



The Influence of Peer Support Group on Compliance of Pregnant Women Consumption of Calcium Tablets in Brebes Indonesia

Mardiani *), Farid Agushybana *), Ani Margawati *)

Master of Health Promotion, Faculty of Public Health, Diponegoro University
Email: Mardianigunawan220405@gmail.com

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ABSTRACT

Compliance of pregnant women taking calcium tablets during pregnancy to prevent the occurrence of pre-eclampsia and eclampsia is one of the challenges that are often encountered. Peer support group as an effort to increase knowledge and attitudes in the compliance of pregnant women to consume calcium tablets, so as to reduce maternal mortality due to pre-eclampsia and eclampsia. This research was conducted to see the effect of the Peer Support Group on knowledge and attitudes in the compliance of pregnant women consuming calcium tablets in Brebes, Indonesia. This research method is

quasy experiment with pre-post-test design. Data obtained using a structured questionnaire that has been tested for validity and reliability first. Subjects were 320 pregnant women in the Bulakamba Community Health Center and Kluwut Health Center. The sample selection using purposive sampling as many as 70 people, divided into two groups namely 35 people for the treatment group and 35 people for the control group. Data analysis used the Mann Whitney statistical test and the Chi-square statistical test. The results showed the treatment and control groups had homogeneous respondent characteristics with $p \text{ value} > 0.005$, so this was an advantage in the experimental design. The results of the multiple logistic regression analysis showed that pregnant women who took part in peer support groups had an effect on increasing knowledge 8.6 times greater, with a $P \text{ value} = 0.001$ ($p < 0.25$). It was concluded that peer support groups can improve the understanding of pregnant women in compliance with calcium tablet consumption and can be used as an alternative health education for pregnant women.

Keywords: Peer Support Group, Compliance, Consumption of calcium tablets, pregnant women.

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Introduction

The prevalence of hypertension is increasingly increasing by more than 800 million people worldwide and Indonesia ranks seventh in Asia (1). The cause of maternal deaths due to hypertension in Indonesia continues to increase based on the report of the directorate of maternal health in 2010-2013 which is 21.5% increasing to 27, 1% (2). Data from Risesdas in 2018, the maternal mortality rate in Brebes district is the 30 highest case after Grobogan district (3). Based on the report of research conducted by Suhartono et. al in 2017, that cases of hypertension in high pregnant women in Brebes district, this is indicated one of them because of exposure to high lead levels (4). The highest cases number two and three are in the working area of the Bulakamba Community Health Center and the Kluwut Community Health Center District Bulakamba Brebes Regency. Strengthening the high exposure to lead can lead to hypertension in pregnant women in the work area of the Bulakamba Community Health Center and Kluwut. The toxic effects of lead can be suppressed one of them by providing adequate calcium intake.

WHO recommends calcium supplementation of 1500-2000 mg / day in pregnant women as part of ANC for the prevention of preeclampsia. Indonesia recommends giving calcium tablets to pregnant women who have low calcium intake and have a history of hypertension, from 1500 to 2000 mg per day as a prevention of pre-eclampsia. The level of adherence is one of the factors to achieve the success of a program in reducing cases of death of pregnant women due to hypertension, pre-eclampsia and eclampsia (5). The results of a preliminary study found that 75% of pregnant women did not comply with calcium tablet consumption and 25% of pregnant women adhered to tablet consumption calcium in the area of the Bulakamba and Kluwut Community Health Centers, for reasons of the effects of drugs, large drugs and do not know how to consume calcium tablets properly and the benefits of calcium tablets.

So far counseling counseling methods and classes of pregnant women for the importance of calcium consumption in preventing hypertension and monitoring compliance of pregnant women in the Bulakamba and Kluwut Community Health Center areas have never been done periodically. The peer support group health promotion method is a concept of WHO Quality Rights. Peer support group is a process of bringing together several people in a group with the same problem, so they can find solutions to overcome common challenges and feel supported by groups according to their problems (6).

According to Nurachmah (1999) Groups can be a very useful place for pregnant women to discuss compliance issues in calcium tablet consumption, to reassess past experiences and successes, if only they can provide input to pregnant women who have the same problem. The support group functions to provide guidance in overcoming disruptive life problems related to diagnosis and treatment. Most pregnant women in the work area of the Bulakamba Community Health Center and Kluwut work as housewives, automatically have plenty of time to stay at home and can participate in peer support groups optimally. According to Bina Melvia Girsang et al (2016) shows the value of $p = 0,000$ which means that peer support groups have a significant influence on the fear of childbearing of primigravid mothers (7). In this method, fellow pregnant women will support each other emotionally, interact, remind each other to always routinely consume calcium tablets. This reinforces the effective Peer Support Group conducted in this



study and peer support group research on the compliance of pregnant women in the consumption of calcium tablets has never been done in Indonesia. The results of this study are expected to be an alternative health education for pregnant women and as input for policy planning relating to calcium tablet supplementation programs.

METHOD

This research method is quasi-experimental with pre-post test design. In this design the knowledge and attitudes of pregnant women in adherence to taking calcium tablets before intervention using the Peer Support Group method are compared with the knowledge and attitude of pregnant women after intervention. The research was carried out in Bulakamba Sub-District, Brebes Regency, with the time the study began late March-end May. The population of all trimester II pregnant women who do not attend the class of pregnant women, because those who take the class of pregnant women the conditions are pregnant women who have a high risk. The area selection was done purposively for the work area intervention group of the Bulakamba Community Health Center and the control group in the working area of the Kluwut Community Health Center. Recruitment of respondents with inclusion criteria were all trimester II pregnant women, pregnant women who could read and write, and pregnant women who did not follow the class of pregnant women. Exclusion criteria were: Pregnant women moved their place of residence at the time of the study, and pregnant women suffered from illness or detected high-risk diseases. A sample of 70 respondents were divided into two groups. The treatment group was 35 respondents and the control group was 35 respondents, but when the research data collection process was carried out there were respondents who dropped out (DO). With the remaining 60 research subjects, 30 pregnant women in the Bulakamba Community Health Center area as a treatment group and 30 pregnant women in the Kluwut Community Health Center area as a control group. The sampling technique used purposive sampling technique in accordance with the inclusion and exclusion criteria of the study.

Data were obtained using a structured questionnaire that had been tested for validity and reliability in advance the Guerebook Method of the Peer Support Group, containing material on peer support groups and log books. The handbook was developed based on the results of the concept from WHO Quality Rights which was modified with the addition of a log book, which will become the group's grip. The implementation phase of the study was conducted in the intervention group and the control group. The choice of the control group and the intervention group is done by observing the distance that is not too close between the intervention group and the control group, and the same geographical location between the intervention group and the control group. Peer support group meetings are held six times, each meeting held for 60 minutes. Done according to standard operating procedures that have been set.

Peer support group meetings are only given to the treatment group, the control group is not given any intervention. The steps and methods of data collection undertaken in this research process are: Opening meeting I, the respondent fills out informed consent for the respondents' willingness to participate in all activities from beginning to end, conducts a pretest, peer support group training, education provision and formation of management. Meeting II - V identifies the problem, discusses and evaluates the problem being overcome. The VI meeting conducted a



posttest and closed the intervention. The variables to be studied are independent variables including: Age, education, occupation, expenditure, ANC Frequency, and Peer Support Group Method. The dependent variable is Knowledge and attitude in compliance with Calcium tablet consumption. The data of this study were analyzed with the Mann Whitney test and Chi-Square test. With a significance level of 95% ($\alpha = 0.05$), as well as multivariate analysis using the multiple linear regression test Backward method. This research has received ethical approval from the Health Research Ethics Commission, Faculty of Public Health, Diponegoro University No. 124 / EA / KEPK-FKM / 2019.

Results And Discussion

Characteristics of Respondents

The following are the results of the research presented in tabular form.

Table. 1

Differences in Characteristics of Pregnant Women between the Treatment and Control Groups

Characteristics	Treatment n = 30	Control n=30	p value
Mother's age (years), (average $\pm$ SD; min-max)	27,1 $\pm$ 5,3;20-39	26,2 $\pm$ 5,7;17-35	0,548 ^a
Education, n (%)			
• Primary school	16 (53,3)	18 (60,0)	0,676 ^b
• Junior high school	10 (33,3)	10(33,3)	
• Senior High School	4 (13,3)	2(6,7)	
Frequency, n (%)			
• Housewife	28 (93,3)	26 (86,7)	0,557 ^b
• Traders	0 (0,0)	1 (3,3)	
• Farmers	2 (6,7)	1(6,7)	
• Entrepreneur	0 (0,0)	1(3,3)	
Frequency ANC, n (%)			
• Enough	15 (50,0)	21 (70,0)	0,118 ^b
• Not enough	15 (50,0)	9 (30,0)	

Info: ^a Test Mann Whitney, ^b Test Chi Square



Table 1 provides an illustration that the majority of respondents' ages with an average age of the treatment group were 27, 1 and the average age of the control group was 26.2 years. This suggests that the average age of pregnant women at productive ages is low risk in pregnancy and has a good impact on pregnancy. According to the Ministry of Health of the Republic of Indonesia (2005) age less than 20 and more than 35 years old is a risk factor in pregnancy. (5) From the results of the last education study, respondents had more elementary school education, namely the 53.3% treatment group and the control group 60.0%, this can state that the highest level of education of respondents, namely high school is still quite low. For the most respondents work were Housewives (IRT), 93.3% treatment group and 86.7% control group. This illustrates that pregnant women in the area mostly work as housewives and do activities at home or around their homes, so that it is beneficial for researchers and respondents to be able to maximally participate in a series of activities in research. It is known that some of the 50% treatment group and 70.0% control group have met the recommended ANC frequency, which is at least 1 time per trimester.

Multivariate analysis was performed after obtaining variables with p values <0.25. The variables of age, education, occupation, expenditure, ANC frequency, Peer Support Group did not have a significant influence on attitude so it cannot be tested multivariately. Whereas the variable age, occupation, expenditure and peer support groups that can be continued multivariate tests are age, occupation, expenditure, peer support groups. The details are presented in table 2, as follows:

Table 2
Recapitulation Results Relationship of independent variables on knowledge

Variable	P -value	
	Knowledge	Attitude
Age	0,206*	0,387
Education	0,449	1.000
Work	0,206*	0,387
spending	0,020*	0,871
ANC frequency	0,259	0,259
Peer support group	0,001*	0,429

Info : * multivariate test constant

Multiple logistic regression analysis of the Backward method through 4 stages in tables 3, 4, 5, and 6, the results of multivariate data analysis showed that the peer support group was the most dominant factor influencing knowledge, evidenced by the value OR = 8.636; 95% CI = 2,566-29,073. Pregnant women who were given Peer support groups had 8.6 times increased



knowledge. This means that the more peer support groups are given, the more knowledge they will gain. The results of multivariate analysis are presented in full in the following tables:

Table 3
First Phase Multivariate Analysis Results

Variable	B	P -value	OR=95 %CI
Age	-0,406	0,703	0,667 (0,083-5,344)
Work	0,684	0,549	1,981 (0,212-18,509)
Spending	0,543	0,444	1,721 (0,429-0,689)
Peer Suport Group	2,156	0,000	8,636 (2.566-29,073)
constant: -1,323			

Table 4
Results of the second phase of multivariate analysis

Variabele	B	P -value	OR=95 %CI
Work	0,757	0,495	2,132 (0,242-18,785)
Outlay	0,543	0,438	1,729 (0,433-6,419)
Peer Suport Group	1,937		6,936 (1,864-25,818)
Konstanta : -1,449			

Table 5
Multivariate Analysis Results Phase three

Variable	B	P -value	OR=95 %CI
Outlay	0,752	0,243	2,112 (0,600-7,500)
Peer Suport Group	1,874	0,004	6,512 (1,791-23,680)
constant: -0,864			



Table 6

Multivariate Analysis Results Phase four

Variabele	B	P -value	OR=95 %CI
<i>Peer Suport Group</i>	2,156	0,000	0,636 (2,566-29,073)
constant:	-0,547		

The results of this study showed that most respondents did not know the benefits of calcium tablets being able to prevent hypertension. this is in line with the Brazilian study by Camargo et al. (2013) showed that most pregnant women (60%) did not know the reason for giving calcium supplements, and only 18.8% of pregnant women were told the use of these tablets to prevent high blood pressure. Information and knowledge about preeclampsia is very important considering the impact of preeclampsia does not only affect pregnant women but the family of pregnant women, babies born, and subsequent pregnancies (8). During peer support groups take place group members are able to provide information support among group members, in the form of giving advice, guidance, and suggestions. one of them is the problem of inhibiting the consumption of calcium tablets. This is in line with the research of Wouters et al, where 89.9% of group member support reported that support group meetings helped create a forum for sharing knowledge and experiences, some of which were related to taking medication (9).

The level of knowledge of pregnant women greatly affects the compliance of mothers in the consumption of calcium tablets. This is based on the increasing knowledge of the mother about the importance of calcium consumption then it will be followed by an increase in compliance with calcium tablet consumption (10). Regarding the effect of peer support groups on compliance with drug consumption, in line with research in Nigeria by Sussan Uzoamaka Arinze there is a significant difference between peer support groups and non-peer support groups on adherence to the consumption of antiretroviral drugs (HIV) with HIV / AIDS, namely the peer group the support group adherence is good 81.7% and compliance is not good 18.3% while the non peer group supports adherence is good 71.0% and compliance is not good 29% with p value <0.01 (11). Notoatmojo (2012) said the higher a person's education, the higher the power of information capture, so that it will be easier to receive the information conveyed. In addition, information can also influence the knowledge of pregnant women during peer support groups. This information can be obtained from information support among group members, experience, print media, electronics and health workers (10).

The success factor of this research in increasing the knowledge of pregnant women through peer support groups is inseparable from the stages of peer support group interventions which were adopted from the peer support group concept handbook from WHO Quality Rights which has been modified to local local conditions (6). The first stage is a pre-test for the intervention group followed by providing training to pregnant women on the peer support group process and material on the importance of calcium tablets for pregnant women. Support groups between



peers greatly influence the human behavior. With the selection of trimester II pregnant women right in this study, because at the age of the pregnancy is able to change social contact, she will socialize a lot between pregnant women. Interest and activities around pregnancy increase, the world of midwifery calls this the Queckening (12). A good group will affect every individual in the group, because peer support groups can influence one's behavior (11). The researcher here is called the facilitator, before the meeting ends the facilitator forms a group by empowering pregnant women as group administrators, namely the group leader and secretary.

The second stage is exploring the problems of pregnant women with the assistance of the facilitator. But previously held ice breaking A² (Ask and Answer), so that each individual knows each other and is able to express the mood that pregnant women feel at that time. The results obtained from 2 groups, namely the Kenanga group and the Baiti Jannnati group, at the time of identification of the problem were as follows: Complaints in the consumption of calcium tablets: Nausea and Dizziness, Pregnancy complaints: Waist aches and hands like cramps. Based on these problems the researchers discuss the above problems as follows :

1. Complaints of nausea and dizziness of pregnant women when taking calcium tablets not all pregnant women experience, because the age of second trimester of pregnancy in pregnant women is called a period of good health free from discomfort normally faced by pregnant women. These side effects and perceived benefits can be caused because in addition to taking calcium tablets, pregnant women also consume iron tablets. For dizziness experienced by pregnant women, is an inconvenience that will be felt by all pregnant women at the age of quarter II. Based on interviews with pregnant women to measure knowledge, it can be seen how pregnant women consume calcium and iron tablets. Obtained 30% of pregnant women consume calcium tablets together with iron tablets so that some side effects such as nausea and dizziness are felt by pregnant women. This was confirmed by Ahmed et al. (2015) regarding compliance of calcium supplements in pregnant women which showed the side effects of calcium tablets in the form of nausea or other gastrointestinal abnormalities. This could be due to the subjects in the study taking iron and calcium supplements at the same time (13). According to Palacios and Pena-Rosas (2011: WHO 2013) in their research, on the same day it is recommended that calcium supplements be taken at different times from iron supplements (14).
2. Pregnancy complaints felt by pregnant women are back pain and leg cramps. Although discomfort is not felt by all pregnant women and is general and does not threaten the lives of pregnant women, but this can make it difficult for pregnant women. Cramps in the legs and low back pain are basically often experienced in the quarter (15).

The next step is to plan support group interventions given by group members. In this step group members provide mutual input to group members experiencing the same problem, the form of support provided by group members is as follows (16).

- a. *Emotional Support*, is an input to overcome complaints that pregnant women experience, the discomfort felt cannot be replaced by anyone. Other group members give empathy and care for each other so that pregnant women remain patient and strong. At the age of the second trimester the discomfort should not be felt, but the physical and



physical condition of each pregnant woman is different. There are still those who need more attention from those closest to them. In this group that attention will be obtained among group members.

- b. *Information Support* is a *solution* given by group members to group members who are experiencing problems, such as nausea and dizziness when consuming calcium tablets and other pregnancy complaints such as back pain and cramps in the arms and legs. Group members gave advice to avoid nausea and dizziness in the consumption of calcium tablets, which is a schedule for taking medication that is better replaced at night, taking medicine that is not accompanied by consumption of calcium medication, drinking with warm water, and calcium medication ingested with bananas. The hope is that pregnant women can take calcium medication without feeling nauseous and dizzy. For lumbago and cramps in the hands and legs, group members recommend regular light exercise every morning, adequate rest, at least the mother can reduce the pain experienced. If the complaint does not heal, it is better to take it to the Midwife and Doctor.

Peer support group is a process of bringing together several people in a group with the same problem, so they can find solutions to overcome common challenges and feel supported by the group according to their problems. After two months of research the researchers proved that the Peer support group had an 8.6 times greater effect on increased knowledge and if included using the multiple logistic regression formula a probability value was obtained, to determine the probability of effects together from independent variables. So it proves that the permerian of health promotion using Peer support groups has a propability to increase knowledge of 83.1%. In conclusion, the results of the peer support group intervention research methods can significantly increase the knowledge of pregnant women, hoping that the knowledge they have can improve the compliance of pregnant women in the consumption of calcium tablets.

Conclusion

Peer support groups provide an increase in knowledge that is very good for the compliance of pregnant women in the consumption of calcium tablets 8.6 times greater than mothers who do not participate in peer support groups

Suggestion

It is expected that the peer support group method can be used as an alternative to health education for program holders and as an input for policy planning relating to calcium tablet supplementation programs.

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