

The Relationship Between Specific Nutritional Interventions for Breastfeeding Mothers and Toddlers and Stunting in Toddlers at Banjarsari Community Health Center

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ABSTRACT

Stunting is a condition in which children under five years old (toddlers) cannot grow due to chronic malnutrition, causing the child to be shorter than their age. Based on 2024 data, stunted toddlers in the world were 23.2%, in Indonesia 19.8%, in Lampung Province 13.1%, in Metro City 12.1%, in 2023 at Banjarsari Health Center 6.08%. Stunting causes a 4.56-fold decrease in IQ compared to non-stunted children, stunted children are likely to have a non-verbal IQ below 89, so the government issued specific nutritional interventions, one of which is for breastfeeding mothers. The purpose of this study was to determine the relationship between specific nutritional interventions for breastfeeding mothers and toddlers with stunted toddlers at Banjarsari Health Center. This type of research is quantitative with a case-control design. The population of all toddlers at Banjarsari Health Center is 622 toddlers. The sample size was determined based on the Sastroasmoro formula, obtaining 66 respondents. The sampling technique used stratified random sampling. Data collection was conducted using height measurements, observation, interviews, and documentation using a checklist and stadiometer. Data were analyzed univariately and bivariately using chi-square. The results of the study from 66 respondents showed that the proportion of specific nutritional interventions for breastfeeding mothers and infants from birth to 6 months was 87.9%, and the proportion of specific nutritional interventions for breastfeeding mothers and children aged 7-23 months was 92.1%. Based on the analysis, the p-value for specific nutritional interventions for breastfeeding mothers and infants from birth to 6 months was ($p=0.014$ OR=7.8) and specific nutritional interventions for breastfeeding mothers and children aged 7-23 months were ($p=0.039$, OR=9.5). The conclusion from the results of the study at the Banjarsari Community Health Center in 2025 was that there was a significant relationship between specific nutritional interventions for breastfeeding mothers and stunted toddlers. Efforts to prevent and overcome stunting should be carried out through the active involvement of health workers together with Posyandu cadres and intensive assistance for breastfeeding mothers. Improvement of nutritional counseling services also needs to be optimized with a flexible schedule and a personal approach, including through home visits. These efforts must be supported by cross-sector collaboration, increased access to health services, and the use of digital media to disseminate nutrition information widely and facilitate communication between mothers and health workers.

Keywords: Toddlers, stunting, specific nutritional interventions

INTRODUCTION

Stunting is a condition in which children under five years of age cannot grow due to chronic malnutrition, resulting in them being shorter than their age. The government has issued a comprehensive plan to reduce stunting through specific nutritional interventions for toddlers from pregnancy through delivery. One of the specific nutritional target groups is breastfeeding mothers and toddlers, with interventions focused on early initiation of breastfeeding (IMD), exclusive breastfeeding, vitamin supplementation, and monitoring of child growth and development.(Pakpahan, 2021:186).

The reason for this program is because developmental delays impact the quality of human resources. Stunting prevents organs from growing and developing optimally. In the short term, stunting can lead to growth failure, impaired cognitive and motor development, resulting in suboptimal body size and metabolic disorders. In the long term, developmental delays can result in reduced intelligence, permanent damage to the structure and function of nerves and brain cells, and reduced learning ability during school age, which will impact productivity in adulthood.(Pakpahan, 2021: 183-184)Children who experience stunting in the first 2 years of life are likely to have a non-verbal IQ below 89 and an IQ 4.57 times lower than the IQ of children who are not stunted.(Daracantika, 2021:132)

Delayed growth and development makes children vulnerable to infections due to weak immune systems, which can cause children to contract infectious diseases, one of which is pneumonia, which is one of the most important Acute Respiratory Tract Infections (ARI) because it claims many lives and is the biggest cause of child mortality in the world and in Indonesia.(Moro et al., 2023: 176).

Data from the Indonesian Ministry of Health reports that pneumonia is a leading cause of death in young children. The leading causes of death are post-neonatal (29 days to 11 months), accounting for 15.3%, and children aged 12-59 months (12.5%) (Ministry of Health of the Republic of Indonesia, 2023: 7). In 2022, the pneumonia coverage rate for toddlers in Lampung Province was 28.5%. Meanwhile, the pneumonia coverage rate for toddlers is projected to increase to 30.2% in 2023 (Lampung Provincial Health Center, 2023: 113). The highest proportion of pneumonia cases in young children in Metro City was at Karangrejo Health Center, at 113%.(Metro City Health Office, 2023:66).

Based on data from the World Health Organization in 2010(2024)150.2 million (23.2%) children under 5 years of age are stunted. Based on the 2022 National Nutrition Status Survey (SSGI), the prevalence of stunting in Indonesia is estimated at 21.6%. The 2023 SKI data shows a stunting rate of 21.5%. Based on SSGI data,(2024: 23)The prevalence of stunting in Indonesia is 19.8%, the prevalence of stunting in Indonesia has indeed decreased every year but still does not meet the stunting target of 14% in the 2020-2024 RPJMN.(Ministry of Health of the Republic of Indonesia, 2023: 49).

The stunting prevalence rate in Lampung Province based on the 2022 SSGI was 15.2%, while in 2023 the stunting prevalence in Lampung Province was 14.9%.(Ministry of Health of the Republic of Indonesia, 2023: 50)In 2024, the prevalence of stunting in Lampung Province decreased to 13.1%.(Ministry of Health of the Republic of Indonesia, 2024: 23)The percentage of stunting among toddlers in Metro City in 2022 was 6.5%, then decreased in 2023 to 3.5%. The community health center with the highest percentage of stunted toddlers was Banjarsari Community Health Center (6.08%).(Metro City Health Office, 2023: 53). Based on pre-survey data until October 2024, the number of stunted toddlers at the Banjarsari Community Health Center in 2024 was 22 toddlers.

The direct cause of nutritional problems in children is low nutritional intake and health status, children under two years of age who receive exclusive breastfeeding have a 20% lower chance of suffering from stunting than those who do not receive breastfeeding.(Hadi et al., 2021: 7). Furthermore, stunting can also be caused by recurrent infectious diseases in children. Indirect causes of stunting are influenced by various factors, including income and economic disparities, health systems, and so on.(Cholig et al., 2023:52).

Efforts to reduce stunting through a specific nutrition intervention program for breastfeeding mothers from birth to 6 months and mothers of children aged 7-23 months. One of the specific nutrition target groups is breastfeeding mothers and toddlers, with interventions focused on early initiation of breastfeeding (IMD), exclusive breastfeeding, vitamin supplementation, and monitoring child growth and development.(Pakpahan, 2021:186).

Hasnawati's research(2021), the relationship between maternal knowledge and the incidence of stunting in toddlers aged 12-59 months in the working area of Lawawoi Health Center, Sidrap Regency, the results of the study with a p value of 0.02, there is a relationship between

maternal knowledge and the incidence of stunting in toddlers aged 12-59 months in the working area of Lawawoi Health Center, Sidrap Regency.

Sunartiningsih's research(2020: 76), with the title of the relationship between early initiation of breastfeeding and the incidence of stunting in toddlers aged 12-24 months at the Gunungsari Bojonegoro Community Health Center, with a significant value of p Value (0.000). Based on the results of this study, it can be concluded that there is a relationship between early initiation of breastfeeding and the incidence of stunting in toddlers aged 12-24 months.

Efendi's research(2021: 68), with the title of the relationship between specific nutritional interventions in the 1000 HPK Movement program and the incidence of stunting in toddlers in the working area of the Jatiluhur Purwakarta Community Health Center. The test results show a relationship between the incidence of stunting and the history of exclusive breastfeeding p Value (0.002), the accuracy of complementary feeding p Value (0.001), consumption of vitamin A capsules p Value (0.001) and completeness of immunization p Value (0.001) which means there is a relationship between specific nutritional interventions in the 1000 HPK program and the incidence of stunting in the working area of the Jatiluhur Purwakarta Community Health Center. Based on the background above, the formulation of the problem of this research is: is there a "Relationship between Specific Nutrition Interventions in Breastfeeding Mothers and Toddlers with Toddler Stunting at the Banjarsari Community Health Center in 2025?"

METHOD

This research is a quantitative research with an analytical survey design using a case-control design with a retrospective approach. The study was conducted at the Banjarsari Community Health Center on April 9–25, 2025. The study population was all mothers who had toddlers in the Banjarsari Community Health Center working area totaling 622 toddlers, with a sample of 66 respondents consisting of 22 case groups (stunted toddlers) and 44 control groups (non-stunted toddlers) using a stratified random sampling technique. Data collection was carried out through observation, height measurement using a stadiometer, and interviews using a checklist sheet. Data analysis was carried out univariately to describe the frequency distribution of research variables and bivariate using the Chi-Square test with a significance

level of $\alpha = 0.05$ to determine the relationship between specific nutritional interventions for breastfeeding mothers and toddlers with the incidence of stunting.

RESULTS

Table 1. Distribution of Respondent Characteristics

Characteristics	Category	N	%
Age	<20 years	1	1.5
	20-35 years	43	65.2
	>35 years	22	33.3
	Amount	66	100.0
Education	Low (elementary/middle school)	20	30.3
	Middle School (SMA)	33	50.0
	High (D3/S1)	13	19.7
	Amount	66	100.0
Work	Doesn't work	55	83.3
	Work	11	16.7
	Amount	66	100.0

Based on Table 1, it is known that the distribution of maternal age is mostly 20-35 years old (65.2%) (43 respondents), the respondents' education is secondary (high school) which is 50.0% (33 respondents) and the respondents' occupation is mostly housewives/not working as much as 83.3% (55 respondents).

Table 2. Specific Nutritional Interventions for Breastfeeding Mothers and Infants from Birth to 6 Months

No	Characteristics	Category	N	%
1.	specific nutritional interventions for	Did not receive specific nutritional	8	12.1

breastfeeding mothers and infants from birth to 6 months	intervention education		
	Receive specific nutritional intervention education	58	87.9
	Total	66	100.0

Based on data obtained from 66 respondents, the majority of respondents (87.9%) (58 respondents) had received specific nutritional intervention education for breastfeeding mothers from birth to 6 months. Meanwhile, 12.1% (8 respondents) did not receive any specific nutritional intervention education. The high percentage of those who received education indicates that the implementation of the specific nutritional intervention program in the Banjarsari Community Health Center area is quite good. However, there is still a small number of mothers who did not receive education (12.1%). This indicates that there are still gaps in the coverage of the intervention program that need to be followed up. Various factors such as lack of access to information and low participation in integrated health posts (Posyandu) could be the cause of this unachievement.

Table 3. Specific nutritional interventions for breastfeeding mothers and children aged 7-23 months

No	Characteristics	Category	N	%
1.	specific nutritional interventions for breastfeeding mothers and children aged 7-3 months	Did not receive specific nutritional intervention education	5	7.6
		Receive specific nutritional intervention education	61	92.4
		Total	66	100.0

Based on data from 66 respondents, the majority (92.4%) had received specific nutritional interventions for breastfeeding mothers and children aged 7–23 months. Meanwhile, 7.6% (5 respondents) had not received such education. However, the fact that 5 respondents still had not received education indicates a small gap in program implementation. Factors such as a lack of visits to health facilities and low participation in integrated health posts (Posyandu) could be the cause.

Table 4. Relationship Specific nutritional interventions for breastfeeding mothers and infants from birth to 6 months with stunted toddlers at Banjarsari Community Health Center

Variables	Stunting Incident				Total	P-Value	OR	95% CI
	Stunting (Case)		No Stunting (Control)					
	N	%	N	%				
Did not receive specific nutritional intervention education	6	27.3	2	4.5	8	12.1	0.014	7,875
Getspecific nutrition intervention education	16	72.7	42	95.5	58	87.9		
Amount	22	100.0	44	100.0	66	100.0		

Based on table 4. the results of the study at the Banjarsari Health Center were obtained from 22 respondents in the stunting group, 27.3% (6 respondents) did not receive intervention, while in the non-stunting group of 44 respondents, 4.5% (2 respondents) did not receive intervention. The results of the statistical test obtained a p-value of $0.014 < 0.05$ meaning H_a was accepted and H_0 was rejected, meaning there was a significant relationship between specific nutritional interventions for breastfeeding mothers and babies from birth to 6 months on stunting toddlers at the Banjarsari Health Center. The Odds Ratio (OR) value = 7.875 (CI 95% = 1.438 – 43.139), these results indicate that respondents who did not receive

intervention had a risk of experiencing stunting 7.875 times greater than those who received intervention.

Table 5. Relationship Specific nutritional interventions for breastfeeding mothers and children aged 7-23 months with stunted toddlers at Banjarsari Community Health Center

Variables	Stunting Incident						P-Value	OR	95% CI
	Stunting (Case)		No Stunting		Total				
	N	%	N	%	N	%			
Did not receive specific nutritional intervention education	4	18.2	1	2.3	5	7.6	0.039	9,550	0.998 - 91.510
Getspecific nutrition intervention education	18	81.8	43	97.7	61	92.4			
Amount	22	100.0	44	100.0	66	100.			

Based on table 5. the results of the study at the Banjarsari Health Center were obtained from 22 respondents, the stunting group had 18.2% (4 respondents) who did not receive intervention, while in the non-stunting group of 44 respondents there were 2.3% (1 respondent) who did not receive intervention. The results of the statistical test obtained a p value of $0.039 < 0.05$ meaning H_a was accepted and H_0 was rejected meaning there was a significant relationship between specific nutritional interventions for breastfeeding mothers and children aged 7-23 months on stunting toddlers at the Banjarsari Health Center. The Odds Ratio (OR) value = 9.556 (CI 95% = 0.998-91.510), these results indicate that respondents who did not receive intervention had a risk of experiencing stunting 9.556 times greater than those who received intervention.

DISCUSSION

The results of the study showed a significant relationship between specific nutritional interventions for breastfeeding mothers and infants from birth to 6 months and the incidence of stunting at the Banjarsari Community Health Center ($p=0.014$). These results indicate that specific nutritional interventions in the early period of life play a crucial role in preventing stunting. The first six months are the golden period for child growth, so meeting nutritional needs through Early Initiation of Breastfeeding (IMD), colostrum, exclusive breastfeeding, and nutritional counseling for breastfeeding mothers are crucial efforts to support infant growth and development. Exclusive breastfeeding for six months is the primary source of nutrition containing macronutrients, micronutrients, antibodies, and growth factors needed by infants to support linear growth, increase immunity, and reduce the risk of infections that can affect the child's nutritional status. Furthermore, the mother's nutritional status during breastfeeding also influences the quality of breast milk provided, thus contributing to infant growth.

The proportion of mothers receiving specific nutritional interventions in this study reached 87.9%, higher than Efendi's (2021) study in the Jatiluhur Community Health Center (Puskesmas) work area, which reported a proportion of intervention recipients of 37.8%. This difference is likely related to the implementation of outreach programs and the coverage of health services in each region. Efendi's study explained that limited health workers resulted in suboptimal outreach implementation, resulting in lower intervention coverage. These results reinforce the idea that better coverage of specific nutritional interventions provided to breastfeeding mothers and infants increases the likelihood of preventing stunting in toddlers.

The findings of this study align with those of Efendi (2021), which demonstrated a relationship between specific nutritional interventions within the First 1,000 Days of Life (HPK) program and stunting, particularly regarding the history of exclusive breastfeeding, appropriate complementary feeding (MP-ASI) provision, vitamin A capsule consumption, and complete immunizations. Furthermore, Sunartiningsih's (2020) study also reported a relationship between Early Breastfeeding Initiation and stunting in toddlers, while Hasnawati's (2021) study demonstrated a correlation between maternal knowledge and stunting. These findings suggest that the success of specific nutritional interventions is not solely determined by the availability of the program but also by maternal knowledge and the effectiveness of health workers in providing education during the 1,000 HPK period.

This study also showed a significant relationship between specific nutritional interventions for breastfeeding mothers and children aged 7–23 months and the incidence of stunting ($p=0.039$). The Odds Ratio (OR) value of 9.556 indicates that children who do not receive specific nutritional interventions have a risk of approximately 9.6 times greater than children who receive interventions. These results illustrate that the age period of 7–23 months is a very crucial period because children's energy and nutrient needs increase, while breast milk alone is no longer able to meet all nutritional needs, so it is necessary to provide Complementary Foods (MP-ASI) that are age-appropriate, nutritionally balanced, and rich in micronutrients. In addition to providing MP-ASI, interventions in this age group also include vitamin A supplementation, complete immunizations, prevention of infectious diseases, diarrhea treatment, growth and development monitoring, and education to mothers about proper feeding practices.

Physiologically, adequate nutrition between the ages of 7 and 23 months is crucial for a child's linear growth. Complementary feeding (MP-ASI) that meets the needs for energy, protein, vitamins, and minerals will help prevent chronic malnutrition, strengthen the immune system, reduce the risk of infection, and support age-appropriate height growth. Conversely, children who do not receive optimal nutritional interventions are at risk of growth disorders that can progress to stunting. Therefore, the success of specific nutritional interventions in this age group requires the active involvement of mothers in implementing correct feeding patterns along with ongoing health care support.

Based on the discussion above, it can be concluded that specific nutritional interventions from birth to 23 months of age play a crucial role in reducing the risk of stunting. Efforts to improve health promotion, breastfeeding counseling, education on complementary feeding (MP-ASI), the use of nutritious local foods, and collaboration between health workers, integrated health post (Posyandu) cadres, families, and the community need to be continuously strengthened to ensure all mothers receive adequate information and support. Optimal implementation of specific nutritional interventions during the First 1,000 Days of Life is expected to contribute to optimal child growth, leading to a continued decline in stunting rates.

CONCLUSION

Based on research on the relationship between specific nutritional interventions for breastfeeding mothers and toddlers with stunted toddlers at the Banjarsari Community Health Center in 2025 with a total of 66 respondents, 22 case groups and 44 control groups, the following conclusions were obtained:

1. The proportion of mothers and infants receiving specific nutritional intervention education from birth to 6 months was 87.9%.
2. The proportion of breastfeeding mothers and children aged 7-23 months who received specific nutritional intervention education was 92.4%.
3. There is a significant relationship between specific nutritional interventions for breastfeeding mothers and babies from birth to 6 months with stunted toddlers with a p value of 0.014 and OR = 7.875.
4. There is a significant relationship between specific nutritional interventions for breastfeeding mothers and children aged 7-23 months with stunting in toddlers with a p value of 0.039 and OR = 9.556.

LIMITATIONS

In conducting this research, the researcher experienced limitations, including limited time due to the less conducive environment at the integrated health post (Posyandu), and a limited sample size due to the decline in stunting rates at the Banjarsari Community Health Center. The wide confidence interval (CI) indicates a high degree of uncertainty regarding the estimated relationship between specific nutritional interventions and stunting incidence. This may be due to the uneven and relatively small sample sizes for each intervention category, particularly for breastfeeding mothers and toddlers who received complete specific nutritional interventions. Small sample sizes can increase the standard error and widen the CI range. Some of the specific nutritional interventions studied were not universally accepted by all respondents, resulting in less representative data across all intervention categories, resulting in wide CIs.

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