

Article

THE EFFECT OF PREVENTION EFFORTS ON STUNTING INCIDENTS IN CHILDREN

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SUBMISSION TRACK

Received: Jul 28, 2024
Final Revision: Aug 03, 2024
Available Online: Oct 07, 2024

KEYWORDS

Complementary feeding, Early initiation of breastfeeding, Exclusive breastfeeding, Immunization, Iron supplement tablets, Stunting

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ABSTRACT

Stunting is a condition of growth failure in toddlers due to chronic malnutrition and repeated infections, especially during the first 1,000 days of life, characterized by height that is not appropriate for their age. Stunting has a serious impact on the quality of life of toddlers in the future, so it is important to prevent it. The design of this research is an analytical survey with a case-control approach, aimed at determining the impact of preventive measures on the incidence of stunting in toddlers. The respondents of this study were 44 people, selected using the systematic random sampling technique. The instruments used were questionnaires and the Maternal and Child Health book. The data analysis used is Chi-Square. The results of this study indicate that there is an influence of the history of consuming Iron Supplement Tablets (p-value 0.000, OR 28.98), Early Initiation of Breastfeeding (p-value 0.005, OR 17.5), Exclusive Breastfeeding (p-value 0.011, OR 7.6), Complementary Feeding (p-value 0.012, OR 14.5), and Immunization (p-value 0.021, OR 12.0) on the incidence of stunting in toddlers. The conclusion of this study is that there is a significant impact of preventive measures on the incidence of stunting in toddlers. Suggestions for health workers and health cadres to be more proactive in implementing stunting prevention efforts to reduce the incidence of stunting in toddlers.

I. INTRODUCTION

Stunting is a health problem that must be treated seriously. The period of the first 1000 days of life (1000 HPK) is a critical period as the beginning which will then have a long-term and recurring impact in the life cycle. Toddlers who experience stunting will have delays in intelligence, productivity, and achievement after growing up. Preventing and controlling stunting is not only the responsibility of the Ministry of Health but is a cross-sector responsibility of the central government, regional governments, and the families themselves. There are many efforts that can be made to prevent stunting, including special nutritional therapy and sensitive interventions. Special dietary interventions are targeted at pregnant women and toddlers with the aim of preventing chronic protein energy deficiency, overcoming iron and folic acid deficiencies, overcoming iodine deficiencies, treating worms, and protecting against malaria (Ministry of Health of the Republic of Indonesia, 2022).

According to the World Health Organization (WHO), in 2022 globally there will be 149.2 million children under the age of 5 experiencing stunting, three-quarters of these children live in Asia and Africa. In Indonesia, based on data from the Indonesian Toddler Nutrition Status Survey (SSGI), the national incidence of toddlers with stunting from 2019 to 2022 has decreased by 3.05% each year but has not yet reached the national target, namely reducing the stunting rate by 3.8%. Per year to achieve the target of 14% in 2024 (RI Ministry of Health, 2022). Even though it is below the national incidence rate, the percentage of children under five experiencing stunting in Lampung Province in 2022 is 15.2% and in South Lampung Regency it is 9.9% (Arinal Djunaidi, Chusnunia Chalim, Dr. Hj Reihana, 2022).

There are several factors that cause children to experience stunting problems, namely factors from within the child such as age, gender, and birth weight, and external factors, namely from the child such as socio-economics and the practice of giving food to children, which contribute to the incidence of stunting, for example not optimal breastfeeding. Exclusive (especially non-exclusive breastfeeding) and providing complementary foods that are limited in quantity, quality, and variety of types (Damanik et al., 2021).

II. METHODS

This type of research is an analytical survey with a case-control approach (Suhron, 2024). The population in this study were all toddlers in the working area of the Tanjung Sari Community Health Center, Kalianda, South Lampung. The sample in this study was toddlers in the Working Area of the Tanjung Sari Community Health Center who were divided into two groups, namely the case group and the control group, with a ratio of 1: 1, namely a number 22 toddlers for the case group and 22 toddlers for the control group, taken using the simple random sampling method. Data collection in this study was carried out with the help of questionnaires and the Maternal and Child Health Book (KIA), to obtain data on the history of Blood Supplement Tablets, Early Breastfeeding Initiation, Exclusive Breastfeeding, MPASI, and Immunization. The analysis used is Chi-Square and Odds Ratio values.

III. RESULT

1. The Influence of Mother's History of Consuming Blood Supplement Tablets on the Incident of Stunting

Table 1.
The Influence of Mother's History of Consuming Blood Supplement Tablets (TTD) on the Incident of Stunting

Prevention Efforts	Stunting events				Total		p-value	OR: CI 95%
	Stunting		Not Stunting					
	N	%	n	%	N	%		
Not Compliant	14	100	0	0	14	100	0,000	28,98
Comply	8	26,7	22	73,3	30	100		
Total	22	50,0	22	50,0	44	100,0		

Table 1 shows that 14 people (100%) of mothers of stunted toddlers did not comply with taking blood supplement tablets, compared to mothers of babies who were not stunted, all 22 mothers (100%) complied with taking blood supplement tablets. The statistical test results obtained p-value = 0.000; OR 28.98 with a confidence level of 95%. This shows that there is a very significant influence between the history of compliance with taking blood supplement tablets and the incidence of stunting, where mothers of toddlers who are disobedient in taking blood supplement tablets have a 29 times higher risk of their toddlers experiencing stunting compared to mothers of toddlers who comply with taking tablets. Add blood.

2. The Influence of the History of Early Breastfeeding Initiation on the Incidence of Stunting

Table 2.
The Influence of the History of Early Breastfeeding Initiation on the Incidence of Stunting

Prevention Efforts	Incident				Total		p-value	OR: CI 95%
	Stunting		Not Stunting					
	n	%	n	%	N	%		
Not	13	92,9	1	7,1	14	100,0	0,005	17,5
	9	30	21	70	30	100,0		
Total	22	50,0	22	50,0	44	100,0		

Table 2 shows that 13 people (92.9%) of stunted toddlers had a history of no, compared to 21 babies who did not experience stunting (70%) had a history of. The statistical test results obtained p-value = 0.005, OR 17.5 with a confidence level of 95%. This shows that there is a very significant influence between a history of and the incidence of stunting, where toddlers who have a history of not having had an 18 times higher risk of experiencing stunting compared to toddlers who have a history of.

3. The Effect of Exclusive Breastfeeding on the Incident of Stunting

Table 3.
The Effect of Exclusive Breastfeeding on the Incident of Stunting

Prevention Efforts	Incident				Total		p-value	OR: CI 95%
	Stunting		Not Stunting					
	n	%	n	%	N	%		
Not exclusive breastfeeding	12	80	3	20	15	100,0	0,011	7,600
Exclusive breastfeeding	10	34,5	19	65,5	29	100,0		
Total	22	50,0	22	50,0	44	100,0		

Table 3 shows that 12 people (80%) of stunted toddlers had a history of not being exclusively breastfed, compared to 19 people (65.5%) of toddlers who were not stunted and had a history of exclusive breastfeeding. The statistical test results obtained p-value = 0.011; OR 7.6 with a confidence level of 95%. This shows that there is a very significant influence between a history of exclusive breastfeeding and the incidence of stunting, where toddlers who have a history of not being exclusively breastfed have an 8 times higher risk of experiencing stunting compared to toddlers who have a history of exclusive breastfeeding.

4. The Influence of MP-ASI History on Stunting Incidents

Table 4
The Influence of MP-ASI History on Stunting Incidents

Prevention Efforts	Incident						p-value	OR: CI 95%
	Stunting		Not Stunting		Total			
	n	%	n	%	n	%		
MP-ASI is not suitable	9	90	1	10	10	100,0	0,012	14,5
MP-ASI is appropriate	13	38,2	21	61,8	34	100,0		
Total	22	50.0	22	50.0	44	100.0		

Table 4 shows that 9 people (90%) of stunted toddlers had a history of giving inappropriate MP-ASI, compared to 21 people (61.8%) of toddlers who did not experience stunting who had a history of giving appropriate MP-ASI. The statistical test results obtained p-value = 0.012; OR 14.5 with a confidence level of 95%. This shows that there is a very significant influence between the history of giving appropriate MP-ASI and the incidence of stunting, where toddlers with a history of giving inappropriate MP-ASI have a 15 times higher risk of experiencing stunting compared to toddlers with a history of giving MP-ASI. Appropriate breast milk.

5. The Influence of Immunization History on Stunting Incidence

Table 5
The Influence of Immunization History on Stunting Incidence

Prevention Efforts	Incident				Total		<i>p-value</i>	<i>OR: CI 95%</i>
	Stunting		Not Stunting		N	%		
Not Complete Immunization	14	93,3%	1	6,7%	15	100,0%	0,021	12,0
Complete Immunization	8	27,6%	21	72,4%	29	100,0%		
Total	22	50,0%	22	50,0%	44	100,0%		

Table 5 shows that 14 people (93.3%) of stunted toddlers had a history of incomplete immunization, compared to 21 people (72.4%) of toddlers who did not experience stunting who had a complete immunization history. The statistical test results obtained $p\text{-value} = 0.021$; OR 12.0 with a confidence level of 95%. This shows that there is a very significant influence between complete immunization history and the incidence of stunting, where toddlers who have an incomplete immunization history have a 12 times higher risk of experiencing stunting compared to toddlers who have a complete immunization history.

IV. DISCUSSION

1. The Influence of Maternal Blood Supplement Tablet Consumption History on the Incident of Stunting

The results of the study found that 14 people (100%) of mothers of stunted toddlers did not comply with taking blood supplement tablets, compared to mothers of babies who were not stunted, all 22 mothers (100%) complied with taking blood supplement tablets. The statistical test results obtained $p\text{-value} = 0.000$; OR 28.98 with a confidence level of 95%. This shows that there is a very significant influence between the history of compliance with taking blood supplement tablets and the incidence of stunting, where mothers of toddlers who are disobedient in taking blood supplement tablets have a 29 times higher risk of their toddlers experiencing stunting compared to mothers of toddlers who comply with taking tablets. Add blood.

This is in line with research by Adrian & Utami in 2020, which showed that the percentage of mothers of toddlers who consumed blood supplement tablets during pregnancy as needed had reached 88.6%. The percentage of toddlers experiencing stunting is higher in mothers who do not take blood supplement tablets during pregnancy. The percentage is 72.4% versus 37.9%. In this study, it can be observed that there is a link between the incidence of reduced stunting and the increase in giving pregnant women a minimum of 90 additional tablets during their pregnancy (Dwi Ardian & Efri Diah Utami, 2020). Stunting prevention can be done by fulfilling the nutritional needs of pregnant women. Pregnant women must receive nutritious food and nutritional supplements (iron/Fe tablets and folic acid) and monitor their health. The minimum consumption of blood supplement tablets

for pregnant women is 90 tablets during pregnancy. Providing blood supplement tablets to pregnant women is an effort to overcome the problem of iron deficiency in pregnant women and must be accompanied by compliance with consumption (Danefi, 2020).

2. The Influence of the History of Early Breastfeeding Initiation on Stunting Events

The study's results showed that 13 people (92.9%) of stunted toddlers had a history of no, compared to 21 babies who did not experience stunting (70%) had a history of. The statistical test results obtained $p\text{-value} = 0.005$, OR 17.5 with a confidence level of 95%. This shows that there is a very significant influence between a history of and the incidence of stunting, where toddlers who have a history of not having had an 18 times higher risk of experiencing stunting compared to toddlers who have a history of.

This is in line with Hanifa et al.'s 2023 research showing the success of preventing stunting with a $p\text{-value}$ of 0.0031 (Hanifa et al., 2023a). Also in line with the results of Santi Sundary's research in 2022, it is known that early initiation of breastfeeding is associated with the incidence of stunting, with a $p\text{-value}$ of <0.05 and an OR of 31.45 (Lintang & Azkiya, 2022). Likewise with research by Anggryni et al., in 2021, the results of the study showed that there was a significant relationship between early initiation of breastfeeding and the incidence of stunting ($p=0.019$, OR=11.11) (Anggryni et al., 2021).

Is the process of breastfeeding a baby immediately after birth, where the baby is left to look for its own mother's nipple. During the process, the baby is left in direct skin-to-skin contact with the baby's skin and the mother's skin for one hour after birth. Then the baby crawls to look for the mother's breast and finds the mother's nipple. Improper or not doing it will result in not getting the nutrients that are important for babies at the beginning of their lives. Twenty-four hours after giving birth is a very important time for subsequent breastfeeding success. So it is very important to support and realize the success of the process for every newborn. The success also helps to achieve exclusive breastfeeding for six months which also influences the protection of babies from infections. If the baby does not experience infection, the baby's growth will not be hampered (Arisman, 2010).

3. The Effect of a History of Exclusive Breastfeeding on the Incident of Stunting

The results of the study showed that 12 people (80%) of stunted toddlers had a history of not being exclusively breastfed, compared to 19 people (65.5%) of toddlers who were not stunted and had a history of exclusive breastfeeding. The statistical test results obtained $p\text{-value} = 0.011$; OR 7.6 with a confidence level of 95%. This shows that there is a very significant influence between a history of exclusive breastfeeding and the incidence of stunting, where toddlers who have a history of not being exclusively breastfed have an 8 times higher risk of experiencing stunting compared to toddlers who have a history of exclusive breastfeeding.

This is in line with research by Hanifa et al., 2023 which found that exclusive breastfeeding was successful in preventing stunting with a p-value of 0.0031 (Hanifa et al., 2023b). Likewise, Aurima et al. in 2021 showed that there was a significant relationship between the incidence of stunting in toddlers in Indonesia and exclusive breastfeeding (Aurima et al., 2021). Another result that found similar results was researched by Sampe A. et al., 2020, which stated that there was a relationship between exclusive breastfeeding and the incidence of stunting in toddlers with a p-value of 0.000 and an OR value of 61, which means that toddlers who were not given exclusive breastfeeding were 61 times more likely to experience stunting compared to toddlers who are exclusively breastfed (SJMJ et al., 2020).

Exclusive breastfeeding is given before 6 months because the baby's digestive system before 6 months is still not perfect, the baby's digestive tract function is not ready to receive food or manage food. When food enters other than breast milk, the digestive tract will experience digestive disorders characterized by diarrhea or difficulty defecating. One of the causes of stunting in toddlers is exclusive breastfeeding which is not given for 6 months. Toddlers who do not receive exclusive breast milk tend to have inadequate nutritional intake and may be at risk of stunting. According to this, it is based on the provision of breast milk (ASI) which has an important role in forming quality human resources and is a primary effort to improve the survival of babies and children. Breast milk is very much needed during the growth period of toddlers so that their nutritional needs are met. Efforts made to increase understanding, awareness, and motivation of mothers in providing exclusive breastfeeding are through counseling and education about providing exclusive breastfeeding to pregnant and breastfeeding mothers (SJMJ et al., 2020).

4. The Effect of MP-ASI History on Stunting Incidence

It shows that 9 people (90%) of stunted toddlers had a history of giving inappropriate MP-ASI, compared to 21 people (61.8%) of toddlers who did not experience stunting who had a history of giving appropriate MP-ASI. The statistical test results obtained p-value = 0.012; OR 14.5 with a confidence level of 95%. This shows that there is a very significant influence between the history of giving appropriate MP-ASI and the incidence of stunting, where toddlers with a history of giving inappropriate MP-ASI have a 15 times higher risk of experiencing stunting compared to toddlers with a history of giving MP-ASI. Appropriate breast milk.

This is in line with research conducted by Hasanah, S in 2020 which stated that there was a relationship between giving complementary foods to breast milk and the incidence of stunting with a p-value of 0.002 (Hasanah et al., 2020). Likewise, research conducted by Fitri L and Ernita in 2019 found that there was a relationship between giving MP-ASI and the incidence of stunting with a p-value of 0.001 (Fitri, 2019). Other research that is also in line is research by Permata Sari D, et al in 2024 with the results that there is a relationship between the age of giving MPASI (p-value = 0.001), frequency of MPASI (p-value = 0.000), and portion of MPASI (p-value = 0.039) with stunting, but there is no relationship between MPASI texture (p-value = 0.825) and stunting (Diah Permata Sari et al., 2024).

Efforts to prevent stunting can be made with nutritional problems, namely by providing breast milk (ASI) and breast milk complementary foods (MP-ASI). MP ASI is food or drinks other than breast milk that is given to babies during the

transitional feeding period. Inadequate provision of MP-ASI can cause stunted growth and development. Low-quality MP-ASI, such as MP-ASI with low calorie, protein, and micronutrient content, can increase the risk of stunting. Apart from the composition of MP ASI, food and water safety also need to be considered when providing MP ASI. The use of contaminated food and water as well as poor hygiene can reduce the quality of MP ASI. In 2023 WHO issued recommendations regarding giving MP-ASI starting at the age of 6 months while continuing breastfeeding until 24 months. Good MP-ASI meets several requirements, namely on time, complete nutrition, sufficient and balanced, safe, and given in the right way (Diah Permata Sari et al., 2024). Failure to provide MP-ASI can be caused by many things, some of which are a mother's lack of knowledge about providing appropriate MP-ASI. So, midwives as frontline health workers have an important role in providing information and education about providing MP-ASI appropriately according to the age of babies and toddlers.

5. The Influence of Immunization History on Stunting Incidence

The results showed that 14 people (93.3%) of stunted toddlers had a history of incomplete immunization, compared to 21 people (72.4%) of toddlers who did not experience stunting who had a complete immunization history. The statistical test results obtained $p\text{-value} = 0.021$; OR 12.0 with a confidence level of 95%. This shows that there is a very significant influence between complete immunization history and the incidence of stunting, where toddlers who have an incomplete immunization history have a 12 times higher risk of experiencing stunting compared to toddlers who have a complete immunization history.

This is in line with research by Wanda et al. In 2021, it was found that there was a relationship between the history of basic immunization status and the incidence of stunting in toddlers in Hegarmanah Village, Jatinangor District with a $p\text{-value} < 0.05$ and there was a risk of stunting in toddlers with incomplete immunization 4.9 times compared to toddlers. With complete immunization (Dilina Wanda et al., 2021). The results of this study are also in line with research by Zuhrotunida with the result that there is a relationship between the completeness of toddler immunization and the incidence of stunting ($p\text{-value} = 0.000$) (Zuhrotunida et al., 2024). However, the results of this study contradict research by Vasera and Kurniawan in 2021 which stated that there was no relationship between immunization and the incidence of stunting with a value of $p = 0.12$ ($p > 0.05$) (Rifana Atifa Vasera & Budi Kurniawan, 2023). Immunization is an effort to increase the body's immunity and eradicate infectious diseases. Immunization works by stimulating antibodies against certain organisms, without making someone sick first. The body's defense system then reacts to the vaccine that is inserted into the body. Incomplete immunization can cause a toddler's immunity to become weak, making them susceptible to infectious diseases. Children who experience infections will have a high chance of experiencing problems with their growth which will ultimately be the cause of stunting in children. Providing complete basic immunization to children has a great influence on the child's growth and development. Children who experience infections if left untreated will be at risk of stunting. Immunization is one way to prevent infectious diseases in children. Optimizing the provision of basic immunizations on time is one of the efforts to prevent infections in children, to prevent stunting. The benefit of providing

immunization is to reduce morbidity, disability, and mortality rates in children, which is hoped to reduce the chain of transmission of diseases transmitted by humans (Decree of the Minister of Health of the Republic of Indonesia concerning National Guidelines for Stunting Management Medical Services, 2022). By monitoring the nutritional status and immunization of several babies and toddlers, it is hoped that health workers can provide an in-depth understanding of the importance of nutrition and immunization to prevent stunting.

V. CONCLUSION

The conclusion from the results of this study found that there was a significant influence on the history of blood supplement tablets (p value= 0.000; OR=28.98); history of Early Initiation of Breastfeeding (p value= 0.005; OR=17.5); History of exclusive breastfeeding (p value= 0.011; OR=7.6); History of MP-ASI (p value= 0.012; OR=14.5); and Immunization History (p value= 0.021; OR=12.0) on the incidence of stunting in the Tanjung Sari Community Health Center work area in 2024. Suggestions for health workers as the front guard in stunting prevention efforts to monitor and optimize stunting prevention efforts in level health facilities Firstly, to reduce the incidence of stunting.

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