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**The Effectiveness of Health Education about Healthy Pregnancy through WhatsApp Group towards the Knowledge of Pregnant Women at Bakunase Health Center Kupang City 2019**

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**ABSTRACT**

One thing we can do to enrich pregnant women knowledge is through health education about healthy pregnancy. Digital era, known as Web 2.0, or Health 2.0, or Medicine 2.0, makes healthy people and patients rely more on the internet than doctors or health workers as a source of health care information. The number of internet users in Indonesia is growing, reaching up to 64.6% or 171 million citizens. WhatsApp is the most popular application for people to communicate via internet. Thus, it needs to be analyzed the opportunities giving knowledge about health education and health promotion through WhatsApp. The purpose of this study was to determine the effectiveness of health education about healthy pregnancy through WhatsApp group towards the knowledge of pregnant women at Bakunase Health Center, Kupang City. Researchers used experimental research. They used quasi experimental research design with pretest and posttest design. The population in this study were 95 pregnant women in the work area of Bakunase Health Center in 2019. The sampling technique used was purposive sampling, with sample were 48 people. The results of paired samples t-test show that there was a difference between the average pre and post intervention in the provision of health education about healthy pregnancy through WhatsApp group for pregnant women with a p value of 0.0001. The intervention of providing health education about healthy pregnancy towards pregnant women at Bakunase Health Center in Kupang City through WhatsApp group was effective in increasing the knowledge of pregnant women about healthy pregnancy.

**Keywords:** health education; WhatsApps group; knowledge; pregnant women**INTRODUCTION**

Maternal Mortality Rate (MMR) is an indicator to assess the success of maternal health programs and community health level. In general, maternal mortality decreased during the 1991-2015 namely from 390 to 305 per 100,000 live births.<sup>(1)</sup> Although there was a tendency to decrease maternal mortality, it did not succeed in achieving the MDG target that must be achieved at 102 per 100,000 live births in 2015. The causes of death mainly due to mothers bleeding, hypertension during pregnancy, and infection. Efforts to reduce maternal mortality in Indonesia require programs that focus on maternal health. One of the efforts is by increasing the knowledge of pregnant women through health promotion about healthy pregnancy so that they are willing, aware, and able to prepare and enjoy the pregnancy process safely and comfortably, thus, prevent health problems.

Health communication includes the use of communication services to convey messages and influence the decision making process associated with efforts to improve and manage health by individuals and communities.<sup>(2)</sup> The need for accurate and up-to-date information is increasingly needed along with the rapid development of information and technology. This phenomenon encourages the public and agencies to utilize information and technology. Currently, the website is not only accessed by using a browser on the desktop, but also accessed on a tablet or a smartphone.<sup>(3)</sup>

Digital era, known as Web 2.0 or Health 2.0 or Medicine 2.0, indicates healthy people and patients rely more on the internet than doctors or health workers as sources of health care information.<sup>(4)</sup> The number of internet users in Indonesia is growing, reaching 64.6% or 171 million citizens.<sup>(5)</sup> WhatsApp is the most popular application for the community in communicating via the internet. Thus, it is necessary to analyze the opportunity sharing knowledge about health education and health promotion by using WhatsApp.

**Goal**

The purpose of this study was to determine the effectiveness of health education about healthy pregnancy through WhatsApp group towards the knowledge of pregnant women in Bakunase Health Center in 2019.

**METHODS**

This type of this research was an experimental research. The researchers used quasi experimental research design with pretest and posttest design. The study was conducted in October 2019 at the Bakunase Health Center, Kupang City. The population of this study were 95 pregnant women in the work area of the Bakunase Health Center in 2019. The sampling technique used was purposive sampling. The inclusion criteria in this study were in trimester II and trimester III pregnancy (> 12 weeks), no history of abortion, were in the Bakunase Health Center area, had a smartphone and were willing to be investigated. While, the exclusion criteria in this study were pregnant women who did not have a smartphone, were in gestational age <12 weeks and were not willing to be sampled. The sample size in this study was calculated based on the Slovin formula; 48 samples. The independent variable was health education through WhatsApp group and the dependent variable was the knowledge of pregnant women. Data collection techniques were done through the provision of interventions using videos about the definition of healthy pregnancy and pregnancy checks that must be obtained by pregnant women through WhatsApp group. Giving interventions using videos through WhatsApp group were done twice with the frequency of providing video at least once in every two weeks when pregnant women did pregnancy check up. The total time needed for intervention was a month. Data collection on knowledge of pregnant women obtained by using questionnaires before and after the intervention. Differences in mean values before and after intervention in pregnancy quality material were analyzed using paired samples t-test analysis.

**RESULTS**

Table 1. The characteristics of the respondents based on their age and level of education at Bakunase Health Center, Kupang City 2019

Characteristics	Frequency	Percentage
<b>Age</b>		
< 20 years old	2	4.1
20 – 35 years old	39	81.3
>35 years old	7	14.6
Total	48	100.0
<b>Level of education</b>		
Senior high school	28	58.3
Diploma	12	25.0
Bachelor	8	16.7
Total	48	100.0

Table 2. The knowledge of pregnant women before and after the intervention of health education about healthy pregnancy through whatsapp group at Bakunase Health Center, Kupang City October 2019

Knowledge of pregnant women	Before intervention		After intervention	
	Frequency	Percentage	Frequency	Percentage
Good	3	6.3	40	83.3
Average	19	39.5	6	12.5
Below average	26	54.2	2	4.2
Total	48	100.0	48	100.0

Table 3. The different average of pre and post intervention of giving educational knowledge about healthy pregnancy through whatsapp group towards pregnant women at Bakunase Health Center Kupang City October 2019

Knowledge	Percentage
Minimum	56.6
Maximum	78.8
Deviation standard	11.01
p-value	0.0001

## DISCUSSION

Educational characteristics of respondents based on table 1 shows that 28% had high school education and 20% had higher education (Diploma and Bachelor). This shows that 100% of respondents could easily accept the information provided. Educational factors can influence knowledge. The higher level of one's knowledge is, the easier he or she receive information about objects or related to knowledge. Knowledge in general can be obtained from information conveyed by parents, teachers and media. Education closely related to knowledge. Education is one of the basic human needs that is very necessary for self-development. The higher level of one's education is, the easier he or she receive and develop knowledge and technology. One factor that influences knowledge is education. Education is a process of changing attitudes and behavior of a person or group; also efforts maturing humans through teaching and training. The age characteristics of the respondents based on table 1 shows that 95.9% are adult. A person's age contributes to physical, psychological and mental aspects. In psychological aspects, maturity and high level of thinking highly influence knowledge.

Table 2 shows the percentage of respondent's knowledge prior to the treatment of giving a video about healthy pregnancy is 6.3% good, 39.6% average, and 26% below average. The respondent's knowledge after being treated with the provision of healthy pregnancy videos through WhatsApp group is 83.3% good, 12.5% average and 4.2% below average. Table 3 shows the difference of mean value of knowledge before treatment is 56.64 and after treatment is 78.85. Paired samples *t-test* results shows that there are significant differences in knowledge of pregnant women about early and late healthy pregnancies ( $p < 0.05$ ). The results of this study indicated that healthy pregnancy video interventions through Whatsapps groups which given twice for pregnant women were effective in increasing the knowledge for pregnant women. This can be seen from the increasing of the average knowledge of pregnant women before and after the intervention. The results of this study are in line with the results of previous studies. Chan and Chen, reported that the use of social media and health applications could improve maternal health. The results of their research indicated that interventions using social media and health applications could improve physical health for pregnant women, especially in the management of weight gain during pregnancy for pregnant women suffer from Diabetus Millitus.<sup>(6)</sup> Research related to social media was also carried out by Dekker, et al. Their research reported that 1661 respondents obtained information about health through social media. Respondents used social media to find information related to maternal health status. Respondents were more interested in getting information through online media than discussing with health workers.<sup>(7)</sup> Research conducted by Kavlak, et al, showed that 45% of pregnant women used internet to obtain information related to pregnancy such as fetal development, nutrition during pregnancy, and information related to childbirth.<sup>(8)</sup> Jayaseelan, explained that 100% pregnant women use smartphones and health applications to get information related to pregnancy.<sup>(9)</sup>

The results of research conducted by Imran, showed that there was an enrichment in the knowledge of young women in class X SMAN 2 Gowa after being given health education by watching videos.<sup>(10)</sup> In line with the research conducted by Indriani (2017), there was an effect of health education by watching video on the level of knowledge about the examination of female teenage breast self-examination in Ciputat YMJ Vocational School. Video can be an effective media in health education. Audio visual media is a type of media containing sound elements and image draws that can be viewed like video recordings. Media such as audio-visual media have a enough high effectiveness level of 60 - 80%.<sup>(11)</sup> The benefits of counseling using video are: more interesting and easier to understand, by watching video a person can learn by himself, the video can be repeated in certain parts that are considered unclear, it can be displayed more detailed information, can be accelerated or slowed down, two different scenes played at the same time can be compared, and can be used as a real display of a scene, a discussion situation, documentation, promotion of a product, interviews and display experiments process.<sup>(12)</sup>

## CONCLUSION

There was a significant difference in the knowledge of pregnant women before and after the intervention in providing health education about healthy pregnancy through WhatsApp group. The results of this study indicated that health education interventions through WhatsApp group which given two times to pregnant women were effective in increasing the knowledge of pregnant women.

## REFERENCES

1. Badan Penelitian dan Pengembangan Kesehatan. National Riskesdas Report 2018. Basic Health Research 2018 (Laporan Nasional Riskesdas 2018). Riset Kesehatan Dasar 2018. Jakarta: Lembaga Penerbit Badan Penelitian dan Pengembangan Kesehatan; 2019. p. 674.

2. Rahmadiana M. Health Communication (Komunikasi Kesehatan). *J Psikogenes*. 2012;1(1).
3. Leonita E, Jalinus N. The Role of Social Media in Health Promotion Efforts: A Literature Review (Peran Media Sosial Dalam Upaya Promosi Kesehatan: Tinjauan Literatur). *Invotek J Inov Vokasional dan Teknol*. 2018;18(2):25–34.
4. Pallavi S. Effectiveness of web-based social sensing in health information dissemination. *Telemat Informatics*. 2017;34:194–219.
5. Hutami AS. Communication and Information: 83% of Internet Users are Whatsapp Users (Kominfo: 83% Pengguna Internet adalah Pengguna Whatsapp). *Gatra Media Group [Internet]*. 2019 Nov 19; Available from: <https://www.gatra.com/detail/news/457263/teknologi/kominfo-83-pengguna-internet-adalah-pengguna-whatsapp>
6. Chan K., Chen M. Effects of social media and mobile health apps on pregnancy care: meta analysis. *JMIR MHealth Uhealth*. 2019;7(1):1-13.
7. Decker R., King S, Lester K. Social media and evidence based maternity care: A Cross sectional survey study. *J Perinat Educ*. 2016;25(2):105-115.
8. Kavlak O, Atan S., Gulec D, Ozturk D, Atay N. Pregnant women's use of the internet in relation to their pregnancy in Izmir, Turkey. *Inform Heal Soc Care*. 2012;37(4).
9. Jayaseelan R, Piichandy, C Rushhandramani D. Usage of smartphone apps by women on their maternal life. *Res J Sci amd Tech*. 2015;7(3):158–64.
10. Imran F. Effects of Health Education through Video Media on Increasing Knowledge of Young Women About the Effects of Criminal Provocation Abuses in Class X of SMAN 2 Gowa (Pengaruh Penyuluhan Kesehatan Melalui Media Video Terhadap Peningkatan Pengetahuan Remaja Pu. Universitas Islam Negeri Alaudin Makasar.; 2017.
11. Arsyad A. *Learning Methods (Metode Pembelajaran)*. PT Raja Grafindo: PT Raja Grafindo.; 2008.
12. Munadi Y. *Learning Media: A New Approach (Media Pembelajaran: Sebuah Pendekatan Baru)*. Jakarta: Gaung Persada Press; 2012.