THE INFLUENCE OF MATERNAL FACTORS, TODDLER FACTORS, AND ENVIRONMENTAL FACTORS ON THE INCIDENCE OF STUNTING IN TODDLERS

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ABSTRAK : PENGARUH FAKTOR IBU, FAKTOR BALITA, DAN FAKTOR LINGKUNGAN TERHADAP KEJADIAN STUNTING PADA BALITA

Latar Belakang: Stunting merupakan masalah gizi kronis di Indonesia yang mempengaruhi tinggi badan, perkembangan kognitif dan motorik, serta risiko penyakit kronis. Studi ini bertujuan menganalisis pengaruh faktor ibu, balita, dan lingkungan terhadap insidensi stunting pada balita di Desa Balongsari, Kota Mojokerto pada tahun 2025.

Metode: Studi ini merupakan studi observasional analitis potong lintang terhadap 84 ibu dan balita yang dipilih menggunakan sampling acak berstrata proporsional. Data dikumpulkan melalui kuesioner, wawancara, data sekunder, dan antropometri, kemudian dianalisis menggunakan uji chi-square dan SEM.

Hasil: Hasil penelitian sebagian besar ibu memiliki status gizi normal (60,7%), berusia 20–34 tahun (61,9%), memiliki pengetahuan yang baik tentang menyusui (56%), dan memiliki jarak kelahiran normal 2–4 tahun (67,9%). Di antara bayi, sebagian besar memiliki riwayat infeksi sesekali (65,5%), imunisasi lengkap (52,4%), dan jarak kelahiran ideal (66,7%). Faktor lingkungan didominasi oleh kurangnya akses ke air bersih (52,4%), sanitasi yang buruk (51,2%), ketersediaan layanan kesehatan (71,4%), dan lingkungan yang tidak higienis (52,4%). Menyusui eksklusif selama 6 bulan mencapai 54,8%, dan sebagian besar balita tidak mengalami stunting (69%). Analisis menunjukkan bahwa variabel signifikan untuk stunting adalah status gizi ibu (p=0,000; PR=23,500), pengetahuan (p=0,000; PR=8,039), usia ibu saat hamil (p=0,001; PR=0,185), jarak kelahiran (p=0,000; PR=6,836), paritas (p=0,001; PR=0,187), riwayat infeksi (p=0,000; PR=9,614), imunisasi (p=0,000; PR=12,222), sanitasi (p=0,000; PR=9,690), akses ke air bersih (p=0,000; PR=13,508), akses ke fasilitas kesehatan (p=0,000; PR=13,762), dan menyusui eksklusif (p=0,000; PR=14,438). Variabel yang tidak signifikan adalah jarak kelahiran (p=0,182; PR=0,491). SEM menunjukkan bahwa faktor ibu, bayi, dan lingkungan berpengaruh, dengan faktor ibu menjadi yang paling dominan.

Kesimpulan: Stunting pada balita dipengaruhi oleh faktor-faktor terkait ibu, balita, lingkungan, dan pemberian ASI eksklusif. Upaya pencegahan harus difokuskan pada pendidikan ibu tentang gizi, promosi pemberian ASI eksklusif, imunisasi balita, serta peningkatan sanitasi dan akses ke air bersih.

Kata Kunci: Stunting, ASI Eksklusif, Pendidikan Ibu, Sanitasi, Balita

ABSTRACT

Background: Stunting is a chronic nutritional problem in Indonesia that affects height, cognitive and motor development, and the risk of chronic diseases. This study aims to analyze the factors that influence open defecation behavior in Tegalrejo Village, Dringu District, Probolinggo Regency.

Method: This study is a cross-sectional analytical observational study of 84 mothers and toddlers selected using proportionate stratified random sampling. Data were collected through questionnaires, interviews, secondary data, and anthropometry, then analyzed using chi-square tests and SEM.

Results: The results of the study showed that most mothers were of normal nutritional status (60.7%), aged 20–34 years (61.9%), had good knowledge about breastfeeding (56%), and had a normal birth interval of 2–4 years (67.9%). Among infants, the majority had a history of occasional infections (65.5%), complete immunization (52.4%), and an ideal birth spacing (66.7%). Environmental factors were dominated by lack of access to clean water (52.4%), poor sanitation (51.2%), availability of health services (71.4%), and unhygienic environments (52.4%). Exclusive breastfeeding for 6 months was 54.8%, and most toddlers were not stunted (69%).

The analysis shows that the significant variables for stunting are maternal nutritional status (p=0.000; PR=23.500), knowledge (p=0.000; PR=8.039), maternal age during pregnancy (p=0.001; PR=0.185), birth spacing (p=0.000; PR=6.836), parity (p=0.001; PR=0.187), history of infection (p=0.000; PR=9.614), immunization

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(p=0.000; PR=12.222), sanitation (p=0.000; PR=9.690), access to clean water (p=0.000; PR=13.508), access to health facilities (p=0.000; PR=13.762), and exclusive breastfeeding (p=0.000; PR=14.438). The non-significant variable was birth spacing (p=0.182; PR=0.491). SEM indicated that maternal, infant, and environmental factors were influential, with maternal factors being the most dominant.

Conclusion: Stunting in toddlers is influenced by factors related to the mother, the toddler, the environment, and exclusive breastfeeding. Prevention efforts should focus on educating mothers about nutrition, promoting exclusive breastfeeding, immunizing toddlers, and improving sanitation and access to clean water.

Keywords: Stunting, Exclusive Breastfeeding, Mother Education, Sanitation, Toddlers

INTRODUCTION

Stunting is a chronic nutritional problem that remains a major challenge in Indonesia. According to the WHO (2015) definition, stunting is a condition of growth failure in children characterized by a height lower than the standard for their age due to long-term malnutrition. The impact of stunting not only affects a child's height but also impacts cognitive development and motor skills, and increases the risk of chronic diseases in the future (Black et al., 2013). In Indonesia, the prevalence of stunting reached 30.8% in children under five, according to the 2018 Basic Health Research (Riskesdas). This figure indicates that nearly one-third of Indonesian children experience stunted growth due to inadequate nutritional intake and recurrent infections, particularly during the first 1,000 days of life (Kemenkes RI, 2019).

The causes of stunting are complex and multifactorial. According to research by Beal et al. (2018) , the main causes of stunting include maternal malnutrition, inadequate diet, poor sanitation, and a lack of psychosocial stimulation for children. Maternal factors, including nutritional knowledge, maternal nutritional status during pregnancy, and maternal height, play a significant role in determining the risk of stunting in children. Research by Uliyanti et al. (2017) also revealed that mothers with good nutritional knowledge tend to have children with better nutritional status and a lower risk of stunting.

In addition to maternal factors, exclusive breastfeeding is a major factor influencing child growth. WHO (2018) recommends exclusive breastfeeding for the first six months of life to ensure infants receive optimal nutrition, which plays a significant role in preventing infections that often cause growth disorders. Giugliani et al. (2015) emphasized that exclusive breastfeeding not only improves a child's nutritional status but also reduces the risk of infections such as diarrhea and respiratory infections, which can worsen nutritional status and lead to stunting. Therefore, optimal exclusive breastfeeding is a crucial nutritional intervention for preventing stunting.

Furthermore, home environmental factors, including sanitation and access to clean water, also play a significant role in stunting. Poor sanitation increases the risk of infectious diseases, which can hinder a child's nutrient absorption. Schmidt et al. (2002) explains that an unhygienic environment can worsen a child's nutritional status by increasing exposure to infections such as diarrhea, which interferes with the absorption of nutrients essential for growth. This condition is exacerbated by suboptimal clean and healthy living behaviors (PHBS) in many families, which increases the risk of infection in toddlers. Kusumawati et al. (2015) found that households with poor sanitation and limited access to clean water have a higher prevalence of stunting compared to households with a healthy home environment. Child health factors and access to adequate health services are crucial for stunting prevention. Stunting cases in Balongsari in 2025 remain a major challenge considering the low level of maternal nutritional knowledge, suboptimal exclusive breastfeeding practices, and home environmental conditions that do not fully support a clean and healthy lifestyle. Local data shows that approximately 30% of families have not implemented PHBS practices properly and 40% of mothers have not provided exclusive breastfeeding for six months. This condition is exacerbated by the still high number of infectious diseases in toddlers, such as diarrhea and ARI, which affect nutritional absorption and child growth (Dinkes Kota Mojokerto, 2024).

RESEARCH METHODS

This study is a cross-sectional analytical observational study of 84 mothers and toddlers selected using proportionate stratified random sampling. Population: all pairs of mothers and toddlers aged 24–59 months, totaling 84. The sample consisted of toddlers aged 24–59 months with complete data on the variables and parental/guardian consent to participate in the study

at the Gedongan Community Health Center, totaling 84 toddlers. There were 42 stunted toddlers and 42 non-stunted toddlers (controls). Independent variables: Mother Factors (Nutritional status during pregnancy, Knowledge about breastfeeding, Age, Inter-pregnancy interval, Parity), Toddler Factors (History of illness, Immunization status), Intermediate variables: Exclusive breastfeeding, Dependent variable: Incidence of stunting in toddlers. Data were collected through questionnaires, interviews, secondary data, and anthropometry, then analyzed using chi-square tests and SEM.

RESEARCH RESULTS

General Data Characteristics

Maternal Factors

Table 1
Maternal Factors Affecting Stunting Incidence in Balongsari Village, Mojokerto City

Maternal Nutrition	Frequency (f)	Precentage (%)
Maternal Nutrition Status		
Normal	51	60,7
Undernourished	33	39,3
Maternal Age during Pregnancy		
Too young (<20 years)	32	38,1
Safe Age (20 – 34 years)	52	61,9
High risk age (> 34 years)	-	-
Knowledge of Exclusive Breastfeeding		
Good	47	56
Fair	37	44
Poor	-	-
Birth Spacing		
Normal (2-4 years)	57	67,9
At risk (<2 years / >4 years)	37	32,1
Parity		
Primipara (1 child)	20	23,8
Multipara (> 1 child)	64	76,2

Table 2
Influencing Factors of Toddlers on Stunting Incidence in Balongsari Village, Mojokerto City

Child Factors	Frequency (f)	Precentage (%)
History of Infectious Disease		
None (not sick within 3 months)	-	-
Ocassionally (1-2 times/ 3 months)	55	65,5
Frequently (>3 times/ 3 months)	29	34,5
Immunization Status		
Complete	44	52,4
Incomplete	20	47,6
Birth Interval		
Very close (<2 years)	-	-
Ideal (2-3 years)	56	66,7
Distant (>3 years)	28	33,3

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Table 3
Environmental Factors Affecting Stunting Incidence in Balongsari Village, Mojokerto City

Environmental Factors	Frequency (f)	Precentage (%)
Access to Clean Water		
Yes	40	47.6
No	44	52.4
Sanitation		
Good	41	48.8
Poor	43	51.2
Access to Health Services		
Available	60	71.4
Not Available	24	28.6
Hygiene Practices		
Yes	40	47.6
No	44	52.4

Exclusive Breastfeeding

Table 4
Exclusive Breastfeeding for Toddlers in Balongsari Village, Mojokerto City

Exclusive Breastfeeding	Frequency (f)	Precentage (%)
Yes (for a full 6 months)	46	54.8
No (< 6 months)	38	45.2

Stunting Incidents

Table 5
Incidence of Stunting in Toddlers in Balongsari Village, Mojokerto City

Stunting Status	Frequency (f)	Precentage (%)
Not Stunted	58	69
Stunted	26	31

Analysis of The Relationship Between Maternal Factors (maternal nutritional status during pregnancy, maternal nutritional knowledge, maternal age during pregnancy, birth spacing, and parity) and The Incidence of Stunting in Toddlers.

Table 6
Analysis of The Relationship Between Maternal Factors and The Incidence of Stunting in Toddlersin Balongsari Village, Mojokerto City in 2025

Maternal Factors	Stunting Status				Total		P-Value	PR (95% CI)
	Not Stunted		Stunted					
	F	%	F	%	F	%		
Maternal Nutritional Status								
Normal	47	92,2	4	7,8	51	100	0,000	23,500 (6,724-82,136)
At risk	11	33,3	22	66,7	33	100		
Maternal Knowledge								
Good	41	87,2	6	12,8	47	100	0,000	8,039 (2,748-23,515)
Moderate	17	45,9	20	54,1	37	100		
Poor	-	-	-	-	-	-		
Maternal Age During Pregnancy								
Too young (<20 years)	15	46,9	17	53,1	32	100	0,001	0,185

Safe age (20–34 years)	43	82,7	9	17,3	52	100		(0,068-0,502)
Too old (>34 years)	-	-	-	-	-	-		
Birth Spacing								
Normal (2–4 years)	47	82,5	10	17,5	57	100	0,000	6,836
At risk (<2 years/ >4 years)	11	40,7	16	59,3	27	100		(2,447-19,096)
Parity								
Primipara (1 child)	8	40	12	60	20	100	0,001	0,187
Multipara (>1 child)	50	78,1	14	21,9	64	100		(0,064-0,546)

Analysis of Factors Affecting Toddlers (History of Infectious Diseases, Immunization Status, and Spacing Between Children) on The Incidence of Stunting in Toddlers

Table 7
Analysis of Factors Affecting Toddlers on The Incidence of Stunting in Toddlers in Balongsari Village, Mojokerto City in 2025

Child Factors	Stunting Status				Total		P-Value	PR (95% CI)
	Not Stunted		Stunted					
	F	%	F	%	F	%		
History of Infectious Disease								
None (not sick within 3 months)	-	-	-	-	-	-		
Ocassionally (1-2 times/ 3 months)	47	85,5	8	14,5	55	100	0,000	23,500
Frequently (>3 times/ 3 months)	11	37,9	18	62,1	29	100		(6,724-82,136)
Immunization Status								
Complete	40	90,9	6	12,8	44	100	0,000	12,222
Incomplete	18	45	22	55	40	100		(3,674-40,654)
Birth Interval								
Very close (<2 years)	-	-	-	-	-	-		
Ideal (2-3 years)	36	64,3	20	35,7	56	100	0,182	0,491
Distant (>3 years)	22	78,6	6	9,7	28	100		(0,171-1,410)

Analysis of The Relationship Between Environmental Factors (sanitation, clean water, and distance to health facilities) and The Incidence of Stunting in Toddlers

Table 8 Analysis of The Relationship Between Environmental Factors and The Incidence of Stunting in Toddlers Toddlers in Balongsari Village, Mojokerto City in 2025

Environtmental Factors	Stunting Status				Total		P-Value	PR (95% CI)
	Not Stunted		Stunted					
	F	%	F	%	F	%		
Sanitation								
Good	37	90,2	4	12,7	41	100	0,000	9,690
Poor	21	48,8	22	51,2	42	100		(2,941-31,929)
Access to Clean Water								
Yes	37	92,5	3	7,5	40	100	0,000	13,508
No	21	47,7	23	52,3	44	100		(3,620-50,410)
Access to Health Services								
Available	51	85	9	15	60	100	0,000	13,762
Not Available	7	29,2	17	70,8	24	100		(4,446-42,602)

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Analysis of The Relationship Between Exclusive Breastfeeding and Stunting in Toddlers

Table 9
Analysis of The Relationship Between Exclusive Breastfeeding and Stunting in Toddlers in Balongsari Village, Mojokerto City in 2025

Exclusive Breastfeeding	Stunting Status				Total		P-Value	PR (95% CI)
	Not Stunted		Stunted					
	F	%	F	%	F	%		
Yes	42	91,3	4	8,7	46	100	0,000	14,438 (4,301-48,465)
No	16	42,1	22	57,9	38	100		

The Study Results Using The T-Test

Table 10
The Results of statistic test using T- Tests and conclusions of research hypothesis tests

Type of Relationship	Path of Relationship	Path Coefficient	T-Test	P-Value	Conclusion
Direct	X1. Maternal Factors → Y. Stunting Prevention	0.502	7.367	0.000	Significant
Indirect	X1. Exclusive Breastfeeding → Y. Stunting Prevention	0.036	2.436	0.015	Significant
Total	X1. Maternal Factors → Y. Stunting Prevention	0.539	8.348	0.000	Significant
Direct	X2. Child Factors → Y. Stunting Prevention	0.297	4.032	0.000	Significant
Indirect	X2. Child Factors → Z. Exclusive Breastfeeding → Y. Stunting Prevention	0.038	2.569	0.010	Significant
Total	X2. Child Factors → Y. Stunting Prevention	0.334	4.621	0.000	Significant
Direct	X3. Environmental Factors → Y. Stunting Prevention	0.251	2.916	0.004	Significant
Indirect	X3. Environmental Factors → Z. Exclusive Breastfeeding → Y. Stunting Prevention	0.069	2.353	0.019	Significant
Total	X3. Environmental Factors → Y. Stunting Prevention	0.320	4.122	0.000	Significant
Direct	X1. Maternal Factors → Z. Exclusive Breastfeeding	0.189	2.646	0.008	Significant
Direct	X2. Child Factors → Z. Exclusive Breastfeeding	0.196	2.764	0.006	Significant
Direct	X3. Environmental Factors → Z. Exclusive Breastfeeding	0.361	2.517	0.012	Significant
Direct	Z. Exclusive Breastfeeding → Y. Stunting Prevention	0.192	2.447	0.014	Significant

Based on the results of the t-test table 10 answers the specific objectives of the study.

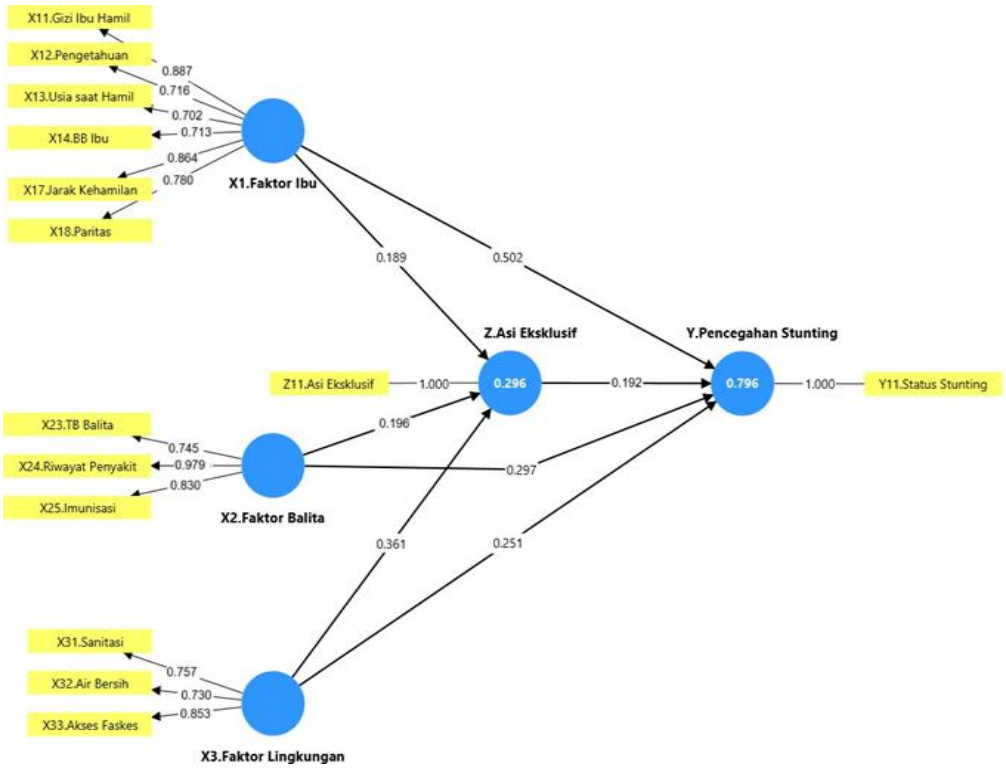

Figure 1
Final model of stunting prevention: loading factor values and regression coefficients

DISCUSSION

Maternal Factors

There is an influence between maternal nutritional status and the incidence of stunting in toddlers, mothers with a risky nutritional status category are 23,500 times more likely to have children who experience stunting compared to mothers with normal nutritional status. Pregnant women whose nutritional status during pregnancy is normal with LILA > 23.5 cm. KEK during pregnancy can cause various risks for both mother and fetus. KEK will increase the risk of miscarriage, postpartum hemorrhage, maternal death, susceptibility to infectious diseases and difficult and prolonged labor. The impact of KEK on the fetus includes impaired fetal growth, babies at risk of LBW, babies at risk of congenital abnormalities, risk of stunting impaired growth and development of brain cells that affect children's intelligence (Paramita, 2019) . Research results, Pradani & Indarti (2022) There is a significant relationship between the nutritional status of pregnant women and the incidence of stunting in toddlers aged 0-3 years, with a p value <0.05. Mothers with poor nutritional status are more likely to produce stunted children than mothers with normal nutritional status. Research by Fitriyana (2024) found that pregnant women with a mid-upper arm circumference (MUAC) of less than 23.5 cm (an indicator of KEK) have a 2 to 9 times higher risk of giving birth to stunted children than mothers with a normal MUAC. Research by Sagita & Wardani (2022) found that maternal nutritional status during pregnancy affects fetal growth. Therefore, malnutrition increases the risk of low birth weight (LBW), which can lead to growth and developmental disorders, including stunting.

There is a correlation between maternal knowledge and the incidence of stunting in toddlers. Mothers with moderate knowledge are 8.039 times more likely to have stunted children than mothers with good knowledge. Mothers with low nutritional knowledge are also more likely to have stunted children. One study found that mothers with low nutritional knowledge are 2.7 times more likely to have stunted children than mothers with high knowledge (p=0.027). A mother's knowledge of food types and nutritional adequacy is important.

The mother's age during pregnancy also influences the risk of stunting in children. A mother's age is closely related to physiological and psychological factors that can affect fetal growth and development during the first 1000 days of life. Research shows that some mothers who have toddlers without stunting become pregnant at around 20-34 years of age (Julian, 2018) .

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Pregnancy and childbirth in mothers under 20 years of age carry a high risk of premature birth or low birth weight (LBW), which can trigger stunting and even increase the risk of maternal and infant death because at this time the mother is not physically or mentally prepared to have and care for a child. Meanwhile, if the mother becomes pregnant at an older age (>35 years), there is also a risk of giving birth to a stunted toddler because during this period, women are more susceptible to several diseases that can harm the health of the mother and baby during pregnancy and delivery. Research by Larasati et al. (2018) showed a P value of 0.016, indicating a significant influence between maternal age during pregnancy and the incidence of stunting in toddlers in the Pujon Malang Community Health Center Work Area (OR = 3.86).

There is an influence between pregnancy spacing and the incidence of stunting in toddlers, p value 0.000 <0.05, prevalence ratio of 6.836 (95% CI = 2.447 – 19.096) which means mothers with pregnancy spacing are at risk (<2 years,>4 years). According to the National Population and Family Planning Board (BKKBN), the ideal pregnancy spacing with her last delivery for a mother is two years because pregnancy spacing that is too close risks causing complications in the mother such as bleeding during pregnancy to delivery and the baby born is at risk of having low health quality (BKKBN, 2019) . Mothers who have a pregnancy spacing of <2 years cannot recover their physical condition optimally after giving birth and will have difficulty in dividing their time to care for 2 toddlers. The results of research conducted by Ernawati (2021) showed that the p-value of 0.0004 means that pregnancy spacing is related to the incidence of stunting in toddlers at the Harapan Baru Samarinda Health Center. The first two years of a toddler's life are a golden period because they experience rapid growth and development, requiring mothers to ensure adequate nutrition to maximize breast milk production and meet their nutritional needs, especially during this period. If mothers fail to meet their nutritional needs, they can develop chronic energy deficiencies (CED). Repeated pregnancies within a short period can deplete fat, protein, glucose, folic acid, minerals, and vitamins, disrupting metabolism and suboptimal fetal growth and development.

Child Factors

There is an influence between the history of infectious diseases and the incidence of stunting in toddlers, toddlers with a history of infectious diseases in the frequent category have a 9.614 times greater chance of experiencing stunting compared to toddlers with a history of infectious diseases. A history of infection influences the occurrence of stunting with a 9.614 times greater chance of experiencing stunting in Mojokerto Regency. Several studies explain the magnitude of the risk faced by toddlers with a history of infectious diseases experiencing stunting. Research conducted by Subroto et al. (2021) and research by Dewi & Widari (2018) stated that children with a history of infectious diseases are at a 3 times greater risk of experiencing stunting than those without a history of infection. The combined effect and interaction between infection, environmental factors and malnutrition are determinants of stunting. These interactions reinforce each other through infections that worsen each malnutrition, because appetite suppression and reduced food intake, and malabsorption reduce nutrient intake, while malnutrition reduces the immune defense system, thereby worsening the effects of infection. Acute and chronic infections disrupt growth, especially those involving the gastrointestinal tract (Millward, 2017) . Stunting is common in children with infectious diseases. If these infections occur over a long period and repeatedly, they can result in stunted growth and ultimately lead to short stature compared to other children. The duration and frequency of infectious diseases have been shown to be associated with stunting (Lusiani & Anggraeni, 2021) . Therefore, infectious diseases are a condition that needs to be prevented to reduce the risk of stunting in children.

There is an influence between immunization status and the incidence of stunting in toddlers. Toddlers with incomplete immunizations are 12.222 times more likely to experience stunting compared to toddlers with complete immunizations. Complete basic immunizations are given to infants under 12 months of age. Complete routine immunizations consist of basic immunizations, namely HB0, BCG, polio, DPT-HB-HiB, and MR. Immunizations are adjusted according to the child's age (Kemenkes RI, 2020). A factor that can increase the risk of stunting during the 1000 Days of Life (HPK) is not receiving immunization. This is because children who do not receive passive immunity increase the risk of infection (Nasrul, 2018).

Toddlers with non-ideal birth spacing are 0.491 times more likely to experience stunting than those with ideal birth spacing, but this difference is not statistically significant.

Environmental Factors

Sanitation plays a significant role in stunting in Balongsari Village, Mojokerto City. Environmental sanitation indirectly affects toddler nutrition. Poor sanitation can lead to infectious diseases in toddlers, such as diarrhea and worm infestation, which can disrupt the digestive process and nutrient absorption. If this condition persists for a long time, it can lead to stunting. Infection is closely related to unhealthy environmental conditions, such as lack of access to clean water, adequate sanitation facilities, and waste management. Therefore, the provision of clean water and sanitation plays a crucial role in reducing stunting because it is closely linked to efforts to prevent infectious diseases (Apriluana & Fikawati, 2018). The high prevalence ratio indicates that improving sanitation is a priority for local governments to reduce stunting rates. Difficult access to sanitation and poor sanitation can trigger stunting in children (Kemendesa PDTT, 2017). Poor access to clean water and sanitation facilities can increase the incidence of infectious diseases, which can divert energy for growth to fight infections, making it difficult for the body to absorb nutrients, and stunting growth. Research conducted by Adiyanti (2014) showed that inadequate access to sanitation in the form of inadequate toilets increased the risk of stunting by 1.3 times compared to toddlers who used adequate toilets after controlling for the child's age.

There is an influence between access to clean water and the incidence of stunting in toddlers. Toddlers from families with inadequate access to clean water are 13.508 times more likely to experience stunting compared to toddlers from families with adequate access to clean water. The high prevalence ratio in this study indicates that access to clean water is an important factor in preventing stunting in Balongsari Village, Mojokerto City. Toddlers from families with unprotected drinking water sources are 1.35 times more at risk of experiencing stunting compared to toddlers from families with protected drinking water sources. This clean drinking water source is an important factor for body health and reduces the risk of various diseases, while toddlers are subjects who are susceptible to infectious diseases because toddlers' natural immunity is relatively low (Mia & Sukmawati, 2021).

The appropriate intervention for managing and reducing stunting is nutrition-sensitive intervention. Nutrition-sensitive interventions address the underlying causes of stunting by improving sanitation and increasing clean water supply through community-based water supply systems, ensuring access to adequate sanitation and safe drinking water (Hijrawati et al., 2021).

Exclusive Breastfeeding

There is a correlation between exclusive breastfeeding and stunting in toddlers. Toddlers who do not receive (Pertiwi et al., 2021) complete exclusive breastfeeding are 14.438 times more likely to experience stunting than those who do. Exclusive breastfeeding for the first six months is a key strategy in preventing stunting because it provides optimal nutrition and immune protection for infants. Infants who receive exclusive breastfeeding for 6 months can improve intelligence, immunity, and child development, in addition to preventing infections and reducing the risk of nutritional problems (Nirwana, 2014) . Breast milk is the best food for babies because it contains all the nutrients in the ideal ratio and contains immune power (Nugroho, 2014) . Breastfeeding for toddlers contributes to the nutritional status and health of toddlers. The nutritional content in breast milk includes energy, which has a very large contribution from protein, carbohydrates, and fat. Nutrients such as vitamin A, vitamin D, vitamin B6, calcium, iron, and zinc are nutrients in breast milk that are needed by children. Iron deficiency can cause cognitive and physical disorders and increase the risk of death. Iron plays a role in distributing oxygen to all body tissues. If oxygen flow to bone tissue is reduced, bone growth will be hampered. Therefore, toddlers with iron deficiency are at risk of stunting (Nugraheni et al., 2020) . Low breastfeeding rates have the potential to threaten the growth and development of toddlers and have implications for the overall growth and development of human resources. Exclusive breastfeeding is expected to maintain a child's nutritional balance, thereby achieving normal growth (Pertiwi et al., 2021).

CONCLUSION

There is a correlation between maternal nutritional status, maternal knowledge, pregnancy spacing, parity, history of infectious diseases, immunization status, sanitation, access to clean water, access to health services, exclusive breastfeeding and stunting in toddlers, but there is no correlation between birth spacing and stunting in toddlers. In a joint test, the contribution of exogenous variables, namely mother, toddler, environment, and exclusive breastfeeding, was 79,6%. The remaining 20,4% was explained by other variables.

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SUGGESTION

Stunting in toddlers is influenced by maternal, toddler, environmental, and exclusive breastfeeding factors. Prevention should focus on maternal nutrition education, increasing exclusive breastfeeding, toddler immunization, and improving sanitation and access to clean water.

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