Journal of Healthcare Technology and Medicine Vol. 10 No. 1 April 2024
Universitas Ubudiyah Indonesia
e-ISSN : 2615-109X

Faktor-faktor Penyebab Kejadian Stunting pada Balita di Desa Matiti 1 Kecamatan Doloksanggul Kabupaten Humbang Hasundutan Tahun 2024

Factors Causing Stunting in Toddlers in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 2024

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Abstrak

Stunting atau pendek adalah masalah kurang gizi kronis akibat kurangnya asupan gizi dalam waktu yang lama sehingga mengakibatkan gangguan pertumbuhan pada anak.tujuan penelitian ini untuk mengetahui adanya faktor penyebab kejadian stunting berdasarkan pengetahuan ibu tentang stunting, paritas, pendapatan keluarga, pemberian asi eksklusif, dan ketersediaan air bersih. Jenis penelitian ini adalah penelitian deskriptif analistik yang dilakukan dengan desain *croos sectional*. Populasi 119 orang dan pengambilan sampel dengan menggunakan rumus Slovin dengan jumlah sampel 56 orang. Pengumpulan data ini menggunakan kuesioner, kemudaian diolah dengan uji *chi-square*. Hasil penelitian ini menunjukan bahwa pengetahuan ibu tentang stunting memiliki hubungan dengan kejadian stunting dengan menggunakan uji *chi-square* dengan tingkat kepercayaan 90% dan df=2, diperoleh hasil analisis x^2 hitung (10.303) >chi-square x^2 tabel (4.605), variabel paritas memiliki hubungan dengan kejadian stunting dengan menggunakan uji chi-square dengan tingkat kepercayaan 90% dan df=3, diperoleh hasil analisis x^2 hitung (11.321) >chi-square x^2 tabel (6.251). variabel pendapatan keluarga memiliki hubungan dengan kejadian stunting dengan menggunakan uji chi-square dengan tingkat kepercayaan 90% dan df=2, diperoleh hasil analisis x^2 hitung (6.102) >chi-square x^2 tabel (4.605), variabel pemberian asi eksklusif memiliki hubungan dengan kejadian stunting dengan menggunakan uji chi-square dengan tingkat kepercayaan 90% dan df=1, diperoleh hasil analisis x^2 hitung (51.762) >chi-square x^2 tabel (2.705), ketersediaan air bersih memiliki hubungan dengan kejadian stunting dengan menggunakan chi-square dengan tingkat kepercayaan 90% dan df=1, diperoleh hasil analisis x^2 hitung (19.399) >chi-square x^2 tabel (2.705). Diharapkan kepada responden untuk dapat mengatur jumlah anak, memberikan asi eksklusif, memberikan gizi seimbang, serta memperhatikan air bersih.

Kata Kunci : Penyebab, *Stunting*, Balita

Journal of Healthcare Technology and Medicine Vol. 10 No. 1 April 2024
Universitas Ubudiyah Indonesia
e-ISSN : 2615-109X

Abstract

Stunting or shortness of breath is a problem of chronic malnutrition due to lack of nutritional intake for a long time, resulting in growth disorders in children. The aim of this research is to determine the factors that cause stunting based on the mother's knowledge about stunting, parity, family income, exclusive breastfeeding, and availability. clean air. This type of research is descriptive analytical research conducted with a cross sectional design. The population was 119 people and sampling was used using the Slovin formula with a sample size of 56 people. This data was collected using a questionnaire, then processed using the chi-square test. The results of this study show that maternal knowledge about stunting has a relationship with the incidence of stunting using the chi-square test with a confidence level of 90% and df=2, obtained by the analysis of 2 counts (10.303) > chi-square 2 tables (4.605), parity variables has a relationship with the incidence of stunting using the chi-square test with a confidence level of 90% and df=3, obtained by the analysis of 2 counts (11,321) > chi-square 2 tables (6,251). The variable family income has a relationship with the incidence of stunting using the chi-square test with a confidence level of 90% and df=2, obtained by the analysis of 2 counts (6.102) > chi-square 2 tables (4.605), the variable providing exclusive breastfeeding has a relationship with the incidence of stunting using the chi-square test with a confidence level of 90% and df=1, obtained from the analysis of 2 counts (51,762) > chi-square 2 tables (2,705), the availability of clean water has a relationship with the incidence of stunting using chi-square with 90% confidence level and df=1, obtained by analysis of 2 counts (19.399) > chi-square 2 tables (2.705). It is hoped that respondents will be able to regulate the number of children, provide exclusive breastfeeding, provide balanced nutrition, and pay attention to air cleanliness.

Keywords*: Causes, Stunting, Toddlers*

INTRODUCTION

One of the current health issues that disrupts the development of future generations is malnutrition. The impact of malnutrition on children will have a significant effect on the next generation. One of the serious health problems that needs to be addressed in Indonesia is stunting. According to Suparisa & Purnawingsih (2019), stunting is a condition in which the development of children under five fails due to chronic malnutrition, low psychosocial stimulation, and repeated exposure to infections, especially during the first 1,000 days of life (1,000 HPK). Stunting, which is still not fully understood by the broader community, is often perceived as a normal condition, and there is still a misconception that stunting is genetic (Yulistini et al., in Zulaikha, 2021). Stunting is a condition of short stature for age, caused by unmet nutritional needs over a prolonged period, starting from pregnancy until the age of 24 months. A stunted child is one who has a height-for-age less than the standard deviation of <-2 (z-score H/A) according to WHO Child Growth Standards (Radjamuda, 2022).

In 2020, globally, around 22% or 149.2 million children under the age of 5 experienced stunting, 45.4 million were wasted, and 38.9 million were overweight (UNICEF, 2021). The world has made progress in nutrition, but significant challenges remain. There has been a global reduction in stunting (low height-for-age ratio) between 1990 and 2018, with the prevalence of stunting among children under 5 decreasing from 39.2% to 21.9% or from 252.5 million to 149.0 million children, although progress has been much slower in Africa and Southeast Asia (WHO, 2019). The World Health Organization (WHO) in 2018 stated that the global prevalence of stunting among children under five reached 22.9% or 154.8 million children. The incidence of stunting in Indonesia ranks among the top five in the world. Indonesia is the country with the third highest prevalence of stunting in the Southeast Asian Region after Timor-Leste (50.5%) and India (38.4%), with Indonesia at 36.4% (Ministry of Health Data and Information Center, 2018). In 2019, the national stunting prevalence rate dropped to 27.67%, while in 2020, the national prevalence rate decreased to 24.1% (Ministry of Health RI, 2020).

According to the Basic Health Research (Riskesdas) data, the prevalence of stunting in Indonesia was 36.8% in 2007, 35.6% in 2010, and increased to 37.2% in 2013, consisting of 18% very short and 19.2% short. The 2018 Riskesdas data showed the prevalence of stunting among children under five in Indonesia was 30.8%. Based on WHO standards, Indonesia is in the high stunting problem category. The prevalence of stunting in North Sumatra (Sumut) based on the 2022 Indonesian Nutrition Status Survey (SSGI) data is 21.1%. Of the 33 districts/cities

in North Sumatra, 5 districts have a stunting rate above 30%. South Tapanuli District, with a stunting prevalence of 39.4%, ranks first among the 33 districts in North Sumatra, followed by Mandailing Natal District with a prevalence of 34.2%, Pakpak Barat District with a prevalence of 30.8%, Central Tapanuli District with a prevalence of 30.5%, and Humbang Hasundutan District ranks 6th with a prevalence of 29.6%, an increase of 2.9% from 2021 (26.7%).

According to the 2021 Riskesdas data from the Ministry of Health, the stunting prevalence among children under five in Humbang Hasundutan was 16.43%. According to EPPGBM (Integrated Nutrition Recording and Reporting) data in 2021, the stunting prevalence in Parilitan was around 27.83%, Pollung 25.70%, Baktiraja 12.42%, Paranginan 11.02%, Lintongnihuta 14.37%, Doloksanggul 21.97%, Sijamapolang 25.00%, Pakkat 14.48%, Onan Ganjang 24.19%, and Tarabintang 16.20%, totaling 16.43%.

The Decree of the Minister of National Development Planning/Head of the National Development Planning Agency No. KEP/42/M.PPN/HK/04/2020 on the determination of the expansion of district/city locations for the integrated stunting reduction intervention focus in 2021, identified Humbang Hasundutan District as one of the stunting focal areas for 2021. The Regent Regulation of Humbang Hasundutan No. 3 of 2021 on the convergence of stunting prevention and reduction acceleration in Humbang Hasundutan District, and the Regent's Decree No. 56 of 2021 on the formation of a coordination team for the convergence of stunting prevention and reduction in Humbang Hasundutan District were established.

The indicators and targets of the public health program in the RPJMN (National Medium-Term Development Plan) and RENSTRA (Strategic Plan) for 2020-2024 target a decrease in the prevalence of stunting and severe stunting among children under five, with the goal of reducing the rate to 24.1% in 2020, 21.1% in 2021, 18.4% in 2022, 16% in 2023, and 14% in 2024. Meanwhile, the RPJMD (Regional Medium-Term Development Plan) of Humbang Hasundutan District for 2021-2026, through the target indicators of the health department, is currently under preparation, targeting a reduction in the prevalence of stunting to 23.65% in 2021, 20% in 2022, 18% in 2023, 13.5% in 2024, 11.5% in 2025, and 10% in 2026.

Several researchers have found factors related to the incidence of stunting, including mothers' knowledge about stunting, family income or economy, exclusive breastfeeding, availability of clean water, and parity or the number of children. Previous research conducted by Mugianti S. Mulyadi (2018) found that the factors causing stunting include low energy intake (93.5%), low maternal education (48.4%), and lack of exclusive breastfeeding (32.3%).

These factors are caused by a lack of knowledge among mothers about fulfilling nutritional needs and the presence of parents with low education, which requires cross-sectoral involvement in addressing them.

According to research conducted by Zairinayati R. (2019), one of the factors influencing stunting is the mother's lack of nutritional knowledge, which tends to lead to feeding the child without considering nutritional content, quality, and food diversity. Other factors include poor food hygiene behavior, leading to infectious diseases and decreased appetite. The population in this case consists of children aged 0-5 years who have been diagnosed with stunting by doctors/health workers, and the control population consists of children who are not stunted, with a sample size of 30 cases and 30 controls. The results showed that 43.3% of stunted children were in the age range of 3.2-3.9 years, with a weight of 9-15 kg. From the bivariate test, it was found that there is a relationship between the source of clean water and the incidence of stunting among children under five.

Based on a preliminary survey I conducted in May at the Matiti Health Center in Doloksanggul District, Humbang Hasundutan Regency, in 2023, there were approximately 19 children under five in the village who were stunted (9.91%). I interviewed 5 mothers with children under five and found that they were not well aware of the factors causing stunting. Researcher is interested in conducting a study on the Factors Causing Stunting Among Children Under Five in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency, in 2024.

.METODE PENELITIAN

The type of research conducted is descriptive-analytic with a cross-sectional design, carried out through a survey by distributing questionnaires to respondents and then analyzing the data using frequency distribution tables. This approach involves simultaneous measurement to identify the factors causing stunting among children under five in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency, in 2024. The study was conducted in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency, in 2024. The sample for this research was selected using purposive sampling, and the sample size was determined using the Slovin formula, resulting in 56 respondents.

RESEARCH RESULTS

Univariate Analysis

Table 4.1. Frequency Distribution of Respondents Based on Mother's Knowledge About Stunting, Parity, Family Income, Exclusive Breastfeeding, Availability of Clean Water Against Stunting Incidence in Matiti Village, Doloksanggul District, Humbang Hasundutan Regency in 2024

No	Variabel	Amount	Persentase %
1	**Knowledge**		
	Good	11	19.6%
	Enough	21	37.5%
	Less	24	42.9%
	Total	56	100%
2	**Parity**		
	Primipara	8	14.3%
	Secondipara	22	39.3%
	Multipara	23	41.1%
	Gerandemultipara	3	5.4%
	Total	56	100%
3	**Family Income**		
	<2.500.000	35	62.5%
	2.500.000 – 3.500.000	18	32.1%
	3.600.000 – 5.000.000	3	5.4%
	>5.000.000	0	0%
	Total	56	100%
4	**Exclusive Breastfeeding**		
	Not Appropriate	20	35.7%
	Appropriate	36	64.3%
	Total	56	100%
5	**Availability of Clean Water**		
	Meets Health	41	73.2%

	Requirements		
	Does Not Meet Health Requirements	15	26.8%
	Total	56	100%
6	**Stunting Incident**		
	Stunting	19	33.9%
	No Stunting	37	66.1%
	Total	56	100%

Based on Table 4.1, it is known that out of 56 respondents based on Mother's Knowledge About Stunting, Good as many as 11 people (19.6%), Sufficient as many as 21 people (37.5%), Less as many as (42.9%). Based on Parity of 56 respondents, primipara as many as 8 people (14.3%), Secondipara as many as 22 people (39.3%), Multipara as many as 23 people (41.1%), and Grandemultipara as many as 3 people (5.4%). Based on Family Income of 56 respondents <2,500,000 as many as 35 people (62.5%), 2,500,000 - 3,500,000 as many as 18 people (32.1%), 3,600,000 - 5,000,000 as many as 3 people (5.4%), >5,000,000 none. Based on the provision of exclusive breastfeeding from 56 respondents, 20 people (35.7%) did not meet the requirements, 36 people (64.3%) met the requirements. Based on the availability of clean water from 56 respondents, 41 people (73.2%) met the health requirements, 15 people (26.8%) did not meet the health requirements. Based on the incidence of stunting, it is known that out of 56 toddlers who experienced stunting, 19 people (33.9%), 37 people (66.1%) did not experience stunting.

Bivariate Analysis

After the univariate analysis was carried out, further analysis was carried out in the form of bivariate analysis. The data obtained from both variables are categorical data, so the statistical test uses the chi-square test which aims to test both variables. The results of collecting knowledge data and its relationship to the incidence of Stunting were collected through questionnaires distributed to respondents through research using primary data can be seen in the following table:

1 Factors Causing Stunting in Toddlers Based on Parity in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 2024.

Table 4.2. Factors Causing Stunting in Toddlers Based on Mother's Knowledge of Stunting in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 2024.

NO	Knowledge	*Stunting Incident*							
		Stunting		**No *Stunting***		**Total**		**df**	**X^2 Count**
		n	**%**	**n**	**%**	**N**	**%**		
1	Good	0	0	11	100	11	100	2	10.303
2	Enough	6	28.6	15	71.4	21	100		
3	Less	13	54.2	11	45.8	24	100		

Based on Table 4.2, it is known that out of 11 respondents, mothers with good knowledge, none of their children experienced stunting, and 11 people did not experience stunting (100%). Of the 21 respondents, mothers with sufficient knowledge, 6 people experienced stunting (28.6%), and 15 people did not experience stunting (71.4%). Of the 24 respondents, mothers with less knowledge, 13 people experienced stunting (54.2%), and 11 people did not experience stunting (45.8%). The results of the bivariate analysis obtained a comparison of x2 count with x2 table, obtained x2 count (10,303) > x2 table (4,605) then Ha is accepted Ho is rejected, thus there is a relationship between maternal knowledge about stunting and the incidence of stunting in Matiti Village, Doloksanggul District, Humbang Hasundutan Regency in 2024.

2 Factors Causing Stunting in Toddlers Based on Parity in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 2024.

The results of data collection collected through questionnaires distributed to respondents through researchers using primary data can be seen in the following table:

Table 4.3. Cross Tabulation Based on Respondent Parity Regarding Stunting Incidents in Toddlers in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 2024

NO	Parity	*Stunting Incident*							
		Stunting		**No *Stunting***		**Total**		**df**	**X^2**
		n	**%**	**n**	**%**	**N**	**%**		Count
1	Primipara	0	0	8	100	8	100	3	11.321
2	Secondipara	6	27.3	16	72.7	22	100		
3	Multipara	10	43.5	13	56.5	23	100		
4	Gerandemultipara	3	100	0	0	3	100		

Based on table 4.3, it is known that out of 8 respondents whose toddlers experienced stunting, none were primiparous, 8 did not experience stunting (100%). Out of 22 respondents whose toddlers experienced stunting, 6 were secondiparous (27.3%), 16 did not experience stunting (72.7%). Out of 23 respondents whose toddlers experienced stunting, 10 were multiparous (43.5%), 13 did not experience stunting (56.5%). Out of 3 respondents whose toddlers experienced stunting, 3 were multiparous (100%), none did not experience stunting. The results of the bivariate analysis obtained a comparison of x2 count with x2 table, obtained x2 count (11,321) > x2 table (6,251) then Ha is accepted Ho is rejected thus there is a relationship between maternal parity and the incidence of stunting in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 2024

3 Factors Causing Stunting in Toddlers Based on Family Income in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 2023

The results of data collection collected through questionnaires distributed to respondents through researchers using primary data can be seen in the following table:

Table 4.4. Cross Tabulation Based on Respondents' Income on Stunting Incidents in Toddlers in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 2024

NO	Family Income	*Stunting Incident*							
		Stunting		**No *Stunting***		**Total**			**X^2**
		n	**%**	**n**	**%**	**N**	**%**	**df**	**Count**
1	<2.500.000	16	45.7	19	54.3	35	100	2	6.102
2	2.500.000 3.500.00	3	16.7	15	83.3	18	100		
3	3.600.000 5.000.000	0	0	3	100	3	100		
4	>5.000.000	0	0	0	0	0	0		

Based on Table 4.3, it is known that out of 35 respondents with family income <2,500,000, 16 (45.7%) of their toddlers experienced stunting, and 19 (54.3%) did not experience stunting. Out of 18 respondents with family income 2,500,000 – 3,500,000, 3 (16.7%) of their toddlers experienced stunting, and 15 (83.3%) did not experience stunting. Out of 3 respondents with family income 3,600,000 – 5,000,000, none of their toddlers experienced stunting, and 3 (100%) did not experience stunting. The results of the bivariate analysis obtained a comparison of x2 count with x2 table, obtained x2 count (6.102) > x2 table (4.605) then Ha is accepted Ho is rejected thus there is a relationship between family income and the incidence of stunting in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 2024.

4 Factors Causing Stunting Incidence in Toddlers Based on Exclusive Breastfeeding in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 2024

The results of data collection collected through questionnaires distributed to respondents through researchers using primary data can be seen in the following table:

Table 4.4. Cross Tabulation Based on Respondents' Exclusive Breastfeeding of Stunting Incidence in Toddlers in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 202

NO	Exclusive Breastfeeding	*Stunting Incident*			
		Stunting	**No *Stunting***	**Total**	**X^2 Count**

		n	%	n	%	N	%	df	
1	Not Appropriate	19	95	1	5	20	100	1	51.761
2	Appropriate	0	0	36	100	36	100		

Based on Table 4.3, it is known that out of 20 respondents, mothers who provided inappropriate Exclusive Breastfeeding, 19 (95%) had toddlers experiencing stunting, and 11 (5%) did not experience stunting. Out of 36 respondents, mothers who provided inappropriate Exclusive Breastfeeding, none had toddlers experiencing stunting, and 36 (100%) did not experience stunting. The results of the bivariate analysis obtained a comparison of x2 count with x2 table, obtained x2 count (61,762) > x2 table (2,705) then Ha is accepted Ho is rejected thus there is a relationship between the provision of Exclusive Breastfeeding and the incidence of stunting in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 2024.

5 Factors Causing Stunting in Toddlers Based on the Availability of Clean Water in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 2024

The results of data collection collected through questionnaires distributed to respondents through researchers using primary data can be seen in the following table:

Table 4.6. Cross Tabulation Based on Respondents' Availability of Clean Water Against Stunting in Toddlers in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 2024

NO	Availability of Clean Water	Stunting Incident							
		Stunting		No *Stunting*		Total			X^2 Count
		n	%	n	%	N	%	df	
1	Meets Health Requirements	7	17,1	34	82.9	41	100	1	19.399
2	Does Not Meet Health Requirements	12	80	3	20	15	100		

Based on Table 4.3, it is known that out of 41 respondents who have the availability of clean water that meets health requirements, 7 children experience stunting (17.1%), and 34 children do not experience stunting (82.9%). Of the 15 respondents who have

the availability of clean water that does not meet health requirements, 12 children experience stunting (80%), and 3 children do not experience stunting (20%). The results of the bivariate analysis obtained a comparison of x2 count with x2 table, obtained x2 count (19,399)> x2 table (2,705) then Ha is accepted Ho is rejected thus there is a relationship between the availability of clean water and the incidence of stunting in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 2024

DISCUSSION

From the results of the study entitled Factors Causing Stunting in Toddlers in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency in 2024.

Factors Contributing to Stunting in Children Based on Maternal Knowledge of Stunting in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency, 2024

Based on the chi-square test with a 90% confidence level and df = 2, the calculated chi-square value (10.303) is greater than the chi-square table value (4.605). Therefore, Ha is accepted, and Ho is rejected, indicating that maternal knowledge about stunting is a contributing factor to the occurrence of stunting in Matiti Village, Doloksanggul District, Humbang Hasundutan Regency, in 2024.

Knowledge is the result of human cognition that simply answers "what," such as what water is, what a human is, what nature is, and so on. In this context, knowledge refers to each field of scientific study that examines a specific subject, such as biology, natural science, social science, anthropology, sociology, economics, etc. (Notoatmodjo, 2017). Research by Rahayu et al. (2018) shows that toddlers whose mothers have low knowledge have a higher risk of experiencing stunting. Sastria et al. (2019) explain that there is a significant relationship between maternal knowledge and the incidence of stunting in toddlers and children. The level of maternal nutritional knowledge will affect the nutritional status of the mother and, in turn, the child. The higher the mother's nutritional knowledge, the better her nutritional status will be.

This study aligns with research conducted by Olsa E. on the relationship between mothers' attitudes and knowledge and the incidence of stunting in newly enrolled elementary school children in Nanggalo District. The method used in this study was cross-sectional, with a

sample of 232 newly enrolled elementary school children and their mothers in Nanggalo District, Padang City. Respondents filled out questionnaires, and children's height was measured. Data were analyzed using the chi-square test. The bivariate analysis between knowledge and stunting incidence showed a p-value < 0.05 (p = 0.000). Thus, Ha is accepted, and Ho is rejected, meaning there is a significant relationship between maternal knowledge and stunting incidence. Similarly, Rahayu et al. (2018) found that toddlers with mothers who have low knowledge are at greater risk of stunting.

Factors Contributing to Stunting in Children Based on Parity in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency, 2024

Using the chi-square test with a 90% confidence level and df = 3, the calculated chi-square value (11.321) is greater than the chi-square table value (6.251). Therefore, Ha is accepted, and Ho is rejected, indicating that parity is a contributing factor to the occurrence of stunting in Matiti Village, Doloksanggul District, Humbang Hasundutan Regency, in 2024. Parity refers to the number of pregnancies a woman has carried to a viable gestational age, whether from the current or previous marriage (Nurwanti, 2011). Stunting based on parity is influenced by poor child spacing, a consequence of pregnancies that are too close together, mothers who are too old or too young, and families with too many children.

A literature review was conducted by searching articles through Google Scholar, covering the period from 2017 to 2020. Hapi Apriasih's study shows that parity is related to the incidence of stunting in toddlers. Families with many children have a higher risk of stunting because they may struggle to provide adequate attention and meet the nutritional needs of all their children. Therefore, families should be encouraged to manage birth spacing and be equipped with proper knowledge. The study concludes that parity is related to the incidence of stunting in toddlers.

Factors Contributing to Stunting in Children Based on Family Income in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency, 2024

Using the chi-square test with a 90% confidence level and df = 2, the calculated chi-square value (6.102) is greater than the chi-square table value (4.605). Therefore, Ha is accepted, and Ho is rejected, meaning that family income is a contributing factor to the

occurrence of stunting in Matiti Village, Doloksanggul District, Humbang Hasundutan Regency, in 2024.

Family income refers to the earnings from all working members, whether from agriculture or other sectors. Variations in contributions can occur depending on the number of working household members and their contributions to the household (according to Subandi in Made Gunarsih, 2013). The lower the family's economic level, the less balanced nutrition can be provided to children, and conversely, the higher the family's economic level, the better the child's nutrition will be. Poor economic status in the family leads to reduced purchasing power for nutritious food for toddlers, increasing the risk of stunting in children (Margawati, A., and Astuti, A. M., 2018).

This study is consistent with research by Ambarwati et al. (2019) on the risk factors for stunting in toddlers in the working area of Simpang Pandan Health Center, Geragai District, East Tanjung Jabung Regency. The study is quantitative with an analytical approach using a control design. The case sample consists of mothers of toddlers suffering from stunting, while the control sample consists of mothers of toddlers who are not stunted. The research instruments were questionnaires and observation sheets. The analysis was conducted using univariate and bivariate analysis with the chi-square test. The study results showed a relationship between socio-economic status and stunting incidence (ρ=0.032: OR=5.0), meaning Ha is accepted and Ho is rejected, indicating a relationship between family income and stunting. This finding aligns with UNICEF's statement that one root cause of stunting is the economic crisis, which leads to families' inability to meet their infants' nutritional needs, both in quality and quantity, thereby affecting infant growth..

Factors Contributing to Stunting in Children Based on Exclusive Breastfeeding in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency, 2024

Using the chi-square test with a 90% confidence level and df = 1, the calculated chi-square value (51.762) is greater than the chi-square table value (2.705). Therefore, Ha is accepted, and Ho is rejected, indicating that exclusive breastfeeding is a contributing factor to the incidence of stunting in Matiti Village, Doloksanggul District, Humbang Hasundutan Regency, in 2024. Exclusive breastfeeding is the practice of giving only breast milk to infants from the first day, including colostrum, until the baby is six months old, without any additional food or drinks except for medicine and vitamins (Yankes Kemenkes, 2022). Toddlers who do

not receive exclusive breastfeeding are at a higher risk of stunting (Rahayu et al., 2018). The more comprehensive the exclusive breastfeeding provided, the lower the risk of stunting.

This study is consistent with research by Karjoso T. on the analysis of maternal factors associated with having stunted toddlers in the working area of Harapan Raya Health Center, Pekanbaru City, in 2019. The research design used was cross-sectional, supplemented with quantitative case study research conducted in the Harapan Raya Health Center working area in June 2019, with a sample of 187 toddlers selected through purposive sampling. Data collection was done using questionnaires and observation lists. The study found a relationship between the duration of exclusive breastfeeding and stunting incidence, with a p-value of 0.001. Thus, Ha is accepted, and Ho is rejected, indicating a relationship between the duration of exclusive breastfeeding and stunting. This study also aligns with research by Manoho in Deli Serdang in 2005, which found that complete exclusive breastfeeding is related to child growth. The lower the rate of exclusive breastfeeding, the higher the rate of poor growth in children.

Factors Contributing to Stunting in Children Based on Clean Water Availability in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency, 2024

Using the chi-square test with a 90% confidence level and df = 1, the calculated chi-square value (19.399) is greater than the chi-square table value (2.705). Therefore, Ha is accepted, and Ho is rejected, indicating that the availability of clean water is a contributing factor to the incidence of stunting in Matiti Village, Doloksanggul District, Humbang Hasundutan Regency, in 2024.

According to Law No. 7 of 2004, water is defined as all water found on, above, or below the earth's surface, including surface water, groundwater, rainwater, and seawater on land. In the Minister of Health Regulation No. 32 of 2017, water is defined as the environmental health quality standards for water used for hygiene purposes, covering physical, biological, and chemical parameters, which can include mandatory and additional parameters. This study aligns with research by Tasnim et al., which states that the availability of clean water significantly impacts child growth and development. Poor sanitation and environmental cleanliness can lead to gastrointestinal diseases, diverting energy needed for growth to fight infections. Frequent infections in toddlers can lead to nutritional problems, including stunting (Torlesse, H., et al., 2016).

This study is consistent with research by Ambarwati et al. in 2019 on the risk factors for stunting in toddlers in the working area of Simpang Pandan Health Center, Geragai District, East Tanjung Jabung Regency. This study was a quantitative study with an analytical approach using a control design. The case sample consisted of mothers with stunted toddlers, while the control sample consisted of mothers with non-stunted toddlers. The research instruments were questionnaires and observation sheets. Analysis was performed using univariate and bivariate analysis with the chi-square test. The study found a relationship between clean water availability and stunting incidence ($\rho = 0.014$). Thus, Ha is accepted, and Ho is rejected, indicating a relationship between clean water availability and stunting.

Research by Torlesse et al. conducted in three different typologies in Indonesia—Sikka (NTT), Jayawijaya (Papua), and Klaten (Central Java)—found a significant impact of household sanitation facilities and water treatment on stunting incidence (ρ-value < 0.007). Therefore, there is a significant relationship between stunting incidence and sanitation. Research by Rahayu et al. (2018); Schmidt, C. W. (2014); and Uliyanti et al. (2017) shows that households without access to drinking water that meets criteria are at greater risk of stunting.

CONCLUSION

Based on the research findings and statistical tests conducted, the conclusions are as follows:

1 Mothers' knowledge about stunting is a contributing factor to the incidence of stunting in toddlers in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency, in 2024, with an analysis result of h2\chi^2h2 calculated (10.303) > h2\chi^2h2 table (4.605).
2 Parity or the number of children is a contributing factor to the incidence of stunting in toddlers in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency, in 2024, with an analysis result of h2\chi^2h2 calculated (11.321) > h2\chi^2h2 table (6.251).
3 Family income is a contributing factor to the incidence of stunting in toddlers in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency, in 2024, with an analysis result of h2\chi^2h2 calculated (6.102) > h2\chi^2h2 table (4.605).

4 Exclusive breastfeeding is a contributing factor to the incidence of stunting in toddlers in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency, in 2024, with an analysis result of h2\chi^2h2 calculated (51.762) > h2\chi^2h2 table (2.705).

5 The availability of clean water is a contributing factor to the incidence of stunting in toddlers in Matiti I Village, Doloksanggul District, Humbang Hasundutan Regency, in 2024, with an analysis result of h2\chi^2h2 calculated (19.399) > h2\chi^2h2table

RECOMMENDATIONS

Based on the conclusions and research findings, the following recommendations are made:

1. For respondents: It is recommended that respondents regulate the number of children, provide balanced nutrition, give exclusive breastfeeding, and pay attention to the availability of clean water.
2. For healthcare workers: Improve health services such as monitoring, controlling, and supervising stunting in the community or families, starting from pregnancy through to toddlerhood.

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