# THE EFFECT OF PROVIDING EDUCATIONAL VIDEOS TOWARDS KNOWLEDGE, ATTITUDE, AND BEHAVIOURS RELATED TO REPRODUCTIVE HEALTH, STIS, AND HIV/AIDS IN NON-MEDICAL COMMUNITIES

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#### ABSTRACT

Reproductive Health is important to prevent Sexually Transmitted Diseases (STDs). The previous study showed that the young people have a low knowledge, and low attitude and behavior regarding reproductive health especially for non-medical community. Video education is known as one of the effective health promotion media. This research aims to know the factor that influences knowledge and attitude towards reproductive health and improving their knowledge, attitude and behavior about reproductive health. This study used a pre-experimental method with a one-group pretest-posttest design. The population in this study infinite population. The population in the reproductive age around 20-30 who did not work in the medical field randomly chosen online. The data were analyzed by descriptive analysis and analytical statistics (Wilcoxon test). The knowledge of respondents towards the health of reproduction and diseases related has increased in the value of the average of pre-intervention as much as 64.48 to 84.43. Respondents' attitudes also improved from the value of 79.51 to 89.55 after watching the educational video. Educational video can increase knowledge related to the health of reproduction, STDs, and HIV/AIDS, and improve the attitude of the respondents to the diseases and screening before marriage.

#### **KEYWORDS**

HIV-AIDS, Reproductive Health, STIs, Video

# INTRODUCTION

Reproductive Health is a state of physical, mental, and social well-being as well as free from disease or disability in a matter related to the system of reproduction [1]. The Previous study showed that young people have low knowledge, and low attitude and behavior regarding reproductive health [2,3]. Many people think that reproductive health education still something taboo, so young people do not get a good education about reproductive health. This phenomenon affected the increasing risk of various reproductive health problems such as divorces, undesired pregnancy, poor nutrition in infants, STIs, and low coverage of immunization before marriage especially in the people with low knowledge about health for example in the non-medical community [4].

Reproductive health and pre-marriage education are important things to improve the health of mothers and children and strengthen the bond of marriage. The right policies related to the implementation of premarital education can overcome various problems and increase the success rate of this program. Premarital education must be carried out in a coordinated, satisfying manner and periodically evaluated to improve the quality of services for reproductive health programs [4].

Young adulthood is a phase where each experiences physical, intellectual, and emotional development. Thus, premarital education plays an important role in increasing the knowledge of couples about their role in building good relationships and influencing their attitudes and behavior. The education includes various kinds of knowledge about the purpose of marriage, understanding the psychology of men and women, sexual health, and every skill that is needed for marriage life [4].

Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) are one of sexual health problems that can occur in individuals of reproductive age. HIV is a virus that lowers the immune system. HIV will make it easier for patients to become infected with various other diseases. The entry of HIV will cause several symptoms that are decreasing immunity. In Indonesia, HIV cases tend to increase from year to year. There were 50.282 HIV cases reported in 2019 with 65% cases in

men and 35% cases in women. Reproductive age (25-48 years) is the age group with the highest percentage of HIV/AIDS cases (70% of HIV cases and 33% of AIDS cases) [5].

The impact of current HIV automatically developed the knowledge about STIs. STIs are growing rapidly in line with developments in social, demographic, and increasing population migration. In developing countries, STIs are ranked as the 10th list of reasons why a person goes to a doctor. This suggests that sexual networking in determining the pattern of spread of various types of STIs is very important for designing strategies for both STI prevention and control [6].

The non-medical community is the person who does not have a relation with a job in the medical field, such as doctor, nurse, midwife, pharmacist, medical student, and others. Mostly, non-medical community does not have more knowledge about health including reproductive health than the person working in the medical field. The use of video as a teaching tool has a several potential benefits. Based on the data above, it is important to improve young people's knowledge, attitude, and behavior regarding reproductive health, especially in the non-medical community.

There are many ways to deliver health education and health promotion. One of them is video education. Video interventions can be a more cost-effective way to distribute instructional materials. Sweat et al. reported that a research evaluating the cost-effectiveness of a video-based human immunodeficiency virus (HIV) patient education program resulted in yearly savings of \$5,544,408 for 10,000 patients in prevented HIV infections [7]. Second, video interventions eliminate variations among educators and balance material presentation, resulting in a more uniform education [8]. Third, those who have a poor level of health literacy are more responsive to video-based instruction [9].

This study was conducted to assess the knowledge and, attitudes and behavior of premarital reproductive health and its interventions, especially in the non-medical community.

#### **METHODS**

#### Type and Design of Research

The pre-experimental method is the method used in this study with a one-group pretest-posttest design. Pre and post-test were given to respondents via Google Form without a control group.

#### Location and Time of Research

The research was conducted online from February 1st, 2021, to February 28th, 2021, at the Laboratory of Public Health and Preventive Medicine, Faculty of Medicine, University of Brawijaya – General Hospital dr. Saiful Anwar, Malang, East Java, Indonesia. The Faculty of Medicine Universitas Brawijaya ethical committee approved all of the procedures with No. 82 / EC / KEPK / 03l2021.

#### Sampling Techniques and Research Samples

The Sampling method in this study uses the purposive sampling technique. The questionnaire used refers to the Illustrative questionnaire for interview surveys with young people: asking young people about sexual and reproductive behaviors (World Health Organization (WHO)). The questionnaires were distributed to non-medical communities of reproductive age (20-30 years) via social media (WhatsApp). The population of this study is infinite population. The infinite population is a collection of objects or individuals with no boundaries or cannot measure the total number of individuals in the occupied territories.. The researcher explains to respondents the purpose of the study and the confidentiality of data information. Finally, the respondents were asked to volunteer to answer the questionnaire and get involved in the research. The population in this study is 20-30 years old non-medical community people. Therefore, the total number population are 160 peoples. According to the Slovin formula, the number of samples needed to achieve a confidence interval of 95% and an error margin of 5% is 114 respondents (minimum).

The inclusion criteria were people who did not have a health education background (nonmedical),20 to 30 years old and willing to participate in all research steps. The respondent who did not finish all the steps of research were excluded from the participants' list.

.In the first step, 154 respondents (96.25% of the total population) filled out the questionnaire. In the next step, the respondents were asked to fill out the pretest and posttest to assess their knowledge about reproductive health, STIs, and HIV/AIDS and assess healthy sexual attitudes and behavior and their willingness to undergo premarital health checks. From all the respondents in the first step, just 122 respondents continue the next step.

Variable

The independent variables were educational videos about reproductive health, STIs, and HIV / AIDS, healthy sexual attitudes and behaviors, and ways to maintain reproductive health. The study's dependent variables were (1) respondents' knowledge and understanding of reproductive health, STIs, and HIV / AIDS (2) healthy sexual attitudes and.

#### Problem identification

Using the Nominal Group Technique (NGT) researchers found the main problem was the low level of knowledge, attitudes, and behavior regarding reproductive health including sexually transmitted infections (STIs) and HIV/AIDS and premarital reproductive health examinations in non-medical communities of reproductive age (20-30 years). The first questionnaire found that 69.03% of respondents did not receive formal reproductive health information. Researchers targeted a percentage of  $\Box$  80% which is considered to have described good knowledge, attitudes, and behavior in the population. Other problems that identified were lack of respondent's knowledge about organs (44.2%) and reproductive function (70.8%), lack of knowledge about STIs and HIV/AIDS (63.1%), attitudes and preventive behaviors for STIs and HIV/AIDS (60.4%), and feelings of responsibility for maintaining reproductive health for their self and their partner (19.5%).

#### Intervention Method

The intervention method is a video that aims to educate about reproductive health, STIs and HIV / AIDS, healthy sexual attitudes and behavior, and how to maintain reproductive health. The video is 13-minutes long. The evaluation was carried out using a post-test by assessing the respondents' knowledge and understanding of reproductive health, STIs, and HIV / AIDS as well as assessing healthy sexual attitudes and behavior and the respondent's willingness to carry out a premarital health check at the end of the program. All variables were measured by pre-test and post-test values.

#### Data analysis

Data were analyzed using IBM Statistical Package for the Social Sciences (SPSS) software version 22. Data were analyzed using descriptive analysis and statistical analysis.

#### **RESULTS AND DISCUSSION**

#### **Respondent Characteristics**

Table 1 shows demographic data and respondent characteristics, From 154 respondents, 66.9% (n = 103) were female and 33.1% (n = 51) were male. The majority are Moslem, namely 96.7% (n = 149). A total of 85.1% (n = 131) of respondents graduated from First Diploma (D1) to Master (S2) graduates. In addition, 64.9% (n = 100) of respondents were unemployed) and 92.2% (n = 142) of respondents were not married. The results of the questionnaire also showed that 28.6% (n = 44) of respondents had a distance barrier at least> 5 km to the health facility from their place of residence. The majority of respondents had a normal body mass index (49.4%, n = 76), did not smoke (87.7%, n = 135) and did not consume alcohol (94.8%, n = 146).

The results of the questionnaire also showed that there was deviant sexual behavior from the respondents such as had sexual intercourse before marriage, sexual intercourse through the rectum and or oral (11%). Other deviant sexual behaviour is 7.8% (n = 12) respondents had the behavior of changing partners. In addition, 66.2% (n = 102) of respondents received information on sexual and reproductive health informally, such as friends, family, films, etc.

#### Statistical analysis

Table 2 shows whether the respondent's characteristics influence the knowledge, attitudes, and behavior of reproductive health, sexually transmitted diseases, and premarital health examinations as assessed from the results of the questionnaire using the Mann Whitney test. The test results indicate that there is an influence of the respondents' religion on knowledge. Significant values were also found: the influence of gender, smoking, and drinking alcohol habits on the attitudes and behavior of the respondents. Furthermore, a simple linear regression analysis test was carried out to ensure whether these characteristics affect the respondent's knowledge, attitudes and behavior of the respondents (Table 2). The test results indicate that religion affects the respondents' knowledge only by 1.9%. In addition, gender, smoking and alcohol was 13,7% (R2 = 0.137), 9.1% and 4.7%, respectively, affecting the respondent's attitude and behavior.

Graph 1 shows the average knowledge, attitudes, and behavior of respondents regarding reproductive health, STDs, and premarital health examinations before and after the intervention. The number of respondents involved in the intervention was 122 people with the same sample both before and after the intervention. The mean pre-intervention score regarding knowledge of reproductive health, sexually transmitted diseases, and premarital health checks was 64.48 and increased to 84.43 after being given the intervention in the form of a video. The mean pre-intervention score regarding attitudes and behaviors of reproductive health, sexually transmitted diseases, and premarital health examinations was 79.51 and increased to 89.55.

Based on the results of the Kolmogorov-Smirnov normality test, it is known that the data is not normally distributed with a significance value of 0.0001 (p < 0.05). Therefore, the statistical analysis was continued with the Wilcoxon test. The Wilcoxon test aims to determine whether there is an average difference between the two paired samples related to knowledge of reproductive health, sexually transmitted diseases, and premarital health checks. The results showed that there was a significant difference between pre-intervention and post-intervention with a significance value of 0.0001 (p < 0.05) (Table 3). However, the results of this test also showed that 7 people experienced a decrease in scores from pre-intervention to post-intervention to post-intervention as many as 66 people and there were 49 people who had the same score both pre-intervention and post-intervention.

The results of the Wilcoxon test related to data towards attitudes and behavior of respondents towards reproductive health, sexually transmitted diseases and premarital health checks showed that there was a significant difference, namely 0.0001 (p < 0.05) (Table 3). This data also found a decrease in value at post-intervention compared to pre-intervention, namely as many as 10 people and as many as 47 people experienced an increase in attitudes and behavior and 65 people had the same score both before and after the intervention.

This study discusses interventions using educational video about knowledge, attitudes, and behaviors regarding premarital reproductive health in non-medical communities of reproductive age. Reproductive health and premarital education are very important to improve the health of mothers and children, as well as strengthening a marriage bond. So that it reduces the problems that can occur after marriage, one of which is STIs [4]. STDs such as HIV/AIDS and STIs are sexual health problems that often occur in individuals of reproductive age. Based on the 2019 National Basic Research (Riskesdas), there were 50,282 HIV cases reported (65% cases in men and 35% cases in women) with productive age (25-48 years) being the age group with the highest percentage of HIV/AIDS cases (70% of HIV cases and 33 % AIDS cases) [5]. In addition, in developing countries, STIs cases are in the 10th place [6].

The current research showed that most respondents are women of the Muslim religion, college or above and did not smoke or drank alcohol. Because this study conducted by online survey, woman usually have more attention to taking the time to fill the survey. In Indonesia more than 80% population have a Muslim religion so the majority of the respondents have a Muslim religion. The prevalence of the smoker in this study is lower than National percentage that around 30%. May it have affected by the majority of respondents are woman. The percentage of woman smoker in Indonesia just 2.5%.

In addition, in this study, we also examined the effect of respondent characteristics on the level of knowledge, attitudes, and behavior of reproductive health, sexually transmitted diseases, and premarital health examinations. From these results, it was found that there was a significant influence between gender with healthy sexual attitudes and behavior and reproductive health with women having better attitudes and behaviors than men However, in most situations, women are expected to be ignorant about sex, be passive in sexual things, and be less comfortable talking about sexual matters, especially their sexual satisfaction, than males. [10]. It was also found that verbal communication between partners about reproductive health is still low in many developing countries and that genderbased power inequalities contribute to a lack of communication on these issues. This is different from what we found in the results of the study. Structural factors such as social norms have shaped personal views about appropriate sexual behavior between men and women, and set double standards, allowing men to have more sexual freedom than women[11].

In this study, religion also has a significant influence on healthy sexual behavior in this study, where non-Muslims have a better level of knowledge than Muslims. Religion is an important part of the cultural order of society; thus, it can influence decision-making, ideology, and moral and ethical behavior. Religious beliefs about fertility issues, contraceptive adoption, and abortion can differ widely among Protestant Christians, Catholics, Muslims, and traditionalists. This can profoundly influence decisions in family planning and, in general, their reproductive health and community well-being [12]. In a study conducted by Smerecnic C and his friends, it was stated that there were sexual stereotypes among Muslim adolescents. Discussing sexual education is taboo in both the Muslim family and

community. This makes them less likely to discuss sexual issues with the community because they feel uncomfortable with the topic. These findings have an impact on the sex education of Muslim adolescents which is in line with the results of the study [13].

Smoking habits and alcohol consumption are associated with risky sexual behavior. Risky sexual behavior is inconsistent use of condoms, the behavior of multiple partners, having oral and anal sex, or having sex with strangers. The practice of this risky sexual behavior is the occurrence of unwanted pregnancies and the risk of contracting sexually transmitted diseases. This is contrary to the results of the study. In this study, it was found that there was a significant influence between smoking habits and alcohol consumption with healthy sexual attitudes and behaviors, where individuals who consumed alcohol and smoked had better attitudes and behaviors than individuals who did not smoke and did not consume alcohol. A meta-analysis study conducted by Rahardjo on alcohol consumption, smoking, illegal drugs, and risky sexual behavior, supports previous studies that there is an influence between alcohol consumption, smoking habits, and illegal drugs with risky sexual behavior. Places such as bars and clubs are commonly used as a means of meeting and finding sex partners. Individuals do not only find conditions and places where it is permissible to consume alcohol but also learn to associate it with sex [14]. Individuals who consume alcohol and smoke are more likely to have a promiscuity relationship and tend to have more discussions about sex. So that someone with more information can act better than someone with less knowledge. [15].

Meanwhile, reproductive age, education level, occupation, distance to health facilities, information sources, nutritional status, and marital status did not have a significant effect on the level of knowledge and attitudes and behavior of reproductive health, sexually transmitted diseases, and premarital health checks.

At a reproductive age, a person can use a variety of resources to obtain sexual health information, including the Internet, television, family doctors, books, magazines, friends, and family14. At the level of relevant education about gender, sexual orientation, the accuracy of sexual information provided by institutions (eg. schools) to support sexual and reproductive health, age at first sexual intercourse, and previous STIs are very important [16].

The difference in the distance to the nearest health facility (less than 5 km to more than 5 km) does not have a significant effect due to advances in technology and easy access to health information so that individuals do not have to go to health facilities to get health information and promotion. This can also be linked to the sources of information obtained, namely formal (for example schools and health workers) and informal (for example friends, books, films, magazines, social media) also does not have a significant influence on knowledge as well as attitudes and behavior reproductive health. More attractive media such as images and videos or articles on social media are easier to access and obtain. Even so, formal sources of information, especially adolescents, can reduce the hazard ratio for risky and deviant sexual behavior [17].

Nutritional status is more associated with maternal and child health problems as well as the risk of premature birth and malnutrition in infants. Meanwhile, the insignificant relationship between the knowledge of reproductive health in unmarried individuals and individuals who are married indicates that there is still a lack of health promotion for pre-marital reproduction [4].

There was an increase in the post-intervention quiz scores compared to the pre-intervention quiz scores after watching video education. The average pretest score about knowledge was 64.48, which increases to 84.43 in the average post-intervention quiz score. This shows a positive and significant impact from educational video which is a form of health promotion on one's knowledge. Audiovisual media and actual demonstrations are more effective in increasing knowledge in a relatively short time yet last longer in memory [18]. Based on the "Learning Pyramid" by Edgar Dale, in learning activities, a person will generally remember up to 50% of what they hear and see, one of which is by watching demonstration videos so that someone can apply and practice it [19,20].

In this study, we examined the knowledge, attitudes, and behavior of reproductive health, sexually transmitted diseases, and premarital health examinations. A person's health behavior is closely related to his knowledge about it [21,22]. In research on the need for premarital care, in the form of premarital health examination services, decisions taken by a person are influenced by the level of knowledge about the impact of the decisions to be taken [23]. This is in line with the results of this study, where there were significant differences in general knowledge of reproduction, sexually transmitted diseases, premarital reproductive health examinations. In addition to knowledge, attitudes and behavior of premarital reproductive health also play a major role in contributing to reproductive health problems in the future. In a study about knowledge and attitudes towards premarital screening and counseling programs, it was stated that although a large part of the population of the sample said that they had to undergo a premarital health check-up, only half were committed to doing so. After being studied, it shows that there is still missing knowledge that forms the basis of these attitudes and behaviors10. In

this study, we also tested respondents' attitudes and behavior before and after being given the intervention video. The results showed that there were significant differences in attitudes and behaviors of reproductive health, sexually transmitted diseases, and premarital health checks before and after the intervention video were given. This reflects the importance of reproductive health education in increasing knowledge and attitudes and behavior regarding reproductive health and premarital screening programs [23,24].

#### Limitations

In this study, there are several limitations related to the results of the interventions carried out. First, Bahasa Indonesia was difficult for some of the respondents to understand because they came from outside Indonesia. Second, in this study, we have limited time in its implementation. As a result, assessing the impact of the intervention on changes in the intervention population's behavior is not optimal. It is take a long time to assess behavior changes.

### CONCLUSIONS AND SUGGESTION

In this study, it can be concluded that the interventional video can increase the knowledge of the productive age population in actuating health promotion related to reproductive health, sexually transmitted diseases, and premarital health checks. However, further evaluation is still needed regarding the commitment to a healthy sexual attitude and behavior. In addition, further research requires other innovations that can change safe sexual behavior and maintain reproductive health as well as significantly following pre-marital health examinations.

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Characteristics			%
Age	20-24 years	66	42.9
	25-30 years	88	57.1
Gender	Women	103	66.9
	Men	51	33.1
Religion	Islam	149	96.7
5	Christian	3	2
	Catholic	2	1.3
Last Education	Elementary School to High School	23	14.9
	First diploma (D1) to Masters (S2)	131	85.1
Work	Work	100	64.9
	Not Working	54	35.1
Marital status	Not married yet	142	92.2
	Married	12	7.8
Distance from residence to health facilities	> 5 km	44	28.6
	< 5 km	110	71.4
Body Mass Index (kg/m <sup>2</sup> )	Skinny (< 18.5)	21	13.6
	Normal (18.5 – 25,0)	76	49.4
	Fat (> 25.0 – 27.0)	11	7.1
	Obesity (> 27.0)	46	29.9
Smoke	Smoke	19	12.3
	Not smoke	135	87.7
Alcohol	Drink alcohol	8	5.2
	Not drink alcohol	146	94.8
sexual intercourse before marriage	Never	137	89
5	Ever	17	11
Changing sexual partners	Never	142	92.2
	Ever	12	7.8
Having sexual intercourse through the rectum / mouth	Never	137	89
	Ever	17	11
Sources of information on sexual and reproductive health	Informal	102	66.2

## FIGURES AND TABLES

Demographics and Characteristics of Respondents

Table 1.

7

Formal	52	33.8

# Table 2.Effect of Respondent Characteristics towards Knowledge, Attitudes, and Behaviors of<br/>Reproductive Health, Sexually Transmitted Diseases and Premarital Health<br/>Examinations

Characteristics		Knowledge		Attitudes and Behaviors	
		Mean ± SD p-Value		Mean ± SD	p-value
Age		73.60±0.13	0.345	86.89±0.09	0.080
	20-24 years	73.11±0.10		88.64±0.07	
	25-30 years	74.09±0.14		85.58±0.10	
Gender		73.67±12.54	0.733	86.89±0.09	0.0001*
	Nomen	74.03±11.44		89.14±0.07	
	Vlen	72.94±14.60		82.35±0.10	
Religion		73.67±0.13	0.045*	86.89±0.09	0.657
•	slam	73.36±0.13		86.83±0.09	
• (	Dther	83.00±0.06		88.89±0.09	
Education		75.43±0.12	0.467	86.89±0.09	0.760
	Elementary to High School	75.43±0.09		87.77±0.18	
• [	D1 to S2	73.36±0.13		86.74±0.09	
Work		73.67±12.54	0.303	86.89±0.09	0.942
• \	Vork	72.75±13.19		86.81±0.09	
• 1	Not work	75.37±11.15		87.04±0.07	
Marital St	atus	73.67±0.13	0.726	86.89±0.09	0.300
• 1	Not married yet	73.98±0.13		87.15±0.08	
	Varried				
		70.00±0.18		83.85±0.10	
Distance Health Fa	of Residence to cilities	73.67±0.13	0.221	86.89±0.09	0.672
	<5 km				
	>5 km	74.95±0.11		87.50±0.07	
-		70.45±0.16		85.37±0.10	
Body Mas	s Index	73.67±0.13	0.081	85.94±0.08	0.951
	Normal	71.71±0.15		85.57±0.08	
	Poor	75.58±0.10		88.24±0.08	
Smoke		73.67±0.13	0.400	86.89±0.08	0.0001*
	/es	74.21±0.15		89.47±0.07	
	No	73.59±0.12		86.53±0.09	
Alcohol		73.67±0.13	0.194	86.89±0.09	0.016*
	/es	78.75±0.06	-	90.63±0.05	
	No	73.39±0.13		86.69±0.09	
	of information	73.67±0.13	0.937	86.89±0.09	0.433
	nformal				
	Formal	73.48±0.12		86.21±0.09	
-		74.04±0.13		88.22±0.07	

\*Significant

# Table 3. Average Results of Intervention Video on Knowledge, Attitudes and Behaviors of Respondents on Reproductive Health, STIs, HIV/AIDS, and Premarital Health Examinations

	Knowledge		Attitude and Behaviors	
	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
	average (%) ± SD	average (%) ± SD	average (%) ± SD	average (%) ± SD
	64.48±20.88	84.43±13.51	79.51±19.29	89.55±15.02
P-Value	<0.001		<0.001	



