

**ARTIKEL RISET**URL artikel: <http://jurnal.fkm.umi.ac.id/index.php/woh/article/view/woh7301>**Incidence of Stunting: Early and Exclusive Breastfeeding in Two-Year-Old Children****<sup>K</sup>Rudy Hartono<sup>1</sup>, Yuridesi Nurani Putri<sup>1</sup>, Sunarto<sup>1</sup>, Sirajuddin<sup>1</sup>, Aswita Amir<sup>1</sup>, Muhammad Ikhtiar<sup>2</sup>, Ronny Horax<sup>3</sup>**<sup>1</sup>Nutrition Department, Makassar Health Polytechnic, Indonesia<sup>2</sup>Environmental Health Department, Public Health Faculty, Universitas Muslim Indonesia, Indonesia<sup>3</sup>University of Arkansas, Arkansas, United State of AmericaCorresponding Author Email (<sup>K</sup>): [dinomks70@gmail.com](mailto:dinomks70@gmail.com)[dinomks70@gmail.com](mailto:dinomks70@gmail.com)<sup>1</sup>, [desi-yuri@gmail.com](mailto:desi-yuri@gmail.com)<sup>1</sup>, [sunarto@poltekkes-mks.ac.id](mailto:sunarto@poltekkes-mks.ac.id)<sup>1</sup>,[sirajuddin.gizi@poltekkes-mks.ac.id](mailto:sirajuddin.gizi@poltekkes-mks.ac.id)<sup>1</sup>, [aswitaamir@poltekkes-mks.ac.id](mailto:aswitaamir@poltekkes-mks.ac.id)<sup>1</sup>,[muhhammad.ikhtiar@umi.ac.id](mailto:muhhammad.ikhtiar@umi.ac.id)<sup>2</sup>, [horax@uark.edu](mailto:horax@uark.edu)<sup>3</sup>**ABSTRACT**

The condition of toddlers having less length or height based on age as a result of factors such as socio-economic conditions, maternal nutrition during pregnancy, and lack of nutritional intake in the first 1000 days of life is called stunting. Nutritional intake factors include failure to initiate breastfeeding, failure to provide exclusive breast milk, and the early weaning process. The research aims to determine the relationship between a history of early initiation of breastfeeding and exclusive breastfeeding with the incidence of stunting in children under two years aged 6-24 months. The research was conducted in the work area of the Lere Community Health Center, Palu City. This type of research is observation with a case-control approach with chi-square analysis. The sample in this study was 19 stunted and 38 under two years old who were not stunted. Data is presented in table form accompanied by a narrative. The results of the research showed that from 57 samples, the percentage of stunting was 33.3%, those under two years old who received early initiation of breastfeeding was 47.4%, and those who received exclusive breast milk were 56.1%. The statistical test results show a significant relationship between a history of early and exclusive breastfeeding and the incidence of stunting in toddlers aged 6-24 months ( $p < 0.05$ ) with an OR of 9.143 and 6.873, respectively. It is recommended that pregnant women initiate early breastfeeding immediately after giving birth and commit to providing exclusive breastfeeding to maintain the child's growth and development.

Keywords: Stunting; Breastfeeding; 6-24 months.

**Article history : (dilengkapi oleh admin)**

Received 21 Mei 2024

Received in revised form 23 Juni 2024

Accepted 21 Juli 2024

Available online 24 Juli 2024

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Public Health Faculty

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## INTRODUCTION

The current nutritional status of toddlers in Indonesia is still a problem, including malnutrition, malnutrition and stunting. Stunting or short toddlers is a symptom of poor nutritional status used as a long-term indicator of malnutrition in children. Chronic malnutrition, especially in the first 1000 days of life, is a major factor in stunting. Stunting is usually not realized by the family, but after two years, the impact can be seen, such as interference with cognitive abilities. <sup>(1,2)</sup>

The Indonesian government's strategy to reduce stunting rates is to launch the National Strategy for the Acceleration of Stunting Prevention for 2018-2024, with the STRANAS accelerated scenario targeting to reduce the prevalence of stunting to 14% by 2024. The priority targets of the national strategy include pregnant women and children aged 0-2 years or households in the First 1000 Days of Life. The interventions carried out are specific and sensitive nutritional interventions. <sup>(3)</sup> UNICEF, in 2019, around 144 million or 21.3% of children under five in the world suffer from stunting. If we look at the Asian continent, more than two and a half children under five suffer from stunting, or as much as 54.0%. If you look at the global map, Indonesia is one of the countries with a high category of nutritional stunting problems. <sup>(4)</sup>

The results of the Indonesian Nutritional Status Study (SSGI) state that the prevalence of stunted toddlers in Indonesia in 2022 is 21.6%, while the prevalence of stunting in Central Sulawesi reaches 28.2%, and in Palu City, the prevalence reaches 23.9%.<sup>(5,6)</sup> Stunting is when a toddler has less length or height, considering his age. ai 28.2%, and the prevalence reached 23.9% in Palu City. Stunted toddlers are categorized as chronic nutritional problems caused by several factors, including socio-economic conditions, maternal nutrition during pregnancy, and lack of nutritional intake in the first 1000 days of life. The nutritional intake factors in question, such as failure to implement Early Breastfeeding Initiation (IMD), failure to provide exclusive breastfeeding, and the early weaning process, can be at risk of stunting. <sup>(7)</sup> Failure to breastfeed early can hinder the process of providing exclusive breastfeeding. Children who are not given exclusive breast milk will have an impact on their nutritional status. Nutritional status is the body's condition as a result of consuming food. If there is a failure during early breastfeeding, it can cause nutritional problems in the baby and will cause stunting in the future. When doing IMD, the baby will automatically get colostrum. Colostrum contains many antibodies and other important substances for intestinal growth and strength against infections, which are very much needed in the baby's growth process. <sup>(8-11)</sup>

Colostrum has a very high protein and immunoglobulin content, namely immunoglobulin A, which can protect the surface of the baby's digestive tract against various pathogenic bacteria and viruses. <sup>(12)</sup> Breast milk is the intake that best meets needs and can improve a child's growth and development. If a child does not get enough breast milk, the child will have poor nutritional intake, and this can lead to malnutrition, such as stunting. One of the uses of exclusive breast milk is to help children grow, especially in height, because breast milk calcium is absorbed more effectively than formula milk. <sup>(12)</sup>

Toddlers or toddlers who suffer from stunting not only have physical growth problems but also cause children to get sick easily and have impaired brain and intelligence development, so children who suffer from stunting are a big threat to the quality of human resources in Indonesia. A low level of intelligence could be at risk of reducing children's productivity in the future. In the end, stunting can cause stunted economic growth, increase poverty, and widen inequality. <sup>(13-15)</sup>

According to data from the Palu City Health Service in 2022, the incidence of stunting in the Lere Community Health Center working area was 18.02% of toddlers experiencing stunting. The coverage of babies receiving Early Breastfeeding Initiation (IMD) in Palu City has reached 100%. Meanwhile, exclusive breastfeeding coverage in Palu City is still at 47.21%. Based on the description above, the author assumes that an important factor causing toddlers, especially toddlers, to suffer from stunting is the failure to implement Early Breastfeeding Initiation (IMD) and exclusive breastfeeding. Therefore, the author is interested in conducting research on the relationship between the history of early breastfeeding initiation and exclusive breastfeeding and the incidence of stunting in toddlers in the Lere Community Health Center working area, Palu City.

The aim of the research was to analyze the relationship between IMD history and exclusive breastfeeding with the incidence of stunting in young children aged 6-24 months in the Lere Community Health Center working area.

## METHOD

This type of research is observation with a case-control design. This design involves two groups, namely the treatment group and the control group. The treatment group is toddlers 6-24 months who are stunted, while the control group is toddlers 6-24 months who are not stunted. This research was carried out in the work area of the Lere Community Health Center, Palu City and the research was carried out in November – December 2023. The population in this study consisted of toddlers aged 6-24 months who lived in the work area of the Lere Health Center, Palu City. The sample in this study was 1:2 between the case and control groups, namely 19 cases of stunting that occurred in toddlers aged 6-24 months. The control group was 38 toddlers. Respondents in this study were mothers who had children aged 6-24 months in the Lere Community Health Center working area and were willing to be interviewed.

Primary data was obtained directly from respondents or mothers in the Lere Community Health Center working area by interviewing them using a questionnaire regarding the history of early breastfeeding initiation and exclusive breastfeeding. Data were analyzed using the Mantel–Haenszel test and presented according to the research objectives.

## RESULTS

The topography of the area is lowland close to the coast with an area of 93.16 HA. Conditions are generally relatively flat with a height of between 0-18 meters above sea level with relatively flat slopes, namely between 0-8% from the coast to approximately 25 m inland. Based on the river basin area, this

area is flowed by the Palu River and passes through several sub-districts. Apart from the Palu River, Palu Bay stretches to the north because the Lere Village area is coastal. When the 2018 earthquake and tsunami occurred, this was one of the areas affected/worst affected.

**Table 1.** Distribution of Respondents Based on Village, Gender, and Age of Sample

Characteristics	n	%
Ward		
Lere	14	24,5
Silae	23	40,4
Kabonena	2	35,1
Gender		
Man	35	61,4
Woman	22	38,4
Age (month)		
6 – 8	9	15,8
9 – 11	13	22,8
12 – 24	35	61,4
<b>Total</b>	<b>57</b>	<b>100</b>

Based on the table above, it is known that of the 57 samples studied, the majority of baduta samples lived in Silae sub-district, namely 23 people with a percentage of 40.4%. Meanwhile, based on gender, the majority of the sample was 35 men, with a percentage of 61.4%. Based on age group, the largest sample was aged 12-24 months, totaling 35 people with a percentage of 61.4%.

**Table 2.** Characteristics of Child 6-24 Months Based on Nutritional Status, History of Early Initiation and Exclusive Breastfeeding

Description	n	%
Nutritional status		
Stunting	19	33,3
Not Stunting	38	66,7
History		
Early Initiation of Breastfeeding	27	47,4
No Early Initiation of Breastfeeding	30	52,6
Giving		
Exclusive breastfeeding	35	56,1
Not exclusive breastfeeding	25	43,9
<b>Total</b>	<b>57</b>	<b>100</b>

Table 2 shows that the number of children who were not stunted was 66.7% in the control group, 52.6% who did not initiate early breastfeeding, and 56.1% who were exclusively breastfed.

Table 3 shows that 88.9% who initiated early breastfeeding did not suffer from stunting, and 53.3% who did not breastfeed early suffered stunting with  $p < 0.05$  and OR of 9.143. There were 84.4%

who were exclusively breastfed and did not suffer from stunting, with 56% who were not exclusively breastfed suffering from stunting with  $p < 0.05$  and an OR of 6.873.

**Table 3.** The Association Between History of Early Initiation and Exclusive Breastfeeding with Stunting

Variable	Nutritional Status				Total		p	OR
	Stunting	%	No	%	n	%		
History								
Early Initiation of Breastfeeding	3	11,1	24	88,9	27	100	0,002	9,143
No	16	53,3	14	46,7	30	100		
Exclusive breastfeeding								
Yes	5	15,6	27	84,4	32	100	0,003	6,873
No	14	56,0	11	44,0	25	100		
<b>Total</b>	<b>19</b>	<b>33,3</b>	<b>38</b>	<b>66,7</b>	<b>57</b>	<b>100</b>		

Based on the research results, it is known that of the 57 samples studied, the percentage of stunting incidents was 33.3%, while the percentage of toddlers who received Early Breastfeeding Initiation (IMD) was 47.4%. Meanwhile, 56.1% of toddlers received exclusive breast milk. The results of statistical tests stated that there was a relationship between a history of IMD and exclusive breastfeeding with the incidence of stunting in toddlers aged 6-24 months in the Lere Community Health Center working area. The Palu City Government has issued various innovations to reduce the stunting rate in Palu City. One of them is the "PALU MASEHA" program. PALU MASEHA is an activity that provides a stunting prevention stimulus package that is given in the first 1,000 days of life. The intervention program is carried out by providing food packages to toddlers (children aged 0-23 months), pregnant women who experience anemia, and breastfeeding mothers who have Low Birth Weight (LBW) Babies. The provision is carried out for three months, where the food package contains food ingredients that are a source of carbohydrates and protein, as well as vitamins and supplements. Stunting is a condition of failure to thrive in children under five due to chronic malnutrition, especially in the first 1000 days of life. This situation is caused by a lack of nutritional intake for a long time and the occurrence of recurrent infections, which are influenced by a lack of good parenting patterns, especially in the first 1000 days of life.<sup>16</sup>

## DISCUSSION

### Relationship between Early Breastfeeding Initiation and Stunting

From the results of this study, it was also found that 30 toddlers did not receive early initiation of breastfeeding, with a percentage of 52.6%. , while the number of baduta who received this was 27 people, with a percentage of 47.4%. From the results of this analysis, it is known that more toddlers do not receive early breastfeeding initiation.

Early initiation of breastfeeding is a natural process of breastfeeding, namely by giving the baby the opportunity to find and suck his own breast milk within the first hour of life by placing the baby as

soon as possible on the mother's chest after birth.<sup>11,12</sup> Apart from that, of the 57 samples studied, 32 toddlers received exclusive breast milk with a percentage of 56.1%. Meanwhile, there were 25 children who did not receive exclusive breastfeeding, with a rate of 43.9%. Exclusive breastfeeding is very important for optimal baby growth and development in terms of physical, mental, and intelligence. Lack of exclusive breastfeeding can be one of the main causes of low nutritional status of infants and toddlers because the body's immunity is lower, so the risk of illness in babies is greater.<sup>(17,18)</sup> According to the 2022 Indonesian Nutrition Status Survey (SSGI), the stunting prevalence rate in Palu City is 24.7% from 23.9% in the previous year, or an increase of 0.8%.<sup>5,6</sup>

Stunting is caused by various factors. Apart from being caused by anemia in pregnant women, LBW babies and giving MP-ASI is not recommended. The incidence of stunting is also caused by recurrent diarrhea, low coverage of basic immunization, low coverage of vitamin A, and low coverage of exclusive breastfeeding. One way to support the success of the exclusive breastfeeding program for babies is to initiate early breastfeeding.<sup>(1,2)</sup> After carrying out statistical tests using the chi-square test, the  $p$  value was 0.002 or  $<0.05$ , which means that  $H_a$  is accepted, namely that there is a relationship between the history of early initiation of breastfeeding and the incidence of stunting in toddlers aged 6-24 months in the Lere Community Health Center working area. From the results of the analysis, the odds ratio (OR) was also obtained with a value of 9.143, meaning that toddlers who did not receive early breastfeeding initiation had a 9.143 times chance of becoming stunted compared to toddlers who received this. This is in line with research conducted by Anisa et al which concluded that there is a significant relationship between early initiation of breastfeeding and stunting in children aged 7-24 months.<sup>(13,14)</sup>

### **The Relationship Between Exclusive Breastfeeding and Stunting**

Furthermore, a statistical test was also carried out using the chi-square test, and it was obtained that the  $p$  value was 0.003 or  $<0.05$ , which means that  $H_a$  is accepted, namely that there is a relationship between exclusive breastfeeding and the incidence of stunting in toddlers aged 6-24 months in the Lere Community Health Center working area. From the results of the analysis, an OR value of 6.873 was obtained, meaning that toddlers who did not receive exclusive breastfeeding had a 6.873 times chance of becoming stunted compared to toddlers who received exclusive breastfeeding. This is in line with research conducted by Angelina et al that there is a significant relationship between exclusive breastfeeding and the incidence of stunting in children aged 6-24 months.<sup>(18-21)</sup>

Early initiation and exclusive breastfeeding have been widely studied by several researchers, but this is an important variable in the process of stunting, especially in the first thousand days of life. The results of research on IMD and Exclusive ASI are the latest data collection because this research was carried out on a small scale with locations carried out in areas where earthquakes and tsunamis occurred in Palu City, Central Sulawesi Province.



## CONCLUSION AND RECOMMENDATIONS

In accordance with the results of the analysis, it was found that there was a significant relationship between a history of IMD and exclusive breastfeeding with the incidence of stunting in toddlers aged 6-24 months with a p value < 0.05 with OR indicating that a history of IMD 9.143 times and exclusive breastfeeding 6.873 times played a role. important for the incidence of stunting. To prevent stunting, pregnant women are expected to carry out early initiation immediately after giving birth and commit to providing exclusive breast milk to maintain the child's growth and development.

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