

Research Article

Increased Knowledge and Attitudes of Preconception Care using the Dedi Torri Application

Peningkatan Pengetahuan dan Sikap Perawatan Prakonsepsi melalui Aplikasi Dedi Torri

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Abstract

Objective: To determine the increase in knowledge and attitude of preconception care through the application of DeDi torRi.

Methods: Uses pre-experiment using a one group pre-test and post-test design.

Results: Based on the paired t test in the first health education using the DeDi torRi application to the difference in knowledge obtained with a p value of 0.000 in attitudes with a p value of 0.000. Based on paired t test in the second health education using the DeDitorRi application to the difference of knowledge obtained with a p value of 0.000 and an attitude with a p value of 0.000.

Conclusion: Preconception care health education through DeDi torRi (application-based module) and education that is given repeatedly to reproductive age mothers can influence the increase in knowledge and attitude of preconception care.

Keywords: health education applications, preconception care, women of reproductive.

Abstrak

Tujuan: Untuk mengetahui peningkatan pengetahuan dan sikap perawatan prakonsepsi melalui aplikasi DeDi torRi.

Metode: Pre-eksperimen dengan menggunakan rancangan one group pre-test dan post-test.

Hasil: Berdasarkan uji paired t test pada pendidikan kesehatan pertama menggunakan aplikasi DeDi torRi terhadap beda pengetahuan yang didapatkan dengan p value sebesar 0,000 pada sikap dengan p value 0,000. Berdasarkan uji paired t test pada pendidikan kesehatan kedua menggunakan aplikasi DeDi torRi terhadap beda pengetahuan yang didapatkan dengan p value sebesar 0,000 dan pada sikap dengan p value 0,000.

Kesimpulan: Pendidikan kesehatan menggunakan aplikasi DeDi torRi (aplikasi berbasis modul) efektif dalam meningkatkan pengetahuan dan sikap pada perempuan usia reproduktif terhadap perawatan prakonsepsi.

Kata kunci: aplikasi pendidikan kesehatan, perawatan prakonsepsi, perempuan usia reproduktif.

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INTRODUCTION

Death of pregnant women is still a major problem throughout the world. Based on data from the World Health Organization (WHO) in 2013, maternal mortality rates (MMR) worldwide reached 289,000 per 100,000 live births and 99% occurred in developing countries (WHO, 2014). In Southeast Asia AKI reached 16,000 / 100,000 KH, Indonesia ranks in the top three reaching 190 / 100,000 live births after Timor Leste (270 / 100,000 live births) and Myanmar (200 / 100,000 live births).

The main causes of maternal death in Indonesia are the highest bleeding, hypertension in pregnancy, infection, prolonged labor, abortion, and others. Based on the results of the 2015 Intercensal Population Survey (SUPAS), MMR in Indonesia reached 305 per 100,000 live births. The maternal mortality rate due to hypertension is 27.1%, and deaths due to comorbidities such as cancer, heart disease and tuberculosis (TB) reach 40.8%¹.

The cause of infant death is birth premature, asphyxia and trauma, infections, congenital abnormalities and others². In Yogyakarta the

number of maternal deaths was 34 with 34 cases in 2017. The cause of death in the perinatal group was intrauterine fetal death (IUFD), LBW and asphyxia. Gunung Kidul is the district with the most cases of maternal deaths, 12 cases³.

Some of these risks require intervention in the preconception period³. The time to start services for pregnancy is not after but before conception⁴. The cause of maternal death can be prevented if there is adequate health / education and screening information before pregnancy⁵. Sustainable Development Goals (SDGs) targets reduce MMR to below 70 per 100,000 live births by 2030⁶.

Preconception care is a program launched by WHO in 2012 in Geneva that aims to reduce maternal, infant, disability and to reduce modifiable risk factors for non-communicable diseases. This program is implemented by all countries in the world, especially low and middle income countries commonly called Low and Middle Income Country (LMICs), one of which is Indonesia.

Women's low knowledge about preconception care results in women not utilizing health services before preparing for pregnancy⁷. The Centers for Disease Control and Prevention recommends that early detection and education be given to all men and women of reproductive age before conception to reduce risk.

Health education is the addition of one's knowledge and abilities through learning practice techniques or instruction in order to remember facts by encouraging self-direction and actively providing information⁸. Technology-based education is an innovative pathway for providing health information⁹. The use of cell phones can also be used to provide health education¹⁰. Mobile-based health applications or Mobile Health (mHealth) have a great opportunity as an effective public health improvement intervention. mHealth can also provide quality information at low and affordable costs, both in terms of users and health service providers¹¹. Health interventions using cellular have a positive impact in efforts to prevent and improve health care¹².

The Gabby Preconception Care System is an innovation developed to support preconception care. Online interactive character animation (Gabby) is designed to identify and modify risks during the preconception. To be able to use Gabby, users can access it through the website and need the internet.

The Gabby system consists of screening women at risk during preconception, assessing readiness for behavior change based on their risk factors, educating them based on their risk factors and having a list of my health that can be read by health workers, users can write stories about their health problems that can read by other Gabby users.

Based on the available content, someone is encouraged to use Gabby every week and the material discussed is different for each interaction based on the risks discussed. Although there are many mHealth solutions related to pregnancy, mHealth solutions that focus on preconception care are still rare¹³.

The difference with the DeDi torRi application (early detection of preconception risk factors) that will be developed by researchers is that this application consists of 4 features consisting of modules on preconception care, health problem handling modules, knowledge and attitude questionnaires and early detection of risk factors at a time preconception the final result of early detection is whether a woman is in the safe category or not when planning a pregnancy, this application is offline. But in the first phase of this study, the researcher wanted to find out the use of modules to increase knowledge and attitude of preconception care.

METHODS

Table 1. Distribution of Characteristics of Respondents

Characteristics of respondents	Total (n=40)	%
Age		
<35	24	60
≥35	16	40
	40	100
Education		
Low	21	52.5
High	19	47.5
	40	100
Employment		
Not work	38	95.0
Work	2	5.0
	40	100
Parity		
Primipara	13	32.5
Multipara	27	67.5
	40	100
Pregnancy history		
Have	5	12.5
don't have	35	87.5
	40	100
Disease history		
have	4	10.0
don't have	36	90.0
	40	100

Previous information about health checks before pregnancy		
	1	2.5
No	39	97.5
Yes	40	100

RESULTS

Respondents in this study were mothers of reproductive age 15-49 years old who were in Wunung village, teguhan hamlet, the working area of Puskesmas Wonosari I and the number of samples were 40 people.

Based on table 1. In the age variable, the majority of respondents were at the age of <35 years, namely 24 people (60%). The characteristics of the latest education are the majority of those with low education (<SLTP) as many as 21 (52.5%). The characteristics of work are the majority of not working 38 people (95.0). The majority parity characteristics of multipara are 27 people (67.5%). Characteristics of previous pregnancy history, the majority did not have a history of previous pregnancy of 35 people (87.5%).

Characteristics of disease history, the majority do not have a history of disease 36 people (90%). Characteristics of previous information about treatment or medical examination before pregnancy, the majority had heard 39 people (97.5%).

This research is a pre-experimental research using one group pre-test and post-test design. The population in this study were all women of reproductive age aged 15-49 who were in the working area of the Gunung Kidul district health office. The sample size is calculated using the Lemsehaw formula and the total sample is 40.

The sampling technique used is non probability sampling using purposive sampling. The inclusion criteria in this study were women of reproductive age (15-49 years), at least mothers who had given birth once, mothers who lived in the working area of Wonosari I Puskesmas (Teguhan Hamlet, Wunung Village) in Gunung Kidul district, mothers who could read and write, mothers who can operate smartphones, can be invited to communicate well. Data were analyzed by paired t-test to find out the significance of Increased Knowledge and Attitudes of Preconception Care using the Dedi Torri Application. Data were processed with the help of Statistical Product and Service Solutions (SPSS) for Windows version 22.0.

Table 2. Distribution of Frequency of Pretest and Post-test I Knowledge of Preconception Care after the First Health Education and Second Health Education

Variable	Knowledge											
	Pretest				First Posttest				Second Posttest			
	Good		Less		Good		Less		Good		Less	
First Health Education and Second Health Education	n	%	n	%	n	%	n	%	n	%	n	%
Education	22	55.0	18	45.0	35	87.5	5	12.5	40	100	-	-

Based on table 2. pre-test and first post-test of knowledge in the first health education there was an increase in knowledge namely in the pre-test 18 respondents (45.0%) had less knowledge about preconception care in preparing for a safe and healthy pregnancy and the first post-test of respondents who low knowledge to 5 people (12.5%). First post test and second post test

knowledge after the second health education an increase in knowledge that is in the first post test 5 people (12.5%) have less knowledge about preconception care in preparing for a safe and healthy pregnancy and in the post test second (after second health education) all respondents had good knowledge of preconception care in preparing for a safe and healthy pregnancy.

Table 3. Distribution of Pretest and Posttest Frequency Attitudes after the First Health Education

Variable	Attitude											
	Pretest				First Posttest				Second Posttest			
	Good		Less		Good		Less		Good		Less	
First Health Education and Second Health Education	n	%	n	%	n	%	n	%	n	%	n	%
Education	26	65.0	14	35.0	38	95.0	2	5.0	40	100	-	-

Table 4. Paired T Test Results Knowledge and Attitudes of Preconception Care in Reproductive Age Women in the First Health Education and Second Health Education

Variable	Pretest	First Post test	Second post test	Mean (95 % CI)	P-value
	Mean (SD)	Mean (SD)	Mean (SD)		
Knowledge	25.43 (4.867)	36.93 (0,917)	38.38 (0.490)	1.450 (1.170-1.730)	0.000
Attitude	54.20	56,85	58,83(1,509)	1.975(1.709-2.241)	0.000

Based on table 4. Knowledge statistical test shows that the first post test score is higher than the pre test that is 36.93. The difference in knowledge before and after the first health education is given is 11.50.

Attitude statistical test shows that the first post test is higher than the pre test that is 56.85. Difference in attitude before and after is 2.65. Statistical tests indicate p value = 0.000 (<0.05), so it can be concluded that health education using the DeDi torRi application can improve knowledge and attitudes towards preconception care in preparing for a safe and healthy pregnancy. The first and second post-test statistical tests had an increase of 38.38. Statistical tests show p value = 0.000 (<0.05), so it can be concluded that health education using the DeDi torRi application and repeated health education can increase knowledge of preconception care in preparing for a safe and healthy pregnancy.

Attitude statistical test shows that the first post test score is higher than the pre test that is 56.85. The difference before and after being given health education is 2.65. The first post-test and second post-test statistical tests were 58.83. Statistical tests show p-value = 0.000 (<0.05), so it can be concluded that health education using the DeDi torRi application and repeated health education can improve attitudes towards preconception care.

DISCUSSION

Effects of Health Education Using the DeDi torRi application on Knowledge Enhancement. The results in table 4 show that there is an influence of health education about preconception care with the application of DeDi torRi on increasing knowledge with a value of p = 0.000 <0.05. Based on the results of health education, health education using the DeDi torRi application can increase mothers' knowledge about preconception care. Modules as an effective health education to influence one's attitude. This media is also useful to increase the target's interest in forwarding messages to others¹³.

The advantage of providing preconception health education through the DeDi torRi application is that this module is not made in book form but is made in the form of an application that is DeDi torRi installed on the respondent's smartphone, the application-based module (DeDi torRi) is offline so that it can be read over and over repeated by respondents in different times.

In addition, the application-based module that is provided is also accompanied by images that can describe the contents of the message and the language used is everyday language that is easy to understand. Android-based adolescent reproductive health education applications can increase understanding of adolescent reproductive health.¹⁴

The influence of health education using the DeDi torRi application to improve attitudes. The results of the study in table 4. show that there is an effect of health education on the improvement of respondents' attitudes about preconception care with a value of p = 0.000 <0.05. Health information in the form of application-based modules makes respondents tend to experience more positive behavioral changes.¹⁵

Because almost all women and men of reproductive age have access to the internet and or own a cellphone so that mobile health can play a role in providing information that can encourage awareness and ultimately support the implementation of preconception care¹².

Health education using mobile applications can improve nutrition and better lifestyle behaviors¹⁶. Changes in attitudes to respondents due to the addition of media in providing health education in the form of application-based modules making it possible for mothers to read it at home¹⁷.

The results of this study are in line with the results, which states that mobile applications during pregnancy can increase maternal knowledge, behavior change and improve perinatal health¹⁸. Based on the research, which states that smartphone applications to promote lifestyles that focus on knowledge, attitudes, social support and apply effective self-regulation techniques to motivate workers with low

education¹⁹.

Cellular health interventions have a positive impact on efforts to prevent and improve health care, such as HIV detection services for adolescents and reproductive-age populations and comprehensive health screening¹¹. The application becomes a health promotion strategy and as a monitoring tool. The application can enable users to increase self-monitoring and increase awareness about health²⁰.

Based on the results, mobile applications that promote smoking cessation are well received by smokers who are hospitalized to give smokers an understanding of the effects of smoking²¹.

The Smart Moms application was successful in increasing knowledge, attitudes and behavioral change interventions in the form of 18 modules which began at 13 weeks-24 weeks' gestation. Modules contain weight management treatments to encourage ideal body weight, self monitoring and healthy food recipes²².

Effects of Health Education Provided Repeatedly Using the DeDi torRi application Towards Knowledge and Attitude Improvement

The average difference in the first pre-test and post-test in the first health education is 11.50 and the average difference in the post-test I post-test II in the second health education is 1.45 means that there is an increase in knowledge about preconception care. Difference in average attitude at the time of pre-test and post-test I 2.60 and the difference in post-test I post-test II that is 1.98 means that there is an increase in the attitude of preconception care.

The results of this study are consistent with the results, that reproductive health health education provided repeatedly is effective in increasing adolescent knowledge and attitudes about reproductive health²³.

CONCLUSION

Preconception care health education through DeDi torRi (application-based module) and education that is given repeatedly to reproductive age mothers can influence the increase in knowledge and attitude of preconception care. Health workers can consider methods of providing information or health education through an application-based module for mothers who are planning a pregnancy so that the pregnancy

can run safely and healthily.

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