

The Effect of the Use of Hallobumil Application to Primigravid Pregnant Women's Anxiety

Yuyun Rahayu^{1*}, Rudi Kurniawan¹, Ima Sukmawati¹, Yanti Srinayanti¹, Aap Apipudin¹, Mia Juaningsih¹

¹STIKes Muhammadiyah Ciamis, Jl. K.H. Ahmad Dahlan No. 20, Ciamis, Indonesia

*yuyunr80@yahoo.com

Abstract. Anxiety is a pregnant woman's reaction to changes in herself and her environment that brings a feeling of displeasure caused by allegations of danger, endanger security, or the life of an individual or social group. In the era of increasing use of information and communication technology, there have been many android-based applications to support pregnancy. This study aims to determine the effect of the use of Hallobumil Applications on the anxiety of primigravida pregnant women in the working area of the Baregbeg Health Center in Ciamis Regency.

The research method uses the Pre-Experiment design with the One-Group pretest posttest design approach. Sampling using a purposive sampling method. Data processing uses the Wilcoxon test. Results of the study showed a decrease in anxiety levels of primigravida pregnant women after using Hallobumil Applications. Application of Pregnancy can reduce anxiety levels of primigravida pregnant women. Components of guided imagery contained in the Hallobumil Application include a timeline for monitoring pregnancy in the form of visualization of fetal growth and there are scenarios that guide the imagination of pregnant women as if talking to the fetus. By imagining a pleasant time and place can produce a positive emotional response as a distraction from an inconvenience so that anxiety will gradually decrease. Conclusion: there is an influence of the use of Hallobumil Application to the anxiety of primigravida pregnant women in the work area of the Baregbeg Health Center in Ciamis Regency.

1. Introduction

Pregnancy is a time of transition of life before having a child in the womb and life after birth. Emotions felt by pregnant women is quite unstable, the mother may have a reaction to the extreme and rapid mood changes [1]. Anxiety pregnant women is the reaction of pregnant women to change themselves and the environment that brings displeasure or discomfort caused by allegations of danger or frustration that threatened, jeopardizing safety, balance, or the life of an individual or social group [2].

In general, pregnant women primigravidas experience anxiety higher than multigravida pregnant women, this occurs due to not having previous experience. In pregnancy primigravidas majority do not know the various ways to overcome the pregnancy until the birth process smoothly and easily, so it affects anxiety [3]. Anxiety in pregnant women if not treated will seriously adversely impacted. The increased release of stress hormones trigger kontraksi stimulation of the uterus. As a result of these conditions can



increase blood pressure so as to trigger the occurrence of pre-eclampsia and miscarriage [4]. Babies born preterm and low birth weight is also a negative impact of maternal anxiety [5].

In this era of increased use of information and communication technology, the Internet and mobile applications pregnancy is a medium which is very popular among pregnant women to seek information related to pregnancy [6] Hallobumil is one of android-based application that can support a pregnancy. The main features contained in this application is the monitoring of the pregnancy timeline. Users can recognize the condition of the fetus with fetal growth and development follow gradually. This application also includes articles pregnancies are prepared in accordance with gestational age [7].

Hallobumil application has already been downloaded more than 500,000 times in PlayStore per December 2018 and was ranked second in the category of supporting applications pregnancy or position 4 most downloaded category of parenting. More than 4,000 users have given a review of experiences of using this application. Many of them expressed satisfaction especially in terms of a given article and the concept of interaction with the baby that the mother spirit in through pregnancy. This Hallobumil applications get user satisfaction score 4.3 out of 5, which means the user is satisfied with the application Hallobumil. There are many studies that have used mobile technology in the health field. Research conducted by Dalton *et al* [6] found that 76% of pregnant women who did not complete the trial use of e-Health applications Babies are significantly more anxious than those completing the trial. Another study conducted by Oliveira-ciabatti *et al* [8] found that two-way short message service-based mobile phone the potential to increase the number of antenatal visits.

Preliminary studies conducted by investigators on January 24, 2019 at KIA poly Baregbeg health center with interview to 5 people primigravida pregnant women showed that 4 out of 5 people primigravida pregnant women (80%) say having anxiety during pregnancy. Anxiety felt by them on the condition of the baby, afraid of miscarriage, premature birth scared, and anxious to face labor. Based on this phenomenon, the authors are interested in conducting research on "The Effect of Use of Applications Hallobumil against Maternal Anxiety primigravidae in Puskesmas Baregbeg "

2. Research Methods

This study aimed to determine the effect of application usage Hallobumil to anxiety primigravida pregnant women in Puskesmas Baregbeg Ciamis District. The research was conducted on April 15 - May 24, 2019 at 6 Baregbeg village in the district of Ciamis District.

This study uses the draftPre-ExperimentOne approach to group pretest-posttest design. With a population of 60 pregnant women were primigravida in Puskesmas Baregbeg Ciamis District. Sampling using purposive sampling method to obtain a sample of 32 people. Processing data using the Wilcoxon testwith bantuan Software SPSS 16.0 for Windows.

The research instrument used is questionnaire Zung Self-rating Anxiety Scale (ZSAS) and the enclosed questionnaire regarding the causes of maternal anxiety.

3. Research Results

3.1. Characteristics Of Respondents

Table 1. Distribution frequency characteristics of respondents by age mothers

No.	maternal age	f	Percentage
1.	<20 years	5	15.6
2.	20-35 years	27	84.4
3.	> 35 years	0	0
amount		32	100.0

The results of table 1 can be seen that out of 32 respondents, frequency characteristics based on maternal age, the majority were in the age range of 20-35 years as many as 27 people (84.4%).

Table 2. Frequency Distribution Characteristics of Respondents by Age gestation

No.	gestational age	f	Percentage
1.	trimester 1	3	9, 4
2.	Timester 2	23	71.9

3.	trimester 3	6	18.7
	amount	32	100.0

The results of table 2 can be seen that out of 32 respondents, frequency characteristics based on gestational age, the majority are in the second trimester 13-27 weeks or as many as 23 people (71.9%).

Table 3. Characteristics of respondents based on frequency distribution occupation

No.	Occupation	f	Percentage
1.	Work	5	15.6
2.	Does not work	27	84.4
	amount	32	100.0

Based on the results from table 3 it can be seen that out of 32 respondents, frequency characteristics based on the work, the majority of respondents did not work / housewife as many as 27 people (84.4%).

Table 4. Frequency distribution characteristics of respondents by education

No.	Education	f	Percentage
1.	Basic	14	43.8
2.	secondary	17	53.1
3.	High	1	3.1
	amount	32	100.0

Results from table 4 it can be seen that out of 32 respondents, frequency characteristics based on education, the majority of the last education of respondents have secondary education were 17 (53.1%).

Table 5. Distribution of frequency characteristics of respondents by household income

No.	Income	f	Percentage
1.	Low	9	28.1
2.	secondary	17	53.1
3.	High	6	18.8
	amount	32	100.0

Results from table 5 it can be seen that out of 32 respondents, frequency characteristics based on family income, the majority have an income in one month at the secondary level were 17 (53.1%).

3.2. Univariate analysis

Table 6. Distribution frequency rate of maternal anxiety primigravidae before Using application Hallobumil

No	Category	pretest		
		f	%	mean
1.	Normal	0	0	
2.	mild anxiety	24	75	
3.	anxiety was	8	25	41.78
4.	severe anxiety	0	0	
5.	Severe anxiety	0	0	
	amount	32	100	

The results of table 6 can be seen that the level of anxiety of pregnant women primigravid before using the app Hallobumil (pretest) in Puskesmas Baregbeg, the highest category is the category level of mild anxiety as many as 24 people (75%) and the category of anxiety were as many as 8 people (25 %) with a mean value of 41.78.

Table 7. Distribution Frequency Rate of Maternal Anxiety primigravidae When Using Applications Hallobumil

Category	pretest		
	f	%	mean
Normal	0	0	41.78

mild anxiety	24	75
anxiety was	8	25
severe anxiety	0	0
Severe anxiety	0	0
amount	32	100.0

The results of table 7 can be seen that the level of anxiety primigravida pregnant women after using the application Hallobumil (posttest) in Puskesmas Baregbeg, there is a category of respondents who are normal or not having anxiety as many as 13 people (40.6%), as many as 19 categories of mild anxiety people (59.4%), and there are no respondents who are in the category of moderate anxiety.

3.3. Bivariate analysis

Table 8. Maternal Anxiety Level primigravidae Before And After Using Applications Using Wilcoxon Hallobumil

Change	N	Percentage (%)	P Value
decline	28	87.5	0000
increase	0	0	
Permanent	4	12.5	
amount	32	100.0	

The results of Table 8 shows that there were 28 (87.5%) of respondents who experienced a decrease in anxiety scores after using Hallobumil application, which indicates that the posttest score is less than the pretest. Ha accepted that there are significant Hallobumil application usage on the level of anxiety primigravida pregnant women.

4. Discussion

4.1. Primiravida anxiety levels of pregnant women in the Puskesmas Baregbeg before using the app Hallobumil

The data shows that most respondents experiencing mild anxiety. The results of this study were similar to studies Hasim [9], which matches the respondents with mild anxiety as much as 85%, anxiety was as much as 14%, and 1% had severe anxiety. As in the study Heriani [10], submitted that primigravida pregnant women will actively prepare themselves to go through pregnancy, but often the mother can not eliminate the worry and fear. Primigravidae parity, pregnancy is the first time that happened was the first so that the mother will tend to feel anxious about her pregnancy. Handayani [11] explained that she primigravidae often have thoughts that are intrusive, it happened as the development of stories about pregnancy that assumption,

Various types of changes that occur in pregnancy becomes a stressor and pregnant women are required to adapt to changing circumstances in life. In this study, the majority of stressors come from internal sources or from the minds of pregnant women themselves. In this study, of the 24 respondents with mild anxiety, all have internal stessor be less confident with the physical changes during pregnancy, fear of having a miscarriage, afraid to face labor and worry of premature birth. While in the category of moderate anxiety, of 8 respondents, in addition to having internal stressors also have an external stressor in the form of pressure from the environment, and support for poor families.

The results showed 24 respondents Pregnant women with mild anxiety are on the first trimester of gestation by 1 person (4.2%), 2nd trimester many as 22 people (91.6%), third trimester as many as 1 (4.2%). This indicates that most respondents who experienced mild anxiety trimester of pregnancy are at 2. In the second trimester of pregnancy anxiety she felt began to decrease, because pregnant women started to be able to protect and provide for the fetus, in addition to the mother also began to be interested to know infant state [12].

While the 8 respondents pregnant women with moderate anxiety, the majority are in the third trimester of gestation as many as five people (62.5%). Anxiety pregnant women will increase when pregnancy trimester 3. Increased trimester maternal anxiety associated with close to 3 pregnant women with the birth of a baby. Third trimester of pregnancy is a time of waiting with full alertness, at this time mothers feel anxious with the life of the baby who will be born if the baby will be born normal or

abnormal. Besides, the mother would also imagine how the pain will be felt when giving birth [13] This is supported by research Silva [14] which showed 26.8% of pregnant women experience anxiety, anxiety increased to 42.9% in the third trimester mother.

One of the factors that cause anxiety are economic factors that consists of jobs and income. Research results in Table 4.3 show that of the 32 respondents, 27 (84.4%) are mothers who do not work and 5 (15.6%) is a working mother. From these data indicate that the majority of mothers do not work so much activity done in the home environment and increase the risk of anxiety. This is consistent with the theory Kusumawati [15] which stated that women with activity in the house has been limited interaction while the mother with activities outside the home allows to gain more knowledge of her pregnancy, so she will feel calmer compared with women who did not have more knowledge,

Research results in Table 4.5 shows that out of 32 respondents, 9 (28.1%) had low family income, 17 (53.2%) had a family income at the secondary level, and 6 (18.8%) had high family income. Pregnant women need adequate family economy because of pregnancy requires special budget as the cost of the ANC, nutritious food for the mother and fetus, maternity clothes, maternity costs and needs of the baby after birth. According to Niven in Kusumawati [15] people with low economic status tend to be more tense and a person with higher economic status tend to be more relaxed. On the results of the research can be seen that the respondents had anxiety despite the majority of respondents family income is at an intermediate level, so in this study maternal anxiety is not influenced by income. It is inversely proportional to the research results Said [16] who get the result that there is a relationship between income with anxiety Tuminting primigravida at the health center.

4.2. *Primigravida anxiety levels of pregnant women in the Puskesmas Baregebeg after using the application Hallobumil*

The results of the univariate analysis are listed in Table 4.6 shows that after using the application Hallobumil, anxiety levels decreased primigravida pregnant women, there is a category of respondents with normal or no anxiety as many as 13 people (40.6%), mild anxiety category as many as 19 people (59, 4%) and no respondents in the category of moderate anxiety. From the results of these studies indicate that there is a significant difference between anxiety levels primigravida pregnant women before and after using the application Hallobumil. It can be seen through a reduction in the average value of the level of anxiety in the pretest posttest at 41.78 while at 37.06. Result of analysis using the Wilcoxon test are listed in Table 4.7 showed the value $p = 0,000 < \alpha 0.05$. then H_0 is rejected and H_a accepted that there are significant Hallobumil application usage on the level of anxiety primigravida pregnant women.

Guided imagery is a technique that uses the imagination of individuals under guidance aimed at promoting relaxation and improving the quality of life of individuals so as to produce a state of calm, focus, energy readiness to reduce the discomfort that offers emotional support and confidence in the body [17]

In this study, the application Hallobumil have a positive effect in balancing the psychological state of pregnant women primigravida. Components guided imagery contained in Hallobumil applications include monitoring of the pregnancy timeline visualization fetal growth and development in accordance with the age of the mother's pregnancy. In addition there are scenarios that guide the imagination of pregnant women by providing an interactive experience to the user where the baby seemed to be talking about his own development as well as provide encouragement and support to mothers in undergo during pregnancy so as to increase enthusiasm among the birth of the baby's mother. It is also consistent with the theory Napartstek [18] which states that by imagining a pleasant time and place can generate a positive emotional response as distractions that divert attention from some discomfort or pain. Therefore, by giving pause or divert the minds of individuals who feel discomfort in the form of negative thoughts (anxiety) during pregnancy and focusing on things that are fun, the anxiety will gradually decline. This is in line with the results Purnama [19] which states that guided imagery may reduce the level of anxiety during labor in pregnant women. to give pause or divert the minds of individuals who feel discomfort in the form of negative thoughts (anxiety) during pregnancy and focusing on things that are fun, the anxiety will gradually decline.

The relaxation response is more dominant in the parasympathetic nervous system, thus relaxes the tense nerves. Parasympathetic nerve function controlling the function of the heart rate so as to make the body relax. According Hidayati in Apriato [20] technique of guided imagery, cortexes visual brain that processes the imagination has a strong relationship with the autonomic nervous system, which controls

involuntary movements such as pulse, respiration and physical response to stress and help release the hormone endorphins resulting in a process of relaxation and decreased anxiety. This is reinforced by the results of research Walangadi [21] which states that there is a relationship between knowledge primigravidae third trimester pregnant women with maternal anxiety levels to face deliveries in health centers KIA poly Tuminting. The better the knowledge level primigravid third trimester pregnant women, the lower the level of anxiety in the face of labor, whereas the less good knowledge of the higher primigravida pregnant women experienced anxiety in the face of labor.

The results of the analysis of this study indicate that the use of information and communication technology, the Internet and mobile applications pregnancy is an appropriate means to support expectant mothers reduce anxiety and pregnancy information easy to access and use. This is in line with the results of research Dalton *et al* [22] on the use of application Health-e Babies in education Antenatal, which states that 76% of pregnant women who do not use the application Health-e Babies according to the procedure more anxious to undergo during pregnancy compared with pregnant women who using Health-e Babies application procedure.

In this study, there were respondents who did not decrease the level of anxiety as many as four people (12.5%). The respondents (100%) had low levels of education and were in the age range <20 years. The higher a person's education, the more quality and more mature intellectual knowledge. According sustained in Said [16] anxiety in pregnant women was influenced by knowledge of pregnant women about the process experienced during pregnancy. Pregnant women who have a good knowledge of pregnancy by allowing her to anticipate itself in the face of anxiety during pregnancy. Instead lack of education will lead to a person experiencing anxiety that occurs due to the lack of information obtained that person

Age is one factor predisposing to anxiety, increasing age, the better a person's level of emotional maturity and ability in dealing with problems. According to Tobias in Zumriati [23], gestational age less than 20 years old are considered not ready physically and psychology to give birth and care for the child. Because of the age like this level of maturity, a way of thinking and behaving immature, thus increasing the likelihood of keceamsan during pregnancy. Although age including risk factors can not be modified, but the woman can control these risk factors to plan the ideal age for a woman to become pregnant is 20-35 years.

5. Conclusion

Maternal anxiety levels before using the app Hallobumil primigravid mostly in the category of mild anxiety and after using Hallobumil applications are respondents in the normal category or no anxiety, mild anxiety category experienced a decline and there is no anxiety moderate respondents in the category. There is a significant influence on the level of application usage Hallobumil primigravidae anxiety.

6. References

- [1] Marmi & Margiyati, Introduction to Psychology Midwifery Jakarta: Student Library, 2013.
- [2] Safari, N, E., Triantoro, and Saputra, 2012, Emotion Management, Jakarta: Earth Literacy.
- [3] Shodiqoh, Roisa, E., & Syahrul, F, 2014, Rate Difference Between Anxiety Facing Labor primigravidae And multigravida. Periodic Journal Epidemiolgi. 2 (1). 141-150.
- [4] Dennis, CL., Falah., H., K. & Shiri, R, 2017, Antenatal and Postnatal Prevalence of Anxiety: Systematic Review and Meta-analysis. The British Journal of Psychiatry, 210 (5).
- [5] Ibanez, G, 2015, Effect of Antenatal Maternal Depression and Anxiety on Children's Early Cognitive Development: A Prospective Cohort Study. PLoS One. 10 (8).
- [6] Sarifah, Siti, 2016, Anxiety Emotional Intelligence relationship with Pregnancy First Trimester III in the Face of Labor in Samarinda. eJournal Psychology. 4 (2). ISSN: 2477-2674.
- [7] Utami, 2011, Pedomana pelaksanaan kelas ibu hamil, Jakarta.
- [8] Khaerunnisa, N, 2017, Hallo Pregnant women: Pregnant Applications Today's mainstay [accessed December 20, 2018]
- [9] Oliveira, C., L., Vieira, CS, SC, A., Franzon, A., Alves, D., Zaratini, FS, & Souza, JP (2017), 1-12. <https://doi.org/10.1186/s12978-017-0407-1>
- [10] Heriani, 2016, Anxiety in Labor Ahead In terms of parity, age and education level. Journal of Health Sciences Aisha, 1 (2).

- [11] Hand, R, 2015 Factors Associated With Anxiety Levels Ahead of Labor In primigravida Trimester III in Lubuk Buaya Puskesmas Padang 2012. *Nurses Journal of Nursing*, 11 (1), 62-71.
- [12] Bobak, Lowermilk, and Jense, 2010, *Maternity Nursing Textbook*. Jakarta: EGC.
- [13] Onybala, 2016). Onybala, F., Usman, FR, & Kundre, RM , 2016, Pregnancy Rate Differentials kecemasan Faced with Compliance Maternity Antenatal Care (ANC) in Puskesmas Bahukota Manado. *Ejournal Nursing*, 4 (1).
- [14] Novriani, Wira and Sari, 2017, Support Families with Anxiety Ahead of Labor Trimester III. *Applied science and technology journals*. 11 (1). ISSN: 1979-9292.
- [15] Kusumawati, F., & Hartono, 2011, *Textbook of Psychiatric Nursing*. Jakarta: EGC.
- [16] Said, N., Kanine, E., Bidjuni, H. Relations Socioeconomic Factors With Anxiety primigravida In Puskesmas Tuminting. *E-Journal of Nursing*, 3 (2).
- [17] Moon, 2015, Health messaging system to complement antenatal care: a cluster randomized trial. *Reproductive Health*, 14 (146)
- [18] Naparstek, B , 2010, Guided imagery: A best practice for pregnancy and childbirth. *International Journal of Childbirth Education*, 22 (3).
- [19] Purnama, BWR, 2015, Guided imagery to Level Anxiety Ahead of Labor in Pregnancy. *Prikologi Applied Science Journal*, 3 (2).
- [20] Apriato, 2013, Age and Parity Anxiety Levels Associated with Pregnancy Trimester III Towards Future Health Center Maternity in Weru Ranotana Manado. *Proceedings of the National Seminar Year 2018* 1 (3).
- [21] Walangadi, NN, Kundre, R., & Silolonga, W, 2014, Knowledge relationship primigravidae Trimester Pregnancy III with Capital Facing Anxiety Levels Persalinandi Poly Health Center Tuminting KIA. *Journal of Nursing*, 2 (2).
- [22] Dalton, JA, Rodger, D., Wilmore, M., Humphreys, S., Skuse, A., Roberts, CT, & Clifton, VL 2018, The Health-e Babies App for antenatal education: Feasibility for socially disadvantaged women. *PLoS One*, 13 (5), 1-18. <https://doi.org/https://doi.org/10.1371/journal.pone.0194337>
- [23] Zumriati, 2013, Anxiety Symptoms and Coping Strategies in the Perinatal Period. *BMC Pregnancy and Childbirth*. 13 (233).