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by Ardiansa Tucunan 3

Submission date: 11-May-2023 08:16AM (UTC+0700)

Submission ID: 2089956740

File name: The_relationship_between_early_initiation_of_breas.pdf (184.57K)

Word count: 3645

Character count: 19835

2
Original Research Article

DOI: <https://dx.doi.org/10.18203/2394-6040.ijcmph20214983>

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The relationship between early initiation of breastfeeding, exclusive breastfeeding with stunting and wasting in toddlers in Bolaang reGENCY of east Mongondow

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Received: 29 October 2021

Accepted: 04 December 2021

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ABSTRACT

Background: The forms of malnutrition in toddlers include stunting and wasting. Stunting and wasting that occurs in the first 1,000 days of life is at risk for stunted physical and cognitive growth and toddlers are susceptible to disease. One of the factors causing stunting and wasting is exclusive breastfeeding, which is preceded by successful initiation of early breastfeeding. The purpose of this study was to find out the relationship between early initiation of breastfeeding exclusive breastfeeding with stunting and wasting in toddlers.

Methods: This study was a quantitative research with an analytical survey method using a cross sectional design and it was undertaken in the working area of Tutuyan Health Center and Nuangan Health Center, Bolaang Mongondow Timor regency. Samples were taken as many as 147 respondents using purposive sampling data collection techniques and met the inclusion and exclusion criteria. The data were analysed by univariate and bivariate using chi square statistical test.

Results: The percentage of children under five with stunting was 27.9%, not stunting was 72.1%. Toddlers who experienced wasting by 22.4% and normal by 77.6%. Toddlers who received early initiation of breastfeeding were 42.9% while those who did not gain early initiation of breastfeeding were 57.1%. Toddlers who gained exclusive breastfeeding were 66.7% and those who were not exclusively breastfed were 33.3%.

Conclusions: There was a relationship between early initiation of breastfeeding (p=0.000), exclusive breastfeeding (p=0.013) and stunting. There was a relationship between early initiation of breastfeeding (p=0.001), exclusive breastfeeding (p=0.001) and wasting in children under five in Bolaang Regency of East Mongondow. It is necessary to optimize stunting and wasting prevention programs and also cross-sectoral handling for stunting and wasting prevention in toddlers.

Keywords: Exclusive breastfeeding, Initiation of breastfeeding, Stunting, Wasting

INTRODUCTION

Forms of malnutrition in toddlers include stunting and wasting. Stunting is a developmental disorder experienced by children due to poor nutrition, repeated infections, and inadequate psychosocial stimulation. Toddlers are defined as stunting if their height for age is below minus 2 standard deviation while wasting is if their weight according to length or height is below minus 2 standard

deviations based on the growth standards of the World Health Organization.¹

Basic health research in 2018 showed the national prevalence of stunting was 30.8%. This figure decreased compared to the prevalence of stunting in 2017 of 37.2% consisting of 18.0% of short toddlers and 19.2% of very short children.² The prevalence of stunting in Indonesia is ranked as the fifth largest stunting prevalence rate in the

world.³ The proportion of stunting according to the basic health research report of North Sulawesi province is 25.46%. In Bolaang regency of east Mongondow, the proportion of stunting under five is higher than the proportion of stunting in North Sulawesi Province, which is 26.28%.⁴

In contrast to stunting which is a chronic nutritional problem, wasting is an acute malnutrition problem. The proportion of wasting in children under five in Indonesia showed a decrease of 10.2% compared to 2013 which reached 12.1%.² In North Sulawesi Province, the proportion of children under five wasting was 9.53%. In east Mongondow of Bolaang regency, the proportion of children under five who suffer from wasting is 11.36%. The prevalence of 10-14% for wasting is an indicator of a serious public health problem and is considered critical if 15.0%.⁴

Stunting and wasting that occurs in 1,000 HPK, besides its risks for physical growth barriers and children's susceptibility to disease, also causes cognitive developmental barriers that will affect children's intelligence and productivity levels in the future.⁵ Wasting and stunting are associated with increased mortality, especially if they occur in the same child.⁶ One of the factors causing stunting and wasting is food intake, including the provision of only breast milk from birth to the age of six months which is called exclusive breastfeeding. The results of the study on toddlers in the working area of Tanah Kali Kewall Health Center Surabaya showed that toddlers who did not receive exclusive breastfeeding had a 4.6 times chance of experiencing stunting compared to toddlers who received exclusive breastfeeding, and it had a 3.9 times chance of wasting.⁷ Breast milk is needed by babies, especially until the baby is two years old.⁸ This is due to in this period growth and development takes place rapidly, especially physical growth, nerve and brain function.⁹

The success of early initiation of breastfeeding determines the success of exclusive breastfeeding. Breastfeeding that begins with early initiation of breastfeeding is able to reduce the risk of infant death. This happens because the content in breast milk is a protective factor and proper nutrition in infants and ensures the nutritional status of infants. This study aims to find out the relationship between early initiation of breastfeeding, exclusive breastfeeding with stunting and wasting in toddlers in Bolaang regency of east Mongondow. The success of early initiation of breastfeeding determines the success of exclusive breastfeeding.

METHODS

This study was a type of quantitative research with an analytical survey method using a cross sectional design which was carried out in the working area of Tutuyan Health Center and Nuangan Health Center, Bolaang

regency of east Mongondow. This study was conducted from June to September 2021. The sample in this study was 147 respondents who were obtained from calculations using the sample formula and met the inclusion and exclusion criteria.

Inclusion criteria

The inclusion criteria in this study were mothers of children under five who were willing to be respondents.

Exclusion criteria

The exclusion criteria for this study were toddlers with physical disabilities that affected the measurement and toddlers who were sick.

Respondents were taken using purposive sampling data collection techniques.

Data collection was undertaken during the COVID-19 pandemic with the implementation of level 3 community activity restrictions. Posyandu activities were temporarily closed, so data were obtained through home visits in collaboration with nutrition officers of public health center who carried out health checks for pregnant women and toddlers. Researchers and nutrition workers apply health protocols such as using masks, washing hands before interviews, before measurements and after interviews, interviews are carried out at a distance of more than 1 meter and cleaning measuring instruments before and after use when taking data. Before conducting interviews with the respondents, the researcher was accompanied by a nutritionist to explain the aims and objectives of the study and then in writing asked the respondent's willingness to participate in this study by signing an informed consent form. Respondents who were willing were then continued with interviews using questionnaires and measurements of body weight and length of toddlers. Univariate analysis was conducted to look at the characteristics of the research respondents such as age, gender, parental education and occupation, early initiation of breastfeeding, exclusive breastfeeding, stunting status and wasting of children under five. Bivariate analysis was used to see the relationship between variables by using the chi square statistical test.

RESULTS

The subjects in this study were mostly in the age category of 6-12 months with 78 toddlers (53.1%) while at least 12-24 months with 69 toddlers (46.9%). There were 78 male children under five (53.1%) more than female children under 69 children (46.9%). Toddlers who received early initiation of breastfeeding were 63 (42.9%) while those who did not received early initiation of breastfeeding were 84 (57.1%). Toddlers who got exclusive breastfeeding were 98 (66.7%) and 49 (33.3%). Nutritional status data for toddlers in this study used anthropometric indicators for toddlers, namely body

length according to age (PB/U) to identify stunting toddlers and indicators of body weight according to body length (BB/PB) to identify wasting toddlers. The results of the calculation of nutritional status showed that the percentage of children under five with stunting category consisted of 41 (27.9%) respondents, not stunting as many as 106 (72.1%) respondents (Figure 1). Toddlers who experienced wasting as many as 33 (22.4%) respondents and had normal nutritional status consisting of 114 (77.6%) respondents (Figure 2).

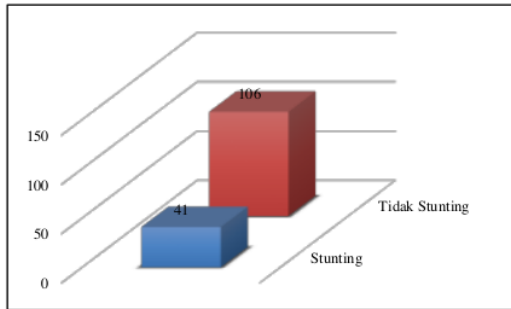


Figure 1: The percentage of toddlers' stunting status.

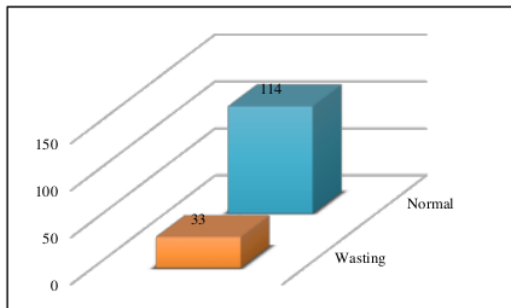


Figure 2: The percentage of wasting status on toddlers.

Table 1: Distribution of research subjects characteristics.

Characteristics subject (toddlers)	N	%
Age (month)		
6-11	78	53.1
12-24	69	46.9
Sex		
Male	78	53.1
Female	69	46.9
IMD		
Yes	63	42.9
No	84	57.1
Exclusive breastmilk		
Yes	98	66.7
No	49	33.3

Toddlers who got IMD and were not stunted, it consisted of 60 (95.2%) respondents and toddlers who did not get IMD and experienced stunting were 3 (45.2%) respondents. The results of statistical tests showed that there was a relationship between early initiation of breastfeeding and stunting in toddlers, the value of $p=0.000$. Toddlers who got exclusive breastfeeding and were not stunted were 77 (78.6%) respondents while toddlers who did not get exclusive breastfeeding and experienced stunting were 20 (40.8%) respondents. The results of statistical tests obtained a value of $p=0.013$, it has indicated that there is a relationship between exclusive breastfeeding and stunting (Table 1).

Table 2: Distribution of stunting status based on early breastfeeding initiation and exclusive breastmilk.

Variable	Nutrition status of PB/U		Total	P value			
	Stunting	Not stunting					
	N	%	N	%			
IMD							
No	38	45.2	46	54.8	84	100	0.000
Yes	3	4.8	60	95.2	63	100	
Exclusive breastmilk							
No	20	40.8	29	59.2	49	100	0.013
Yes	21	21.4	77	78.6	98	100	

Toddlers who got BMI and had normal nutritional status were 57 (90.5%) respondents, while toddlers who did not get BMI and experienced wasting were 4 (32.1%) respondents. The results of statistical tests showed that there was a relationship between early initiation of breastfeeding and wasting toddlers, the value of $p=0.001$. Toddlers who got exclusive breastfeeding and had normal nutritional status were 86 (87.8%) respondents, while toddlers who did not receive exclusive breastfeeding and experienced wasting were 21 (42.9%) respondents. The results of statistical tests obtained a value of $p=0.001$, it showed that there was a relationship between exclusive breastfeeding and wasting toddlers (Table 2).

DISCUSSION

In this study, the most samples of toddlers were in the age category of 6-12 months as much as 53.1% while the sex was the most male 53.1% more than female toddlers at 46.9%. The age category of 6-12 months is the age in the golden period of toddlers. This age is also the initial age for toddlers to be introduced to foods other than breast milk. In this study, toddlers who did not get early initiation of breastfeeding were 57.1% more than toddlers who got early initiation of breastfeeding. In contrast to research on toddlers in Sindang Mungki district, Majalengka regency, the results show that the percentage of toddlers who get early initiation of breastfeeding is higher than those who don't get it.¹¹ In this study, toddlers who got exclusive breastfeeding were 66.7% compared to those who did not. Nationally, the coverage of infants receiving

exclusive breastfeeding in 2017 was 61.33%. However, this figure has not reached the target of exclusive breastfeeding coverage set by the government, which is 80%.¹² Toddlers in the stunting category were 27.9%, not stunting were 72.1%. Toddlers who experienced wasting by 22.4% and normal was 77.6%. Research conducted on toddlers aged 12-18 months in Jatinangor district stated that the prevalence of stunting in the sub-district was 11% and wasting was 5%. This study also concluded that there was an increase in the prevalence of stunting in the group of 15-≤18 month old.¹³

Toddlers who got early initiation of breastfeeding and not stunted were 95.2%, while toddlers who did not get early initiation of breastfeeding and experienced stunting were 45.2%. The results of statistical tests showed that there was a relationship between early initiation of breastfeeding and stunting in toddlers, the value of $p=0.000$. This study is in line with research conducted at the Pantoloan Health Center in Central Sulawesi which stated that there was a relationship between early initiation of breastfeeding, exclusive breastfeeding and stunting in toddlers aged 7-24 months. This study also revealed that toddlers who received early initiation of breastfeeding were less likely to experience stunting.¹⁴ Research conducted on toddlers aged 6-12 months in Boyolali stated that toddlers who did not get early initiation of breastfeeding had a 2.63 times higher chance of experiencing stunting than toddlers who received early initiation of breastfeeding.¹⁵ Toddlers who got IMD and had normal nutritional status were 90.5% while toddlers who did not get IMD and experienced wasting were 32.1%. The results of statistical tests showed that there was a relationship between early initiation of breastfeeding and early initiation of breastfeeding, the value of $p=0.001$. This study is different from the results of research conducted on children under five at the Malacca Health Center, Lalabata District, Sopoeng Regency. The results of his research revealed that there was no relationship between early initiation of breastfeeding and nutritional status based on indicators of weight by body length which identified wasting toddlers.¹⁶

Toddlers who got exclusive breastfeeding and not stunted were 78.6% while toddlers who did not get exclusive breastfeeding and experienced stunting were 40.8%. The results of statistical tests obtained a value of $p=0.013$, it reveals that there is a relationship between exclusive breastfeeding and stunting. This study is in line with research conducted in Saronggi District, Sumenep Regency, the results of the study show that exclusive breastfeeding is one of the factors associated with stunting in toddlers, not exclusively breastfed for infants from birth to 20 months of age.¹⁸ Another review of the literature on risk factors for stunting in children in developing countries states that infants in developing countries who are not exclusively breastfed are at risk of stunting 4 times compared to those who are exclusively breastfed.¹⁹ Another study in Buntu district, Malangka,

Mamasa regency, revealed that infants who were not exclusively breastfed were 61 times more likely to experience stunting than infants who were exclusively breastfed. Exclusive breastfeeding can reduce the risk of stunting.²⁰ Toddlers who received exclusive breastfeeding and had normal nutritional status were 87.8%, while toddlers who did not get exclusive breastfeeding and experienced wasting were 42.9%. The results of statistical tests obtained a value of $p=0.001$, it revealed that there was a relationship between exclusive breastfeeding and wasting. Research conducted in the Saigon Health Center Work Area and Perumnas II Health Center concluded that there is a relationship between exclusive breastfeeding and wasting nutrition in toddlers. Toddlers who are not exclusively breastfed are at risk of 3,946 times the incidence of underweight nutrition compared to those who are exclusively breastfed.⁸

The limitation of this study is that the study was conducted during the COVID-19 pandemic. The planned research locations covering several areas of the puskesmas were canceled because some of these locations were closed and health services including posyandu services were not implemented. It merely two sites out of a total of 11 planned locations where data collection can be undertaken.

CONCLUSION

The results obtained based on statistical tests using chi square were there is association of early initiation of breastfeeding ($p=0.002$), maternal knowledge about exclusive breastfeeding ($p=0.000$), the role of health workers ($p=0.004$), and the role of husband ($p=0.000$) on the exclusive breastfeeding for children under five in north Minahasa regency. However, maternal knowledge and supervision regarding the early initiation of breastfeeding and health workers in north Minahasa regency needs to be more improved.

ACKNOWLEDGEMENTS

The author would like to thank the Institute for Research and Community Service, University of Sam Ratulangi Manado so that this research can be carried out well.

Funding: This research was funded by a budget from the Institute for Research and Community Service (LPPM), Sam Ratulangi University, Manado

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Punuh MI, Akili RH, Tucunan A. The relationship between early initiation of breastfeeding, exclusive breastfeeding with stunting and wasting in toddlers in Bolaang regency of east Mongondow. *Int J Community Med Public Health* 2022;9:71-5.

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