



The Virtual Pregnant Models' Effect on Knowledge and Attitude About Mother and Child Health

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ABSTRACT

Health development in Indonesia today is still prioritized in efforts to improve the health status of mothers and children, especially in the most vulnerable groups, namely pregnant women, maternity, and perinatal babies. One of the objectives of the Maternal and Child Health (KIA) program is to increase family independence in maintaining maternal and child health. Mothers and children are the most vulnerable to various health problems that often result in death. The purpose of this study was to analyze the effect of a virtual model of pregnant women's classes on knowledge and attitudes about maternal and child health. This type of research is quasi-experimental. The population in this study were pregnant women in the working area of the South City Health Center in 2021 with a total sample of 64 respondents. The sampling technique is convenience sampling. This study was analyzed using the ChChi-Square. The results showed that there was no Effect of Virtual Model Maternity Class on Knowledge and Attitudes About Maternal and Child Health with a p-value > 0.05. Although the results show no effect, it is still important for health workers to provide education to pregnant women.

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ABSTRAK

Pembangunan kesehatan di Indonesia dewasa ini masih di prioritaskan pada upaya peningkatan derajat kesehatan ibu dan anak, terutama pada kelompok yang paling rentan yaitu ibu hamil, bersalin dan bayi masa perinatal. Salah satu tujuan program Kesehatan Ibu dan Anak (KIA) adalah meningkatkan kemandirian keluarga dalam memelihara kesehatan ibu dan anak. Ibu dan anak merupakan kelompok paling rentan terhadap berbagai masalah kesehatan yang seringkali berakhir dengan kematian. Tujuan penelitian ini adalah untuk menganalisis Pengaruh Kelas Ibu Hamil Model Virtual Terhadap Pengetahuan dan Sikap Tentang Kesehatan Ibu dan Anak. Jenis penelitian ini adalah quasi experiment. Populasi dalam penelitian ini adalah ibu hamil diwilayah kerja Puskesmas Kota Selatan tahun 2021 dengan jumlah sampel sebanyak 64 responden. Teknik pengambilan sampel adalah convenience sampling. Penelitian ini dianalisis menggunakan uji Chi Square. Hasil penelitian menunjukkan bahwa tidak ada Pengaruh Kelas Ibu Hamil Model Virtual Terhadap Pengetahuan dan Sikap Tentang Kesehatan Ibu dan Anak dengan p-value > 0,05. Walaupun hasilnya menunjukkan tidak ada pengaruh, petugas kesehatan tetap penting untuk memberikan edukasi kepada ibu hamil

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INTRODUCTION

Health development in Indonesia today is still prioritized in efforts to improve the health status of mothers and children, especially for the most vulnerable groups, namely pregnant women, maternity, and perinatal babies. One of the objectives of the Maternal and Child Health (KIA) program is to increase family independence in maintaining maternal and child health. Mothers and children are the most vulnerable to various health problems that often result in death.

Indonesia has the second highest mortality rate in Southeast Asia, with an MMR of 305 per 100,000 KH (ASEAN, 2017). Indonesia has a heavy task load to reduce maternal mortality to less than 70 deaths per 100,000 KH globally in 2030 by the target of the Sustainable Development Goals (SDGs).

In North Sulawesi Province, the maternal mortality rate (MMR) in 2018 was 117.02 per 100,000 live births and the IMR was 10.37 per 1,000 live births. In 2019 it was 114.42 per 100,000 KH and the infant mortality rate was 10.34 per 1000 KH. As for Gorontalo Province, AKI based on data from the Gorontalo Provincial Health Office in 2017 was 44 cases and IMR 178 cases, in 2018 AKI was 29 cases and IMR 248 cases. The highest causes of maternal death in the two provinces are hemorrhage and hypertension and the causes of infant mortality are low birth weight (LBW) and *asphyxia* (Ekasari et al., 2019).

The high maternal mortality rate related to pregnancy and childbirth is one of the big problems in Indonesia, because this mortality rate shows a picture of the health status in a region, as an illustration of Indonesia's human development index, so that maternal and child health services become a top priority in health development in Indonesia. Indonesia (Kemenkes RI, 2019).

Efforts to accelerate the decline in AKI are carried out in the form of antenatal care (ANC) visits which are a protective factor against complications. An examination from the beginning of pregnancy is an effective intervention to prevent morbidity and mortality in pregnant women. The indicators used to describe the access of pregnant women to antenatal care are the coverage of K1 - first contact and K4 - four times contact with health workers who have competence according to standards. According to the 2018 Basic Health Research (Riskesdas), the coverage of ANC Visit 1 (K1) was 96.1% but K4 was only 74.1% (Astuti et al., 2018).

This indicates that many pregnant women do not routinely perform prenatal check-ups. In addition to factors of access and availability of facilities, the use of antenatal services is also influenced by the knowledge, attitudes, and perceptions that are less supportive of pregnant women (Adhar, 2021; Sariatmi et al., 2020; Surya et al., 2022).

One of the efforts that are expected to play a role in reducing morbidity and mortality due to pregnancy, childbirth, and the postpartum period in increasing the knowledge and skills of pregnant women, families, and communities is the use of MCH handbooks, but this effort still has several shortcomings including the knowledge gained is only limited to health problems. experienced during the consultation. Therefore, a method was developed to be able to provide accurate information to pregnant women, which is called "CLASS FOR PREGNANT MOTHERS" (Kemenkes RI, 2014).

However, the implementation of KIH in Indonesia has not been optimal. Research conducted in Temanggung, Jepara, Kenda, Batu City, Bogor Denpasar and Semarang City found that the presence of mothers in KIH only ranged from 29.5%

to 62.5%. In Malang City, only 30% of KIH was implemented well, 20% had not been implemented properly and 50% were not implemented. The results of Llara's (2015) research in Wonosobo stated that only 72.7% of pregnant women regularly attend class activities for pregnant women (Laras Prastiyawati, 2015; Nurdiyan et al., 2015; Siagian et al., 2020)

The South City Health Center is one of the health centers in the Gorontalo City area which started implementing classes for pregnant women in 2010 using BOK funds, but so far the implementation of the existing pregnant women class programs has not been effective. Based on a preliminary study conducted in January 2021, information was obtained from the coordinating midwife that only 65% of pregnant women routinely attended class activities for pregnant women, another reason for the absence of pregnant women was difficulty managing time.

The study shows the low participation of mothers in taking KIH with conventional methods because the material is less interesting, and the method is watching and boring. The desired class for pregnant women is a class that is carried out regularly with continuous material, using media to make it easier to understand (Sariatmi et al., 2020).

The strategy for implementing the KIH has proven difficult to capture opportunities, so changes are needed. Advances in communication and information technology can be used to change the KIH method in a virtual or *online*. In the current COVID-19 pandemic situation, the use of the virtual KIH model can support *social distancing* where the delivery of health education to pregnant women does not have to be collected in one room like the conventional KIH model, and communication and interaction take place continuously between pregnant women and each other as well as health workers (Julaeha, 2013).

METHOD

This type of research is quantitative with a quasi-experimental design using a *pretest* and *posttest design* (Notoatmodjo, 2018). This study used two groups: the case group was treated with a virtual model of pregnant women and the control group was treated with a conventional model of pregnant women.

The study was conducted in the working area of the South City Health Center with a sample of 64 people who met the inclusion criteria.

The instrument validity test (questionnaire) was carried out by comparing the *Corrected item-total Correlation* value with the table value r , at $df = 28$, $\alpha = 0.05$ at 0.361. Question items are said to be valid if the *Item-Total Correlation* > 0.361 and declared invalid if the *Item-Total Correlation* < 0.361 .

The reliability test was carried out after all the data were declared valid, and the analysis continued with the reliability test. The technique for calculating the reliability index of the measuring instrument uses *Cronbach Alpha*. The stipulation is that if the value of '*Cronbach's Alpha*' $>$ table (0.600) then the questionnaire items used in the study are declared reliable or reliable, and if the value obtained is $<$ r_{table} (0.600) then it is declared unreliable. The validity test of the questionnaire was conducted in the Sipatana Public Health Center Work area, Gorontalo City, on 30 pregnant women.

The analysis in this study, namely univariate analysis was carried out to get an idea of the frequency distribution of respondents, and bivariate analysis using the Wilcoxon test

with a significance level of = 0.05 to see differences in the knowledge and attitudes of respondents before and after the intervention. Then using the *chi-square* to see the difference

in knowledge and attitudes about maternal and child health in the case group and the control group before and after the intervention.

RESULTS AND DISCUSSION

Table 1. Distribution Table of Respondents

Characteristics of Respondents	Case		Control	
	n	%	n	%
Age				
at risk (<20 and >35 years)	7	22.6	8	25.8
Not at risk (20-35 years)	24	77.4	23	74.2
Total	31	100	31	100
Gestational age in the second trimester				
second trimester	15	48.4	18	58.1
third trimester	16	51.6	13	41.9
Sum	31	100	31	100
Parity				
Primigravida	2	38.7	12	38.7
Multigravida	17	54.8	17	54.8
Grandemulti	2	6.5	2	6.5
Total	31	100	31	100
Last Education				
SD	2	6.5	0	0
SMP	6	19.4	3	9.7
SMA	17	54.8	23	74.2
PT	6	19.4	5	16.1
Total	31	100	31	100
Work				
Work	22	71	8	25.8
Not Work	9	29	23	74.2
Total	31	100	31	100

Based on table 1 it can be seen that Most of the respondents' ages, both case and control groups, were in the non-risk category, while the case group was in the third trimester of pregnancy and the control group was in the second trimester. For parity, most of the respondents were in

the multigravida category, while for the education category, most of the respondents graduated from high school and most of the respondents did not work or were only housewives.

Table 2. Table of Frequency of Knowledge of Pretest and Post Test Control Groups on Maternal and Child Health

Knowledge of Case Groups	Pretest		Posttest	
	n	%	n	%
Good	7	22.6	30	96.8
Less	24	77.4	1	3.2
Total	31	100	31	100

Based on table 2 it can be seen that there is an increase in knowledge by 93.5% in the control group after being given the intervention.

Table 3. Table of Frequency of Knowledge of Pretest and Post Test Cases on Maternal and Child Health

Knowledge of Posttest Pretest Case	n		Groups	
	%	n	%	Good
7	22.6	30	96.8	Less
24	77.4	1	3.2	Total
31	100	31	100	Based

Table 3 it can be seen that there is an increase in case group after being given the intervention. knowledge about maternal and child health by 96.8% in the

Table 4. Maternal and Child Health

Case Group Attitudes	Posttest Pretest		Cases	
	n	%	n	%
Positive	16	51.6	11	35.5
Negative	15	48.4	20	64.5
Total	31	100.0	31	100

Based on table 4 it can be seen that the negative attitude in the group cases increased to 64.5% after the intervention

Table 5. Frequency of Pretest and Posttest Control Group Attitudes on Maternal and Child Health

The attitude of the Posttest Pretest Control Group	%		n	
	n	%	Positive	12
38.7	15	48.4	Negative	19
61.3	16	51.6	Total	31
100.0	31	100	Based on	

Table 5 can be seen that the positive attitude in the group control only increased by 48.4% after being given the intervention

Table 6 Changes in knowledge in case groups before and after intervention

Knowledge	Before	After	Changes	P Value
Less	24	1	Negative ranking = 23	0.000
Good	7	30	Positive ranking = 0	
Ties = 8				

Based on table 6 shows that there is a change in knowledge from the original good category 7 respondents after the intervention became 30 respondents. Wilcoxon test results showed $p(0.000) < (=0.05)$. This means that there is a change in knowledge in the case group before and after the intervention.

Table 7 Changes in attitude in the case group before and after intervention

Attitude	Before	After	Changes	P Value
Negative	15	20	ranking = 4	0.166
Positive	16	11	ranking = 9	
Ties = 18				

Based on table 7 shows that there is a change in attitude from the original negative category 15 respondents after the intervention became 20 respondents. Wilcoxon test results show $p(0.166) > (= 0.05)$. This means that there is no change in attitude in the case group before and after the intervention.

Table 8 Changes in knowledge in the control group before and after the intervention

Knowledge	Before	After	Changes	P Value
Less	24	2	Negative ranking = 22	0.000
Good	7	29	Positive ranking = 0	
Ties = 9				

Based on table 8 shows that there is a change in knowledge from the original good category 7 respondents after the intervention became 29 respondents The Wilcoxon test results showed $p(0.000) < (=0.05)$. This means that there is a change in knowledge in the control group before and after the intervention.

Table 9 Changes in attitude in the control group before and after intervention

Attitude	Before	After	Changes	P Value
Negative	19	16	ranking = 7	0.366
Positive	12	15	ranking = 4	
Ties = 20				

Based on table 9 shows that there is a change in attitude from the original negative category 19 respondents after the intervention became 16 respondents. Wilcoxon test results show $p(0.366) > (= 0.05)$. This means that there is no change

in attitude in the control group before and after the intervention.

Table 10 Cross-tabulation of knowledge in case and control groups before intervention

Knowledge	Group				Total		P value
	Control		Case		n	%	
	n	%	n	%			
Less	24	50	24	50	48	100	0.619
Good	7	50	7	50	14	100	
Total	31	50	31	50	62	100	

Based on test results *chi-square* value obtained $p = 0.619 > (0.05)$, it can be concluded that there is no difference in

knowledge between the control group and cases before the implementation of the intervention.

Table 11 Cross-tabulation of attitudes in the case and control groups before intervention

Attitudes	Group				Total		P value
	Control		Case		n	%	
	n	%	n	%			
Negative	19	55.9	15	44.1	34	100	0.222
Positive	12	42.9	16	57.1	28	100	
Total	31	50	31	50	62	100	

The results of the *chi-square* obtained $p = 0.222 > (0.05)$, so it can be concluded that there was no difference in attitude between the control group and cases before the intervention.

Table 11 Cross-tabulation of knowledge in case and control groups after intervention

Knowledge	Group				Total		P value
	Control		Case		n	%	
	n	%	n	%			
Less	2	66.7	1	33.3	3	100	0.500
Good	29	49.2	30	50.8	59	100	
Total	31	50	31	50	62	100	

The results of the *chi-square* obtained $p = 0.500 > (0.05)$, so it can be concluded that there is no difference in knowledge

between the control and case groups after the implementation of the pregnant women class.

Table 12 Cross-tabulation of attitudes in the case and control group after intervention

Attitude	Group				Total		P value
	Control		Case		n	%	
	n	%	n	%			
Negative	16	44.4	20	55.6	36	100	0.220
Positive	15	57.7	11	42.3	26	100	
Total	31	50	31	50	62	100	

test results *Chi-square* obtained $p = 0.222 > (0.05)$, so it can be concluded that there is no difference in attitude between the control group and cases after the intervention.

produce knowledge is strongly influenced by the intensity of attention and perception of the object. Most of a person's knowledge is obtained through the sense of hearing (ears) and the sense of sight (eyes) (Notoatmodjo, 2012).

DISCUSSION

The influence of pregnant women's classes on respondents' knowledge about maternal and child health

Knowledge is the result of human sensing, or the result of someone knowing about objects through their senses (eyes, nose, ears, and so on). automatically at the time of sensing to

Changes in knowledge and attitudes can be done with several strategies, one of which is the provision of information to increase a person's knowledge and attitudes to raise awareness that in the end, that person will have an attitude that is following his knowledge. In this case, the class for pregnant women is one of the efforts to provide information through study groups where pregnant women can learn together, and discuss and exchange experiences about maternal and child health comprehensively and

systematically that is carried out on a scheduled and continuous basis.

One of the objectives of the class for pregnant women is to increase the knowledge of mothers about antenatal care and examination. Knowledge of pregnant women about antenatal care and examination includes knowledge of mothers about the meaning of pregnancy, signs of pregnancy, complaints that are often experienced by pregnant women, physical changes of pregnant women, emotional changes of pregnant women, schedule of pregnancy checks, health services for pregnant women, taking care of pregnant women and fetuses. healthy, things that must be avoided by mothers during pregnancy, myths/taboo, and preparation for childbirth (Kemenkes RI, 2020)

Based on the results of the *chi-square* value $p = 0.619 > (0.05)$, it can be concluded that there is no difference in knowledge between the control group and cases before the intervention. Wilcoxon test results showed $p (0.000) < (=0.05)$. This means that there is a change in knowledge in the case and control groups before and after the intervention.

Classes for pregnant women are one of the strategies for disseminating information through study groups for pregnant women by studying together, discussing, and sharing experiences about maternal and child health thoroughly, and continuing to increase knowledge about care during pregnancy, childbirth, and the postpartum period. This means that there is an effect of class on pregnant women on mother's knowledge about antenatal care and examination (Khafidzoh et al., 2016; Syahda, 2014). Tladan Magetan Regency found that health education through class training for pregnant women was effective in increasing the knowledge of pregnant women about care about pregnancy.

According to Mardiya (2015), knowledge or cognition is a very important domain in shaping one's actions (*over behavior*). Knowledge can be obtained by someone naturally or by intervention, either directly or indirectly. One of the factors that affect knowledge is education, in this study most of the respondents 64.5% with a high school and college education background this, of course, has an impact on respondents' acceptance of the materials provided during the implementation of pregnant women classes both virtually as well as conventional.

According to WOOD (1926), health education is a useful experience in influencing the habits, attitudes, and knowledge of a person or society. Currently, maternal and child health education is generally still carried out through individual consultations or case by case, but there are still many weaknesses. So that the pregnant women's class learning method is implemented which aims to increase the knowledge and skills of pregnant women about their pregnancy (Kemenkes RI, 2011).

The influence of the class of pregnant women on the respondent's attitude about maternal and child health

Attitudes are not brought from birth but are formed and learned throughout the person's development about the object. Attitude is simply a tendency to act on an object in a way. So, attitude is a person's closed response to a certain stimulus or object, which already involves the relevant opinion and emotional factors (happy-not happy, agree-disagree, good-bad, and so on) (Notoatmodjo, 2012).

After someone knows the object or stimulus, the next process is to have or behave towards the stimulus or object. In this study, the class of pregnant women is a stimulus or

object that is expected to have an influence on respondents to behave following the objectives of the class of pregnant women.

The results of the *chi-square* obtained a *p-value* $> (0.05)$, so it can be concluded that there are no differences in attitudes between the control group and cases before and after the intervention. Maulana (2012) states that a person's attitude can change by obtaining additional information about certain objects, through persuasion and pressure from social groups. Attitudes can be formed from the social interactions experienced by individuals. In this study, the respondent's positive attitude was formed from the social interactions experienced by the respondent with health workers and fellow participants in the class of pregnant women (Maulana et al., 2012).

According to Azwar, the factors that influence attitude change include personal experience, the influence of other people who are considered important, the influence of culture, mass media, educational institutions, and religious institutions as well as the influence of emotional factors. From the explanation that has been described, it can be concluded that information from health workers also interacts and shares experiences between pregnant women and health workers about maternal and child health. Respondents know more and more about care during pregnancy, childbirth, and the puerperium, resulting in a more positive attitude about care during pregnancy.

CONCLUSION

Most of the pregnant women had good knowledge in the control group, as many as 29 mothers (49.2%) of 31 mothers, in the case group, namely as many as 30 mothers (50.8%), and most of the mothers who had a positive attitude in the control group, there were 15 mothers (57.7%), and in the case group, there were 11 mothers (42.3%).

There was no difference in knowledge between the control group and the case group after the implementation of the pregnant women class with a *p-value* > 0.05 and, there was no difference between the control group and the case group after the implementation of the pregnant women class with *p-value* > 0.05 and *p-value* > 0.220 . The recommendation from this study is that further research is needed on other risk factors related to the class of pregnant women with larger sample size.

ETHICAL CONSIDERATIONS

This study was approved by the research Ethics Commite, Politeknik Kesehatan Gorontalo No. LB.01/KEPK/58/2021

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