THE EFFECT OF HUSBAND'S SUPPORT MEDIA APPLICATIONS IN THE “MATTAMPU” ANTENATAL VISITS ON HUSBAND'S KNOWLEDGE

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ABSTRACT

Husband's support application in antenatal visits is a media, in the form of education and information about antenatal visits, including reminding wives to make complete antenatal visits, reminding them to take iron tablets, and regularly implementing tetanus toxoid immunization. This study aims to determine whether there is an effect of using the husband's support application in Android-based Mattampu antenatal visits on the husband's knowledge.

This type of research used a quasi-experiment design nonequivalent control group design. The sample was taken using a purposive sampling technique. The research was conducted at the BojoBaruPuskesmas, Barru Regency, from January 2021 to March 2021. The sample in the study was calculated at 52 people and divided into two groups of pregnant women (husbands) who fit the inclusion and exclusion criteria. The first group (intervention) amounted to 26 people, given intervention in the form of Mattampu application, in the meantime, the second group (control) consisted of 26 people conventionally, namely the KIA book, and given 14 days after the pretest and for the next posttest. Data were analyzed using the Wilcoxon and Mann-Whitney tests.

The age characteristics for the intervention and control groups, the majority are 21-25 years old and for the education category, the majority of higher education is 14 people and for the majority of those who work. The results showed that there was an effect of the Mattampu application on the husband's knowledge with p< 0.05 and there was a difference in knowledge of the group that used the Mattampu application as a source of information with p<0.05 and the mean rank was higher in the intervention group, namely 33.65 <19.35 which means there is a difference. The knowledge between the intervention group and the control group.

The use of the Mattampu application affects increasing the husband's knowledge in antenatal visits.

Keywords: Husband's support, Mattampu application, husband's knowledge.
I. INTRODUCTION

For a woman, the husband is a very significant symbol in pregnancy health care, providing a role in the form of support and involvement of a husband. The support and active involvement of the husband help to interest the relationship between husband and wife and is very influential during the couple's pregnancy. Husbands have the right to provide that support and accompany their wives during their pregnancy, including providing information related to pregnancy, but so many husbands do not know this form of role, such as to attend their wives in antenatal care. However, husbands have limited access to maternal health knowledge (Aarnio et al., 2018, Xue et al., 2018, Msoka et al., 2019, Jungari, 2020, Bawadi et al., 2016, Ngure et al., 2017, Aarnio et al., 2018, Khresheh et al., 2018, Tadesse et al., 2018).

According to the 2017 World Health Organization (WHO), approximately 295,000 (94%) maternal deaths during pregnancy and childbirth, there are five main factors of death due to Antenatal Care (ANC) examinations including poverty, distance, inadequate services, cultural practices, and lack of information. The role and support of a husband very the main milestone in accompanying a wife during pregnancy and childbirth, especially to attend during antenatal visits (WHO, 2017, Xue et al., 2018, Kwan Honga et al., 2020).

Health checks and antenatal visits are ways to see the progress of the pregnancy. Data from the State of Ethiopia states that 21% of pregnant women given support for complete antenatal care, and 16% of husbands do not provide this support due to several factors, one of which is the lack of information and communication aimed at them (Bawadi et al., 2016, Ngure et al., 2017, Aarnio et al., 2018, Khresheh et al., 2018, Tadesse et al., 2018).

It is in line with research conducted in Kendari North Sulawesi, 53.3% of husbands provide support to pregnant women, and 46.7% of husbands does not provide support for antenatal visits. The involvement of a husband starts from providing support during pregnancy, including accompanying and reminding his wife to do ANC examinations. (Tadesse et al., 2018, Xue et al., 2018, Aarnio et al., 2018, Hikmah, 2015, Rusdiana & Setiawan, 2019).

Pregnancy visit data in Barru District shows that out of 3,420 pregnant women who made K1 visits, only 3,248 (95%) were pregnant and experienced a decrease in K4 visits, namely 2,917 (85%) pregnant women. One of the factors that influence antenatal visits is the lack of support in the form of providing information about pregnancy which makes many pregnant women not make antenatal visits (Barru District Health Office, 2019).

Information and education, and communication are very influential on antenatal education obtained through media, one of which is electronic media, namely smartphones based on android. The use of android smartphones according to the International Data Corporation (IDC), be found 86.6%. This shows the importance of providing information about antenatal education and visits via an android smartphone. Smartphones can be accessed by anyone and are faster and contain a lot of information needed, and users are more flexible. Smartphones can also be used by pregnant women or husbands to access pregnancy education and participation in support of a husband against pregnancy care (Maseresha et al., 2016, Ghani et al., 2019, Eddy & Fife, 2020).

The results of a study reported that 45% of the husbands studied were knowledgeable about their husband's support for very poor antenatal visits as well as on pregnancy care and education. There are several factors, one of which is a consensual form of education wherein education is carried out about pregnancy examinations without involving the media and is not systematic, as well as the lack of involving husbands in providing information about ANC examinations (Tadesse et al., 2018, Whipps, 2017, Jazzar et al., 2017, Lupton, 2016, Mao et al., 2018).

II. MATERIALS AND METHODS

Location and Research Design

The research was conducted at the BojoBaru Community Health Center, Barru Regency, South Sulawesi Province. This study used quantitative research methods with a research quasi-experimental design with a nonequivalent control group design.

Population and Sample
The population in this study were 68 husbands of pregnant mothers in the first, second, and third trimesters. The sample in this study according to inclusion and exclusion was 52 people with the purposive sampling method. Then the sample was divided into two, some were given intervention in the form of the Mattampu application, and the second group used the KIA book. The inclusion criteria are couples of pregnant women to pregnancy in the first, second, and third trimester of age attendant in the working area of PuskesmasBojo, Barru Regency, a spouse of pregnant women who can read and write. The exclusion criteria were couples of pregnant women who were not willing to participate and do not want to do interviews with a couple of pregnant women who unable to keep up the whole series of research until it to the last. Spouses of pregnant women who are to stay in Barru Regency. Spouses of pregnant women who have permanent jobs except those who have work in the sea (Cruise).

**Data Collection Methods**

Collection instruments

were questionnaire sheets for prospective respondents, consent sheets or informed consent, datasheets for respondent characteristics, questionnaire sheets for pre-test and questionnaire sheets for post-test data

**Analysis**

To analyze the relationship between respondent characteristics and knowledge using the Chi-Square test and to find out the influence of pre-test and post-test knowledge in both the intervention and control groups used the Wilcoxon test and to find out the difference in knowledge between the two groups using the Mann-whiney test.

**Results**

A. Univariate Analysis.

I. Distribution of Respondents

Table 1 Distribution of Characteristics of Respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intervention</th>
<th>Group Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>N %</td>
<td>N %</td>
</tr>
<tr>
<td>21-25</td>
<td>17 65.4</td>
<td>17 65.4</td>
</tr>
<tr>
<td>26-30</td>
<td>9 34.6</td>
<td>9 34.6</td>
</tr>
<tr>
<td>Education</td>
<td>N %</td>
<td>N %</td>
</tr>
<tr>
<td>High</td>
<td>14 53.8</td>
<td>14 53.8</td>
</tr>
<tr>
<td>Low</td>
<td>12 46.2</td>
<td>12 46.2</td>
</tr>
<tr>
<td>Occupation</td>
<td>N %</td>
<td>N %</td>
</tr>
<tr>
<td>Working</td>
<td>18 69.2</td>
<td>18 69.2</td>
</tr>
<tr>
<td>Not Working</td>
<td>8 30.8</td>
<td>8 30.8</td>
</tr>
</tbody>
</table>

In Table 1, the data on the characteristics of the respondents were 52 respondents. The 52 respondents were divided into 2 groups, namely the intervention group and the control group. The division of the intervention group was 26 respondents and the control group was 26 respondents. The intervention group was given action in the form of providing husband support education in antenatal visits in the Mattampu V.2 application and the control group was asked to open and study the MCH book or other educational material and not given the Mattampu application. Characteristics of respondents indicate the age of respondents for the intervention group and the majority control group at the age of 21-25 years as many as 17 people (65.4%). Category of characteristics respondents’ for education in the intervention and control groups are highly educated (S1) as many as 14 people (53.8%). The characteristic category of job respondents for the respondent’s category who worked more than those who did not work, both in the control group and the intervention group.
1. Relationship between Respondent Characteristics and Husband's Knowledge about Antenatal Care

<table>
<thead>
<tr>
<th>Category</th>
<th>Level of Knowledge</th>
<th>TOTAL</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Good N</td>
<td>Enough N</td>
<td>Less N</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-25</td>
<td>28</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>26-30</td>
<td>12</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>40</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Higher Education</td>
<td>24</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Low</td>
<td>16</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Occupation</td>
<td>Work</td>
<td>32</td>
<td>2</td>
</tr>
<tr>
<td>Not working</td>
<td>8</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>10</td>
<td>2</td>
</tr>
</tbody>
</table>

Chi-Square

Table 2 shows the majority of age 20-25 as many as 34 people in the post-test intervention group. Based on the chi-square statistical test, it earned a value of p = 0.118 > 0.05 means that there is no relationship between age and knowledge, both ages 20-25 and at 26-30.

The majority of husbands who were given intervention in this study belonged to categorized of higher education, namely 28 people. Based on the chi-square statistical test, it was found that p-value = 0.031 < 0.05, there was a relationship between education and the husband's level of knowledge.

The majority of respondents who were given intervention in this study worked as many as 36 people. Based on the results of the chi-square statistical test, the value of p = 0.00 < 0.05 means that there is a relationship between work and the level of knowledge.

1. Bivariate

3. Effect of the Intervention Group and the Control

<table>
<thead>
<tr>
<th>Group</th>
<th>The Knowledge Level</th>
<th>Average</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less (N)</td>
<td>Enough (N)</td>
<td>Good (N)</td>
</tr>
<tr>
<td>Intervention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>20 (76.9)</td>
<td>5 (19.2)</td>
<td>1 (3.8)</td>
</tr>
<tr>
<td>Posttest</td>
<td>2 (7,7)</td>
<td>17 (65,4)</td>
<td>7 (26,9)</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>20 (76.9)</td>
<td>5 (19,2)</td>
<td>1 (3,8)</td>
</tr>
<tr>
<td>Posttest</td>
<td>14 (53.8)</td>
<td>11 (43.2)</td>
<td>1 (3,8)</td>
</tr>
</tbody>
</table>

Wilcoxon Test

From the results of the analysis in the table above, table 3 shows that there is an influence between the intervention group and the level of knowledge husband. The majority of the knowledge level categories of the pretest intervention were 20 people (76.9%). After the intervention for 14 days, it was found that the majority of the intervention group who experienced a sufficient increase in knowledge were 17 people (65.4%). Whereas for the control group, the knowledge level category of the pretest intervention was less as many as 20 people (76.9%), and after the conventional intervention the category of the results of the control group's knowledge after the posttest was low, the level of knowledge was 14 people (53.8%) with 0.134 > 0.05 means that there is no significant influence between the level of knowledge and conventional education. Below is a graphic form of increasing the husband's knowledge:
Graph 1 shows an increase in knowledge about husband's support in antenatal care visits in the intervention group and the control group.

3. Differences in Knowledge of Husband's Support in Antenatal Visits Pre Test and Post Test in the Intervention and Control

<table>
<thead>
<tr>
<th>Group</th>
<th>Knowledge Level Before the Intervention</th>
<th>Knowledge Level After Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>N Mean Rank 39.50</td>
<td>N Mean Rank 33.65 P-Value 0.00</td>
</tr>
<tr>
<td>Intervention</td>
<td>Control 26 13.50</td>
<td>Control 26 19.35 P-Value 0.00</td>
</tr>
</tbody>
</table>

Mann-Whitney

Based table 4 shows that the pretest intervention group and the pretest control group with a value of p<0.05 with a value of 0.00<0.05, it is concluded that Ha is accepted with a greater mean value of the intervention group compared to the control group, namely 39.50, it means that there is a difference in knowledge between the two groups, while the posttest group for the posttest intervention group and the control group shows that the p-value <0.05 with the mean rank of the posttest intervention group is higher, namely 33.65, it can be concluded that Ha is accepted, meaning there is a different knowledge between the intervention and control groups. This shows the influence of Mattampu's application on their husband's knowledge.

III. DISCUSSION

52 respondents were divided into 2 groups, namely the intervention group and the control group. The division of the intervention group was 26 respondents and the control group was 26 respondents. The intervention group was given intervention in the form of husband support education in antenatal visits in the Mattampu V.2 application whereas the control group was not given the Mattampu application.

In table 1, the characteristics of the respondents indicate the age of the respondents for the intervention group and the majority control group at the age of 21-25 years as many as 17 people (65.4%). Category of respondents' characteristics for education in the intervention and control groups were more highly educated (S1) as many as 14 people (53.8%). The characteristic category of job respondents for the respondent's category worked more than those who did not work, both in the control group and the intervention group.

Based on table 2, education can have a huge influence on increasing a person's knowledge. One of the impressions in increasing knowledge is age. Age is one of the characteristics of the respondents in this study. The
categories of respondent characteristics for the intervention group in the study were the majority of respondents aged 20-25. Age is the length of life calculated from birth the increasing age the more reproductive they are. The results of statistical tests showed that there was no relationship between age and husband's knowledge of antenatal visits with a value (p> 0.05). As for the education group, in this study, the majority of respondents' characteristic categories were high education groups. Chi-square test results showed a relationship between education and knowledge of husbands about antenatal visits with p> 0.05 or 0.031< 0.05. One thing that also affects knowledge is work. Work is a type of position in which a person performs an activity to get a wage or payment. Work is the main activity that supports the needs of the house. In this study, the majority of respondents' characteristics category worked. The results showed that there was a relationship between work and knowledge with 0.01< 0.05 (Wawan, 2010., Notoatmodjo., 2010, Rosidi Yun Indah., 2018., Wawan, 2010., Budiar Vitivi, 2018., Alanazy, 2019., InayahNur, 2019).

Based on Table 3, the current digitalization era can easily acquire knowledge in the form of information with the presence of the media. One of the media used is electronic media, namely smartphones (Aarnio et al., 2018, Xue et al., 2018, I Compound Gloria et al., 2016., Msoka et al, 2019, Hungary 2020., Rosidi Yun Indah, 2018 ., Fitria Wulandari et al., 2018). Smartphones themselves are widely used in health services in providing education. However, many individuals do not take advantage of the power of this technology to increase knowledge for various reasons including the lack of desire for it because they think that health services, especially pregnancy, are only women who have this role (Bawadi et al., 2016, Ngure et al., 2017, Aarnio et al., 2017). al., 2018., Khesheh et al., 2018, Tadesse et al., 2018., Nazari Laela et al., 2020., Huebsch Marco et al., 2016., Cummins Allison., 2019., Tsai Jing Yi et al. al., 2018).

Based on the results of this study, it was found that there was an effect of increasing husband's knowledge in antenatal visits where the increase in knowledge was quite significant in the group given the intervention, namely the Android-based Mattampu v.2 application after being given a posttest. Where the results of the increase in knowledge can be seen with the results of the Wilcoxon statistical test with a value of p = 0.00 <0.05, wherein the Wilcoxon test, it means that there is an effect of increasing the husband's knowledge in antenatal visits.

This is in line with research conducted by Santoso Dana Hanna in 2017 and Chang Ling Ko in 2019, where increasing the husband's knowledge of antenatal visits and the health of pregnant women in implementing pregnancy applications can reduce the three delays which can ultimately reduce maternal mortality. The Android application is more efficient and useful in providing health education because it facilitates the delivery of messages and receipt of educational messages and the use of the android application for the husband to be positively involved in antenatal care of a wife by using social media and health applications. The involvement of a husband in improving health outcomes (Hanna Dana Santoso, 2017, Ko Ling Chang et al., 2019)

Unlike the case with respondents in the control group who were given education conventionally, namely the KIA book, it was found that there was no significant increase in knowledge after the respondents were given the pretest and posttest significantly. The husband did not experience an increase in knowledge this can be seen from the statistical test where the p value> 0.05 means that there is no increase in knowledge with the results of p = 0.058> 0.05.

From the results of the above research, it can be concluded that Husband's Support in Android-Based Antenatal Visits is very influential on increasing the knowledge of husbands who are not given the intervention of the Mattampu v.2 application. The Mattampu application is designed for pregnant women and their partners to more easily get information about antenatal visits with an attractive appearance that is easily accessible and can be used in offline mode. One of the advantages of the mattampu application is that there are sound features. This voice feature functions if the husband and pregnant mother who access this application do not like reading the application, there is a feature where the information needed will be read out directly and the user only has to listen to the information provided so it is very easy. This is one of the reasons the matt application can provide a very significant increase in knowledge for husbands about antenatal visits.

Based on Table 5, education is a learning process from not knowing to know the value of health knowledge and knowledge is a level that affects communication. Knowledge is a domain that shapes a person's behavior patterns and is the result of experiences gained from oneself. Someone who has a low level of knowledge will find it difficult to respond to questions that contain verbal with high-level knowledge. Midwives need to know the patient's education level to communicate well (Notoatmodjo, 2010., Rahmawati, 2019., Hikmawati, 2019.,
Knowledge is obtained from various information media and can be accessed simply. In increasing knowledge, there are several ways, one of which is using the media as a way of providing education. Media that is often used in providing education include television, radio, newspapers, magazines, and the internet (Notoatmodjo, 2010; Mindhayanti Askari, 2017; Tahira et al., 2019).

The sample study used 52 respondents. The sample was divided into two groups, namely the intervention group with 26 respondents and the control group with 26 respondents. The results of statistical analysis show that there is a difference in knowledge between the intervention group and the control group where 0.00 < 0.005 means that Ha is accepted, meaning that there is a difference in the knowledge of the group given the intervention and the control group. This research is in line with research conducted by Rahmawati (2019) and Hikmawati (2018) which states that there is a significant difference between the knowledge of the group given the intervention and the control group with a p value < 0.05. One of the factors influencing the difference in knowledge between the intervention groups was the educational intention.

The more often the husband makes contact and sees the application, the more often the husband also gets information. The intensity of education is a supporting factor in understanding and is repeated so that it can increase knowledge compared to someone who has never been given education. However, the media also greatly affects the husband's knowledge because the husband will be interested in obtaining information through the media with an attractive appearance and is easier to use and can be carried anywhere, and is more flexible.

One of the very interesting media where the images and information used can encourage husbands to read the education is the Mattampu application. This is proven because the Mattampu application has an attractive appearance compared to conventional education using the KI book. The KIA book looks less attractive and less attractive today because people are more interested in digitizing, namely Android smartphones.

IV. CONCLUSIONS AND SUGGESTIONS
use of the Mattampu v.2 application can increase the husband's knowledge in providing support for antenatal visits, including reminding the wife to make regular and complete antenatal care visits and increasing the husband's knowledge in reminding his wife to consume Fe tablets regularly and reminding them to immunize tetanus toxoid according to the schedule given by the health worker.

The suggestions for the Mattampu V.2 application can be improved by adding content regarding education for husbands about the husband's role in preparation and assistance for childbirth.

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