

THE EFFECT OF PREGNANT WOMEN'S PARTICIPATION IN PREGNANCY CLASSES ABOUT BREASTFEEDING SKILLS: A QUASI-EXPERIMENTAL STUDY

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ABSTRACT

Pregnant women can benefit from exclusive breastfeeding. Therefore, to raise awareness of exclusive breastfeeding and hone their breastfeeding skills, mothers can participate in pregnancy classes. This study aimed to determine the effect of pregnant women's participation in pregnancy classes on their breastfeeding skills. This is a quasi-experimental study with a control group and a double post-test design. The samples were selected by using random permuted block sampling. The sample size that met the inclusion criteria was 80 pregnant women in their third trimester domiciled in the work area of the Perumnas and Curup Public Health Center. The intervention group was given pregnant women classes with the Breastfeeding Preparation Module. This study used checklists to assess the respondent's breastfeeding skills. The data obtained were analyzed using the dependent T-test. The results showed that pregnant women's participation in pregnancy classes affected their breastfeeding skills (p -value < 0.05). Pregnancy classes regarding exclusive breastfeeding are recommended for pregnant women to succeed at breastfeeding, especially exclusive breastfeeding.

Keywords: *Breastfeeding skills; classes for pregnant women; third trimester*



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INTRODUCTION

Expecting mothers should begin taking exclusive breastfeeding skill classes in the third trimester of their pregnancy. One of the success factors for breastfeeding is the correct breastfeeding technique. Pregnant women can learn or improve their breastfeeding skills at classes held in antenatal care facilities. These classes contribute to the success of exclusive breastfeeding (Alebel, Tesma, Temesgen, Ferede, & Kibret, 2018). Mothers' breastfeeding skills include breastfeeding techniques and knowledge regarding expressing, storing, and correctly serving breastmilk. These skills are essential for babies to get good quality and quantity of breastmilk and for mothers to succeed in exclusive breastfeeding for six months.

Maulida et al. (2018) showed a significant relationship between pregnant women's participation in pregnancy classes and successful breastfeeding. Nowadays, there are various methods for women to obtain information that can increase their knowledge or information and lead to maternal

behavior changes. Nevertheless, pregnancy classes are still needed, especially for primiparous mothers, to increase their knowledge about breastfeeding (Maulida, Umriaty, Dina, & Zulfiana, 2018). According to Soriano-Vidal et al. (2018), prenatal classes could influence the mothers' behavior. They also found that knowledge was the most important element influencing exclusive breastfeeding behavior, followed by subjective norms, practice control, and attitudes in women in Spain (Soriano-Vidal, Vila-Candel, Soriano-Martín, Tejedor-Tornero, & Castro-Sánchez, 2018).

Previous studies have also shown that the mother's decision to breastfeed or give formula milk to their babies is influenced by multiple factors, including knowledge, attitude, and helpers (healthcare workers). Moreover, a lack of help from significant others or professional healthcare workers when breastfeeding difficulties occur affects the mother's decision to give exclusive breastfeeding (Mawaddah, Barlianto, & Nurdiana, 2018).

The participation of pregnant women in prenatal classes influences the rate of exclusive breastfeeding. In Rejang Lebong Regency, 77% of mothers provided exclusive breastfeeding, which is lower than the Ministry of Health's target of 90% (Rejang Lebong District Health Office, 2020). This result is predicted to be caused by the low attendance in pregnancy classes for various reasons, such as household duties, difficulty managing time due to work, and socio-cultural factors such as doubts to check by midwife.

Prenatal classes allow pregnant women to learn together to increase their knowledge about pregnancy care, preparation for childbirth, breastfeeding techniques, and exclusive breastfeeding. The Indonesian Ministry of Health (2019) defined a prenatal class as a study group for pregnant women with a gestational age of 20 weeks to 32 weeks with a maximum of 10 participants. These classes enable pregnant women to study together, have discussions, and share their experiences about maternal and child health thoroughly and systematically (Indonesian Ministry of Health, 2019).

Pradany and Margawati (2016) showed a significant relationship between the level of mothers' attendance in a prenatal class and the behavior of exclusive breastfeeding (Pradany & Margawati, 2016). Moreover, according to Andayani et al. (2017), the rate of exclusive breastfeeding was 1.86 times higher among mothers who regularly attended prenatal classes than mothers who did not. Despite controlling the effect of antenatal care (ANC) and the husband's support, these classes have been found to affect exclusive breastfeeding directly (Andayani et al., 2017). Additionally, an exploratory study of mothers who gave birth by cesarean section found that environmental support from health workers and family support also played a role in the mother's breastfeeding habits during the first two months after giving birth (Wen et al., 2021).

Based on an initial survey conducted by the Independent Practice of Midwives (PMB) in the Work Area of the Perumnas Public Health Center and Curup Public Health Center from July to November 2020, 60 postpartum mothers complained that their breastmilk supply was low. Therefore, they could not exclusively breastfeed their babies. Low milk supply can be caused by the mother's lack of knowledge about the correct breastfeeding technique. Nationally, in 2018, the coverage of infants that receive exclusive breastfeeding was 68.74%. This figure is still well below the national target of 80%. Bengkulu Province was ranked 9th with a percentage of 65.46%.

Overall, the studies above suggest that pregnancy classes for expecting mothers may increase their breastfeeding knowledge and exclusive breastfeeding skills. This study used the breastfeeding preparation module combined with the demonstration method during the pregnancy class. This research aims to determine the effect of the expecting mothers' participation in pregnancy classes on their breastfeeding skills.

METHOD

Study design

This is a quasi-experimental study with a control group and a double post-test design (two-group post-test-only design).

Sample

There were 126 pregnant women in their third trimester in the Work Area of the Perumnas and Curup Public Health Center in 2021. The sample size that met the inclusion criteria was 80 pregnant women. The samples in the study were pregnant

women in their third trimester (32 weeks' gestation), primigravida, singleton pregnancy, able to read and write, pregnant women without pregnancy complications, and willing to be respondents and sign the informed consent form. The random permuted blocks sampling technique was used, which randomized patients into groups called blocks. Treatments were assigned to each block in a random order, but the desired allocation proportion was reached within each block (Sugiyono, 2018). The number of samples obtained was 33 respondents, which was calculated by Lameshow's sample size formula:

$$n = \frac{\{Z_{1-\alpha/2} \sqrt{2P(1-P)} + Z_{1-\beta} \sqrt{P_1(1-P_1) + P_2(1-P_2)}\}^2}{(P_1 - P_2)^2}$$

Based on this formula, the minimum number was added by 20% to 39.6 as a form of anticipation for dropout respondents. Therefore, the sample size was 40 people for each control and intervention group. Thus, the total number of samples in this study was 80 people.

Instrument

The media used in the study was a Breastfeeding Preparation Module. The module was made by the research team based on sources from the Ministry of Health of the Republic of Indonesia and has been consulted with experts and tested at the community health center at the Kampung Delima Health Center, which usually conducts classes for pregnant women. The instrument used was the checklist for assessing breastfeeding skills from Suryaningsih's Research (2012), which has been tested for validity and reliability with a Cohen's Kappa reliability test value of 0.815.

Intervention

Pregnancy classes were conducted four times per the Indonesian Ministry of Health standards with a duration of 1-2 hours. The intervention group was given the breastfeeding preparation module, which contained materials on exclusive breastfeeding, breastfeeding techniques, breastmilk expression methods, and tips for boosting breastmilk supply. The pregnant women's classes were divided into four sessions: a lecture session, a question-and-answer session, a brainstorming session, and a demonstration session. The control group was given counseling about breastfeeding skills. The measurement of breastfeeding skills was conducted twice, i.e., in the first and second week of postpartum.

Data collection

This research was conducted between September and November 2021 and from August to September 2022 in the Work Area of the Perumnas Public Health Center and the Curup Public Health Center in Rejang Lebong Regency, Bengkulu Province, Indonesia. Data was collected by using a breastfeeding skills checklist. The respondents received explanations about the study and agreed to sign the informed consent form.

Data analysis

A univariate data analysis approach was applied to determine the distribution of the respondent's age, education, and occupation. The frequency and percentage of categorical data were calculated and presented. Bivariate analysis was also conducted to examine the relationship between independent (participation in pregnancy classes) and dependent variables (breastfeeding skills). This study used a parametric test because the data obtained is numeric. The results of the data normality test using the Shapiro-Wilk test

obtained a p-value of > 0.05, which means that the data is normally distributed. As the data is normally distributed, the dependent T-test was applied. The confidence level was determined to be 0.05, and the confidence interval was 95%.

Ethical considerations

This research has received approval from the Research Ethics Committee of the Health Polytechnic of the Ministry of Health of Bengkulu with No. KEPK.M/123/07/2021.

RESULTS

The characteristics of the research subjects in the two groups are presented in Table 1.

Table 1. Respondents' Characteristics

Characteristics	A	B	Sig
	n (%)	n (%)	
Age:			
< 20 years and > 35 years	0 (0%)	0 (0%)	1.000
≥ 20-35 years	40 (100%)	40 (100%)	
Education:			
Primary school and junior high school	3 (7.5%)	10 (25%)	1.000

Table 2. Average breastfeeding skills in the two groups

Breastfeeding skills score	Group	Mean	SD	SE	t	Mean diff	95% CI		p-value*
							Lower	Upper	
Post 1 st	I	43.90	1.45	0.59	17.23	4.65	3.34	6.4	0.000
	C	39.25	2.97	0.65					
Post 2 nd	I	47.87	3.39	0.56	3.49	6.75	5.44	8.05	0.001
	C	41.12	2.80	0.61					

Table 2 depicts that the average difference between the intervention group and the control group in the first measurement is 4.65, and in the second measurement is 6.75.

Characteristics	A	B	Sig
	n (%)	n (%)	
Senior high school	23 (57.5%)	14 (35%)	
University	14 (35%)	16 (40%)	
Occupation:			
Working mother	29 (72.5%)	17 (42.5%)	0.346
Not working	11 (27.5%)	23 (57.5%)	

Note: A = intervention group; B = control group

Table 1 shows that all respondents were 20-35 years old. In the intervention group, more than half of the respondents (57.5%) graduated from senior high school; in the control group, almost half (40%) graduated from university. Most working mother respondents (72%) were in the intervention group, while the proportion of working mothers was lower in the control group (42.5%).

The results of the Chi-square analysis showed that the two groups did not show a significant difference (p > 0.05). This result indicates that the two groups were homogeneous and worthy of comparison.

The average values of breastfeeding skills in the two groups are presented in Table 2.

A bivariate analysis was conducted to examine the relationship between the two variables. The results of the data normality test using the Shapiro-Wilk test obtained a p-value > 0.05. This result indicates that the data is normally distributed.

Table 3. Differences in the mother's average breastfeeding skills, expression, and storage after being given the Breastfeeding Preparation Module

Variable	Mean	SD	T-test	95% CI		P value
				Lower	Upper	
Maternal age in the intervention group - Post 1 intervention group skills	19.28	3.90	22.65	17.51	21.06	0.000
Maternal age control group - Post 1 control group skills	23.57	4.13	13.94	10.69	14.45	0.000
Maternal age in the intervention group - Post 2 skills in the intervention group	21.23	4.76	20.43	19.06	23.40	0.000
Maternal age control group - post 2 control group skills	23.57	4.13	13.94	10.69	14.45	0.000
Post 2 intervention group skills - Post 1 intervention group skills	4.65	1.44	12.64	3.34	4.65	0.000
Post 2 control group skills - Post 1 control group skills	1.87	2.07	3.78	0.76	2.65	0.001

Table 3 shows a significant difference in the mean value of breastfeeding skills between the intervention group and the control group based on age, with a p-value of < 0.05 in the first and second measurements. This suggests that there is an effect between maternal age and participation in pregnancy classes on breastfeeding skills. Statistically, the T-test showed a significant difference between the intervention and the control groups, with a p-value of <0.05 in the first and second measurements. This result indicates that pregnant women's participation in pregnancy classes affects their breastfeeding skills.

DISCUSSION

This study found that maternal age affects breastfeeding skills. This result is supported by Damayanti et al.'s (2020) study, which showed a significant relationship between age and exclusive breastfeeding. In general, each woman has different breastfeeding abilities younger primiparous (less 20 years old) mothers are considered more able to breastfeed than older primiparous mothers (≥ 35 years old).

According to the theory that the age of 20-35 years is the productive age range which should be the most ideal age for reproduction so that the ability to breastfeed is also considered the most optimal. Age above 35 years is an age with a high risk of pregnancy and childbirth, so it is considered that the ability to breastfeed has also decreased along with the aging of organ systems. Meanwhile, at the age of fewer than 20 years, the reproductive organs are still in their infancy (immature), psychologically it is also considered not ready to become a mother so that it will interfere with the process of exclusive breastfeeding (Rahmawati & Wahyuningati, 2020).

One of the contributing factors to this finding is the development of mature glands at puberty and how they change functions after giving birth to a baby. For this reason, more preparation is needed for mothers aged 35 years and over to succeed at exclusive breastfeeding, such as self-preparation in terms of increasing breastmilk supply for fulfilling their babies' needs through consuming nutritious food and having adequate rest.

For that it is necessary more preparation for mothers who aged 35 years and over in the gift Exclusive breastfeeding is like deep self-preparation things to increase breast milk so that mother's milk Smooth and enough for baby consumption such as consuming nutritious food, get enough rest, take the time enough for the baby to breastfeed as often as possible and deep improve breastfeeding achievement exclusive given age limit giving birth to mothers up to 35 years old related to a (Damayanti, Doda & Rompas, 2020).

One of the contributing factors to this finding is the development of mature glands at puberty and how they change functions after giving birth to a baby. For this reason, more preparation is needed for mothers aged 35 years and over to succeed at exclusive breastfeeding, such as self-preparation in terms of increasing breastmilk supply for fulfilling their babies' needs through consuming nutritious food and having adequate rest.

The productive age range of 20-35 years is the most ideal age range for reproduction. It is also within this range that the ability to breastfeed is considered the most optimal. Women over 35 have a higher risk of pregnancy and childbirth. It is considered that their ability to breastfeed has also decreased along with the aging of their organ systems (Pradany & Margawati, 2016).

Conversely, at ages below 20 years, the women's reproductive organs are still in their infancy (immature). Women in this age range are also psychologically considered unprepared to be a mother. These factors would interfere with their breastfeeding journey and result in their failure in exclusive breastfeeding (Rahmawati & Wahyuningati, 2020).

The mother's age of over 20 years shows their physical and mental readiness to receive information during pregnancy class (Rapingah, Muhani, Besral, & Yuniar, 2021). In line with this study, maternal age affects breastfeeding skills. For mothers who attended the classes for pregnant women, the rate of exclusive breastfeeding is 1.86 times higher than for mothers who did not attend. A previous study has shown that despite controlling for factors such as husband's support and ANC, classes of pregnant women can directly affect exclusive breastfeeding (Andayani *et al.*, 2017). Classes for pregnant women can be provided during antenatal care and contribute to exclusive breastfeeding success (Alebel *et al.*, 2018).

Next, the mother's educational level can affect their knowledge and attitude towards breastfeeding. Rahmawati and Wahyuningati (2020) stated that education level is related to breastfeeding skills and that the higher the mother's level of education, the easier it is for the mother to absorb information. Furthermore, previous studies have revealed that the mother's educational background was a significant predictor of good intentions and motivation to practice exclusive breastfeeding (Rapingah, *et al.* (2021). Educated women also follow the recommended antenatal instructions, changing their attitudes towards breastfeeding practices and affecting their decision to give exclusive breastfeeding (Sutrini & Aulia (2020). Mothers with no formal education are less likely to do exclusive breastfeeding because they tend to be less informed about the benefits of exclusive breastfeeding compared to mothers with higher education (Sutrini & Aulia, 2020). In addition, knowledge of breastfeeding skills and sources of information about breastfeeding were significant predictors of good intention to practice breastfeeding (Jebena & Tenagashaw, 2022).

Regarding the mother's occupation, Sutrini and Aulia (2020) stated that there was no relationship between the type of work and exclusive breastfeeding for working mothers. The mother's occupation is not related to breastmilk production; even though they have different workloads, all these types of work produce the same effect on the mother's physical and psychological condition (Sutrini & Aulia, 2020). The low exclusive breastfeeding to working mothers probably due to the fact that mothers generally work all the time consumed by his job at eventually affect life family, one of which is breastfeeding exclusive Therefore it is very important to impart knowledge to the mother working on the benefits of breastfeeding and breastfeeding, expressing breast milk, how to store and give breast milk, milk, how manage lactation since pregnancy so that working mothers can still get exclusive breastfeeding as well strive for regulations from local government so that each owner the workplace provides support for success of exclusive breastfeeding (Shaliha, 2019).

This study shows a significant difference in the mean of breastfeeding skills between the intervention and the control groups, with a p-value of < 0.05 in the first and second measurements. This result is supported by Maulida *et al.*'s (2018) study, which stated that there is a significant relationship between pregnant women's class participation and breastfeeding. Various media can increase knowledge or information influencing mothers' behavior. However, classes for pregnant women are still needed, especially for new mothers, to increase their knowledge about breastfeeding (Maulida *et al.*, 2018).

Breastfeeding skills can be delivered to pregnant women during antenatal classes; midwives or maternity nurses can teach mothers about breastfeeding and its benefits during pregnancy or before the baby's birth (Lumbiganon *et al.*, 2016). According to the reference Indonesian Ministry of Health (2019), classes for pregnant women should be held at least four times during pregnancy or per the agreement between the facilitator and participants. At each meeting, the class material for pregnant women would be adjusted to the needs and conditions of the participants. Nevertheless, it would still prioritize the primary material: breastfeeding and exclusive breastfeeding (Indonesian Ministry of Health, 2019). Mothers need to be informed that breastfeeding is a natural and physiological way to provide nutrition to infants and toddlers. Breastfeeding is an optimal way of providing nutrition and care for babies. The addition of complete foods

in the second half of the baby's first year also helps to meet their nutritional, immunological, and psychosocial needs (Gupte, 2016).

Table 2 and Table 3 show a significant difference in the mean of breastfeeding skills between the intervention group and the control group with a p-value of < 0.05 in the first and second measurements. This result aligns with Sulistiyawati's research (2016), which stated that other predisposing factors, such as self-confidence, parity, experience, and working status, influence exclusive breastfeeding. Multiparous mothers would have more experience in caring for their children, therefore they have better exclusive breastfeeding skills than primiparous mothers (Sulistiyawati, 2016). The amount of knowledge that individuals gain, either through formal or informal education, also significantly contributes to individuals making healthy decisions, which directly impacts health status (Sulistiarini, 2018).

This study found that mothers could successfully breastfeed their babies after receiving the breastfeeding module. Applying the correct breastfeeding technique is one of the determining factors in whether the breastfeeding process will succeed or fail. Therefore, one of the activities that can help mothers become skilled in breastfeeding is to train postpartum mothers on correct breastfeeding techniques (Gupte, 2016). The classes given to pregnant women were found to have helped them to increase their knowledge of breastfeeding techniques, resulting in their ability to properly manage their expressed breastmilk to provide maximum breastmilk to their babies.

Furthermore, Jebena and Tenagashaw (2022) stated that health education information about breastfeeding techniques given during antenatal care, and follow-up perinatal care were variables that were significantly related to the practice of exclusive breastfeeding. Counseling pregnant women on breastfeeding issues during antenatal care services enables all mothers to access perinatal care services and encourages early initiation of breastfeeding.

Another study stated that the mother's decision to breastfeed their babies largely depends on their knowledge and attitudes towards breastfeeding (Sabriana, Riyandani, Wahyuni, & Akib, 2022). In line with this study, Raissian et al. (2019) stated that factors related to motivation and desire to breastfeed, such as knowledge about the benefits of breastfeeding for infant health and support from professional healthcare workers, are important for successful breastfeeding.

This study found a significant mean difference between breastfeeding skills in the intervention and control groups. The mothers' participation in pregnancy classes required support to obtain correct information about breastfeeding skills. Breastfeeding support groups help mothers to feel cared for and loved. This creates positive emotions, which can increase the levels of the hormone oxytocin and subsequent breast milk production (Purwanti, 2014). Moreover, Yuniyanti et al. (2017) found that breastfeeding support groups have encouraged pregnant women to have the confidence to breastfeed.

Tan et al. (2020) also stated that breastfeeding education during the antenatal period provides prospective mothers with the information and skills needed to breastfeed. Antenatal education substantially increases breastfeeding rates (continuing breastfeeding at two weeks postpartum)

and initiation of breastfeeding rates (Wong, Tak Fong, Yin Lee, Chu, & Tarrant, 2014).

Research by Astutik and Purwandari (2021) revealed that skills related to breastfeeding techniques increased after mentoring. This research used breastfeeding technique materials that were provided through a 10-minute video delivered in easy-to-understand language and accompanied by exercises that used a phantom or a baby doll to demonstrate breastfeeding. This method can help increase the success of exclusive breastfeeding. Studies have also shown that pregnant women who actively participate in pregnancy classes have better breastfeeding skills than those who do not (Astutik & Purwandari, 2021).

This study has some limitations. Firstly, the researchers did not match the sample of the intervention group and the control group. Next, the supporting variables and confounding variables were not examined. A multivariate analysis was also not conducted. Moreover, we had difficulties controlling, parents or in-laws are more dominant in providing information, making it difficult to control respondents a safe and comfortable environment for respondents when evaluating breastfeeding skills. Cultural and family factors also became obstacles in the study. Family habits conducted during breastfeeding regarding method, scheduling, and myths have caused some respondents to hesitate to apply the breastfeeding skills taught.

CONCLUSION AND RECOMMENDATION

The mean of breastfeeding skills in the intervention and control groups differed from the mean difference in the first measurement. There is a significant difference in the mean of breastfeeding skills between the intervention group and the control group. Therefore, there is an effect on the participation of pregnant women in breastfeeding classes after being given the breastfeeding preparation module. Thus, it is recommended that breastfeeding preparation is conducted during pregnancy so that exclusive breastfeeding and breastfeeding for up to two years can be reached.

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