

Effect of Online Education Model on Knowledge Regarding Sexual and Reproductive Health Among Pre-Marital Couples

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ABSTRACT

Lack of knowledge about sexual and reproductive health is still a problem that needs to be addressed among premarital couples. The use of online education method can provide an effective option for increasing knowledge and awareness of how to maintain reproductive health and prevent the transmission of sexual diseases post-marriage. A quasi-experimental design with a comparison group was conducted from April to November 2019 at a Public Health Centers in Bukittinggi city, West Sumatra, Indonesia. The total participants were 30 in the intervention group and 30 in the comparison group. Pre-marital couple in the intervention group received a online education module that was developed by the researcher. On the other hand, participants in the comparison group received a regular handbook. Knowledge was assessed by using a modified Knowledge of reproductive and sexual health. Data were analysed using paired t-test and independent t-tests for the inferential statistic. This study found an online education method significantly increased participants' knowledge in the intervention group ($p = .002$). In the comparison group, the regular handbook significantly also improved participants' knowledge ($p = .035$). However, the change of pre-test and post-test mean score of participants' knowledge in the intervention group was significantly higher than those in the comparison group. It can be concluded that the online education method with an effective module development was significantly improved knowledge of pre-marital couples. Public health care provider should regularly concern to improve the strategy to prevent the incidents of the transmission of sexual diseases post-marriage.

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Introduction

Reproductive health refers to the physical and social well-being of a person associated with their function and reproductive processes, including the absence of diseases or disorders that may affect reproductive activities. In 2019, 36.6% of teenagers in Indonesia were married at the age of less than 15 years (Dinengsih & Hakim, 2020). This situation may increase the prevalence of Chronic Energy Deficiency (CED) among pregnant women aged 15-49 years by 24.2%, and the prevalence of anemia by 18.4%, which can exacerbate pregnancy and the safety of mothers and infants (Huriah et al., 2023). One of the reasons for CED among adolescents is a lack of knowledge regarding reproductive health. Recently, the utilization of reproductive health services, such as quality to access problems and differences, remains difficult. (Ninsiima et al., 2021). Amalia (2018) found that 62.5% of pregnant adolescents had low levels of knowledge about premarital reproductive health. Similarly, Amalia (2018) also found low knowledge of prospective brides (70%) and unsupportive attitudes toward reproductive health (30%) (Amalia & Siswantara, 2018).

The Indonesian Ministry of Religion mandates that prior to a wedding, insight into the meaning of a household must be provided through premarital couples. The duration of this course is 24 hours, including reproductive health, for 3 hours. (Ninsiima et al., 2021). In 2015, the Indonesian Ministry of Health through the Directorate General of Nutrition and Maternal and Child Health launched a guideline about Information Communication and Education (ICE) on reproductive and sexual health in pre-marital couples that are national in nature. The ICE program uses a continuum of care life cycle approach that emphasizes promotive and preventive efforts in each cycle of life. Continuum of care life cycle is the service provided in the life cycle starting from pre-conception, pregnancy, childbirth, postpartum, infants, toddlers, preschoolers, school children, adolescents, adults, and the elderly (Yap et al., 2021). Preconception services are carried out through the provision of sexual and reproductive services on ICE for pre-marriage couples to increase access and quality of reproductive and sexual health services. The quality of ICE services is supported by health human resources who are competent and comply with standards, readiness of service support facilities, operational costs, and continuous facilitative supervision. With the implementation of standardized ICE services, the bride and groom will have comprehensive knowledge about reproductive health and its problems, as well as screening efforts for diseases/complications (Lassi et al., 2014).

The utilization of current technological developments makes it possible to develop a system that replaces the role of an expert in the health sector, as the current development of Android smartphones allows them to be used as a medium for ICE. Apart from being used as a communication tool, smartphones have also become a necessity in modern society, so they are well known among the general public (Huriah et al., 2023). A study by Novaeni et al. (2017) found that 94.3% of the respondents had androids. An application is a program created and used by users to determine the required information processing activities for the completion of a particular task from the user (Novaeni et al., 2018). Similarly, Darmayanti et al. (2021) showed that there was an increase in respondents' knowledge after being given IEC using pocket books (16.7 to 73.3%) and videos (40% to 73.3%). In addition, there was a change in the attitude of the respondents after being given an IEC using pocket book media (23.3% to 40%) (Darmayanti et al., 2020).

Online applications are stored and executed on a web server. The web application is accessed using a web browser application, which responds to the web application stored

on the server, and the results are returned to the user via the web browser application (Rotheram-Borus et al., 2012). Anggela et al. (2020) found that reproductive health information via smartphones could be used to increase the knowledge, attitudes, motivation, and self-efficacy of adolescents related to reproductive health. Providing information via smartphones may help adolescents obtain information related to their reproductive health (Anggela, Sari; Wanda, 2020). The applications contained on smartphones can be very interesting because they are designed to be efficient to use, make it easier to interact with health workers and patients, and increase patient satisfaction in receiving health services from health workers so that they can increase patient knowledge and awareness to comply with health examinations by providing specific information (Partini, 2013).

Erni (2020) found that applications on smartphones were used by 91.3% of premarital couples to increase their understanding of something. It was found that 95.7% of catins agreed to use smartphones as a medium to increase knowledge of 1000 Android-based HPKs, and 87% of catins used Android-based smartphones. Research by Novaeni, et al (2017) shows the results of the percentage of application ratings of 85% which means very good. This shows that according to adolescent perceptions, android-based adolescent reproductive health applications can increase understanding of reproductive health, are interesting to use, easy to understand and remember the material, and increase motivation to study reproductive health, in accordance with the needs of high school youth (Novaeni et al., 2018).

Objective

This study aimed to determine the effect of online-based methods on the knowledge of pre-marital couple towards sexual and reproductive health.

Research Methods

Study design was a quasi experimental with pre test-post test using a comparison group. This study was conducted in the working area of the Bukittinggi City from April to November 2022 with the target population in this study were premarital couple from different geographical locations in Bukittinggi city, West Sumatera, Indonesia. Sample size calculated based on finitive population formula obtained 30 participants per group. The sampling technique used a purposive sampling technique based on inclusion criteria, including (1) female gender; (2) registration with the religious office at least one week before the wedding; (3) and access to computers or smartphones.

Instruments in this study were used two questionnaires including; 1) Participants characteristic questionnaire, and 2) Knowledge questionnaire developed by researchers to assess knowledge of participants with a validity value of 0.959 and a reliability of 0.914. This questionnaire consists of 10 questions with a scale of 0 to 40,.

Descriptive statistics were used to describe the distribution of variables with frequency, and percentage. The comparisons of participants mean score of knowledge and attitude between pre-and post-intervention in each group were assessed using parametric paired t-tests since assumption of the data shown normal distribution. For comparison analysis of pre-and post-intervention results between the two groups was used Independent t-tests. P-value less than 0.05 ($p < .05$) indicated statistical significance.

Results and Discussions

Characteristic of the participants

The characteristics of the participants are shown in Table 1. The distribution of respondent's age was in the range of 20 to 25 year old for both groups, whereas 63.3% of participants in the intervention group and 70% of participants in the comparison group. Based on the level of education of the participants, it was found that both groups had a high school educational background, where 64% of the participants in the intervention group had a high school education background, while in the comparison group as many as 68% were high school graduates. Characteristics of participants based on occupation, namely that of the 50 participants in this study it was found that almost all of them had jobs as housewives, where there were 84% of participants in the intervention group and 88% in the comparison group.

Table 1 Frequency and Percentage of Demographic Data for the Intervention and the Comparison groups (N = 60)

Characteristics	Intervention group (n = 30)		Comparison group (n = 30)	
	n	%	n	%
Age (years)				
20 – 25	19	63.3	21	70.0
26 – 30	7	23.3	5	16.6
> 30	4	13.4	4	13.4
Educational level				
Elementary school	1	3.0	0	0.0
Junior school	5	16.6	3	10.0
Senior high school	8	26.6	10	33.4
Diploma/Bachelor	16	53.3	17	56.6
Occupation				
Self-employee	19	63.3	18	60.0
Housewife	11	36.7	12	40.0

The Effect Of Online Health Education Module

Statistical analysis was conducted in order to determine the within-group effect and between-group effect of the health education with module development on knowledge of pre-marital couples about sexual and reproductive health.

The Compariosson of Posttest Knowledge Between Two Groups

The mean of knowledge score of the participants in the intervention group after receiving the intervention (M = 14.49, SD = 2.52) was significantly higher than those in the control group (M = 12.92, SD = 2.19). Therefore, there was a significant difference in the mean of comfort scores after receiving the intervention between the subjects in the experimental group and the subjects in the control group (p = .003) as presented in Table 2.

Table 2 The Mean of posttest scores of Knowledge Between the Intervention Group and Comparison Group (N = 50).

Variables	Intervention group (n=25)		Comparisson group (n=25)		p
	M	SD	M	SD	
Knowledge	14.49	2.52	12.92	2.19	.00*

*p value < .05

The comparison of knowledge scores within the groups

As shown in Table 3, the mean score of knowledge of the participants in the intervention group were significantly increased after receiving the intervention ($p = .003$). As well, knowledge scores of the participants in the comparison group who received usual book also increased significantly ($p = .03$). However, participants in the intervention group had significantly higher knowledge score than the comparison group.

Table 3 The Mean of Pretest and posttest scores of Knowledge Within the Intervention Group and Comparison Group (N = 50).

Variables	Pretest		Posttest		p
	M	SD	M	SD	
Intervention group (n=25)	13.00	1.35	14.96	2.52	.00*
Comparison group (n=25)	11.80	2.00	12.92	2.19	.03*

*p value < .05

Discussion

Consistently, numerous studies has provided health education with module development on knowledge and attitude in various pupolation. Such as, a study by Kusuma (2017) reported that the mean respondent's knowledge after received a developed module regarding diet program on children were increased significantly. According to a study by Darmayanti et al. (2021) about Audio Visual Media and Pocket Books in the Implementation of Sexual and Reproductive Health Education Information Communication on the Knowledge and Attitudes of Prospective Brides and Grooms and found that the use of pocket book media and video media in the implementation of reproductive and sexual health education activities for women is different, and its significant for the knowledge variable by suing an effective websites and applications to increase knowledge (Darmayanti et al., 2020). Anggela et al. (2020) found that reproductive health information via smartphones can be used to increase teenagers' knowledge, attitudes, motivation, and self-efficacy related to reproductive health and can motivate teenagers to be tested for HIV and STIs (Anggela, Sari; Wanda, 2020). Similarly, study by Muryanto et al. (2014) found that the applications on smartphones are very interesting because they are designed to be efficient to use, and the application can make it easier to interact with health workers and patients and increase patient satisfaction in receiving health services from health workers so that it can increase patient knowledge and awareness to comply with health checks by providing specific information (Muryanto et al., 2014). Research by Marbun et al. (2020) found that 91.3% of people used applications on smartphones to increase their understanding of something. It was found that 95.7% of participants agreed to use smartphones as a medium to increase their knowledge. Adolescent perceptions and android-based adolescent reproductive health applications can increase understanding of reproductive health, be interesting to use, easy to understand and remember the material, increase motivation to learn about reproductive health, and suit the needs of high school adolescents (Marbun et al., 2020).

In this study, a module as health education material was developed systematically and using a proper language that may easily understand by the premarital couples. According to the age and level of knowledge of the premarital women could make their studied independently with minimal guidance from health professionals. The main objective of the module system is to increase the efficiency and effectiveness of premarital couples, both in terms of time, funds, facilities and personnel in order to optimally achieve goals (Ramawati et al., 2013). Furthermore, the utilization of sexual and reproductive handbooks also found has significant effect the level of knowledge in

variety of settings. For example, a study by Ainiayah (2017) found there is a significant relationship between the utilization of the sexual and reproductive handbook and the level of knowledge of pre-marital couples, which indicated that the higher the utilization of the handbook, the higher the level of knowledge (Ainiyah, 2017).

The sexual and reproductive handbook is a simple tool as information, education and communication tool in disseminating important information about sexual and reproductive health to families and community. This handbook also can be a tool for early detection of disorders or problems in mothers and children, a communication and counseling tool for mothers, families and the community regarding reproductive health. (Carandang et al., 2022). In this case, a strategy for obtaining behavior change is by providing information to raise awareness and ultimately cause other people to behave according to the knowledge they have (Sezgin & Yıldırım, 2014). Attitude is a reaction or response of someone who is still closed to a stimulus or object. The manifestation of attitude cannot be seen immediately but can only be interpreted in advance from closed behavior. Attitudes actually show the connotation of appropriate reactions to certain stimuli which in everyday life are emotional reactions to social stimuli. (Kuek & Hakkennes, 2020). Providing information in health services In this case, the stimulation of attitude can be delivered by counseling (Fiske et al., 2019)

Conclusion

The findings of this study revealed that the mean score of knowledge in the intervention group who received an online education model was significantly higher than those in the comparison group who received regular education handbook. It can be concluded that there is a need for applications in the implementation of health services for pre-marital couples which contain materials about reproductive and sexual health. With this application, pre-marital couple can learn about reproductive and sexual health by repeatedly downloading pocket book material and videos. With this online application, it is hoped that premarital couples' knowledge of reproductive and sexual health can be improved.

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