

Factors Affecting Breast Milk Substitute in Pidie Jaya, Aceh, Indonesia

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Abstract

Background: Breast milk is the first, main, and best natural food for babies. Breast milk contains various nutrients needed in the process of growth and development of babies. Breastfeeding is a health behavior carried out by mothers. This study aimed to analyze the factors that influence the provision of breast milk substitutes.

Methods: This was a quantitative study, using a cross-sectional design. Data collection was carried out from July to August 2022 on 71 mothers who had babies aged up to 6 months at the Bandar Baru Public Health Center, Pidie Jaya, Aceh, Indonesia. Consecutive sampling technique was used. The variables studied included behavior intentions, social support, accessibility of information, personal autonomy, and situational action. Chi-square was used to assess the relationship between independent variables and the dependent variables.

Results: Most mothers were aged 20–35 years (70.4%), had junior high school education (78.9%), were unemployed (76.1%), and most did not provide breast milk substitutes (70.4%). Mothers who provided breast milk substitutes was significantly associated with the mother's intention to give breast milk ($p=0.002$) and environmental conditions/situations for action ($p=0.001$). Mothers with low intentions tended to substitute breastmilk (53.8%). Furthermore, the situation of action influenced mothers to provide breast milk substitutes (48.6%).

Conclusion: Factors that influence mothers to provide breast milk substitutes are low intention and environmental conditions/situations to act. Therefore, education for mothers to give exclusive breast milk is encouraged.

Keywords: Breastmilk substitutes, culture and tradition, exclusive breastfeeding, intention

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Introduction

Exclusive breastfeeding is one of the essential actions for the growth and development of children.¹ Early initiation of breastfeeding and exclusive breastfeeding will help children survive and build the antibodies they need to protect against various diseases.^{2,3} Granting exclusive breastmilk is one of attempts to decrease the mortality rates of babies and infants which is part of the sustainable development goals (SDGs) in 2030.^{4,5} Exclusive breastfeeding is giving only breast milk to the

baby, either directly breastfed or expressed, and not giving other food or drinks including water, except for medicines and vitamin or mineral drops.^{6,7}

The coverage of exclusive breastfeeding in Indonesia nationally is 59.2%, however, there are several areas that are still below the 2020 strategic plan target. Aceh Province is one of the provinces with low exclusive breastfeeding coverage, especially in Pidie Jaya Regency (31%). Moreover, in the Bandar Baru Public Health Center, it is still far below which is only 5.7%.^{8,9} The low coverage of exclusive

breastfeeding is directly proportional to the increase in breastfeeding substitutes, that might be influenced by various factors. Environmental conditions in the form of cultural traditions are one of the factors that influence the provision of breast milk substitutes. Traditions or customs in the local environment may influence mothers in providing additional food to their babies before the baby is six months old, making this becomes one of the barriers in achieving the exclusive breastfeeding program.¹⁰

The purpose of this study was to analyze the factors that influence the provision of breast milk substitutes in the work area of the Bandar Baru Public Health Center, Pidie Jaya Regency, Aceh, Indonesia.

Methods

The study was a quantitative study with a cross-sectional design, conducted at the Bandar Baru Public Health Center, Pidie Jaya Regency, Aceh, Indonesia in July–August 2022. The data was collected using consecutive sampling

techniques. Mothers who had babies aged up to 6 months old were included. Exclusion criteria were mothers who could not read and write, had babies with congenital defects, babies with a history of weight <1500 grams or premature birth. In addition, sick babies or mothers who refused to continue the data collection process were also excluded. This study had been approved by the Research Ethics Committee of the Universitas Padjadjaran with ethics number 654/UN6.KEP/EC/2022.

After obtaining consent from the mothers, the questionnaire was distributed. The questionnaire was developed through qualitative research which was submitted for publication. This questionnaire consisted of variables such as behavior intention, social support, accessibility of information, personal autonomy, and action situation. The questionnaire had been developed through the stages of content and construct validity. The results in the form of scores were analyzed using the Rasch model using Winsteps software. The validity and reliability test of the questionnaire was conducted on another

Table 1 Sociodemographic Characteristics of Mothers with Babies Aged 0–6 Months at Bandar Baru Health Center, Pidie Jaya Regency, Aceh, Indonesia

Characteristic	Frequency	Percentase (%)
Mother's age (years)		
<20	1	1.4
20–35	50	70.4
>35	20	28.2
Level of education		
Elementary school	2	2.8
Junior high school	56	78.9
Higher education	13	18.3
Mother's occupation		
Yes	17	23.9
No	54	76.1
Family income (IDR)		
< 3,165,000	56	78.9
> 3,165,000	16	21.1
Baby age		
New born	2	2.8
1 month	2	2.8
2 months	3	4.2
3 months	6	8.5
4 months	12	16.9
5 months	7	9.9
6 months	39	54.9
Breastfeeding substitute		
Yes	21	29.6
No	50	70.4

Table 2 Relationship between Factors Influencing Breast Milk Substitute

Variable	Breast Milk Substitute (n=71)		p-value
	Yes (n=21) n (%)	No (n=50) n (%)	
Mother's intention			
Low intention	14 (53.8)	12 (46.2)	0.002*
High intention	7 (15.6)	38 (84.4)	
Social support			
Available	14 (35.0)	26 (65.0)	0.382
Not available	7 (22.6)	24 (77.4)	
Access of information			
Not good	5 (19.2)	21 (80.8)	0.237
Good	16 (35.6)	29 (64.4)	
Personal autonomy			
No	19 (33.9)	37 (66.1)	0.202
Yes	2 (13.3)	13 (86.7)	
Action of situation			
Yes	18 (48.6)	19 (51.4)	0.001*
No	3 (8.8)	31 (91.2)	

Note: Chi-Square test with a significant level <0.05

set of mothers who also had babies aged up to 6 months in Pidie Jaya Regency. The raw variance was 52.4% and Cronbach's alpha was 0.70, indicating that the instrument was valid and reliable to use.

Furthermore, the variables were categorized into 2 groups based on the mean value of each variable as the cut-off value. If the score was less than the mean value, then the following variables were determined such as the mother's intention to breastfeed was designated as low, social support was not available, access to information was not good, the mother had no personal autonomy, and environmental/cultural conditions did not affect the breastfeeding substitutes.

On the other hand, if the score was higher than the mean value, then the mother's intention to breastfeed was high, social support was supportive, the access to information was good, the mother had personal autonomy, and environmental/cultural conditions affected the provision of breast milk substitutes.

The collected data was analyzed using Statistical Package Software for Social Science (SPSS) Version 26, with a significant level (α) <0.05 for the Chi-Square test.

Results

In total, there were 71 mothers involved, predominantly in the age category 20–35 years (70.4%), had junior high school education

(78.9%), the majority were housewives (76.1%) with a total family income of less than 3,165,000 rupiah (78.9%). Interestingly, the percentage of mothers who did breastfeed substitute was less than those who exclusively breastfed (29.6% vs 70.4%) as depicted in Table 1.

Mothers who had given breastmilk substitutes to their babies mostly had low intention to give exclusive breastmilk ($p=0.002$). Furthermore, a situation to act showed that mothers who gave breast milk substitutes were influenced by environmental conditions/situations to act (48.6%) compared to mothers who were not affected by environmental conditions/situations to act (51.4%) did not provide breast milk substitute ($p=0.001$), indicating that there was a relationship between action of situation and the provision of breast milk substitutes in the working area of the Bandar Baru Health Center, Pidie Jaya Regency (Table 2).

Discussion

In this study, it was found that the majority of mothers did not give breastfeed substitutes to their babies, moreover the percentage was quite high. Thus, this finding indicates the success of exclusive breastfeeding. This finding is interesting considering that most mothers have junior high school education. Meanwhile, other studies have stated that education

influences early provision of breast milk substitutes.^{11,12} The higher the respondent's education level, the more likely they are not to provide early complementary feeding.^{11,12} This may be influenced by the more intensive education and socialization about exclusive breastfeeding carried out by Bandar Baru Community Health Center officers. Besides, since the World Health Organization (WHO) recommends exclusive breastfeeding and the prohibition on marketing of breast-milk substitutes because it is a violation of international codes of ethics,^{3,4} mother's awareness of giving exclusive breastfeeding to their babies has increased. However, apparently, some mothers still provide breast milk substitutes.

There are several reasons why the mothers still provide breast milk substitutes, one of which is formula milk. The intensive advertising of formula milk makes mothers decide to give formula milk to babies aged 0–6 months. A study in Mojokerto, most mothers do not provide exclusive breastfeeding and are exposed to formula milk advertisements.⁷ As the results of a study in Banda Aceh stated that there are three variables that are suspected to be factors causing the low achievement of exclusive breastfeeding, namely the variable of maternal knowledge, the variable of formula milk advertising, and the variable of breast milk production.¹³ Formula milk advertisements have a relationship with exclusive breastfeeding.^{7,13}

In addition, another reason mothers do not exclusively breastfeed and choose to give formula milk to babies under 6 months of age is because the mother has to return to work, lack of self-confidence, and lack of knowledge to produce enough breast milk.^{11,14,18} There is a significant relationship between maternal employment status and exclusive breastfeeding.¹⁴ However, mothers who do not work also have the opportunity to not breastfeed exclusively due to the mother's lack of interest, breast milk not coming out or not flowing smoothly, which causes the baby not to want to breastfeed, so the mother gives formula milk instead.¹⁴

The results of our study show that there are 2 factors that dominate the provision of breast milk substitutes, which are the mother's intention and the situation to act based on cultural aspects. Meanwhile, social support, access to information and mother's personal independence have no significant effect on the provision of breast milk substitutes at the Bandar Baru Health Center.

The mother's intention and motivation in breastfeeding affect the mother's decision to provide exclusive breastfeeding. The mother's intention significantly influences the decisions to breastfeed.^{14,15} Furthermore, there is a correlation between maternal readiness and intention for successful breastfeeding. Maternal readiness to provide exclusive breastfeeding for six months is independently related to the maternal intentions. Most mothers are not yet aware of the benefits of exclusive breastfeeding, especially mothers with low levels of education. Increasing maternal awareness to exclusively breastfeed is directly proportional to increasing maternal intention to exclusively breastfeed for six months.^{16–18}

Mothers intend to exclusively breastfeed their babies if they feel confident in doing so, such as knowing the benefits of breastfeeding, being physically and emotionally ready, and being convinced that their milk production is sufficient to fulfill their baby's needs.^{19,20} In addition, breastfeeding experiences from the environment or closest people as well as physiological conditions such as stress and fatigue can also be a trigger for mothers in successfully of breastfeeding.^{21,22} This is in accordance with the results of a study stating that mother's belief in adequate breast milk production is the primary factor influencing her inclination to exclusively breastfeed.²³

The result of this study showed that the condition/situation to act reviewed based on culture had a significant relationship with breastfeeding substitutes. This result is in line with other studies stating that there is a significant relationship between culture and the provision of early breast milk substitutes.^{11,24,25} A study in Serang¹¹ found that mothers with cultural influences are at risk of 0.271 times giving early breast milk substitutes. One of the cultures in the environment is that when breast milk has not come out on the first to third day, the baby is given water to prevent dehydration.¹¹ Likewise, a study in East Nusa Tenggara²⁴ stated that local socio-culture has an influence on the failure of exclusive breastfeeding. Some myths or beliefs that hinder exclusive breastfeeding include giving babies aged 0–6 months bitter coffee to strengthen their hearts, or giving them honey, water and rice water.²⁴

Efforts to increase maternal intention to exclusively breastfeed should not only be carried out after the mother gives birth, but should also be done since pregnancy, even before pregnancy. Providing information

about exclusive breastfeeding during antenatal care includes colostrum feeding material, prohibition of prelactal feeding and the right to obtain early initiation of breastfeeding (*inisiasi menyusui dini*, IMD) for babies. This is in accordance with other studies which state that counseling about exclusive breastfeeding can be done from a young age so that it will further increase motivation, attitudes and beliefs about exclusive breastfeeding and have sufficient knowledge and understanding.^{24,26}

This study has several limitations. The accuracy of the data in the questionnaire is highly dependent on the interpretation and memory of the respondents. Therefore, further research needs to be conducted using a cohort or case-control study design with a larger number of respondents.

In conclusion, in the working area of Bandar Baru Health Center, Pidie Jaya Regency, Banda Aceh, Indonesia, the factors that influence mothers not to provide exclusive breastfeeding are the low intention of mothers and environmental conditions/situations to act. Therefore, education for mothers to provide exclusive breastfeeding is highly recommended. Besides, counseling to the mother's environment such as husband, family, and respected community leaders such as traditional elders in the area also needs to be carried out. So that the information obtained is comprehensive and can support each other in providing exclusive breastfeeding.

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