

The Relation between the Characteristics of Parents and the Incidence of Stunting in Elementary School

By Mohammad Zulkarnain

The Relation between the Characteristics of Parents and the Incidence of Stunting in Elementary School Children in the Working Area of the Air Beliti Health Center

Dita Anggriani Lubis¹, Mohammad Zulkarnain², Rostika Flora³, Risnawati Tanjung⁴

^{1,2,3}Faculty of Public Health, Universitas Sriwijaya, Indonesia

⁴Politeknik Kesehatan, Kementerian Kesehatan, Medan, Indonesia

septi_2003@yahoo.com

Abstract

Stunting is a failure of growth and development experienced by children due to inadequate nutritional intake for a long time, recurrent infectious diseases, and inadequate psychosocial stimulation. The incidence of stunting is higher in rural areas than in urban areas. This study aims to analyze the relationship between maternal characteristics and the incidence of stunting in elementary school children in the Air Beliti Health Center working area. The study was conducted on elementary school children in the working area of the Air Beliti Health Center, Musi Rawas Regency. The design of this study used a cross-sectional design, with a total sample of 84 respondents who were taken randomly and met the inclusion criteria. Determination of stunting is based on anthropometric measurements, while the characteristics of parents are assessed using a questionnaire. Furthermore, the data were analyzed using Univariate, Bivariate, and Multivariate statistical tests. The results of anthropometric measurements showed that children who experienced stunting were 41 people, 48.8%. Based on the characteristics of the parents, it was found that 54.8% of fathers and 50% of mothers had low education, 65.5% of fathers and 75% of mothers worked as farmers, 58.3% of parents had low economic status, and 51.2% parents marry at a young age. There is a significant relationship between married age ($p = 0.049$), maternal education (0.029), and stunting incidence. Based on the multivariate test results, it was found that the most dominant factor related to the incidence of stunting was the age at marriage ($p = 0.000$; $OR = 80.079$). Parents who marry in their teens have a risk of 80,079 times having stunting children. Conclusion: adolescent marriage is associated with the incidence of stunting in elementary school children in the work area of the Air Beliti Health Center.

Keywords

mother characteristics;
stunting; elementary school
children



I. Introduction

National development aims to realize the quality of human resources that are healthy, intelligent, productive and independent. The nutritional status of the population must be improved to build quality resources and it starts as early as possible (Monje, 2019) School children are children who enter school and are vulnerable to growth and development disorders that often occur in children, one of which is stunting (Purnamasari, 2018). Based on data (WHO, 2019), 54% of stunting cases were found in Asian countries, 40% in African countries (WHO, 2020). Based on data (Riskesdas, 2018) it was found that the proportion of very short and short nutritional status in toddlers was 30.8%. For the province of South Sumatra, the prevalence of stunting in children under five was 30.8%.

1

DOI: <https://doi.org/10.33258/birci.v4i3.2215>

4391

The prevalence of stunting in toddlers in 2018 decreased when compared to the results of Riskesdas in 2013, which was 31.7%. The prevalence of stunting is still high when compared to the WHO standard, which is <20%.

Research conducted by (Longa et al., 2020) in West Golewa District, Ngada Regency in East Nusa Tenggara Province found 15.46% of children experiencing stunting. Research conducted by (Schoenbuchner et al., 2019) at SD Inpres Maulafa and SD Negeri Kelapa Lima, Kupang City found that 41.4% of stunting occurred in boys and 58.6% in girls.

Stunting is a growth and development failure experienced by children due to inadequate nutritional intake for a long time, recurrent infectious diseases, and inadequate psychosocial stimulation (Endang et al., 2020). Research conducted (Yarmaliza et al., 2019) showed that 48% of mothers with elementary school education were stunted. Stunting is also caused by many factors, both direct and indirect. Direct factors are determined by nutrient intake, birth weight and disease. While indirect factors such as economic factors, culture, education and work, health service facilities. Socio-economist factors interact with each other such as nutrient input, birth weight between 7-12 years of age. In school children, nutritional needs are needed for growth and development, the level of consumption is determined by the quality and quantity of children's food and drink intake. However, school-age children are vulnerable to nutritional deficiencies and nutritional status that can interfere with their development and growth. Children who experience stunting are caused by lack of food intake and recurrent diseases, especially infectious diseases that can increase metabolic needs and reduce appetite so that it results in abnormalities in short body shape even though gene factors in cells show the potential to grow normally (Sumsel Health Office, 2019).

Research conducted by (Pertiwi et al., 2019) also states that mothers with low education are at risk of having stunting children by 64.7%. In addition, the gestational age of the mother at the time of delivery also determines the occurrence of stunting in children. Research conducted by (Manggala et al., 2018) found that the age of the mother at birth <20 years was at risk of 22.3% of her children experiencing stunting. According to (Clark et al., 2020) pregnant women in their teens can have an impact on the linear growth of children due to nutritional competition between mothers and prospective babies. Low family income is also a risk factor for stunting in children. Research conducted (Rahmawati et al., 2018) shows that 46.6% of families with low incomes are at risk of having stunting children. The behavior of the mother's parenting pattern is a child's growth and development needs and can have an effect on meeting the child's nutritional intake needs. Based on research (Pertiwi et al., 2019)

Research conducted by (Yensasnidar et al., 2019) on students of SDN 11 Kampung Jua, Lubuk Begalung District. As many as 25.3% of children who experience less protein intake. Not only protein, zinc deficiency can also affect the incidence of stunting in children. Based on research conducted by (Zakout et al., 2010) in Gaza City there are 70.2% zinc deficiency in boys and 67.7% in girls. Apart from protein and zinc intake, iron deficiency can also affect children experiencing stunting.

Based on data from the results of the 2018 Nutrition Status Monitoring (PSG) in 17 regencies/cities in South Sumatra Province. The number of stunting percentages in the last five years in children under five has decreased but there was a slight increase in 2017 and 2018. In 2014 the stunting rate was 26.3%, and decreased to 24.5% in 2015, then fell back to 19.30% in 2016 and there was a slight increase of 22.8% in 2017 and remained at 22.8% in 2018. In 2018 the highest percentage of stunting in children under five in Banyuasin Regency was 32.8% and 34.6% in Musi Rawas Regency, while stunting in children under

five was lowest in Palembang City at 14.5%. Musi Rawas Regency is included in the 10 highest stunting areas (South Sumatra Health Office, 2019)

Based on data from the Musi Rawas Regency Office, in the 2019 online recording and nutrition reporting data (e-PPBGM) regarding the nutritional status of toddlers at 19 Puskesmas in Musi Rawas Regency, it was found that the number of children classified as very short was 321 children under five and those classified as short were 819 children. toddler. Of the 19 health centers, the working area of the Megang Sakti Public Health Center had the highest stunting rate of 431 children under five, the Air Beliti Public Health Center had a smaller number of stunting compared to the Megang Sakti Health Center which was 115 children under five, while the lowest stunting rate was found in the working area of the Puskesmas L. Sidoharjo with the number of stunting as many as 16 children under five (Musi Rawas District Health Office, 2020). The high incidence of stunting in Musi Rawas Regency, especially Tuah Negeri Subdistrict, will affect the next young generation in developing Musi Rawas Regency. Therefore, it is necessary to conduct further research to analyze the relationship between maternal characteristics and nutrient intake with the incidence of stunting in elementary school children in Musi Rawas Regency.

II. Research Methods

This research is quantitative with an analytic survey method with a cross sectional research design where the research is carried out by measuring the independent variable and the dependent variable at the same time (Notoadmodjo, 2010). The research location is an elementary school in the working area of the Air Beliti Health Center in Musi Rawas Regency. The sample in this study were elementary school children in Tuah Negeri District in the Air Beliti Health Center Work Area as long as they met the inclusion criteria and passed the exclusion criteria. The determination of the schools as the sampling locations was carried out by simple random method from a total of 23 schools that entered the working area of the puskesmas. 5 schools were determined to be locations randomly and met the minimum requirements of 10%. Meanwhile, the number of students is determined by quota sampling, each of which is equal to 40 students. How to collect data using questionnaires and Observation sheets for TB and BB measurements with the Anthropometric method of data collection. Data analysis with Univariate, Bivariate and Multivariate.

III. Results and Discussion

Table 1. Frequency Distribution of Child and Parent Characteristics Data

Variabel	n	%
1. Stunting Case		
a. Stunting	41	48,8
b. Not Stunting	43	51,2
2. Child Age		
a. 7 Years Old	1	1,2
b. 9 Years Old	9	10,7
c. 10 Years Old	26	31,0
d. 11 Years Old	35	41,7
e. 12 Years Old	10	11,9
f. 13 Years Old	2	2,4
g. 14 Years Old	1	1,2

3. Marriage Age		
a. Teenage Age	43	51,2
b. Normal Age	41	48,8
4. Father's Education		
a. Low	46	54,8
b. High	38	45,2
5. Father's Occupation		
a. Non Agriculture	29	34,5
b. Agriculture	55	65,5
6. Mother's Education		
a. Low	42	50,0
b. High	42	50,0
7. Mother's Occupation		
a. Non Agriculture	21	25,0
b. Agriculture	63	75,0
8. Ekonomik Status		
a. Low	49	58,3
b. High	35	41,7

Based on Table 1, it was found that from 84 children there were 41 children (48.8%) who experienced stunting, fewer than those who did not experience stunting, namely 43 children (51.2%) because some mothers already knew about stunting, this is in line with with sustainable research (2018) which states that stunting is influenced by low maternal education. In addition, the age of children who experience the most stunting is also mostly in children aged 11 years as many as 35 (41.7%), and the age of married mothers is 43 (51.2%), father's education is low 46 (54.8%), father's occupation is mostly agriculture 55 (65.5%), mother's education is low and high 42 (50.0%) respectively, mother's occupation is mostly agriculture 63 (75.0%) and mostly low economic status is 49 (58.3%).

The definition of stunting according to the World Health Organization (WHO) is as a failure in the growth and development of children caused by inadequate nutritional intake for a very long time, as well as recurrent infectious diseases, and inadequate psychosocial stimuli. Children who are stunted, especially at an early age, may also experience growth retardation in other organs, including the brain (Endang, 2020).

Stunting is an unattainable age-appropriate height caused by chronic or chronic malnutrition. This study is not in line with the research by Picauly (2013), which found the incidence of stunting as much as 155 (31.75%). This study is in line with Lestari's research (2018) that stunting is influenced by 36 (56.2%) low maternal education and 45 (70.3%) low family income. This study was not in line with Larasati's research (2018), there were 13 mothers who became pregnant at an early age or in their teens or 41.4%.

In this study, of the 41 (48.8%) children who experienced stunting, most of them were 11 years old as many as 43 (51.2%), and 49 (58.3%) with low economic status. This is in accordance with research conducted by (Pertiwi et al., 2019) which states that mothers with low education can influence children to experience stunting and not only low education that can affect stunting in children. Because in the study (Rahmawati et al., 2018) it was found that low family income can also affect the incidence of stunting in

children. Therefore, maternal characteristics are factors that can affect the increasing incidence of stunting in elementary school (ES) children.

Table 2. Relationship of Mother's Education with Stunting Incidence in Elementary School Children Working area of Air Biliti Health Center

School Children Working area of P. D. Datta Health Center						
Variable	Stunting Case				Total	<i>P</i>
	Stunting		Non Stunting			
	n	%	N	%		
Marriage Age						0.049
Teenage	26	21.0	17	22.0	43	
Normal	15	20.0	26	21.0	41	
Mother's Education						0.029
Low	26	20.5	17	21.5	42	
High	15	20.5	27	21.5	42	

Based on the results of this study, the relationship between mother's education and the incidence of stunting in elementary school children was obtained with a p value of 0.049. Apart from maternal age, maternal height and maternal education and socioeconomic status also affect stunting in children. As research conducted by (Yensasnidar et al., 2019) on students of SDN 11 Kampung Jua, Lubuk Begalung District. Low maternal education is one of the causes of stunting in school-age children. Based on the results of research (Mushtaq et al., 2011) parents' education is lower with a p value = 0.001.

This is due to socio-demographic theory affecting the incidence of stunting in children where low education and low education lead to low mastery of survival skills, so that in reaching work opportunities are hampered which results in low family income due to uncertain work (Latif , 2017). According to Sulastris's research (2012), the results of low maternal education were 39%.

This study is in line with research (Khairunnisa, 2020) which shows that most of the respondents were married at the age of 17-19 years as many as 73.3% or the late adolescent group. There are those who marry at the age of 14-16 years as many as 26.7% or middle teens and no respondents who marry at the age of less than 14 years or early teens, mothers who are pregnant in their teens are still in their infancy so that there can be a struggle for nutritional intake between the fetus and the mother herself. The struggle for nutritional intake will get worse if the mother's nutritional intake is not strong so that the fetus will experience delays in body development.

This study is in line with research (Larasati, 2018) that there is a significant relationship between pregnancy during adolescence and the incidence of stunting in children. Pregnancy in adolescence, when the mother is also still growing will increase the risk that the baby born will experience stunting (Larasati, 2018).

This study obtained the results of the analysis that there is a significant relationship between age of marriage ($p = 0.049$) and mother's education ($p = 0.029$). This is supported by the fact that most of the parents of the research subjects graduated from elementary school so that it could affect the knowledge and economic status of the family so that the risk of stunting in the research subjects increased. This study is not in line with research (Aprilyadi et al., 2020) that maternal education has no effect on the growth and development of preschool children with a high maternal education of 55 (50.9%).

Higher education levels in mothers are closely related to reducing the risk of stunting (Mittal et al., 2007). So that maternal factors or maternal characteristics are still very influential on the incidence of stunting in children, including maternal education and age at marriage can increase the risk of stunting in children born to them.

Table 3. Results of Multivariate Logistic Regression Analysis between seven significant variables

Variable	Coefficient	P	OR	95% CI
Father's Education	-.121	.779	.886	0.381-2.060
Father's Occupation	-.325	.263	.722	0.409-1.277
Mother's Education	.036	.929	1.037	0.470-2.266
Mother's Occupation	-.087	.764	.916	0.519-1.620
Economic Status	.182	.736	1.200	0.416-3.459
Child Age	-.948	.032	.388	0.163-0.922
Marriage Age	4.383	.000	80.079	13.657-469.536
Constant	5.779			

The results of the logistic regression analysis showed that the characteristics of married mothers had an 80,079 times greater chance of their child experiencing stunting compared to families with normal age married mothers. This is in accordance with the results of Kharirunisa's research (2020) that there is an opportunity to increase the risk of stunting in teenage pregnancy.

IV. Conclusion

Based on the analysis of the research results, there is a significant relationship between maternal characteristics and the incidence of stunting in elementary school children. It is known that the factors related to the incidence of stunting in elementary school (ES) children in the working area of the Air Beliti Health Center, Musi Rawas Regency are the age of married mothers and mother's education and there are also research results most of the subjects are 11 years old 35 (41.7%), father's education 46 (54.8%), the occupations of parents are mostly farmers 63 (75.0%), and low economic status 49 (58.3%).

Suggestions

The results of this study are expected to be used for the Musi Rawas District Health Office as a basis for consideration in formulating policies for preventing stunting in children in Musi Rawas District. Likewise for the Air Beliti Health Center in the effort of the stunting prevention program, it is necessary to improve again to prevent stunting in children in the working area of the Air Beliti Health Center. As well as further research, it is also necessary to look at other factors that can be related to the increasing incidence of stunting in children besides maternal characteristics related to stunting in Musi Rawas Regency.

References

Clark, A., Jit, M., Warren-Gash, C., Guthrie, B., Wang, H. H. X., Mercer, S. W., Sanderson, C., McKee, M., Troeger, C., Ong, K. L., Checchi, F., Perel, P., Joseph, S., Gibbs, H. P., Banerjee, A., Eggo, R. M., Nightingale, E. S., O'Reilly, K., Jombart, T., ... Jarvis, C. I. (2020). Global, regional, and national estimates of the population at increased risk of severe COVID-19 due to underlying health conditions in 2020: a

- modelling study. *The Lancet Global Health*, 8(8), e1003–e1017. [https://doi.org/10.1016/S2214-109X\(20\)30264-3](https://doi.org/10.1016/S2214-109X(20)30264-3)
- Aprilyadi, N., I, Kusumaswaty & Conference, I., & Health, O. (2020). The Related Factors To Development Of Pre-School Age Children In An-Nida Early Childhood Education Lubuklinggau City. *ICoHSST*, 21–28.
- Dinkes Sumatera Selatan. (2020). SSGI Berikan Kontribusi Untuk Gambaran Prevalensi Status Gizi Di Sumsel. Dinkes. Sumselprov.Go.Id. <https://dinkes.sumselprov.go.id/2020/02/ssgbi-berikan-kontribusi-untuk-gambaran-prevalensi-status-gizi-di-sumsel/>
- Endang L. Anhari Achadi. Tiara Aninditha. (2020). Pencegahan stunting 1000 HPK, , 2020.pdf (Endang L. Anhari Achadi. Tiara Aninditha (ed.)).
- Fitri I, R. N. W. (2019). Buku Ajar GIZI Reproduksi dan Bukti (Dyan Umiyarni Purnamasari (ed.)).
- Lamilla Monje, J.r; Franco-Lara, L. (2019). 濟無No Title No Title. *Revista Bistua Facultad de Ciencias Básicas*, 53(9), 1689–1699. <https://doi.org/10.1017/CBO9781107415324.004>
- Manggala, A. K., Kenwa, K. W. M., Kenwa, M. M. L., Sakti, A. A. G. D. P. J., & Sawitri, A. A. S. (2018). Risk factors of stunting in children aged 24-59 months. *Paediatrica Indonesiana*. <https://doi.org/10.14238/pi58.5.2018.205-12>
- Mushtaq, M. U., Gull, S., Khurshid, U., Shad, M. A., & Siddiqui, A. M. (2011). Prevalence and socio-demographic correlates of stunting and thinness among Pakistani primary school children. *BMC Public Health*. <https://doi.org/10.1186/1471-2458-11-790>
- Pertiwi, M. R., Lestari, P., & Ulfiana, E. (2019). Relationship Between Parenting Style and Perceived Information Sources With Stunting. *International Journal of Nursing and Health Services*, 2(4), 273–279. <https://doi.org/10.35654/ijnhs.v2i4.150>
- Rahmawati, V. E., Pamungkasari, E. P., & Murti, B. (2018). Determinants of Stunting and Child Development in Jombang District. *Journal of Maternal and Child Health*, 03(01), 68–80. <https://doi.org/10.26911/thejmch.2018.03.01.07>
- Riskesdas 2018. (2018). Riskesdas 2018. Laporan Nasional Riskesdas 2018.
- Schoenbuchner, S. M., Dolan, C., Mwangome, M., Hall, A., Richard, S. A., Wells, J. C., Khara, T., Sonko, B., Prentice, A. M., & Moore, S. E. (2019). The relationship between wasting and stunting: A retrospective cohort analysis of longitudinal data in Gambian children from 1976 to 2016. *American Journal of Clinical Nutrition*, 110(2), 498–507. <https://doi.org/10.1093/ajcn/nqy326>
- Unicef/ WHO/The World Bank. (2019). Levels and Trends in Child malnutrition - Unicef WHO The World Bank Joint Child Malnutrition Estimates, key findings pf the 2019 edition. Unicef.
- WHO. (2020). WHA Global Nutrition Targets 2025: Stunting Policy Brief. Economics and Human Biology.
- Yarmaliza, Y., Farisni, T. N., & Fitriani, F. (2019). The Influence of Mother Characteristics on Giving Tempe Broth as an Effort Prevention of Stunting in Toddler. *J-Kesmas: Jurnal Fakultas Kesehatan Masyarakat (The Indonesian Journal of Public Health)*, 6(2), 49. <https://doi.org/10.35308/j-kesmas.v6i2.1185>
- Yaya, S., Oladimeji, O., Odusina, E. K., & Bishwajit, G. (2020). Household structure, maternal characteristics and children's stunting in sub-Saharan Africa: evidence from 35 countries. *International Health*, 1–9. <https://doi.org/10.1093/inthealth/ihz105>

The Relation between the Characteristics of Parents and the Incidence of Stunting in Elementary School

ORIGINALITY REPORT

2%

SIMILARITY INDEX

PRIMARY SOURCES

1	bircu-journal.com Internet	36 words — 1%
2	conferences.unusa.ac.id Internet	22 words — 1%

EXCLUDE QUOTES OFF
EXCLUDE BIBLIOGRAPHY ON

EXCLUDE MATCHES < 1%