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The effectiveness of peer educators and guidance counselling teachers to the knowledge of reproductive health

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ABSTRACT

Adolescence is the most vulnerable period to reproductive health problems. These problems include early pregnancy, unsafe abortion, sexually infections transmitted (STIs) including the human immunodeficiency virus (HIV), sexual abuse. Access for sexuality education and reproductive health services to comprehensive and youth-friendly was limited. This study aims to determine the effectiveness of peer educators and guidance and counselling teachers in adolescent reproductive health level of knowledge. This is a quantitative study with a quasi-experimental nonequivalent control group design with treatment groups using peer educators and teacher as control groups. The sample size was 70 respondents. Data was collected by questionnaire that already had validity and reliability test. Data analysis used univariate, t-test and logistic regression. The results of this study showed that the provision of information was more effective through guidance conselling teachers (p=0.000, exp B=14.5). This study recommends that improve adolescents' reproductive knowledge need to optimize the role of guidance and counseling teachers in providing information.

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1. INTRODUCTION

Adolescents were a population in the age range of 10-19 years according to the World Health Organization (WHO) which is estimated to be nearly 1.2 million worldwide. In some countries the proportion of adolescents is almost 25% of the total population [1]. In 2018 there were an estimated 12.8 million births among adolescent girls aged 15–19 years, representing 44 births per 1,000 adolescent girls. Adolescent Birth Rates are lowest in high-income countries (12 births per 1,000 adolescent girls) and highest in low-income countries (97 births per 1,000). Indonesia was the 37th country with a high percentage of young marriage and is the second highest in Association of Southeast Asian Nations (ASEAN) after Cambodia. The adolescent birth rates were very high in Indonesia, at 48.0 per 1,000 women in 2010. Child marriage often leads to childbirth at a young age, which can endanger the safety of both mother and baby [2]. Pregnancy and childbirth complications are estimated to be the leading cause of death among 15-19-year-old girls worldwide. Adolescents aged 15-19 years have greater maternal health risks than women just a few years older [3].

Adolescence was the vulnerable periode to reproductive health problems. These problems include early pregnancy, unsafe abortion, sexually infections transmitted (STIs) including the human immunodeficiency virus (HIV), sexual abuse. The proportion of women aged 15 to 19 who gave birth in Indonesia also increased from 9% in 2007 to 10% in 2012. Many young people initiate sexual activity during

adolescence. Boys are more likely to have ever had sex than girls. Data on adolescent sexual experiences, it is known that male adolescents who have had sexual intercourse are higher (8%) than female adolescents (2%) [4]. Sexual intercouse during the adolescence related to pornograph access [5]. A study in 2020 stated that there was a significant relationship between gender with pornographic access behavior (p-value 0.001). Males have a higher percentage to access pornography than females [6].

Health risks to adolescent girls need attention. The agreement of United Nations Children's Fund (UNICEF) and United Nations Fund for Population Activity (UNFPA) as well as WHO on health adolescent reproductive in 1989, that there is a need for efforts to solve adolescent health problems as a transition period from adolescence to adulthood. In this period, it is quite crucial, considering that adolescence is a process of physical, psychological and changes behavioral that greatly affect the health status of adolescents. The efforts to solve adolescent health problems is providing quality education and reproductive health services for adolescent [7].

Youth and young people access for sex education and reproductive health services to comprehensive and youth-friendly was limited therefore, adolescents' reproductive health knowledge was still low. Data showed that most of adolesccents had little or no understanding about adolescent reproductive health. The above points indicate the importance of education to prevent reproductive health problems. Reproductive health services need to available in the community. These include health education, counselling, and provision of contraceptive services [8]. Meanwhile, reproductive health education in Indonesia was generally carried out in the form of counseling by institutions outside of schools, such as the National Population and Family Planning Agency (BKKBN) and Indonesian Family Planning Association (PKBI). Research shows that adolescents in developing countries are in dire need of education reproductive health. There was an influence of health education on adolescent knowledges and attitudes about reproductive health [9].

The majority of girls said they communicated menstruation to their friends compared to their mothers or fathers. About 37.3% of adolescent girls have low knowledge about menstruation. The role of friends is very important in providing information to adolescents. Other research stated that the delivery of health education reproductive by a peer group with five days of peer sessions could increase knowledge on health reproductive. There were observable positive changes in views and opinions of the respondents on STIs and HIV, HIV anti-stigma and the use of condoms [10], [11]. Other studies have shown that school-based healthcare in adolescent sexual, reproductive, and mental health is very effective. However, to be more effective, it still requires continuity of services in the family and community. School-based sexual and reproductive health is the best alternative to get more adolescents in providing sexual and reproductive health information [12].

There had been several studies that prove that peer education is a method an effective for adolescents. A systematic review showed that using peer education could enhance the knowledge, attitude, practice, self-efficacy, positive behavior of adolescents toward health issues and as a result, it will promote the adolescent health. Other reseach showed that peer education can increase the average score before and after the intervention for knowledge and attitudes of adolescents about reproductive health. Peer education was associated with 36% decreased rates of HIV infection among overall high-risk groups (OR: 0.64; 95%, CI: 0.47–0.87). Peer education can promote HIV testing, condom use, and unprotected sex. Time trend analysis revealed that peer education had a consistent effect on behavior change for over 24 months [10], [13]. Several previous studies have shown peer educators increase knowledge in adolescent girls. However, there is no comparison between the increase in knowledge about reproductive health by peers and another trained person in this case is the counseling teacher. The purpose of this study is to know the effectiveness of peer educators and guidance counselling teachers in adolescent reproductive health level of knowledge.

2. RESEARCH METHOD

This research was a quantitative study with a quasi-experimental design nonequivalent control group design. The treatment group were respondents who were given information and assistance through peer educators. The second group as the control group were respondents counseling who were given information by the teacher four times for three months.

This study was to determine the effectiveness of peer educators on the level of reproductive health level of knowledge of females adolescent ofe senior high school grade XI. The approach to this research is a behavioral science approach so that in this study an approach is used according to the Procede Precede theory [14]. In this study, what was examined was the change in the level of knowledge of high school students after being given information about adolescent reproductive health by providing information by peer educators as the treatment group and providing information by the guidance and counselling teacher as the control group. Both of groups used the same module of adolescents' reproductive health.

The 35 samples were obtained according to Lemeshow for each treatment group, so that the total sample size was 70 people [15]. The inclusion criteria in this study were: i) Students living with parents were identified from interviews; ii) Have a mobile phone that can be used to access information known from interviews; and iii) Students who are willing to become respondents and willing to be given treatment and sign an agreement after the explanation. The exclusion criteria in this study were students who did not take the pre test or post test or did not receive information from peer educators or counseling teachers.

Measurement of the pre and posttest knowledge level using a questionnaire. The questionnaire was about reproductive health such as anemia also HIV. First step was pretest and the next step the two groups were given intervention in the form of increased knowledge by peer educators as the group treatment and by the counseling teacher as the control group. And the last step was post test witsh the same queastionnare as pre test. The analysis used were univariate, bivariate and multivariate. Ethical clearance this study was obtained from Ethical Commitee Poltekkes Kemenkes Yogyakarta No. e-KEPK/POLKESYO/0101/V/2019.

3. RESULTS AND DISCUSSION

3.1. Respondent's characteristics

This research respondents was senior high school students (class XI). Respondents' characteristic based on participation of organizations inside and outside school, parents' education, parents' income, frequency interaction to peer and teacher and number of sources of information as well as homogenity of the two research groups. The age range of the respondents was 15-17 years. Hence, the largest group age was 16 years (81.4%).

Based on Table 1, it is known that the most of the respondents attended organizations school both in the experimen group (57.1%) and the control group (62.9%). For participation in organizations outside of school the proportion differed in the two study groups. The largest proportion of the level education of the respondent's father is secondary education (48.6%) for the experiment group and 42.9% for the control group. However, for the control group the proportion of high school education is the same as middle school. Maternal education is mostly secondary education, both in the experiment group (54.3%) and the control group (51.4%).

The proportion of the respondent's parents' income is also the majority more than index in each regency. The number of sources of information on adolescent reproductive health majority >7 sources. The majority of sources of information are through television, the internet, teachers and friends. Frequency interaction for peer majority is not in accordance with the program in the study as 12 times interaction for (65.7%) and teachers was in accordance with the program (97.1%).

Table 1. Frequency distribution of respondents

Variable	Experimen/Peer		Control/Teachers		Homogenity
	N	%	n	%	
Participation of organizations in schools					
No	15	42.9	13	37.1	0.624
Yes	20	57.1	22	62.9	(homogen)
Participation of organizations outside school					
No	16	45.7	19	54.3	0.473
Yes	19	54.3	16	45.7	(homogen)
Father's education					
Basic	5	14.3	5	14.3	0.875
Intermediate	17	48.6	15	42.9	(homogen)
High	13	37.1	15	42.9	
Mother's education					
Basic	5	14.3	7	20	0.815
Intermediate	19	54.3	18	51.4	(homogen)
High	11	29.4	10	26.6	
Parents' income					
<index	12	34.3	9	23.7	0.434
≥index	21	65.7	24	74.3	(homogen)
Number of information sources of adolescent reproductive health (ARH)					
<7	11	29.4	11	29.4	1.000
≥7	22	68.6	22	68.6	(homogen)
Interaction frequency with peer/teacher					
<12	21	65.7	1	2.9	
12	12	34.3	34	97.1	

3.2. Adolescents' reproductive health knowledge

The level of knowledge about reproductive health in the pre-test of both the experiment and the control groups was devide in two categories. The first category was good knowledge level for >76% rights answer. The second category was poor knowledge level for less than 76% rights answer.

Table 2 shows that the level of knowledge about reproductive health in pre-test both groups were poor category. In experiment group was 77.1% and 82.9% in the control group. Different with the pre test, post stest showed that poor category in experiments grup 88.6%, while in the control group the proportion of the level of knowledge poor category was decrease up to to 34.3%.

Table 2. Frequency distribution of knowledge level about adolescents' reproductive health pre dan post test in two groups

Variable	Experiment/Peer		Control/Teachers	
	n	%	n	%
Level knowledge pre test				
Poor	25	77.1	27	82.9
Good	8	22.9	6	17.1
Level knowledge post test				
Poor	29	88.6	12	34.3
Good	4	11.4	21	65.7

3.3. Bivariate analysis

Bivariat analysis used for analysis sources of information, participation of organizations inside and outside of school, and the number interaction to adolescent reproductive health knowledge after treatment. Bivariate analysis were done for each independent variable with the dependent variable. P-value <0.05 was used to consider the associated variables.

In Table 3, it showed that provision of information on adolescent reproductive with a value of p=0.000. The number of sources of information with a value of p=0.430. The participation of respondents in school organizations with value p=0.086, and for participation in non-school organizations and p=0.688. Bivariate analysis showed that the level of knowledge after treatment with a value of p=0.007.

Table 3. Bivariate analysis

Variable	Knowledge levels				p-value
	Poor		Good		
	n	%	n	%	
Research group					
Peer	29	88.6	4	11.4	0.000
Teachers	12	34.3	21	65.7	
Total	43	61.4	25	38.6	
Information sources					
<7 sources	15	68.2	7	29.8	0.430
>7 sources	26	58.3	20	41.7	
Total	43	61.4	25	38.6	
Participation of organizations outside of school					
No	18	51.4	17	48.6	0.086
Yes	23	71.4	10	26.6	
Total	43	61.4	25	38.6	
Participation of organizations in schools					
No	18	64.3	10	35.7	0.688
Yes	23	59.5	17	40.5	
Total	43	61.4	25	38.6	
Interaction frequency with peer/teacher					
<12 times	20	83.3	4	16.7	0.007
12 times	21	50	21	50	
Total	43	61.4	25	38.6	

3.4. Multivariate analysis

The variables with p-value <0.23 were analyzed for multivariate analysis. Logistic regression was used for multivariate analysis. The final results of the multivariate analysis are presented in Table 4. The results of multivariate analysis in Table 4 shows that providing information by guidance and counselling teachers is increase respondents' knowledge about adolescent reproductive health with a value of p=0.000 with an exp B of 15.480. Adolescence is period of transition from chidhood to adulthood, during which there

is rapid growth, including reproductive functions, so that it affects changes developmental, both physical, mental, and social roles [1]. Lack of knowledge is alleged to be one of the causes of risky sexual behavior in adolescents [16], [17]. It is necessary to provide information about reproductive health to adolescents as an effort to prevent risky behavior in adolescents. Previous study stated that the positive impact of getting the right information and knowledge about reproductive health is able to prevent premarital sex behavior, unwanted pregnancy, human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), and STIs [18].

Table 4. Analysis of multivariate factors related to the level of knowledge of adolescent reproductive health after treatment

Variable	Sig.	Exp(B)	95.0% C.I.for EXP(B)	
			Lower	Upper
Information about reproductive health	0.000	15.480	4.242	56.225
Participation of organizations outside of school	0.117	0.383	0.115	1.251

In this study, the provision of information on adolescent reproductive health was carried out by peer counselors and guidance counseling teachers. The improvement of adolescent reproductive health can be seen from the knowledge about HIV, anemia among high school female students. Some studies had shown peer educator are effective at increasing knowledge about HIV in adolescents [19], [20]. A previous systematic review stated that improving knowledge of transmission routes with peer-based educational interventions seems to be particularly effective. The studies demonstrated significantly higher knowledge of sexual transmission of HIV among the intervention group having administered peer-education interventions [21].

In this study, it shows that the provision of information about health reproductive to adolescents statistically shows significance with a value of p=0.000. The frequency of interaction is also significant with p=0.007, where the number of interactions that are not in accordance with this research program has a proportion of the level of knowledge that is less than those more frequent interaction to the peer and teacher according to this research program. Learning about sex and reproductive health from peers and teachers is associated with adolescents' positive beliefs about having risky behavior which in turn are associated with their engagement in those same behaviors. Adolescents who frequently communicate with their friends and teachers about sex hold more positive expectancies about the social benefits and pleasure associated with sex, and are less likely to have expectancies about risk behavior [22].

The control group (teachers) is more optimal in guidance and counseling providing information to respondents, as same as previous study that school-based healthcare in adolescent sexual, reproductive, and mental health is very effective even though in this case the role of teachers is more effectively disseminated. with the peer role It is possible that a different approach is used between the teacher and the peer. Guidance counseling teachers also have as professionals who have the capacity to provide information about adolescent health [23]. School-based sex education plays a vital role in the sexual health and well-being of young people. Topics of reproductive health education can be addressed successfully across the curriculum is encouraging and offers much needed flexibility to schools, both in terms of available time and talented teachers to tackle difficult and important topics [24].

Sources of information about reproductive health for adolescents are from school books, television, teachers, friends and parents in the order same the previous study. The dissemination of reproductive health information is needed to help adolescents gain insights on decision making toward positive reproductive health and protect them from reproductive health risks [25]. Teachers had an important role in increasing knowledge of Adolescent Reproductive Health in their students [26]. Adolescent Reproductive Health Education by teachers is an effort to address student reproductive health problems. Teachers had a major role in the world of education, this is because teachers interact directly with students in providing education. The importance of teachers´ competence its effect on student learning. In general, research has indicated that specific cognitive abilities and personality characteristics determine to what extent teachers can be effective in delivering high quality instruction [27]. Education was shown to be a factor associated with HIV awareness as adolescents with at least a primary education reported high levels of HIV awareness compared to those without any formal schooling. Young adolescents with adequate HIV knowledge will most likely know how to protect themselves and are less likely to stigmatize those infected or affected as the survey observed that stigmatizing tendencies were low among young adolescents with comprehensive HIV knowledge. Schools as sources of HIV information [AOR=8.06, 95% C.I (1.70–38.33), p<0.001] was associated with comprehensive HIV knowledge [28]. The other studies, many adolescents lack knowledge of STIs other than HIV. About 55.9% did not know about STIs. While in the multivariate analysis being in

school was significant positive correlates of STI knowledge [11]. Other reseach showed that parents and teachers found the idea of screening for STIs in adolescent girls to be acceptable, and were comfortable with research staff contacting girls through informational meetings at schools [29].

The participation of organizations and information sources does not significant to level of knowledge of adolescents. Other study showed that there was no difference in the level of knowledge and attitudes of students about adolescent reproductive health based on participation in the adolescent information and counseling center (PIK-R) program [30]. Nevertheless, another study stated that there is relationship between the use of PIK-R and knowledge of reproduction in adolescents [31]. It is important to identify the characteristics of youth in terms of organizational participation. This is related to environment around them that can influence a behavior. Several studies have shown that the environmental factors were the role of parents, the role of school, the role of friends or the community. Adolescents are in the developmental stage of expanding and exploring friendships. The results from a systematic review in 2019 highlight a body of evidence supporting the importance of peer networks on adolescent health behaviors through social processes [32].

Multivariate analysis showed that the guidance and counseling teachers have an exp B 14.6 times more good knowledge than peer. It refers to previous study that to improve and increase knowledge and preventing early marriage it is necessary to have formal activities at school. Eventough, health policies must combine interventions at the individual, school, and family levels [33]. Previous study showed that to improve students' reproductive health khowledge need to support and improved teachers' knowledge, comfort, and skills for delivering sexual health education in junior and high schools. Curriculum guided teachers need to built in their implementation of content, activities, and assessment strategies, providing a structured and unique focus on building students' health [34].

4. CONCLUSION

There is an effect of providing information by guidance counselling teachers with the level of knowledge counseling respondents about adolescent reproductive health. There were increase level of knowledge in post test results. The role of counseling teachers cannot be replaced by peers, so that these two roles can be carried out together to make it more effective.

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