

THE EFFECT OF EDUCATION LACTATION ON BREASTFEEDING BEHAVIOR INFANT 0-6 MONTHS IN KENDARI INDONESIA

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ABSTRACT

Background: Provision of breast milk (ASI) is important because it lowers the risk of morbidity and mortality in infants. Breast milk is the ideal food for a baby's growth and development from birth to age 6 months. Thus, the appropriate interventions to improve the behavior of exclusive breastfeeding is really needed.

Aim: To determine the effect of education lactation on behavior breastfeeding for infants 0-6 months.

Methods: This was Quasy Experiment study with pre-test and post-test design with control group. Samples mother (gestational age $\geq 28-32$ weeks) were divided into 3 groups: 1) those who received education lactation and a modification module (n = 21), 2) a group that only received a modification module (n = 21) and 3) a group that only received the MCH book (n = 20). Data were collected using a questionnaire, the implementation of the pre-test before starting lactation education, the first post-test after the intervention with a lag time of 2 months and the second post-test after the intervention with a lag time of 3 months.

Results: There had been an increase of knowledge and attitude scores in each group and the highest in the group 1. At the age of 0-3 months, there was a difference in breastfeeding in all groups. In the sixth month, there was a change in group 2, while group 3 had no change, but some mothers given partially breastfed and formula. The tendency of increasing age of the baby causes mothers to give formula milk, but in group 1, majority of women still gave exclusive breastfeeding until the baby 6 months old. It was shown that there was an influence of lactation education on behavior of breastfeeding infants 0-6 months.

Conclusion: Education lactation can improve knowledge, attitudes and behavior of mother to give breastfeeding up to 6 months.

Key Words : education lactation, breast-feeding.

INTRODUCTION

Breastfeeding (breast milk) is important because it lowers the risk of morbidity and

mortality in infants. World Health Organization (WHO) and the American Academy of Pediatrics (AAP) advocates

for exclusive breastfeeding for six months and breastfeeding with complementary foods (solids) at least 12 or 24 months.¹ Breast milk is the ideal food for growth and development of infants from birth until the age of 6 months. The practice of breastfeeding in developing countries have managed to save about 1.5 million babies per year. So one of the efforts to improve nutrition is by giving exclusive breastfeeding and baby has a right to get it.²

Breastfeeding is the extragestation period with breasts as "external placenta", because breast replace the function of the placenta not only in providing nutrients for the baby, but also very important in children's development. When breastfeeding, there is reciprocal interaction between mother and baby.³ The benefits of breastfeeding is a protective factor against certain diseases for baby and mother. By breastfeeding, the baby can be protected from gastrointestinal disease, otitis media, respiratory infections, neonatal necrotizing enterocolitis. Breastfeeding may also lower the risk of cancer in women include breast cancer and ovarium.⁴ Unfortunately, many people are not aware of this and tend to choose formula instead of breast milk.

The low exclusive breastfeeding is caused by internal and external factors. Internal factors include the lack of knowledge and mother attitude. External factors include the lack of family support, community, health professionals and government, the promotion of milk formula, social and cultural factors as well as the lack of availability of maternal and child health care facilities.⁵

To improve breastfeeding practice, lactation training should be conducted. Giving education about breastfeeding has been done only during pregnancy, which is included in for pregnant women class materials. Though

the practice of breast-feeding was carried out at postnatal period. In early lactation, difficulties often occur so that breastfeeding becomes ineffective and even halted. Therefore, education on breastfeeding should be continued in the postnatal period.

The decline in breast-feeding will lead to the emergence of nutritional problems in infants 0-6 months. So intervention is needed to improve the coverage of breastfeeding. However, evidence of effective interventions to improve exclusive breastfeeding is still rare. The results showed that antenatal education and counseling are quite helpful in breastfeeding. The results of the study in Japan showed that it is very important to provide an accurate prenatal education that focuses on methods and long-term benefits of breastfeeding to the mothers, families and health professionals. Prenatal education for mothers and fathers regarding breastfeeding should be improved.⁶ Research on the effectiveness of prenatal education programs with the outcome is breastfeeding, the result of mothers in the intervention group had higher scores on breastfeeding knowledge and attitudes towards breastfeeding on the third day in postpartum period. The sum of exclusive breastfeeding higher in the intervention group at 3 days and 1 month postpartum.⁷

Nowadays, in maternal health services, the information about breastfeeding is giving when mothers come for getting antenatal care and attend pregnant class or during examination of pregnant women, midwife immediately provide an explanation of breastfeeding, especially in the final trimester of pregnancy. Giving information about breastfeeding integrated in pregnant class program and was held at the health center, do 4-5 sessions. In the implementation of this class, breastfeeding information given

at the 2nd and 4th meeting, which is about the early initiation of breastfeeding, position and attachment of breastfeeding.

Given the explanation above, some ongoing interventions that began from pregnant mother until childbearing process to oversee postnatal breastfeeding period are needed. This matters because the failure of breastfeeding mothers, is due to the emergence of problems in early lactation and sometimes untouched by health professionals. This study aimed to determine the effect of lactation education to breastfeeding practice of mother.

METHODS

This was Quasy Experimental study with pre-test and post-test design with control group. Sample of study were pregnant women with gestational age of ≥ 28 -32 weeks, located in Public Health Centers (Puskesmas) in Kendari (Puskesmas Poasia, Puskesmas Mekar and Puskesmas Puuwatu).

The samples were divided into 3 groups: 1) those who received education lactation and module modification (n = 21), 2) a group that only received the module modification (n = 21), and 3) a group that only received the MCH book (n = 20).

The intervention in this study was firstly doing the initial screening of maternal health of samples to adjust the gestational age. Further, giving lactation education two times during prenatal and two times postnatal, then followed up breastfeeding until the baby is 6 months old. Lactation Education in pregnant women was more focused on improving the knowledge and skills in breastfeeding. Lactation education was given to prenatal and postnatal care, whereas breastfeeding practices was determined by the intake of food from birth until the time of the study, the duration of breastfeeding until the baby was 6 months old.

The lactation education that used a modification module had the materials such as the importance of breastfeeding, exclusive breastfeeding, early initiation of breastfeeding, the advantages of breastfeeding, milk formula and prelacteal food hazards, myths about breastfeeding, breastfeeding including positioning and attachment; recognize early changes in breast milk and mature milk, granting mothers to breastfeed at work: express the milk; address the issue of breastfeeding: mother and baby, knowing the baby enough milk, the nutritional needs of nursing mothers and support of husband in breastfeeding. Using a power point presentation of the material, baby phantom, models of breast and equipment for expressing milk (breast milk pump and milk bottles).

Checklists and questionnaires that were used in this study include:

- 1) Social data: age, ethnicity, education, occupation, income, parity, history and feeding babies.
- 2) Knowledge of the breast milk questionnaire with total of 20 questions covering materials on: definition of exclusive breastfeeding, colostrum, benefits of breastfeeding, early initiation of breastfeeding, breastfeeding way, danger of formula milk/ food prelacteal and excellence breastfeeding than formula.
- 3) Attitudes toward breastfeeding questionnaires with 18 questions using closed questions with the likert scale included: nutrition during pregnancy, early initiation of breastfeeding, colostrum, exclusive breastfeeding, the benefits of breastfeeding, problems with breastfeeding and formula feeding.

Data were analyzed using SPSS (Statistical Package for Social Sciences). The homogeneity of the characteristics of the respondents was analyzed using chi square, the effect of education on

breastfeeding practise was analyzed by Wilcoxon test, and to test the difference in change of scores between groups was using the Kruskal Wallis test.

RESULTS

Characteristics of Respondents

Overall the number of respondents 62 mothers were divided into 3 groups. Characteristics of respondents displayed is

the age group, ethnicity, level of education attained, employment status, family income and parity. The division of the research group is Group 1 as the group of lactation education using a modification module, group 2 is a group without a class only uses a modification module, and the third group is a group without a class, simply use the MCH handbook. This can be seen in Table 1 below:

Table 1. Characteristics of Respondents

Characteristics	Group						p
	1		2		3		
	n(21)	%	n(21)	%	n(20)	%	
Age Groups							
< 20	4	19,0	1	4,8	2	10,0	0,419
20 - 35	16	76,2	16	76,2	16	80,0	
> 35	1	4,8	4	19,0	2	10,0	
Ethnicity							0,514
Muna	7	33,3	5	23,8	4	20,0	
Buton	2	9,5	1	4,8	2	10,0	
Tolaki	3	14,3	9	42,9	5	25,0	
Others	9	42,9	6	28,6	9	45,0	
Level of Education							
High	16	76,2	17	81,0	16	80,0	0,554
Low	5	23,8	4	19,0	4	20,0	
Occupation							
Work	2	9,5	3	14,3	5	25,0	0,388
Does not work	19	90,5	18	85,7	15	75,0	
Income							
≥ Rp. 1.650.000	11	52,4	16	76,2	13	65,0	0,272
<Rp. 1.650.000	10	47,6	5	23,8	7	35,0	
Parity							
Primiparas	10	47,6	6	28,6	4	20,0	0,152
Multiparas	11	52,4	15	71,4	16	80,0	

According to the table 1, the age group of most respondents were 20-35 years old (76.2%) in group 1 and 2, while the third group as much as 80%. At the ethnicity group, the most was in other tribes, namely 42.9% in group 1 and 45% of group 3, while the ethnicity in group 2 majority was Tolaki (42,9%). Education respondents were generally high at 76.2%

in group 1, 81% of group 2 and 80% in group 3. Most of the respondents did not work (IRT) is 90.5% in group 1, 85.7% in group 2 and 75% in group 3. The family income of respondents was generally high (≥ Rp. 1,650,000), ie 52.4% in group 1, 76.2% in group 2 and 65% in group 3. Most of the respondents had parity multiparas (> 1 child) ie 52.4% in group 1,

71.4% in group 2 and 80% in group 3. The results obtained with chi square test had p values > 0.05, which was indicated that the characteristic conditions of the three study groups was homogeneous.

Breastfeeding

Breastfeeding practices were prescribed by the baby that fed by breast milk only,

without being offered food or other drink, except drop or syrups consisting of vitamins, minerals, supplements or drugs, there was also the provision of water. Results of research on breastfeeding can be seen in Table 2.

Table 2. Distribution of Breastfeeding Behavior

Breastfeeding	Groups						P
	1		2		3		
	n(21)	%	n(21)	%	n(20)	%	
0 months							
Exclusive breastfeeding	21	100,0	18	85,7	17	85,0	0,182
Partial breastfeeding	0	0,0	0	0,0	0	0,0	
Formula milk	0	0,0	3	14,3	3	15,0	
1 months							
Exclusive breastfeeding	21	100,0	19	90,5	14	70,0	0,035
Partial breastfeeding	0	0,0	2	9,5	3	15,0	
Formula milk	0	0,0	0	0,0	3	15,0	
3 months							
Exclusive breastfeeding	21	100,0	13	61,9	10	50,0	0,002
Partial breastfeeding	0	0,0	5	23,8	3	15,0	
Formula milk	0	0,0	3	14,3	7	35,0	
6 months							
Exclusive breastfeeding	20	95,2	6	28,6	10	50,0	0,000
Partial breastfeeding	1	4,8	10	47,6	3	15,0	
Formula milk	0	0,0	5	23,8	7	35,0	

Table 2 showed that at the time of delivery, all respondents gave exclusive breastfeeding, except in groups 2 and 3 that there were mothers who feed formula milk because breast milk did not come out. In the first month, there was the second group only had 2 partial breast-fed infants, whereas in group 3 there was a decline of breastfeeding exclusively. In the third month, there was a decline of exclusive breastfeeding in group 2 and 3, and the amount of formula feeding increases. At month 6, in group 1 contained 1 partial breastfeeding mothers, as well as in group 2, the amount who gave a partial breastfeeding increases. In group 3, the amount of which giving exclusive

breastfeeding was still the same as the third month. Chi square test results showed that at the beginning of the month did not found differences in breastfeeding infants, but in the first, third and sixth month, breastfeeding differences were found in all three groups ($p < 0.05$). This was due to many of respondents in groups of 2 and 3 gave partially breastfed and formula.

Knowledge and Attitudes of Mothers

Lactation Education is expected to increase the knowledge and attitudes of mothers about the importance of breastfeeding, this it will change the behavior of the mother in breastfeeding. Changes in current knowledge score pre test, post test 1 and

post test 2 can be calculated by assuming knowledge score of isomor fhi. Score of mother's knowledge at the beginning, T1 and the last averaged to see changes in knowledge score after obtaining education lactation.

In Table 3, all respondents had an increase in knowledge compared to baseline measurements. It was shown that there were differences in knowledge at the beginning of the measurement with the second measurement and the third

measurement. Wilcoxon statistical test results indicated that the respondent's knowledge score was significant in post test 1 in all groups. The score of knowledge of baseline was between 14.3 to 15.6; and after education, the average score of knowledge of mothers changed from 16.5 to 19.3 (Table 3). Changes in the average score of knowledge before and after the intervention also could be seen in Figure 1.

Table 3. Changes of Knowledge and Attitudes of Respondent Before and After Intervention based on Intra-Group

Variable	T0	T1(p)	T2 (p)
Knowledge			
Group 1 (n=21)	15,67±0,730	17,19±0,98(0,000)	19,33±0,58(0,000)
Group 2 (n=21)	14,57±2,56	16,10±3,315 (0,000)	17,57±1,81(0,000)
Group 3 (n=20)	14,30±2,41	15,50±2,89(0,000)	16,50±2,26(0,000)
Attitude			
Group 1 (n=21)	49,67±4,39	53,76±5,22 (0,000)	61,43±3,40(0,000)
Group 2 (n=21)	47,24±6,34	51,76±7,11(0,000)	54,43±6,94(0,000)
Group 3 (n=20)	46,25±8,85	49,35±9,91(0,000)	51,60±8,65(0,000)

Attitude is a response of mother to the breastfeeding. Table 3 showed a significant increase in respondents' attitudes that began in the second measurement (post-test I) in all groups. Wilcoxon statistical test results indicated that the attitude of the respondent started a significant score in the post test 1 in all groups. Distribution of respondents' attitudes change before and

after the intervention can be seen in Figure 2.

Figure 1 showed that at the beginning of the measurement, the highest average of knowledge score was in group 1, and the lowest was in group 3. At the end of the measurement, the highest knowledge score was in group 1, then group 2, while the lowest score was the third group.

Figure 1. Changes of Knowledge Score of Mother

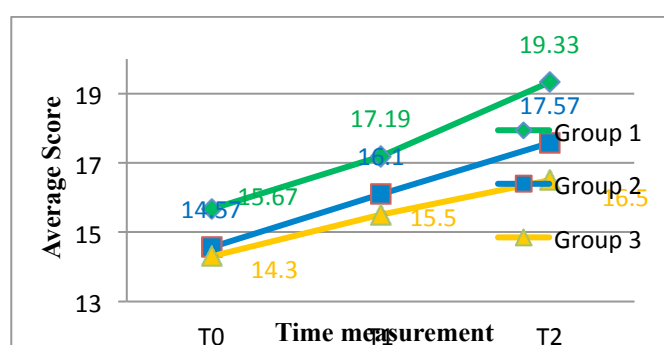
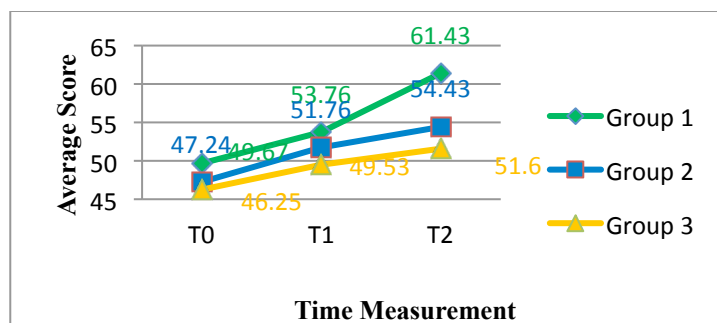


Figure 2 showed at the beginning of the measurement, the average score of the attitude of the respondents was between 46.25 to 49.67. The average of last score was from 51.6 to 61.43. The

highest improved of attitudes score was in group 1, followed by group 2, and the lowest score of the attitude of the respondent was in group 3.

Figure 2. Changes of Attitude Score of Mother



Different knowledge score ($\Delta 1$) was obtained from the score of the current knowledge of T1 minus the score of initial knowledge, and $\Delta 2$ acquired knowledge score when T2 (end) minus the initial knowledge score. To compare the difference between the knowledge score test was used Kruskal Wallis test. Kruskal

Wallis test results found there was differences in knowledge among the three groups in $\Delta 2$, but not on $\Delta 1$. In terms of the increase in score, the highest increase is group 1. It was shown that there was influence of lactation education through training to increase knowledge score of respondents (Table 4).

Table 4. Difference Score of Respondents Knowledge and Attitude Before And After Intervention by intra-group

Variable	$\Delta 1$	P	$\Delta 2$	p
Knowledge				
Group 1 (n=21)	1,52		3,67	
Group 2 (n=21)	1,52	0,542	3,00	0,000
Group 3 (n=20)	1,20		2,20	
Attitude				
Group 1 (n=21)	4,10		11,76	
Group 2 (n=21)	4,52	0,201	7,19	0,000
Group 3 (n=20)	3,10		5,35	

Table 4 showed that the results of Kruskal test found there was a difference in attitude among the three groups in $\Delta 2$, but no differences were found in $\Delta 1$. In terms of the increase in score, the highest increase was group 1. This showed that there was an influence of lactation education through

training to increase scores attitudes of respondents.

Differences breastfeeding behaviour after giving lactation education

Table 5 showed when the initial measurement, all respondents in group 1

gave exclusively breastfeeding, while in group 2 and 3 there were three mothers gave formula milk. At the end of the measurement, in group 1, there was one respondent gave partially breastfed, whereas in group 2 and 3, more of respondent gave partial breastfeeding than formula milk. Results of Chi Square test indicated there was no *p value* in group 1, because all respondents at the beginning were giving breastfeeding only. While the second group gained *p value* > 0.05, which means there was no difference in breastfeeding at the beginning of the end. The third group obtained value *p* < 0.05,

which means there was difference between the treatment of breastfeeding with the control group. It was shown that in group 1, all mothers majority of exclusive breastfeeding until the baby was 6 months old, which means that lactation education affected on exclusive breastfeeding. In group 2, generally the mother was still exclusive breastfeeding (18 mothers), so it was said that the module lactation helped mothers to continue providing exclusive breastfeeding to their children; whereas in the group 3, mothers remain exclusive breastfeeding by 17 mothers, while 3 had changed from breast milk to formula.

Table 5. Differences Breastfeeding after Lactation Education Compared to the Control Group

Group	Early Breastfeeding	Last Breastfeeding						Total		P
		Breast milk		Breast milk + Formula milk		Formula milk				
		n	%	n	%	n	%	n	%	
I	Breast milk	20	95,2	1	4,8	0	0,0	21	100.0	
	Total	20	95,2	1	4,8	0	0,0	21	100,0	-
2	Breast milk	6	28,6	8	38,1	4	19,0	18	85.7	
	Formula milk	0	0,0	2	9,5	1	4,8	3	14.3	0,497
	Total	6	28,6	10	47,6	5	23,8	21	100,0	
3	Breast milk	10	50,0	3	15,0	4	20,0	17	85.0	
	Formula milk	0	0,0	0	0,0	3	15,0	3	15.0	0,038
	Total	10	50.0	3	15.0	7	35.0	20	100.0	

Breastfeeding was determined based on the practice of feeding infants with exclusive breastfeeding only without being offered food or other drink, except drop or syrups consisting of vitamins, minerals, supplements or drugs, there was also the provision of water. Distribution changes of exclusive breastfeeding before and after the intervention can be seen in Figure 3. Figure 3 showed that at the beginning of the measurement, generally the mother

only breastfed exclusively, but when the age of baby increase, the mother began to add breast milk with formula milk (partial breastfeeding) and the amount of the only formula feeding increases. Breastfeeding Practices changes from pre-test, post test 1, post test 2 and post-test 3 can be seen in Table 6.

Figure 3. Changes in Practices of Giving Exclusive Breastfeeding

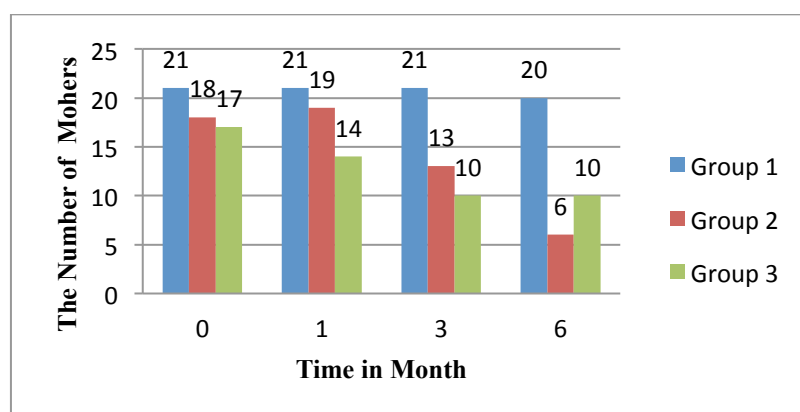


Table 6. The Exclusive breastfeeding practices difference Before And After intervention based on intra-group

Breastfeeding Practice	T0	$\Delta 1$	$\Delta 2$
Group 1 (n=21)	21	0 (1,000)	1 (0,317)
Group 2 (n=21)	18	5 (0,273)	12 (0,06)
Group 3 (n=20)	17	7 (0,15)	7 (0,15)

Table 6 indicated that the Wilcoxon test results found no difference in breastfeeding in all groups from the age of 0 months to 3 month old baby. At 6 months there was a change in group 2, while the first group had no changes in breastfeeding. In group 3, some mothers given partial breastfeeding and formula feeding. But the changes were not significant. The increasing age of the baby, the mother had to give formula, but in group 1 the majority of women still gave only breast milk until the baby was 6 months old. It was shown that there was an influence of lactation training to the practice of breastfeeding mothers.

DISCUSSION

Health education process to achieve the educational goals of behavior change is influenced by many factors. Changes in behavior are the result of the change after the learning process. The process of attitude change from no confident to be more confident is due to knowledge or

growing skills. Changes in behavior occurs because of changes (additions) knowledge or skills and their attitudes change very clear.⁹ The aim of health education are: 1) change of knowledge / understanding, opinions, and concepts; 2) change of attitudes and perceptions, and 3) installing new better of behaviors / practices.

The results of this study showed that the group who received education lactation (group 1) had score of knowledge and attitude higher compared with groups 2 and 3, who only received a modification module and MCH books. This is relevant to the previous research on the effectiveness of prenatal education program with the outcome of breastfeeding, the result of mothers in the intervention group had higher scores on breastfeeding knowledge and attitudes towards breastfeeding on the third day postpartum. The sum of exclusive breastfeeding is higher in the intervention group at 3 days postpartum and one month postpartum.⁷

Increased knowledge score is due to the treatment of health education undertaken during prenatal and continued in postnatal time. This motivates the mother to find out more things related to breastfeeding and lactation. The intensity of health education is also one factor affecting the increase of knowledge, thus becoming more frequent contact between the mother and giver of health education, the more often the mother gets knowledge that will indirectly increase the knowledge of the mother. Another benefit of the intensity of health education is the repeating of information into a supporting factor in understanding the mother to such information. Information or knowledge that is often repeated can improve knowledge retention.¹⁰

Whereas in group 2 and 3 was also an increase of knowledge, it could be due to the attention that is done in the form of home visits to all the samples not only the group who has given education. It aims to determine the infant feeding until 6 months old, where visits were made at the time of birth in the clinic and the next at month 1, month 3 and month 6. And the increase could be due to the knowledge gained through reading modification information module or MCH book acquired before. Home visit, group meetings, monitoring session are good opportunity to share information (WHO, 2003).¹¹

Good knowledge will have an impact on the attitude of support. Formation and attitude change can be caused by the knowledge gained from both formal and non-formal education and experience which attitude is a form of passive behavior s.¹² Important determinant of behavior is an intention. Women who expressed the intention to breastfeed, is a very strong predictor of initiation and duration of breastfeeding.¹³ The intention of breastfeeding is influenced by the

mother's attitude toward breastfeeding and influenced by people who are in her social connection, like husband, grandmother, brother or friend. The role of parents in the decision to breastfeed exclusively or not is so big, especially if the breast-feeding mothers living with parents or in-laws. Besides, the influences of other social culture is feeding practices beside breast milk such as provision of fruit at the age of 2 months and formula feeding, it shape the behavior of the mother to provide additional food or drink other than breast milk so that this condition becomes a habit that occurs continuously in the community. This is common initiated because of babies crying so that families feel that only breastfeeding alone is not sufficient for breastfed infants, babies need to be given extra food to keep from crying again.

For primiparous women who are not planning to breastfeed, the strongest concern is that the intention of breastfeeding will be painful, difficult, and has a negative impact on the body.¹⁴ Mothers with successful previous breastfeeding experience, will have a greater opportunity to successfully breastfeed when compared with the bad experiences before. Issue of a lack of confidence or poor self-efficacy mother, in which the mother is not sure of her breast milk adequacy problems or she has a problem in belief that she can successfully breastfeed, it is an important barrier to the provision of ASI.¹⁵

Factors relating to exclusivity and duration of breastfeeding among others: lack of knowledge and lack of confidence in the mother, does not have enough expertise in the techniques of breast feeding and management problems commonly encountered when breastfeeding (such as swelling of the breast, the perception of insufficient breast milk, nipples inflamed, etc.), pacifier/dummie, lack of physical and

psychological support that received during the period of lactation from family members, health care professionals, the use of pacifiers/dummies by working mothers, exposure information from sources as diverse norms and culture with regard to exclusive breastfeeding that improper among family members, peers, and society.^{16,17}

After giving birth is a critical period in breastfeeding as breastfeeding problems that appear. It is expected that the postnatal health education will help women to improve their abilities and skills facing of difficulties in breastfeeding. Antenatal education and counseling are quite helpful in breastfeeding, 68% of mothers said that early breastfeeding problems are the main reason they stopped breastfeeding before two months after childbearing process.⁵ Another barrier is the lack of knowledge about breastfeeding and lack of support from the health professionals.¹⁸ In this study, a group of pregnant women who get lactation education demonstrated the ability to continue to give only breast milk until the baby is 6 months old. In line with the results of research on prenatal breastfeeding education and breastfeeding outcomes, the result is mothers who taking prenatal classes significantly increase the duration of breastfeeding 6 months, when compared with the group control.¹⁹

Other research results are also consistent with the results of this study, that education about breastfeeding during antenatal and postnatal lactation support, both increase the rate of exclusive breastfeeding until 6 months after childbearing process.²⁰ Support given to the postnatal period is more effective than the education in antenatal period. Prenatal education for mothers and fathers regarding breastfeeding should be increased.⁶ Results showed that pregnant women and their partners should be given

health education together, it will give the results in improvement of maternal health behavior, when compared if women are only given health education alone.²¹

CONCLUSION

The results of this study indicate that education lactation during pregnancy and after childbirth improve knowledge and attitudes of the nursing mothers, and influence mothers to practice exclusive breastfeeding until the baby is 6 months old. So, it is necessary continuous lactation education program from prenatal to postnatal to increase exclusive breastfeeding practices involving the husband or the mother's family.

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