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The Effect of Using Meet You Application on the Knowledge of Menstrual Cycle of Women's Reproductive Age

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ABSTRACT

The population in Indonesia continues to increase, one of which is caused by the high birth rate. One of the countermeasures is through the Family Planning program with a simple calendar contraceptive method. However, the use of this method has a challenge, namely the lack of understanding of Women's Reproductive Age regarding the menstrual cycle, which varies between 21-35 days. The menstrual period recorder application, Meet You, can act as an effective educational tool to improve the knowledge of the menstrual cycle of women. The research method used a Quasi Experiment design with a Pretest-Posttest Control Group Design approach, with a population of 129 Women's Reproductive Age, sampling using purposive sampling technique with a total sample of 32 respondents who met the inclusion criteria. Data were analyzed using paired t-test with a p - value of 0.001 (<0.05), indicating a significant increase in menstrual cycle knowledge after using the Meet You application. Based on this study, there is an effect of using the Meet You application on the knowledge of the menstrual cycle of Women's Reproductive Age. The Meet You application is easily accessible and relevant so it is recommended for use in increasing knowledge of the menstrual cycle, and can understand the menstrual cycle of Women's Reproductive Age.

Keywords: obstetrics; menstrual cycle; women of reproductive age; menstrual period tracker

Introduction

The population in Indonesia is increasing every year. One of these problems is the high birth rate. Indonesia is one of the most populous countries in the world after India, China and the United States [1]. One way to tackle the high birth rate is to implement a family planning program using contraceptives. The calendar method is a simple contraceptive method carried out by Couples of Fertile Age (PUS) by avoiding coitus or sexual intercourse during the fertile period.

According to the results of the updating of family data collection in 2023 by BKKBN, the use of modern contraception is certainly more used by Women's Reproductive Age, which is 60.9%, but there are still Women's Reproductive Age who use traditional contraception, which is 0.5%. According to data from the Central Bureau of Statistics of East Java Province in 2023, the percentage of women who had ever used contraception increased by 1.84 percent. However, the percentage of women who were using contraception decreased by 2.92 percent compared to 2022. Based on preliminary studies conducted at BKKBN Malang City in December 2024 the number of PUS amounted to 104,338 people. In Blimbing sub-district there are 22,597 PUS, 14,675 active modern family planning participants, so there are still 7,992 PUS who use natural family planning. In the RW 04 and RW 06 Kelurahan Jodipan area, there are 129 Women's Reproductive Age. Some Women's Reproductive Age choose natural methods because they are considered

more in line with religious values, do not involve hormonal intervention, do not cause systemic side effects, and do not require invasive medical procedures. Furthermore, the perception that the calendar method is more "natural" and safer for the body is also supported [2].

One of the main challenges in the use of calendar contraceptive methods is the lack of understanding of how to calculate the fertile window. The lack of knowledge of women who use traditional contraception can hinder the effectiveness of the chosen contraceptive method [2]. This research does not aim to replace the contraceptive options used by Women's Reproductive Age, but rather to improve understanding of the menstrual cycle so that women who choose the calendar method can use it more accurately, informedly, and responsibly. Improving reproductive literacy is key to ensuring the effective and safe use of natural methods. A Decision-Making Aid (ABPK) is a flip sheet that serves as a tool in making family planning program decisions for clients [4]. The use of ABPK can make the counseling process more effective because it provides complete and clear information about various aspects of contraception [5]. Midwives use ABPK in the form of flipcharts as a counseling tool to help clients understand contraceptive method options through structured education during face-to-face sessions. However, ABPK has limitations because it doesn't provide a mechanism for ongoing monitoring after counseling is complete.

WHO encourages efforts to expand access to and information about effective contraception, sexual education, and reproductive health-related support and services [6]. The use of application media in providing health education can help clarify the information conveyed because the display is more attractive and easy to understand [7].

According to WHO, digital health technologies, such as apps, can improve women's health by providing essential reproductive information, increasing knowledge, and encouraging autonomy in deciding when to become fertile [8]. One of the applications is a menstrual period recorder, Meet You, designed by Josh Horwitz. This application is used as an effective educational tool to Increase The Knowledge and Awareness Of Women's Reproductive Age regarding the menstrual cycle, fertile period and related to reproductive health. The Meet You app is not positioned as a replacement for ABPK, but rather as a complement that strengthens conventional education. ABPK serves as an initial educational medium for healthcare workers, while the Meet You app is used as a self-monitoring tool for Women's Reproductive Age so that the learning process and application of the calendar method can take place more consistently and not stop at just the counseling session. Previous research says that mobile applications for tracking the menstrual cycle are increasingly popular by using the application can facilitate women in timing their sexual intercourse at the fertile period of the menstrual cycle to increase the likelihood of conception or to avoid conception [9]. Other research shows that adolescents and Women's Reproductive Age can utilize technology applications, for example the Menstrual Calendar Application which can make it easier to know their fertile period [10].

The use of the Meet You application has the potential to assist Women's Reproductive Age in delaying pregnancy. By increasing knowledge about the fertile period and providing the necessary support, this application can help women make more informed decisions about their reproductive health. Meet You application was chosen because it is free, easily accessible on commonly used Android devices, and has a simple interface that can be understood by women of all educational levels. Therefore, its selection was based on the suitability of its features and the characteristics of respondents at the community level, rather than commercial considerations. Based on the above background, the authors are interested in examining the "Effect of Using the Meet You Application on the Knowledge of the Menstrual Cycle of Women's Reproductive Age".

Method

The type of research used in this study is *Quasi Experiment with Pretest - Posttest Control Group Design* approach. The control group received education using only the ABPK (Decision-Making Aid) media, in accordance with the standard education provided in healthcare facilities. Meanwhile, the intervention group received education using a combination of ABPK and a digital-based application. This research was conducted in Jodipan Village in June - July 2025. The population used was all Women's Reproductive Age in RW 04 and RW 06 villages of 129 Women's Reproductive Age and a sample of 32 Women's Reproductive Age using purposive sampling technique with inclusion criteria who were willing to become research subjects by filling out informed consent, calendar method acceptors, having a

smartphone, not being pregnant, regular menstrual cycles every month, and had never used a menstrual period recorder application. A sample size of 32 respondents was deemed adequate because in a pretest–posttest design, each respondent acts as their own control. A sample size of ≥ 30 meets the assumption of normality based on the Central Limit Theorem and is sufficient to detect differences in means using a paired t-test at a 5% significance level.

The independent variable was an integrated educational intervention combining ABPK flip chart counseling and the Meet You application. ABPK was delivered during face-to-face sessions to provide structured explanations about the menstrual cycle and the calendar method, while the Meet You application was used for one month as a self-monitoring digital tool with reminder and fertile period prediction features to reinforce and sustain learning outcomes. The dependent variable in this study was the knowledge of Women's Reproductive Age about the menstrual cycle. Women's Reproductive Age data were obtained from the records of knowledge data were obtained from the answers to a 20-item questionnaire by Women's Reproductive Age regarding the menstrual cycle measured before and after the intervention. Application using an interval scale with a score of 0 - 100.

Before conducting the parametric test, a normality test using Shapiro–Wilk was performed because the sample size was less than 50 respondents. The test results showed that all pre-test and post-test data in both groups had a p-value > 0.05 , indicating that the data were normally distributed. Therefore, the analysis was continued using parametric tests in the form of Paired t-test and Independent Sample t-test.

The data analysis used was univariate analysis to describe the characteristics of respondents such as age, occupation and education using percentage while knowledge using maximum, mean, and minimum. Bivariate analysis used paired t -test to determine whether there was an influence between the two variables studied. This research has passed the ethical review by the Malang Ministry of Health Polytechnic Research Ethics Commission Team at KEPK with DP.04.03/F.XXI.30/00640/2025.

Results and Discussion

1. Analysis Univariate

Table 1.
Distribution Frequency Characteristics Respondents

Characteristics	Intervention Group		Control Group	
	<i>f</i>	%	<i>f</i>	%
Age				
<20 years	0	0	1	6.25
20 - 35 years	12	75	11	68.75
>35 years	4	25	4	25
Amount	16	100	16	100
Education				
JUNIOR HIGH SCHOOL	6	37.50	2	12.50
SENIOR HIGH SCHOOL	9	56.25	13	81.25
College	1	6.25	1	6.25
Amount	16	100	16	100
Work				
Work	1	6.25	2	12.50
Doesn't work	15	93.75	14	87.50
Amount	16	100	16	100

Table 1 for the intervention group shows that none of the respondents were under 20 years old, with the majority being between 20 and 35 years old (12 respondents (75%)), and very few respondents aged 4 or over 35 years old (25%). Respondent characteristics based on education show that almost half of the respondents had a junior high school education (6 respondents (37.5%)), some answered with a high school education (9 respondents (56.25%)), and very few respondents had a college education (6.25%). Respondent characteristics based on occupation show that almost all respondents were unemployed (15 respondents (93.75%)), and very few respondents were employed (1 respondent (6.25%)).

Table 1 group control show that very little from respondents aged <20 years as many as 1 person (6.25%), some big respondents aged between 20 – 35 years as many as 11 people (68.75%) and very few respondents aged >35 years as many as 4 people (25%). Characteristics respondents based on education show that almost half respondents with education final are 2 junior high school students (12.5%), some of them respondents with education the last high school graduate was 13 people (81.25%), and very few respondents with education final College, namely 1 person (6.25%). Characteristics respondents based on work show that almost all over respondents is No Work as many as 14 people (88.5%) and very few respondents is Work as many as 2 people (12.5%).

The majority of respondents were Women's Reproductive Age aged 20-35 years, an effective age range for contraceptive use and reproductive decision-making [11]. Knowledge is also influenced by age, because the maturity of thinking increases with age [12].

The last level of education does not always determine knowledge, experience and learning processes, both formal and informal, also play an important role [13]. All respondents, regardless of educational background, can increase knowledge through the Meet You application that not working or as a housewife can help increase knowledge, according to Maulida in Nursa'idah's research knowledge and experience can be obtained from the environment which is obtained directly or indirectly [14].

Table 2.

Frequency Distribution of Women's Reproductive Age Knowledge Regarding the Menstrual Cycle Before and After Using ABPK Media and the *Meet You* Application

Group	Score (Range)	Mean	Std. Dev	Difference	p-value
Experiment	<i>Pre-Test</i> (25 – 50)	39.38	7,719	45	0.001
	<i>Post-test</i> (70 – 100)	84.38	7,932		

Table 2 shows that before given experiment ABPK usage and applications *Meet You* in give education about cycle menstruation , has an average of 39.98, while after given ABPK and Application *Meet You* has an average of 84.38. Then tested use *paired sample t-test* get results *p – value* 0.001 (<0.05), so can concluded that there is difference knowledge about cycle menstruation in groups experiment before and after given ABPK and application *Meet You*.

Before being given the Meet You application intervention, most respondents were able to correctly answer three main questions related to the length of menstruation, prediction of the next cycle, and markers of the beginning of menstruation according to the Meet You application. After the intervention, almost all questions were answered correctly, although there were still those who had difficulty calculating the length of the cycle without the help of the application.

The analysis results showed a significant increase in the mean knowledge score after the intervention ($p < 0.05$). To strengthen the interpretation of these findings, an effect size calculation was performed using Cohen's *d*, which showed a value of $d = 0.8$ (a large effect size). This indicates that the intervention was not only statistically significant but also had a strong practical impact in improving respondents' understanding of the menstrual cycle.

The effectiveness of the intervention can be explained by the integration of traditional counseling and digital reinforcement. ABPK provides structured information during counseling sessions, but its limitation lies in the absence of ongoing monitoring and reminder mechanisms.

During one month of observation, respondents who used the Meet You application became more active in consulting and reading reproductive health materials in the Meet You application. This application is designed to follow technological developments, has an attractive appearance, is easily accessible, and provides menstrual cycle reminder features (menstrual cycle, fertile period, safe period, monthly cycle prediction), making it easier to monitor and improve Women's Reproductive Age' knowledge about the menstrual cycle. Respondents stated that the reminder features and educational materials in the application made monitoring the menstrual cycle easier and knowledge increased regularly.

According to the researchers, this application is more attractive and easily accessible, making it easier to monitor the cycle every month, so it is effective in increasing knowledge. Another study showed that attractive app-based health promotion media can encourage self-learning about reproductive health [15] Similar results were also found which stated that cycle tracker applications are popularly used by women to understand reproductive health, including fertility information and other health indicators [16].

So, the combination of ABPK and digital applications results in a more comprehensive, sustainable educational approach and has a practically meaningful impact on increasing the knowledge of Women's Reproductive Age.

Table 3.

Distribution Frequency Women's Reproductive Age knowledge regarding Cycle Menstruation in Groups Control using ABPK media

Group	Score (Range)	Mean	Std. Dev	Difference	p-value
Control	<i>Pre-Test</i> (30 – 70)	44.69	9,911	8.75	0.004
	<i>Post-test</i> (40 – 70)	53.44	8,892		

Table 3 shows that before given ABPK education regarding cycle menstruation, has an average of 44.69, while after given an average ABPK of 53.44. Then tested use *paired sample t-test* get results *p – value* 0.001 (<0.05), so can concluded that there is difference knowledge about cycle menstruation in groups control before and after given ABPK.

During one month of observation, the use of ABPK proved to be less effective for monitoring the menstrual cycle because all respondents did not have ABPK at home and only relied on a regular calendar. Many respondents still forgot to record the exact date of the start of menstruation so they did not know the duration of the menstrual cycle each month because there was no reminder. This study is in line with other studies which state that not all women routinely record their menstrual cycle. The reasons include busy work, taking care of children, and household chores that make them not have time or forget to record in a notebook [17].

Researchers argue that respondents still often forget the exact date when menstruation starts and forget to mark the date because they do not have a reminder feature. So that respondents do not know how long the menstrual cycle is each cycle.

2. Analysis Bivariate

To examine differences in knowledge improvement between the experimental and control groups, an Independent Sample t-test was conducted. This test compared post-test scores between groups to determine the effect of the intervention. A significance level of $p < 0.05$ was used.

Table 4.

Analysis of Differences in Women's Reproductive Age Knowledge Regarding the Menstrual Cycle Between the Experimental Group and the Control Group

Group	Score (Range)	Mean	Std. Dev	Difference	p-value
Experiment	<i>Post Test</i> (70 – 100)	84.38	7.93	30.94	0.001
Control	<i>Post Test</i> (40 – 70)	53.44	8.89		

The Independent Sample t-test showed a statistically significant difference in post-test scores between the experimental and control groups ($p = 0.001$). The experimental group demonstrated a substantially higher mean score 84.3 compared to the control group 53.44. This finding indicates that

the addition of the Meet You application to ABPK produced a significantly greater improvement in knowledge compared to ABPK alone.

This knowledge research can cover 3 levels, namely knowing, understanding, and application. This study shows that after using the Meet You application, almost all respondents have good knowledge about the menstrual cycle, except for one respondent with sufficient knowledge. This attractive and easily accessible application makes it easier for users to monitor the menstrual cycle. In contrast, in the control group, most respondents had moderate to poor knowledge. This finding is in line with research stating that application media in health education can clarify information because of its attractive appearance and easy to understand [7].

Women's Reproductive Age can understand (Comprehension) in monitoring the menstrual cycle will make it easier when planning, delaying or ending a pregnancy that does not use birth control to regulate the timing of sexual intercourse. In accordance with the results of research [9] by understanding the use of mobile applications to track the menstrual cycle can facilitate women in regulating the timing of their sexual intercourse during the fertile period of the menstrual cycle to increase the likelihood of conception or to avoid conception.

Women's Reproductive Age can apply (Application) the application that has been given then most likely will not forget to mark their menstrual cycle. In accordance with the results of the study which showed that the application has a reminder feature and prediction of the menstrual cycle according to the needs and cycles of each user [18].

So that there is a difference in knowledge between the experimental group and the control group, there is an effect of using the Meet You application on the knowledge of the menstrual cycle of women of childbearing age.

This research has been carried out according to the procedure but there are still limitations in the implementation of the study, namely researchers pay less attention to the media used, which is not equal between printed media and digital, researchers only monitor the marking of the menstrual cycle, do not determine the material that must be learned for 1 month.

Conclusion

Based on the findings and discussion of research related to the effect of using the Meet You application on the knowledge of the menstrual cycle of women of childbearing age in Jodipan Village, the intervention group has an average of 84.38, while the control group has an average. There is a difference in the level of knowledge of the Women's Reproductive Age menstrual cycle between the experimental group and the control group. So it can be concluded that there is an effect of using the Meet You Application on the knowledge of the menstrual cycle of women of childbearing age. Suggestions and input for institutions to improve academic quality with research and technology-based education, as well as making a real contribution to the development of science and information for future researchers, for midwives to be able to take a combination approach between print media and digital media in providing education to Women's Reproductive Age, and for Women's Reproductive Age is expected to utilize the Meet You application to make it easier to monitor the menstrual cycle every month, for future researchers is expected to pay attention to the media used and other factors that can affect the menstrual cycle.

Thank-you note

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