

# Practice Of Exclusive Breastfeeding At Evacuation Site Post-Earthquake In Palu City, Indonesia

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## Abstract

The problem of post-disaster exclusive breastfeeding is caused by the lack of knowledge, the level of education, the family support, the support of health workers, the health facilities, and the distribution of the assistance for the breastfeeding substitutes and the commercial porridge which is very accessible, can change the behaviour of the exclusive breastfeeding in the disaster-affected areas. This research aims to analyse the determinant of the success of the post-disaster exclusive breastfeeding. The research method was quantitative with the cross-sectional approach. The population was 52 mothers at three evacuation sites who had 6 to 8-month babies; taken by the Total Sampling. The data were analysed using the univariate analysis and the bivariate analysis. The results of the research were the characteristics of the respondents, namely: those who were 26 to 35 years old, were 63.5%; those who were in low education, were 86.5%, and those who were in higher education, were 13.5%; the pre-disaster breastfeeding practice was 73.1%; those who had less knowledge about breastfeeding were 80.8%; those who had received the assistance of PASI (breastfeeding companion) and commercial porridge were 76.9%; the unavailability of the health facilities was 65.4%; the lack of support from the health workers was 65.4%; and the less support from the families was 71.2%. The bivariate analysis showed that the variables of: education, knowledge, the status of receiving the assistance of PASI & commercial porridge, the availability of the health facilities, the support from the health workers, and the support from the families; all of these variables had a significant relationship to the practice of exclusive breastfeeding at the evacuation site, with a  $p$  value  $< 0.05$ .

**Keywords:** *Exclusive breastfeeding, Refugee, Post-Earthquake.*

## Introduction

The earthquake and liquefaction that followed by a large tsunami wave which occurred on 28 September 2018 with a magnitude of 7.7 on the Richter Scale, located in the Province of Central Sulawesi, have become a widespread concern, both from within and outside the country. The natural disaster which struck three areas: Palu City, Donggala Regency, and Sigi; resulted in approximately 1,948 of which were found dead, while 843 were still missing. Not only claimed lives and lost property, but also a large portion of transportation infrastructure, buildings and facilities were severely damaged, including changes of lands, coastal ecological

characteristics, and general geomorphology. The Palu City has become one of the areas seriously affected by disasters. The series of disasters that befell this area resulted in many residents who died, injured, and stated lost, along with their homes.

In emergencies (during disasters and post-disaster), many problems arise with regard to breastfeeding mothers, infants, and children under two years old, due to limited clean water and fuel for food needs<sup>1</sup>. For the time being, mothers cannot breastfeed their babies due to severe stress, and there are also babies who lost their mothers (orphaned babies) so they cannot have breastfeeding for survival<sup>2</sup>. In addition, the difficult things

to avoid are: the aid from other countries in the form of formula milk in large amount; the low-level education and knowledge of the mothers; the support from health workers; and the support from the families; therefore, the exclusive breastfeeding is low<sup>3,4</sup>.

One area in Palu City that is seriously affected by the earthquake and liquefaction is the area in Tatanga Sub-district, and there is a refugee tent inhabited by mothers and the babies. Before the earthquake, the exclusive breastfeeding in this area was high, at 85.67% in 2017<sup>5</sup>. After the earthquake, the exclusive breastfeeding in the area is thought to have decreased.

Based on the research problem, namely the occurrence of earthquake, that the number of the high refugees, specifically the risky group, such as: pregnant women, nursing mothers, and babies, and residing in the refugee tents; has the potential to experience problems in feeding the babies, both in terms of quality and quantity. The exclusive breastfeeding is a challenge for the mothers who have babies in the evacuation site. Thus, this research aims to analyze the factors that influence the success of the exclusive breastfeeding at the evacuation site.

## Materials and Method

**Research Design:** This is a quantitative research with a cross-sectional design. This research was conducted at three points of evacuation in the working site of PUSKESMAS Sangurara, Palu, from October to January 2018-2019.

**Population and Samples:** The population in this research were the mothers who had babies aged 6 to 8 months old, obtained as many as 52 people taken by the Total Sampling.

**Data Collection:** The research data consisted of: respondent characteristics data, independent variables, and dependent variable. The respondent characteristics data included: mother's age, baby's age, mother's education level, pre-disaster breastfeeding, post-disaster exclusive breastfeeding, which was measured using research questionnaire. The independent variables were the level of education, the level of mother's knowledge of breastfeeding, the Assistance Receipt Status of PASI & Commercial Porridge, the availability of health facilities, the support from health workers, and the support from families. The dependent variable was the exclusive breastfeeding at the evacuation site.

**Data Analysis:** The data analysis was the univariate and bivariate, namely the chi-square test with a significance level ( $\alpha$ ) of 5% using the SPSS software.

## Results

**Table 1: Characteristics of Respondents**

Characteristics	n	%
<b>Age</b>		
17-25	12	23.0
26-35	33	63.5
36-45	7	13.5
<b>Age of Baby</b>		
6 Months old	18	34.6
7 Months old	14	26.9
8 Months old	20	38.5
<b>Level of Education</b>		
Low	45	86.5
High	7	13.5
<b>Pre-Disaster Breastfeeding</b>		
Fully Breastfeeding	38	73.1
Partially Breastfeeding	14	26.9
<b>Post-Disaster Exclusive Breastfeeding</b>		
Non-Exclusive	38	73.1
Exclusive	14	26.9
<b>Knowledge</b>		
Less	42	80.8
Fair	10	19.2
<b>Assistance Acceptance Status of PASI and Commercial Porridge</b>		
Accept	40	76.9
Do not accept	12	23.1
<b>Health Facility Availability</b>		
Unavailable	34	65.4
Available	18	34.6
<b>Health Workers Support</b>		
Less	34	65.4
Full	18	34.6
<b>Family Support</b>		
Less	37	71.2
Full	15	28.8

The Table 1 shows that the majority of respondents in the 26-35-year-old group is 63.5%. Most respondents having 8-month-old babies are at 38.5%. More than half of respondents with low education are at 86.5%. Most respondents fully breastfeeding before the disaster happened are at 73.1%. Most respondents give non-

exclusive breastfeeding in the aftermath are at 73.1%. The majority of respondents with low knowledge is at 80.8%. Most respondents receive the assistance acceptance status of PASI and commercial porridge are at 76.3%. More than half of the respondents have their health facilities unavailable are at 65.4%. Most respondents receive less support from health workers are

at 65.4%. And the majority of respondents receive less family support is at 71.12%.

Table 2 shows that all independent variables are the factors that influence the exclusive breastfeeding of the babies who are evacuating in Palu City, with a  $p$  value  $< 0.05$ .

**Table 2: Bivariate Analysis**

Variable	Exclusive Breastfeeding				N	p
	No		Yes			
	n	%	n	%		
<b>Education Level</b>						
Low	36	80	9	20	45	0.011
High	2	28.6	5	71.4	7	
<b>Knowledge</b>						
Low	34	81	8	19	42	0.016
Fair	4	40	6	60	10	
<b>Assistance Acceptance Status of PASI &amp; Commercial Porridge</b>						
Accept	36	90	4	10	40	0.000
Do not accept	2	16.7	10	83.3	12	
<b>Health Facility Availability</b>						
Unavailable	30	88.2	4	11.8	34	0.002
Available	8	44.4	10	55.6	18	
<b>Health Workers Support</b>						
Less	30	88.2	4	11.8	24	0.002
Full	8	44.4	10	55.6	18	
<b>Family Support</b>						
Less	32	86.5	5	13.5	37	0.001
Full	6	40	9	60	15	

## Discussion

Natural disasters, such as earthquake and tsunami, resulted in the loss of property and damage to health facilities and housing, so that the people who survived the incident are forced to flee and live in the refugees' tent. The riskiest group to experience health and nutritional problems is the group of babies and nursing mothers. Failure to exclusively breastfeed can occur to the mothers who have babies.

The results showed that the failure of exclusive breastfeeding in the refugee camp was 73.1%. Other research showed that the low exclusive breastfeeding occurred in the mothers living in refugee camp<sup>6</sup>.

The results of this research indicated that the

mother's education level was a factor influencing the success of breastfeeding. The high education status of the mothers, the high the breastfeeding as well. Several research show that there is a positive correlation between mother's education and the practice of initiating breastfeeding by van Rossem, *et al.*,<sup>7</sup> the practice of exclusive breastfeeding<sup>8</sup>, and the duration of breastfeeding<sup>9</sup>.

The low education of the respondents shows that the knowledge level of the respondents about exclusive breastfeeding is also low. This research showed that there were 80.8% of respondents who had low knowledge about exclusive breastfeeding. The low knowledge showed that the majority of respondents who did not exclusively breastfeed were at 81.0%. Other research

shows that breastfeeding practices vary depending on the level of knowledge of the mother, i.e., a mother with a good level of knowledge will exclusively breastfeed and avoid the milk formula and the use of bottles<sup>10,11</sup>

In addition to the factors of education and knowledge of the respondents that affect the exclusive breastfeeding in the evacuation site, there was the assistance of breastfeed substitutes and commercial porridge, given to the mothers. The results showed that most of the mothers who accepted the assistance did not exclusively breastfeed, namely at 90.0%. This caused the mother to fail to exclusively breastfeed at the evacuation site.

The distribution of formula milk substitutes and commercial porridge changes the practice of breastfeeding, and increases the supply of formula milk in the affected areas. The most worrying condition is that babies aged 0–5 months old also receive the formula milk<sup>12,13</sup>. This condition explains that receiving such formula milk assistance is a condition that facilitates the mothers to fail to give exclusive breastfeeding.

The results of this research indicated that there was a significant relationship between the health facilities and the post-earthquake exclusive breastfeeding and liquefaction in Palu City. Health facilities close to mothers to conduct health checks and get information about health, both for those carrying babies. The unavailability of breastfeeding tents makes it difficult for mothers to breastfeed their babies.

Then, the results of this research indicated that there was a significant relationship between the health workers support and the post-earthquake exclusive breastfeeding and liquefaction in Palu City. The respondents with less support from health workers did not provide more exclusive breastfeeding at 88.2%. The support from health workers, in this case related to efforts to provide information, and emotional support to the nursing mothers, as well as not recommending the use of formula milk easily, and promoting breastfeed substitute products.

In post-natural disaster situations, the support from health workers is very important in supporting the mothers to exclusively breastfeed. The babies who are not exclusively breastfed have the potential to lack of nutrient intake, and affect the nutritional status of the babies. Water, sanitation and hygiene services, are the needs of refugees, and correlated with health and nutritional status, especially for babies and children<sup>13</sup>.

(Cronin, *et al.*, 2008). Other research shows that baby sitters need special support for breastfeeding after the natural disasters<sup>14</sup>.

In addition to the support from health workers, the support from families is also very important and supports the success of the exclusive breastfeeding in the evacuation site. Stress and trauma conditions can interfere with breastfeeding, therefore the family support, especially parents, husbands or relatives, greatly helps the baby's mothers to give exclusive breastfeeding. Research shows that stressed mothers will interfere with the success of breastfeeding<sup>15</sup>. Other research shows that there is a significant relationship between the husbands' support and the exclusive breastfeeding for babies, where the husbands will be able to actively seek information and participate in the success of exclusive breastfeeding for the babies<sup>16</sup>.

## Conclusions

The practice of the exclusive breastfeeding at the evacuation site was very low, which was at only 26.9%. The factors significantly related to the practice of the exclusive breastfeeding at the evacuation site were the level of education and knowledge of the respondents about breastfeeding, the presence of the breastfeed substitute food (PASI) & the commercial porridge, the unavailability of health facilities caused by the natural disaster, and the low support from health workers and the families in supporting the mothers to give the exclusive breastfeeding.

**Acknowledgements:** This research was supported by the Faculty of Public Health, Tadulako University, Palu, Indonesia.

**Ethical Clearance:** Taken from Hasanuddin University ethical committee

**Source of Funding:** Self

**Conflict of Interest:** Nil

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