

CHANGES IN MIDWIFERY KNOWLEDGE ON THE TRIAL OF THE SAMSIDER-JULI PREGNANCY EXAMINATION APPLICATION IN EFFORTS TO PREVENT MATERNAL MORTALITY IN DAIRI REGENCY

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ABSTRACT

Introduction Online antenatal care can help provide relatively economical medical services and reduce inequality for health checkups, especially for pregnant women, cost-effectiveness, especially in developing countries or large areas such as Indonesia, especially Dairi as a mountainous area where health services still cannot reach the entire community, especially in areas that do not have infrastructure and facilities that cannot be passed by vehicles such as motorcycles and cars. However, some pregnant women doubt the reliability of the online information because they do not communicate directly face-to-face. Therefore, it was important to ensure the quality and security of online services. Online pregnancy examination services using an application so that midwives and patients can write complaints in the application where the 14 T service was already available in the application. *Method:* This study was quasi-experimental research. The sample was 84 midwives (Slovin formula) and was selected in a balanced manner (proportional to size). Bivariate analysis uses the paired t test to analyze the difference in midwifery knowledge before and after the trial of using the pregnancy examination application. *Results of the study:* Knowledge shows that before the trial of using the Samsider-Juli pregnancy examination application, the majority of midwives had poor knowledge, which was 48 people 57.1%. After the trial of using the Samsider – Julipregnancy examination application, the majority of good knowledge was 56 people 66.7%. The test using the paired t test showed that there was a difference in the knowledge of midwives before, namely the mean value of 30.15 and after the mean value of 31.35. Midwifery knowledge has increased after the trial of using the Samsider-Juli pregnancy examination application with a mean difference of 1.20238 and p value of 0.002. This means that statistically there was statistically significant difference ($p < 0.05$) difference in knowledge before and after the trial of the pregnancy screening application. *Conclusion:* There was a change in the knowledge of midwives before and after the trial of the Samsider – Juli pregnancy examination application where the knowledge of midwives became better.

Keyword : antenatal , pregnancy examination

INTRODUCTION

Online antenatal care was a better alternative for these women because it can provide pregnancy-related information and remote clinic consultations. Online antenatal care can help provide relatively economical medical services and reduce

healthcare inequalities, due to convenience and cost-effectiveness, especially in developing countries or large regions. However, some pregnant women will doubt the reliability of such online information. Therefore, it was important to ensure the

quality and security of online services. Build a stable and mutually beneficial trust between pregnant women, obstetric care providers and technology online programs ⁽¹⁾.

Pregnancy a process that starts from conception and develops until the fetus was full-term, 280 days or 38-40 weeks will give birth. Antenatal care (ANC) refers to services offered by health workers to pregnant women according to predetermined guidelines. Approximately 500,000-1,000,000 women die each year worldwide as a result of pregnancy complications. Most of these deaths occur in developing countries. According to the World Health Organization (WHO) 2020, around 55 percent in Asia, 40 percent in Africa and only 1 percent in developed countries. In the United States, the maternal mortality ratio is about 7.7 deaths per 100,000 live births over the past 17 years. This maternal death in the United States can be prevented through timely intervention. The maternal mortality rate (MMR) for American women is higher for all age groups and for every cause of death. Most American women do not check for pregnancy early in pregnancy.

Bloom in Notoatmodjo (2012) divides human behavior into three domains, namely cognitive, affective, and psychomotor. The cognitive domain is measured from knowledge, the cooperative domain in behavior, namely knowledge is interpreted as the result of knowing and this happens after people sense a certain object. Knowledge or cognition was a very important domain for the formation of a person's actions (overt behavior). An individual's knowledge of something can change and develop according to their abilities, needs, experiences and the high and low mobility of information about something in their environment. Knowledge is the result of knowing after a person senses a certain object. Sensing occurs through the five senses including the five human senses, namely the sense of sight, the sense of smell, the sense of

hearing, the sense of taste, and the sense of touch. A person's knowledge of objects has different intensities or levels consisting of 6 levels, namely know-understand-application-analysis-synthesis-evaluation.

The results of the research of Sitorus, S et al. 2020 out of 150 midwives studied, 108 people (72.0%) have implemented a referral system in accordance with the implementation of antenatal care. The average value of knowledge before treatment was 8.19 in the case group and 8.25 in the control group, the average attitude value was 8.17 in the case group and 8.24 in the control group and the average action value was 8.87 in the case group and 8.89 in the control group. After training on the implementation of antenatal care, it was known that there was an increase in knowledge, attitudes and actions of midwives in implementing antenatal care. Knowledge ($p = 0.000$), attitude ($p = 0.000$) and actions ($p = 0.000$) in the application of antenatal care have an effect on the implementation of the referral system to prevent maternal mortality in Dairi Regency ⁽²⁾.

Antenatal visits for monitoring and supervision of maternal and child welfare at least four times during pregnancy in time, namely up to the first trimester pregnancy (<14 weeks) one visit, and the second trimester pregnancy (14-28 weeks) one visit, and the third trimester pregnancy (28-36 weeks and after the 36th week) two visits. Nationally, the target of antenatal care visits is 90%. Assessment of the implementation of health services for pregnant women can be carried out by looking at the coverage of K1 and K4 (3). Health services for pregnant women must meet the frequency of at least 6 ANC times and 2 times to the doctor. ANC is carried out at least 1 time in the First Trimester (TM I) (0-12 weeks), 1 time in the Second Trimester (TM II) (12-24 weeks), and 3 times in the Third Trimester (TM III) (24 weeks until before delivery), 2 times checked by a doctor during the First Visit

(K1) in TM I and the Fifth Visit (K5) at TM III ⁽⁴⁾.

The pregnancy screening application offered in this study is applied through hardware such as Personal Computer (PC), laptop or notebook and smartphone. Among these hardware,. From the description of change above, the very basic thing in the process of change is the knowledge of a person. The ways to gain knowledge are:

1. Traditional or non-scientific methods include:
 - a. The trial and error method is done by using possibilities in solving problems and if it does not work, other possibilities are tried.
 - b. The way of power or authority, other people accept the opinions expressed by people who have power or authority without testing them.
 - c. Based on personal experience, repeating past experiences in solving problems.
 - d. Through the path of thought both by induction and deduction. Induction is the process of making conclusions through special to general statements and deduction is the process of making conclusions from general to special statements.

The purpose of the study is to find out the changes in knowledge, midwives before and after the use of the pregnancy examination application. Analyze changes in knowledge before and after the use of the pregnancy screening app.

METHOD

This research uses a quantitative method and was carried out in Dairi Regency. The method that mothers with quasi-experiments to analyze changes in knowledge before and after the use of the pregnancy examination application. The sample was 84 midwives (Slovin formula) and was selected in a balanced manner (proportional to size). Bivariate analysis uses the paired t test to analyze the difference in midwifery knowledge before

and after the use of the Samsider – Juli pregnancy examination application.

RESULTS AND DISCUSSION

TRIAL Use of Samsider – Juli Pregnancy Examination Application in an effort to prevent maternal deaths in Dairi Regency

Before the trial of using the Samsider – Juli pregnancy examination application, it began with a pre-test to find out the knowledge of midwives to use the Samsider – Juli pregnancy examination application in an effort to prevent maternal deaths in Dairi Regency.

Pre-test

The trial of the use of the Samsider – Juli pregnancy examination application began with a pre-test to find out the knowledge of midwives in the use of the pregnancy examination application in an effort to prevent maternal deaths in Dairi district. The pre-test was carried out by distributing a questionnaire containing a statement about the midwife's knowledge about the Samsider – Juli pregnancy examination application and entering the pregnancy test results into the application. The results are as described below.

a. Knowledge before

Table. 1 Distribution of Midwives' Knowledge Frequency about Samsider Juli Pregnancy Examination Application Before the Trial

No.	Knowledge	Amount (n)	Percentage (%)
1.	Good	36	42,9
2.	Poor	48	57,1
Total		84	100

Based on table 1, the results of the study show that the knowledge of midwives about the trial of the samsider – Juli pregnancy test application before being given the majority was not good, namely 48 people (57.1%). The lack of good knowledge of midwives was evident from the midwives' answers to the statements in the questionnaire. Midwives tend to be less

aware that the results of pregnancy tests must be documented to the application, maternal death can be prevented as early as possible. Midwives also do not know that the standard 14 T pregnancy test needs to be loaded into the application appropriately and accurately.

b. Knowledge after

Table 2. Frequency Distribution of Midwifery Knowledge about Samsider-Juli Pregnancy Examination Application After the Trial

No.	Knowledge	Jumlah (n)	Persentase (%)
1.	Good	56	66,7
2.	Poor	28	33,3
Total		84	100

Based on table 2, the results of the study show that the knowledge of midwives after the trial of the pregnancy examination application is mostly good, which is 56 people (66.7%).

The following stage The difference between before and after the trial or pre test and post test was assumed to be an increase in knowledge, the results are as described below.

Table 3. Distribution of Differences in Midwifery Knowledge Before and After the Trial of the Samsider-Juli Pregnancy Examination Application

Variable		Trial of the Pregnancy Examination application Mean SD Mean Diff P Value			
		Mean	SD	Mean Diff	P Value
Knowledge	Before	30,15	2,377	-	0,002
	After	31,35	3,08765	38	

Based on table 3, the results of the study using the paired t test show that there was a difference in the knowledge of midwives before the mean value of 30.15 and after the trial use of the application with a mean value of 31.35. Midwives' knowledge increased after using the application with a

mean difference of 1.20238 and *p* value of 0.002. This means that statistically there was a statistically significant difference ($p < 0.05$) between the knowledge before and after the trial of the Samsider-Juli pregnancy screening application.

Discussion

A. Midwife's Knowledge

Based on the results of statistical analysis, the knowledge of midwives about the pregnancy examination application before and after the trial of the Samsider Juli. Pregnancy Examination Application for the prevention of maternal death. showed a poor majority, namely (57.1%). Poor knowledge of midwives before the trial of the Samsider-Juli Pregnancy Examination Application for the prevention of maternal death.

Midwives also lack knowledge in carrying out tasks related to reporting pregnancy test results by entering them into the application by writing down the results found and entering them into the features in the pregnancy examination application. After the trial of the JuliSamsider Pregnancy Examination Application, the knowledge of midwives who were previously the majority was not good 48 people (57.1%) changed to a good majority 56 people (66.7%). It can be seen that after being given education, the knowledge of midwives increases. Based on the paired t test, there was a difference in midwifery knowledge before and after the trial of the Samsider = Juli Pregnancy Examination Application in an effort to prevent maternal death. namely a mean value of 30.15. The increase with a mean difference of 1.20238 and *p* value of 0.002. Statistically, there was a significant difference ($p < 0.05$) between knowledge before and after the trial of the Samsider Juli Pregnancy Examination Application in an effort to prevent maternal mortality. The lack of good knowledge of midwives is evident from the midwives' answers to the statements in the questionnaire. Midwives tend to be less aware that the results of pregnancy tests

must be documented to the application, maternal death can be prevented as early as possible. Midwives also do not know that the standard 14 T pregnancy test needs to be loaded into the application appropriately and accurately.

Evaluation of the Digital Smart Education Model Samsider Juli pregnancy examination application.

A. Disadvantages

Some of the weaknesses found in this digital intelligent education model are:

1. This application uses an internet network that requires credit/data packages.
2. Midwives must have a smartphone or laptop to operate this application.
3. Pregnant women must also be able to enter complaints into the application if they do not regularly visit every month or carry out a minimum standard examination.

B. Advantages

Some of the advantages found in the Samsider – Juli pregnancy examination application are:

1. This application can be accessed through a web-based internet network with an http address. www.Cek.bumil.com.
2. It can make it easier for midwives to find out the pregnancy and the number of pregnant women and high-risk pregnancies to be immediately addressed.
3. Can help midwives predict pregnancy risk or not at risk.
4. Midwives continue to report in the standard 14 T pregnancy examination application.
5. Midwives can find out and detect pregnant women by looking at the application so that it facilitates early detection of pregnant women at risk and can group pregnant women in efforts to prevent the death of pregnant women based on the web.
6. This application is easy for midwives to understand because it is accompanied

by an operational instruction manual in the form of a pocket book.

CONCLUSION

There was a change in the knowledge of midwives before and after the trial of the Samsider – Juli pregnancy examination application where the knowledge of midwives became better.

What is already know on this topic

trial of the use of the Samsider Juli pregnancy examination application, midwife's knowledge

What this study adds

Pregnancy Application, Reduce Maternal Mortality

Competing interests

The authors declare no competing interest.

Authors' contributions

The first author carried out research and wrote reports and article manuscripts

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Tables and figures (if any)

Table 1 : Distribution of Midwives' Knowledge Frequency about Samsider Juli Pregnancy Examination Application Before the Trial

Table 2 : Frequency Distribution of Midwifery Knowledge about Samsider–Juli Pregnancy Examination Application After the Trial

Table 3 : Distribution of Differences in Midwifery Knowledge Before and After the Trial of the Samsider-Juli Pregnancy Examination Application

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