



## STUDY ON RELATIONSHIP OF EXCLUSIVE BREASTFEEDING AND MOTHER EDUCATION WITH SEVERELY STUNTING CASE: EVIDENCE FROM PADANG CITY

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### ABSTRACT

Stunting has been highlighted as one of the nutritional problems worldwide especially in developing countries. In Indonesia, Padang is one among those cities with the highest stunting cases whose prevalence rate is 22,6%. Such a high rate must be suppressed since the World Health Organization (WHO) stated that the stunting should be of a main concern if the prevalence rate reaches more than 20%. Associated with such issue, this research examines the relationship of exclusive breastfeeding and mother educational background independently with a case of severely stunting. The data is gathered from a local public health center (known as Puskesmas) in Andalas working territory whose number of the recorded stunting case is the third highest-ranked (13%) in Padang city. An analytical survey research with case control design is carried out, and a non-probability typed- purposive sampling technique is used in which the number of respondents are divided into two groups i.e., 20 case typed and 20 control typed sample of toddlers. Bivariate and univariate analysis with Chi-Square statistical test show that while there exists positive correlation between exclusive-breastfeeding and severely stunting case, the opposite relationship is demonstrated by a mother educational background with the severely stunting case. It is further suggested that the health personnel should improve healthcare services by providing a better health screening work in a monthly routine and conducting a counseling of the exclusive breastfeeding regularly.

**Keyword:** Severely Stunting, Exclusive Breastfeeding, Mother Education, Analytical Survey

### INTRODUCTION

Stunting is a nutritional problem experienced by toddlers whose stature is relatively shorter compared to those of the same age. Based on child development standards of World Health Organization (WHO), the stunted toddlers are categorized based on a z-score of stature i.e., (ordinary) stunting and severely stunting (WHO, 2013). While the earlier is indicated by the z-score down between -2 to -3 times standard deviation of age based-stature, the latter is indicated by the z-score lower than -3 times standard deviation.

Research on basic health (Riset Kesehatan Dasar - Riskesdas) in 2007 showed that the national prevalence rate

of the stunted toddlers reaches 36,8%. Since then, the rate fluctuated randomly and reached down to 30,8% in 2018 in which the stunted-typed accounted to be 17,1% and the severely stunted-typed is 12,8%. Meanwhile, the WHO stated that the problem of stunting should be of a main concern if the overall prevalence rate reaches more than 20% (Kemenkes RI, 2018b).

(Khoirun Ni'mah, 2015) found that infants who do not receive the exclusive breastfeeding are at high risk of stunting. Breast milk has many benefits including increasing immunity, preventing ear infection, lowering frequent diarrhea and chronic constipation, etc. Furthermore, mother's



educational background also relate to the occurrence of stunting. The toddlers from mothers who are educated tend to be spared from stunting compared with whom from less educated ones (Akombi, 2017).

The prevalence rate of stunting case in West Sumatera accounted for 25,6% in 2016 (Kemenkes RI, 2018a). According to Nutritional Status Monitoring of toddlers, the stunting case has increased by 30,6% in 2017 within which the case of stunted and severely stunted toddlers are of 21,3% and 9,3%, respectively. Moreover, the stunting prevalence rate in Padang city was found to be 22,6% in 2018 (Kemenkes RI, 2018a). This rate has increased by 4.9% from 2015 (DKK Padang, 2019).

Furthermore, as reported by Public Health office of Padang city in 2018, the stunting prevalence rate recorded in working territory of Puskesmas Andalas is the third highest-ranked in Padang city which accounted for 13%, within which the case of stunted and severely stunted toddlers are of 7% and 6%, respectively. In terms of severely stunting case, the number of cases recorded from Puskesmas Andalas is of the highest prevalence rate in Padang city (Profil DKK, 2018). Data obtained from Puskesmas Andalas showed that Jati and KubuParakKarakah sub-districts were those with the highest stunting case in 2019. The rate of those two amounted to 24,34% (stunting: 12,5%; severely stunting: 11,84%) and 14,63% (stunting: 0,09%; severely stunting: 5,63%), respectively (Puskesmas Andalas, 2019).

Based on the above evidences, this research proposed to examine the relationship of exclusive breastfeeding and mother education with severely

stunting case in Pusekemas of Andalas sub-district.

## MATERIAL AND METHODS

This research is a type of analytical survey research with case control design. The research samples were taken from Jati and KubuParakKarakah sub-districts following non-probability typed-purposive sampling technique. The samples are of toddlers categorized as case typed-respondents and control typed-respondents. The case typed-respondents include those of 12-59 months old with height/age (H/A) are less than -3 times standard deviation, and the control typed-respondents include those of the same age range with H/A are more than -2 times standard deviation. By using hypothesis testing of  $OR = 4$  and assuming the stunting prevalence rate ( $P_2$ ) = 40% (Kusumawardhani, 2017), the number of samples required is derived to be 20 with proportion of case typed- and control typed-sample is of 1:1.

This research selects the severely stunting case as a dependent variables, and the exclusive breastfeeding and mothers educational background as independent variables. While a primary data was collected by interviewing mother of sampled toddlers by the aid of questionnaires, the severely stunting case is obtained by measuring toddlers' stature (height) using microtoise with rate of accuracy of 0,1 cm.

Analysis is carried out to examine the relationship of both dependent and independent variables by applying Chi-Square test. The Fisher exact test is applied instead in the case if the requirements for the Chi Square test cannot be fulfilled with a confidence level of 95% ( $\alpha = 0.05\%$ ).



## RESULT

### A. Univariate Analysis

#### 1. The Occurance of Severely Stunting

**Table 1. Frequency Distribution of Severely Stunting Case**

Type of sampled Responses	f	%
Case type (Severely Stunting)	20	50
Control Type (Non-severely Stunting)	20	50
<b>Total</b>	<b>40</b>	<b>100</b>

Table 1 shows that from the total 40 samples of toddler, there exists 20 samples (50%) whos are experiencing severely stunting and 20 samples (50%) are non-severely stunting.

#### 2. Exclusive Breastfeeding

**Table 2. Frequency Distribution of Exclusive Breastfeeding**

Breastfeeding	Type of sampled Responses				Total	
	Case (Severely Stunting)		Control (Non-Severely Stunting)		F	%
	F	%	f	%		
Non-exclusive	19	95	11	55	30	75
Exclusive	1	5	9	45	10	25
<b>Total</b>	<b>20</b>	<b>100</b>	<b>20</b>	<b>100</b>	<b>40</b>	<b>100</b>

Table 2 shows that from 30 samples of toddler who received non-exclusive breast feeding, 19 samples (95%) are from case typed- and 11 samples (55%) are from control typed- response.

#### 3. Mother Educational Background

**Table 3. Frequency Distribution of Mother Educational Background**

Mother Educational Background	Type of sampled Responses				Total	
	Case (Severely Stunting)		Case (Severely Stunting)		f	%
	F	%	f	%		
Less-educated	10	50	2	10	12	30
Well-educated	10	50	18	90	28	70
<b>Total</b>	<b>20</b>	<b>100</b>	<b>20</b>	<b>100</b>	<b>40</b>	<b>100</b>

Table 3 shows that from 12 samples of toddler from less educated mother, 10 of them (50%) are in the case typed- response and 2 of them (10%) are in the case of control typed- responses.



## B. Bivariate Analysis

### 1. Relationship between Exclusive breast-feeding and Severely Stunting Case

**Table 4. Relationship between Exclusive breast-feeding and Severely Stunting Case**

Breastfeeding	Severely Stunting				Total		P-Value	OR
	Case		Control		F	%		
	F	%	F	%				
Non-exclusive	19	95	11	55	30	75	0,011	15,545
Exclusive	1	5	9	45	10	25		
<b>Total</b>	<b>20</b>	<b>100</b>	<b>20</b>	<b>100</b>	<b>40</b>	<b>100</b>		

Table 4 shows that from 20 samples of toddler who are experiencing severely stunting, 19 toddlers (95%) did not received exclusive breastfeeding from their mother. The result of Chi-Square test found that there is correlation between exclusive breast-feeding with the occurrence of

severely stunting case in which  $p = 0,011$  ( $p\text{-value} < 0,005$ ). The OR value of 15,545 means that those who does not get the exclusive breastfeeding have 15,545 times greater risk of experiencing severely stunting compared to those who get the exclusive breastfeeding.

### 2. Relationship between Mother Educational Background and Severely Stunting Case

**Table 5. Relationship between Mother Educational Background and Severely Stunting Case**

Mother Educational Background	Severely Stunting				Total		P-Value	OR
	Case		Control		F	%		
	F	%	F	%				
Less-educated	10	50	2	10	12	30	0,016	9,000
Well-educated	10	50	18	90	28	70		
<b>Total</b>	<b>20</b>	<b>100</b>	<b>20</b>	<b>100</b>	<b>40</b>	<b>100</b>		

It is shown from Table 5, from 20 samples of toddler who are experiencing severely stunting, 10 toddlers (50%) comes from well-educated mothers. The result of Chi-Square test implies that there does not exist a correlation between mothers educational background and the

occurrence of severely stunting in which  $p = 0,016$  ( $p\text{-value} < 0,05$ ). The OR value of 9,000 means that those who comes from less educated mother have 9,000 times greater risk of experiencing severely stunting compared to those who comes from well-educated mother.



## DISCUSSION

### A. Univariate Analysis

#### 1. The occurrence of Severely Stunting

The result of the proposed research is in line with the finding of previous research (Rahman, 2018). Who studied the effect of feeding practice of toddlers on the occurrence of stunting found that 50% are of case, and 50% are of control.

The occurrence of severely stunting is generally caused by the lack of nutritional intake provided for toddlers. Nutritional intake affects the growth and development of toddlers. The better the nutritional intake provided, the better the growth and development of toddlers.

#### 2. Exclusive Breastfeeding

In terms of exclusive breastfeeding, the proposed research also supports the previous study of exclusive breastfeeding as a stunting risk factor of 6-24 months toddlers in Yogyakarta city in which about 60,33% of toddlers who did not get exclusive breastfeeding are experiencing stunting (Hidayah, 2013).

Breast milk is very important for the growth and development of toddlers. Interviewing the mothers of sampled toddlers revealed that the reason they did not give exclusive breastfeeding to their children are because the milk did not come out immediately right after the birth, and consequently, they fed their toddlers a formula milk as a substitute. The breastfeeding started once the breast milk comes out smoothly after some period of times, but still with a formula milk accompanied as supplementary. The returned questionnaires proved this finding from which it is found that 55% of mothers fed their toddlers of ages 0 -6 months old with a formula milk.

### 3. Mother Educational Background

Another interesting findings of the proposed research in terms of the relationship between mother educational background and severely stunting case also supports the research of (Dasril, 2019). Who studied family characteristics of the incidence of stunting in Elementary School of Nanggalo district. They found that more than half number of samples of children (66,7%) come from less educated mothers.

In fact, educated mothers know how to process food, manage food menus, and maintain food quality and hygiene properly. Moreover, well-educated mothers also tend to actively seek for information of healthy food to improve nutrition for their children.

### B. Bivariate Analysis

#### 1. Relationship between Exclusive Breastfeeding and Severely Stunting Case

As mentioned earlier (Larasati, 2018) revealed in their study that there exists correlation between the exclusive breastfeeding and the occurrence of stunting (p-value = 0,001) in which the those who does not get the exclusive breastfeeding have 3,306 times greater risk of experiencing stunting compared to those who get the exclusive breastfeeding. The proposed research convincingly supports such findings. Moreover, it can straightforwardly be said that those who does not get exclusive breastfeeding will have a weaker immune and are prone to disease. When this happens, the energy that should be used for growth is eventually diverted to fight infections or diseases, thus the growth of toddlers will be stunted.



## CONCLUSION

This study has examined the relationship of exclusive breastfeeding and mother educational background with the case of severely stunting in working territory of Puskesmas Andalas. It is revealed that there were about 50% of toddlers experience severely stunting in which 75% of them did not get exclusive breastfeeding and 12,5% of them comes from less educated mothers. We found that there was a significant correlation between exclusive breastfeeding, mother educational background and the occurrence of severely stunting case.

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