



The Effect of Whatsapp and Zoom on Knowledge and Attitudes about Dangerous Signs of Pregnancy During COVID-19

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ABSTRACT

The dangerous sign of pregnancy can occur unpredictably, especially in the third trimester. In the COVID-19 pandemic, pregnant women are often worried about antenatal checks up because there is a potential for COVID-19 transmission, and education for pregnant women cannot be carried out because of social distancing, especially in red zone areas. This study is to measure the effect of Whatsapp and Zoom media on the knowledge and attitude of pregnant women about the dangerous sign of pregnancy. This study used a quantitative approach with quasi-experimental research with a purposive sampling technique. Samples were taken with a proportion of 1:1 with a total of 32 respondents in each group. The measuring instrument used a questionnaire that has been tested for validity and reliability. Data analysis used Friedman Test. The results of the analysis showed that there was an effect of Whatsapp and Zoom media on knowledge ($p=0,0001$) and attitude ($p=0,0001$) of pregnant women about the dangerous sign of pregnancy. Difference average score increase in the intervention group for knowledge and attitude variables. Giving health promotion media through Whatsapp and Zoom media has been proven to increase the knowledge and attitude of pregnant women about the dangerous sign of pregnancy and it can be applied in health services during the COVID-19 pandemic.

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Kata kunci:

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ABSTRAK

Tanda bahaya kehamilan dapat terjadi tidak terduga, terutama pada trimester ketiga. Di masa pandemi COVID-19 ibu hamil sering kali khawatir dengan pemeriksaan kehamilan karena berpotensi menularkan COVID-19 dan edukasi kepada ibu hamil tidak bisa dilakukan karena social distancing terutama di kawasan zona merah. Penelitian ini bertujuan untuk mengukur pengaruh media Whatsapp dan Zoom terhadap pengetahuan dan sikap ibu hamil tentang tanda bahaya kehamilan. Penelitian ini menggunakan pendekatan kuantitatif dengan jenis penelitian quasi-experimental dengan teknik purposive sampling. Sampel diambil dengan proporsi 1:1 dengan jumlah 32 responden pada setiap kelompok. Alat ukurnya menggunakan angket yang telah diuji validitas dan reliabilitasnya. Analisis data menggunakan Uji Friedman. Hasil analisis menunjukkan bahwa ada pengaruh media Whatsapp dan Zoom terhadap pengetahuan ($p=0,0001$) dan sikap ($p=0,0001$) ibu hamil tentang tanda bahaya kehamilan. Selisih peningkatan skor rata-rata pada kelompok intervensi untuk variabel pengetahuan dan sikap. Pemberian media promosi kesehatan melalui media Whatsapp dan Zoom terbukti dapat meningkatkan pengetahuan dan sikap ibu hamil tentang tanda bahaya kehamilan dan dapat diterapkan dalam pelayanan kesehatan di masa pandemi COVID-19.

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INTRODUCTION

Currently, the global COVID-19 pandemic has been ongoing for more than a year since WHO declared it for the first time at a press conference in March 2020 with the number of cases > 121,000 cases in a total of 57 countries (Ghiffari, 2020). The COVID-19 virus was first detected in Wuhan, Hubei China, in December 2019 (Dai, 2020). As of December 15, 2020, there were 73,140,790 cases of COVID-19 recorded, 1,627,009 people died and 51,260,353 people recovered. Indonesia itself counted the COVID-19 cases reaching 629,429 cases, 19,111 people died, and 516,656 people recovered (Illah, 2021). Currently, COVID-19 cases in Central Java Province have reached 74,138 cases, with 4,499 people dying, 59,019 patients recovering and 10,620 people being treated (Sofianto, 2021). Meanwhile, Batang Regency had a total of 1,140 cases of COVID-19 on December 1, 2020 (Isnuyati, Setiani, & Nurjazulli, 2021). From March to December 2020, the total number of pregnant women who were confirmed to be COVID-19 was 59 people. Most of the pregnant women infected with COVID-19 came from Subah Sub-district with 11 people and Tulis sub-district as many with as 8 people.

The current COVID-19 pandemic has a very significant influence on human life, both related to public health, social, economic, and psychological conditions of a person. Likewise, pregnant women feel hesitant to access health services because of the potential for COVID-19 transmission in health facilities (Septianingsi, Yunadi, & Kusumawati, 2021). Classes for pregnant women as an effort to improve mothers' attitudes about pregnancy, childbirth, and early detection of dangerous signs also cannot be carried out, especially in areas with COVID-19 red zones (Rahmawati & Sulistyorini, 2021). This causes health workers, especially in the lack of education for pregnant women about early detection of dangerous signs of pregnancy to reduce maternal mortality and infant mortality (Kementrian Kesehatan Republik Indonesia, 2020).

The Indonesian Demographic and Population Survey (IDHS) in 2012 reported the maternal mortality rate in Indonesia was 359 per 100,000 live births and infant mortality was 32 per live birth. This figure increased when compared to the 2007 IDHS report, which was 228 per live birth (KH) and an IMR of 34 per live birth (Badan Kependudukan dan Keluarga Berencana Nasional, Badan Pusat Statistik, & Kementrian Kesehatan Republik Indonesia, 2008; Badan Pusat Statistik, Badan Kependudukan dan Keluarga Berencana Nasional, Departemen Kesehatan, & Macro Internasional, 2013). The COVID-19 pandemic period also resulted in a decrease in the coverage of visits by pregnant women at the Subah Health Center, the risk was high compared to 2019, maternal mortality (MMR) was recorded at 1 person, and infant mortality rate (IMR) at 6 babies. Among the factors that influence it is the lack of early detection of the dangerous signs of pregnancy by pregnant women and their families due to limited communication with health workers, resulting in delays in assistance to health facilities/doctors/midwives (Wijayanti & Setianingsih, 2014). Management that can be done to detect the presence of pregnancy is by early detection that can be done by pregnant women themselves. To carry out early detection, pregnant women must be given knowledge regarding the signs and dangerous signs of pregnancy. Based on this background, digital or online communication media are needed in increasing the knowledge and attitudes of pregnant women as an alternative solution during a

pandemic that will reduce maternal mortality (MMR) and infant mortality (IMR).

Health workers and the government play a role in providing information about the dangerous signs of pregnancy is very important because it is very important for pregnant women and their families to obtain better information so that they can help reduce the morbidity and mortality of pregnant women (Ekacahyaningtyas & Mustikarani, 2021). The use of social media (online) can be carried out by all health workers as an effort to unite patient health, provide correct health KIE to the community, provide ANC services to pregnant women, and conduct virtual classes for pregnant women (online) as routine meetings that were previously usually held. However, the effectiveness of using online social media cannot be given in terms of how health information is virtual (online) as well as the ability to monitor the patient's health status.

Based on the explanation above, online media messages can be used for communication and monitoring the health of pregnant women. Therefore, the purpose of this study was to analyze the influence of Whatsapp and Zoom media in increasing the knowledge and attitudes of pregnant women about the dangerous signs of pregnancy during the COVID-19 pandemic at the Subah Health Center.

METHOD

The type of research used is quantitative research with a quasi-experimental design (quasi-experimental). Quasi-experimental is to make the smallest group into the experimental and control groups randomly (Wijayanti & Setianingsih, 2014). The research sample was divided into 2 groups, namely the intervention group which was given treatment in the form of health promotion via Whatsapp and Zoom, and the control group which did not receive treatment. Both groups measured knowledge and attitudes about the dangerous signs of pregnancy before and after treatment with a questionnaire. This study was used to see changes in knowledge and attitudes of pregnant women using Whatsapp and Zoom media. This research was carried out in two groups, namely the control group and the intervention group using Whatsapp and Zoom treatments for a duration of 60 minutes using a smartphone. Intervention materials provided online include understanding the dangerous signs of pregnancy, symptoms that can be felt, and their management. This material is delivered in several types of media, namely Whatsapp (Flyer, Leaflet, Poster, Text, and Voice Note) and Zoom (Power Point and 2-way discussion). The variables measured in this study included the characteristics of the respondents (age, mother's last education, and mother's occupation), knowledge, and attitudes of pregnant women. The variables of knowledge and attitudes of pregnant women were measured by a questionnaire that had passed the validity and reliability test, in the form of 23 questions of knowledge and 25 questions of attitude. Measurements were carried out three times, namely, the first measurement was carried out pretest 30 minutes before the intervention, the second measurement was carried out post-test 1 after 2 weeks of intervention, and the third measurement was carried out posttest-2 with a distance of 4 weeks (1 month) after the intervention which was a retention test to increase awareness. About the material and the deposition of previously accepted knowledge. This research has passed the ethical test by the Research Ethics Commission of the Faculty

of Public Health, University of Diponegoro No. 189/EA/KEPK-FKM/2021.

RESULTS AND DISCUSSION

The distribution of respondents' characteristics in this study is almost said to be similar. The age category of respondents was dominated by the age group of 20-35 years, namely 84.4% in the control group and 96.9% in the intervention group. The respondent's age category, which is dominated by healthy reproductive age, is still able to

actively learn and receive new knowledge through online media. This healthy reproductive period is 20-35 years, which makes the risk of pregnancy and childbirth both for the mother and for the child lower than for mothers who are pregnant at the age of fewer than 20 years and more than 35 years (Andaruni, Pamungkas, & Lestari, 2017). Adequate age will have an impact on the level of maturity of a mother's way of thinking and working. So in this study, the similarity of age categories is an advantage. This is because the age difference will affect the increase in experience and maturity. So the more experience gained will also increase the level of knowledge (Wulandari, 2014).

Table 1.
Distribution of Respondents Characteristics by Age, Occupation and Education

Variable	Group			
	Control		Intervention	
	f	%	f	%
Respondent Age				
<20 years	3	9.4	1	3.1
20-35 years	27	84.4	31	96.9
>35 years	2	6.2	0	0.0
Respondent's Job				
Government Employees / Civil Servant	0	0.0	1	3.1
Private Sector Employees	1	3.1	2	6.2
Entrepreneur	1	3.1	1	3.1
Housewife	29	90.6	24	75.0
Employee	0	0.0	3	9.4
Others	1	3.1	1	3.1
Respondent Education				
Primary School	2	6.2	2	6.2
Junior High School/Madrasah Tsanawiyah	9	28.1	7	21.9
Senior High School/Vocational High School	12	37.5	18	56.2
Diploma III	4	12.5	3	9.4
Diploma IV/S1	4	12.5	2	6.2
Master's degree	1	3.1	0	0.0
Total	32	100.0	32	100.0

Table 1 shows that there are similarities in the educational background of respondents, most of whom have the latest education in SHS/VHS/MA, both in the control and intervention groups. A high level of education can affect the decision-making system, including decision-making in responding to matters related to pregnancy dangerous signs (Wulandari, 2014). The level of education can give an idea that the control and intervention group respondents have had a secondary education level. The level of education is related to the respondent's ability to understand the received health information. This is an advantage because the respondent's level of knowledge will not differ much at the beginning of the study and will support respondents to receive information online. This is following the results of the study which showed that the level of education proved to be the main determining factor in the process of acquiring knowledge, attitudes, and health behavior enrichment (Wulandari, 2014). Dewi's research also states that the higher the level of education, the more open a person is to receiving information and the more knowledge he has, on the other hand, low education tends to be hampered in understanding newly introduced values (Ummah, G, & Rosalinna, 2020).

The majority of pregnant women in this study also did not work and were only housewives (IRT). Judging by the type of work, professionals that often interact with other people will be more likely to receive new information when

compared to people who rarely interact with other people (Rusmita, Barokah, & Idarahunyuni, 2019). A working mother is a mother who does activities outside the home to earn income in addition to raising and taking care of children at home. A person who works has more opportunities for interaction and exchange of information than someone who does not work and is more at home (Roobiati, Sumiyarsi, & Musfiroh, 2019; Wulandari, 2014).

Differences in Respondents' Knowledge and Attitudes About dangerous Signs of Pregnancy

Based on the table above, it can be concluded that there are statistical differences in the level of knowledge and attitudes in the three measurements taken by either the control or intervention groups. An increase in the mean knowledge of the intervention group from 14.53 in the pre-test, 16.25 at the posttest-1, and 18.00 at the posttest-2 ($p = 0.0001$) and an increase in the mean attitude from a score of 62.03 in the pre-test, 83.78 at posttest-1, and 86.66 at posttest-2 ($p = 0.0001$). This explains that the information provided during the intervention can add to and enrich previous knowledge. This is in line with other studies which state that health education with internet-based electronic media can increase a person's level of knowledge and behavior (Aziz, Kosasih, & Lukman, 2019).

Table 2.
Differences in Respondents' Knowledge and Attitudes About dangerous Signs of Pregnancy

Group	Mean			P value
	Pretest	Posttest 1	Posttest 2	
Knowledge				
Control	13,88	14,97	14,97	0,045** a)
Intervention	14,53	16,25	18,00	0,0001* a)
Attitude				
Kontrol	63,34	67,53	68,97	0,0001* a)
Intervention	62,03	83,78	86,66	0,0001* a)

*there is a significant difference ($p < 0.05$), **significantly there is no difference ($p > 0.05$)

^{a)}uji Friedman Test

In addition to the increase in the average score of knowledge and attitudes of the intervention group, the control group that was not given any treatment also experienced an increase. The increase in the control group's mean of the knowledge variable from 13.88 in the pre-test, 14.97 in the posttest-1, and 14.97 in the posttest-2 ($p = 0.045$) as well as the increase in the mean attitude from the score to 62.03 in the pre-test, 67, 53 at posttest-1, and 68.97 at posttest-2 ($p = 0.0001$). This increase can occur due to influences originating from factors such as information from outside/mass media outside the media provided, personal experience, education, age, and the supportive environment around pregnant women. Information received from formal and informal education can have a short-term effect so that it can provide changes or increase knowledge (Budiman & Riyanto, 2013). The control group also experienced a change/increase in the average knowledge and attitude but not higher than the difference in changes in the intervention group given the treatment. The increase in knowledge and attitude scores in the control group can be influenced by factors including exposure to information/mass media other than those obtained from research (Sari, Sulaeman, & Idriani, 2018). These results show that health education efforts by providing interventions via Whatsapp and Zoom in this study have proven to be effective in increasing respondents' knowledge and attitudes about the danger signs of pregnancy, this is following Apri's research in Pringsewu Regency where education via Whatsapp Group can increase knowledge of pregnant women (p -value 0.0001) (Sulistianingsih, Apri, & Hasyim, 2021). The results of this study are also supported by Sri Handayani's research which states that there is a link between online health education through Whatsapp Group on the attitudes of pregnant women in early detection of preeclampsia (Handayani & P Milie, 2019).

Health education using electronic media via Whatsapp can save time, energy, and costs (Issabella & Prabandari, 2020). The reason is that the presenters can send health information media to several respondents at once in a short time. In this era of the COVID-19 pandemic, online media is very much needed because it can minimize the potential for transmission. Respondents can also access information that is distributed flexibly so that they can choose the time and location to read the information comfortably without being disturbed by other activities. However, this freedom causes delayed feedback so that it passes the specified time limit, and the control to ensure the acceptance and understanding of the information shared is also lower than the face-to-face learning method (Jayanti, Hermayanti, & Solehati, 2021).

Health promotions carried out via Whatsapp groups are very helpful in changing the knowledge of pregnant women during the COVID-19 pandemic. Whatsapp groups can share the required pregnancy dangerous signs in various ways, including through text messages, photos, videos, and some

supporting emojis/stickers. Educational efforts are also supported by online learning via Zoom. Meetings conducted via Zoom are very helpful in clarifying the material and conducting two-way interactions with pregnant women. The combination of health education methods provided by researchers, namely through Whatsapp and Zoom meetings, can support the delivery of effective information to pregnant women. The online meetings also allow for two-way communication between presenters and respondents. This research is also supported by research that states that online media via Zoom is proven to increase mothers' knowledge about pregnancy check-ups in the new normal era. There was an increase in the average knowledge of pregnant women during the pretest was 72.43 and when the posttest increased to 75.92 with a significance value of 0.000 ($p = 0.05$) (Maryati, Marlina, & Ulfah, 2021).

This is supported by Pohan's statement that the benefits of online learning can create very efficient communication and discussion between educators and participants. Both parties can interact with each other and the right means to give quizzes as evaluation and implementation can be flexible (Pohan AE, 2020). The obstacle felt by the author in carrying out research using this online method is the problem of unstable internet access for participants. This causes some participants to go in and out during the online learning process (Zoom) which can reduce their understanding of the material. For this reason, an asynchronous online media upgrade is needed so that participants can access material file information freely without worrying about missing material (Maryati et al., 2021).

The advantage of using social media as a medium for health education is also supported by Asmirati's research which states that Whatsapp social media has a greater influence on increasing knowledge than conventional media (leaflets) (Asmirati, Marwidah, Asriani, & Irmawati, 2021). The features of social media are seen as more attractive because they can be presented in various forms, while leaflet media cannot stimulate sound and motion effects so some respondents consider leaflets to be more boring than online media (Asriani & Rusnawati, 2019).

The type of counseling media selected also plays an important role in increasing the knowledge and attitudes of pregnant women. The existence of the combination of health promotion media, the higher the increase in the measured variables. However, the combination of the use of the given media must be considered because each media has advantages and disadvantages. Syukaisih's research which compared the effectiveness of leaflet media and video media on the knowledge and attitudes of the poor about smoking showed that video promotion was more effective than leaflets (printed) because the mean value of the video group was higher than the leaflet group ($0.87 > 0.73$) (Syukaisih, Alhidayati, Rasyid, & Rofiqoh, 2018) Senja's research also

stated that there was an effect of educational packages using booklets, audiovisual media, and a combination of both on the knowledge and attitudes of pregnant women about the danger signs of pregnancy ($p < 0.05$). The combination of the booklet and audiovisual media is in the first rank more influential than the booklet and audiovisual media which are given separately, then the second is the booklet and the third is the audiovisual media (Sari SA, S, & Idriani, 2018). Thus, the combination of the types of health education media selected greatly influences changes in the knowledge and attitudes of respondents. So that academics are expected to be able to develop and combine several types of online health promotion media that can increase the effectiveness of receiving health information.

CONCLUSIONS AND SUGGESTIONS

There is an increase in the average knowledge and attitudes of pregnant women about the danger signs of pregnancy. For this reason, the provision of media via Whatsapp and Zoom is an effective way to increase the knowledge and attitudes of pregnant women among limited health workers and pregnant women to meet face-to-face during this pandemic. However, this effort has several limitations, so it would be better if academics could develop a combination of types of counseling media through social media that are appropriate to be used as an online health education platform, especially for pregnant women, and appropriate monitoring methods.

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