pertiwi

[1]Doctoral Student of Population and Environmental Education Postgraduate Program, Universitas Negeri Makassar, Makassar, Indonesia
[2,3]Department of Population and Environmental Education, Universitas Negeri Makassar, Makassar, Indonesia

***Abstract*—Reproductive health education is one of the essential programs in achieving population quality. Researchers implemented an educational program for adolescents aged 13-15, as many as 100 people in Palu City. The educational program includes four materials: reproductive organs, puberty, infectious disease infections and HIV/AIDS. Researchers conducted experiments with the one-group *pretest-posttest* design method. The results of the study show that educational programs contribute to increasing adolescents' knowledge of reproductive health. Furthermore, this program also increases the attitude of adolescents toward the prevention of infectious diseases related to reproductive health and the prevention of HIV/AIDS.**

***Keywords*—knowledge, attitude, students.**

I. INTRODUCTION

The youth generation that determines the nation's future has the broadest possible rights and opportunities to grow and develop optimally. The government and society must protect adolescents from various health problems to fulfil these rights. Physical and psychological changes occur drastically during puberty, causing the risk of emotional disturbances. Therefore, adolescents must develop their knowledge about these changes so that social development does not experience serious troubles. One form of these disorders is reproductive healthReproductive health problems in adolescents broadly impact various aspects of life. However, the main obstacle to reproductive health education is the limited ability of parents to provide education and cultural prejudices [1]. As a result, students generally receive reproductive health information from their peers in their neighbourhood and at school. They only receive information that is not educational, so their understanding of the risks and impacts of reproductive health care is minimal [2][3]. With these facts, the incidence of infectious diseases that interfere with the reproductive organs of young women increases. In the long term, contagious diseases cause infertility and the incidence of ectopic pregnancy[4]. Unfortunately, the number of people living with HIV is increasing sharply [5]. In 2019, WHO data showed that more than 70 million people were infected with HIV, and around 35 million people have died from HIV. Even data from the Ministry of Health for 2020 shows that the percentage of people with HIV in Indonesia aged 15-19 years is 2.7 per cent.

Several studies have shown that adolescents' knowledge of reproductive health influences their experiences in premarital sexual intercourse [6]. In addition, the high percentage of early marriages in Indonesia is also a health problem. Supported by the results of research conducted, this lousy condition must be anticipated through education about adolescent reproductive health. Adolescence is one of the stages in human life. This stage is a crisis stage because it is a transitional stage from childhood to a period of several things that can be a risk factor for adolescent sexual activity, namely the lack of parental supervision and the low knowledge of adolescents about sexuality [7][8]. According to the characteristics of their sexual development, adolescents generally develop sexual behaviour through heterosexual relationships or dating. Their developmental tasks, namely, also influence the formation of heterosexual relationships. Adolescents begin to form new relationships with the opposite sex.

Teenagers are residents aged 10 to 19 years, which at that time was associated with the transition from children to adults. This period is a period of preparation for adulthood which will pass through several stages of development in life. In addition to physical and sexual maturity, adolescents also experience stages towards social and economic independence, building identity, acquiring abilities (skills) for adult life and the ability to negotiate (abstract reasoning) [9].

II. RESEARCH METHOD

This experimental research involved 100 adolescents aged 12 to 15 years or currently studying at junior high school. The education program takes place in four meetings, including pretests, explaining the material, giving modules and final evaluation. Educational materials in this program are 1) Reproductive organs, 2) Puberty, 3) Sexually transmitted diseases and 4) HIV/AIDS. Evaluation of the program's effectiveness through two stages, namely testing the increase in knowledge and attitudes of adolescents on reproductive health and testing the difference between the results of the pretest and posttest. The first test used the Paired sample T-test method, and the second used the One-Way ANOVA method. Both tests use the SPSS-21 program.

III. Result and Discussion

1. Description of the Reproductive Health Education Model for Adolescents in Palu City

The description of the material contained in this research module is presented in Table 1.

Table 1 Description of Research Materials

No	Topic	Description	Sub Description
1.	Reproduction system	Material on the reproductive organs are the parts in the female and male reproductive organs.	a. The material presented is part of the reproductive organs in men and women, the internal and external reproductive organs. b. How to maintain and care for the reproductive organs in men. c. How to maintain and care for the reproductive organs in women.
2.	Puberty	The material provided is about the changes in adolescent boys and girls.	a. Physical puberty occurs both primary and secondary. b. Puberty characteristics
3.	Sexually transmitted infections (STIs)	STIs are infections passed from person to person through sex or genital contact.	a. Causes of STIs b. Symptoms that can appear due to sexually transmitted diseases c. STI prevention
4.	HIV/AIDS	HIV is the abbreviation for Human Immunodeficiency Virus. This virus attacks the immune system and weakens the body's abilities.	a. Causes of HIV/AIDS b. Spread of HIV/AIDS c. Prevention of HIV/AIDS

2. Subject of Experimental

The subjects in this study were students at two private junior high schools in Palu City. One hundred students are willing to become research subjects with the following age distribution.

Table 2 Age Distribution of Respondents

Age	Gender	Number of Respondents
13 years old	Man	2
	Woman	24
14 years old	Man	19
	Woman	28
15 years old	Man	10
	Woman	17

3. Increasing knowledge and attitudes of adolescents on reproductive health before and after the implementation of the education program

Adolescent knowledge about reproductive health includes factual, conceptual and procedural aspects. The test was carried out using the paired sample t-test or comparing two paired data. The assessment results of adolescent knowledge assessment before implementing the program are presented in Table 3.

Table 3 Categorization of Adolescent Knowledge Before the Education Program

Category	Interval	Frequency	Percentage
Very low	0 - 0.19	4	4%
Low	0.2 - 0.39	28	28%
Currently	0.4 - 0.59	60	60%

Tall	0.6 - 0.79	8	8%
Very high	0.8 - 1.0	0	0%
Amount		**100**	100%

Based on Table 3, adolescent knowledge tends to be in the medium category, with a percentage of 60%. The table illustrates that the lack of information about reproductive health and sexually transmitted diseases will impact adolescents' physical and mental health. So that by providing counselling about reproductive health that is correct will help adolescents take responsibility for their reproductive health. After implementing the educational program, an increase in students' knowledge of reproductive health was found (Table 4).

Table 4 Categorization of Adolescent Knowledge After Education

Category	Interval	Frequency	Percentage
Very low	0 - 0.19	0	0%
Low	0.2 - 0.39	0	0%
Currently	0.4 - 0.59	0	0%
Tall	0.6 - 0.79	8	8%
Very high	0.8 - 1.0	92	92%
Amount		**100**	100%

The research experiment was carried out through the lecture method and by giving modules to the participants. The results of the pretest and posttest knowledge of adolescents are presented in Table 5.

Table 5 Description of Youth Knowledge Before and After the Education Program

Result Test	***Pretest***	***Post Test***
Min	0.143	0.748
Max	0.676	1.000
Mean	0.436	0.834
Std. Deviasi	0.138	0.061

Based on the results of tests of adolescents' knowledge of reproductive health, it was shown that the average pretest knowledge of adolescents was 0.436, while the intermediate posttest knowledge of adolescents was 0.834. A comparison of the mean difference values shows that the average ability of adolescents after the education program is higher than before the education program, with an average value difference of 0.398. The description means that after being given counseling and providing printed modules, it will increase adolescents' knowledge about reproductive health.

Furthermore, adolescent attitudes about reproductive health cover three aspects: cognitive, affective and conative. The description of the results of testing students' attitudes towards reproductive health before implementing the educational program is revealed in Table 6.

Table 6 Categorization of Adolescent Attitudes Before the Education Program

Category	Interval	Frequency	Percentage
Very low	0 - 1.7	4	4%
Low	1.8 - 2.5	2	2%
Currently	2.60 - 3.39	35	35%
Tall	3.4 - 4.19	35	35%
Very high	4.20 - 5.0	24	24%
Amount		**100**	100%

The application of education to students contributes to improving student attitudes, and students tend to realize that maintenance of reproductive hygiene and prevention of diseases of the reproductive organs must be carried out intensively. The recapitulation of the results of the student attitude assessment is listed in Table 7.

Table 7 Categorization of Adolescent Attitudes After Education Programs

Category	Interval	Frequency	Percentage
Very low	0 - 1.7	0	0%
Low	1.8 - 2.5	0	0%
Currently	2.60 - 3.39	0	0%
Tall	3.4 - 4.19	20	20%

Very high	4.20 - 5.0	80	80%
Amount		**100**	100%

Table 8 Description of Student Attitudes Before and After the Education Program

Result Test	***Pretest***	***Post Test***
Min	1.592	4.075
Max	4.242	4.450
Mean	3.401	4.399
Std. Deviasi	0.200	0.080

Based on the results of tests on adolescent attitudes towards reproductive health, it was shown that the pretest scores for adolescents were 3,401 while the average posttest scores for adolescents were 4,399. A comparison of the mean difference values shows that the moderate attitude of adolescents after the education program is higher than before, with a difference of 0.998. The analysis means adolescents' attitudes about reproductive health have increased after being given counselling and providing printed modules.

Hypothesis testing is done by using the Paired Sample T-Test or comparing the similarity of two paired data. The test results of adolescents' knowledge and attitudes towards reproductive health found that the sig value was 0.000. The test results indicate a significant difference between students' knowledge before and after being given treatment. Thus, the educational program increases the knowledge and attitudes of adolescents. This educational program impacts increasing adolescent knowledge in maintaining reproductive health and preventing diseases of the reproductive organs. In addition, adolescents tend to avoid the risk of transmission of infectious diseases and HIV-AIDS after receiving educational programs.

The study results show that reproductive health education programs impact the community's quality of life. The results of this study are supported by Dongarwar and Salihu [10] that comprehensive sexual and reproductive health education and counselling can be carried out to prevent the risk of decreasing the quality of public health. Low adolescent literacy regarding sexual and reproductive health is a risk factor for teenage pregnancy. These risks will impact the quality of life of future generations. The expression of the importance of reproductive health education for adolescents is also revealed in the article that adolescents need more comprehensive dissemination of sexual and reproductive health information. Adolescents' knowledge of the risks of disease related to reproductive health will impact their decisions in disease protection and decrease their quality of life [11]. Reproductive health education with intensive assistance can improve adolescent attitudes towards pregnancy prevention. By developing an educational model and involving professional instructors, educational programs for high school students can run effectively [12].

IV. Conclusion

Reproductive health education programs for adolescents are effective in increasing adolescents' knowledge and attitudes about self-protection from infectious diseases. The program has been proven to increase youth's knowledge about reproductive organs, puberty, infectious disease infections and HIV-AIDS. With this knowledge, adolescents have the attitude to maintain their health and prevent behaviour that impacts the causes of contagious diseases and HIV-AIDS.

References

[1] I. Ezhova, L. Savidge, C. Bonnett, J. Cassidy, A. Okwuokei, and T. Dickinson, "Barriers to older adults seeking sexual health advice and treatment: a scoping review," *Int. J. Nurs. Stud.*, vol. 107, p. 103566, 2020.

[2] V. Vongxay *et al.*, "Sexual and reproductive health literacy of school adolescents in Lao PDR," *PLoS One*, vol. 14, no. 1, p. e0209675, 2019.

[3] F. M. Cowan, "Adolescent reproductive health interventions," *Sexually Transmitted Infections*, vol. 78, no. 5. The Medical Society for the Study of Venereal Disease, pp. 315–318, 2002.

[4] M. Vichnin, "Ectopic pregnancy in adolescents," *Curr. Opin. Obstet. Gynecol.*, vol. 20, no. 5, pp. 475–478, 2008.

[5] T. Solehati, I. Pramukti, A. Rahmat, and C. E. Kosasih, "Determinants of Adolescent Reproductive Health in West Java Indonesia: A Cross-Sectional Study," *Int. J. Environ. Res. Public Health*, vol. 19, no. 19, p. 11927, 2022.

[6] D. P. Nursanti, E. P. Kumalasari, A. Setyaningsih, J. Siekmans, and V. Wabeke, "Analysis of Adolescent Reproductive Health Knowledge on Premarital Sexual Attitude," *J. Qual. Women's Heal.*, vol. 5, no. 2, pp. 189–194, 2022.

[7] J. C. Coleman, "The nature of adolescence," in *Youth Policy in the 1990s*, Routledge, 2022, pp. 8–27.

[8] V. Chan, J. Moore, J. Derenne, and D. C. Fuchs, "Transitional age youth and college mental health," *Child Adolesc. Psychiatr. Clin.*, vol. 28, no. 3, pp. 363–375, 2019.

[9] J. Wu, G. Snell, and H. Samji, "Climate anxiety in young people: a call to action," *Lancet Planet. Heal.*, vol. 4, no. 10, pp. e435–e436, 2020.

[10] D. Dongarwar and H. M. Salihu, "Influence of sexual and reproductive health literacy on single and recurrent adolescent pregnancy in Latin America," *J. Pediatr. Adolesc. Gynecol.*, vol. 32, no. 5, pp. 506–513, 2019.

[11] I. Ajzen, "The theory of planned behavior," *Organ. Behav. Hum. Decis. Process.*, vol. 50, no. 2, pp. 179–211, 1991.

[12] I. Yakubu, G. Garmaroudi, R. Sadeghi, A. Tol, M. S. Yekaninejad, and A. Yidana, "Assessing the impact of an educational intervention program on sexual abstinence based on the health belief model amongst adolescent girls in Northern Ghana, a cluster randomised control trial," *Reprod. Health*, vol. 16, no. 1, pp. 1–12, 2019.