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FACTORS THAT INFLUENCE THE INCIDENT OF STUNTING IN INFANTS AND TODDLER

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Abstract: *Stunting is a serious public health problem in Indonesia, with a prevalence reaching 27.7% in 2021. The problem of stunting is considered to disrupt human resource potential and is related to health levels, even child mortality, so it is important to resolve it. This research aims to identify factors related to the incidence of stunting in infants and toddlers in Indonesia. The factors studied in this research include birth weight and family income. The study was designed to use a cross-sectional research approach. In this study, the dependent variable is the incidence of stunting and the independent variables include: factors such as birth weight and family income are evaluated at the same point. The research results show that the birth weight of the baby and the incidence of stunting show a significant influence, with a significance value of 0.001 (< 0.05), as well as the family income variable showing a significant influence on the incidence of stunting with a significance value of 0.003 (< 0.005). The conclusion is that there is a significant influence between birth weight and family income on the incidence of stunting.*

Keywords: *Stunting, birth weight, family income, Infannts, Toddler*

I. Introduction

Stunting is one of the problems hampering human development globally. In 2017, the United Nations Children's Emergency Fund (UNICEF) stated that in Asia there were 83.6 million stunted toddlers with a percentage of around 55%. The largest proportion is in South Asia (58.7%) and the least is in Central Asia (0.9%). Where Indonesia with a percentage (36.4%) is ranked third after Timor Leste (50.2%) and India (38.4%) (Stunting B, 2018). Stunting is a serious public health problem in Indonesia, with a prevalence reaching 27.7% in 2021 (Kementerian Kesehatan Republik Indonesia, 2021).

It is very important to solve the problem of stunting because it can disrupt human resource potential and is related to health levels and even child death. According to the Indonesian Toddler Nutrition Status Survey (SSGBI), the stunting rate in Indonesia decreased by 27.67 percent in 2019 from 29.6 percent in 2017. Although the stunting rate is reported to have decreased, the figure remains high because WHO's target is that the stunting rate is not may be more than 20% (BKKBN, 2021).

According to the 2018 Riset Kesehatan Dasar (Riskesdas) of the Ministry of Health, the percentage of very short toddlers in Central Java Province is 31.15% among toddlers aged 0-59 months, and the percentage of stunted toddlers is 20.06% (Dinkes Jateng, 2019). Data collected from the Tegal District Health Service shows that 10,793 children under five are stunted in 2021. Previously there were around 9346 toddlers with stunting in 2020. So it can be said that the stunting rate in Tegal Regency tends to increase (Dinkes

Kab. Tegal). Kalisapu Village, which has the highest cases of stunting in Slawi District, has 103 cases of Low Birth Weight (LBW). Several factors that cause stunting include parental education level, exclusive breastfeeding for less than six months, and family income (Larasati, 2017).

This research aims to identify factors related to the incidence of stunting in infants and toddlers in Indonesia. The factors studied in this research include birth weight and family income.

II. Materials and Methods

The study was designed to use a cross-sectional research approach. In this study, the dependent variable is the incidence of stunting and the independent variables include: birth weight and family income evaluated at the same point.

This method uses the same approach, observation, or data collection to evaluate the relationship between one variable and other variables

Kalisapu Village, Slawi working area, Slawi District, Tegal Regency with a sample size of 35 toddlers. A simple sampling technique is a random sampling technique from a population, with each member of the accessible population having the same opportunity to be selected or not selected as a research sample.

This research uses a questionnaire to collect secondary data about the causes of stunting. This research uses a logistic regression test which is a further development of the multivariate chai square.

III. Results and Discussion

Table 1. Proportion of Birth Weight Variables

Variable	Amount	Precentage (%)
Baby's birth weight		
Not risk	16	46,00
Risk	19	55,00
Total	35	100

Based on table 1, it shows that of the 35 respondents, 55% of respondents are at risk of stunting and 46% are not at risk of stunting.

Table 2. Proportion of Family Income variables

Variabel	Amount	Precentage (%)
Family income		
> UMR	12	34,28
< UMR	18	51,42
Total	35	100

Table 2 shows that 51% of respondent families have incomes below the UMR and 34.28% have incomes above the UMR.

Table 3. Bivariate Analysis

No	Variabel Independen	Kejadian		Total	
		Stunting	Not Stunting	n	%
1.	Baby's birth weight				
	Not risk	4	12	16	45,71
	Risk	14	5	19	54,29
2	Family income				
	> UMR	3	9	12	34,28
	< UMR	14	4	18	51,42

Table 3 shows that 77% (14 respondents) of babies with birth weight are at risk of experiencing stunting, while those with birth weight who are not at risk are 22% less likely to experience stunting.
Respondents with family income < UMR 82.35% experienced stunting, while those with family income > UMR 17.64% experienced less stunting.

Tabel 4. Overal Mode fit

-2Log likelihood awal (block number = 0)	112.159
-2Log likelihood akhir (block number = 1)	121.514

Based on table 4, the initial -2Log probability value (block number = 0) is 112,159 which was obtained from the results of the regression analysis. The final -2Log probability value (block number = 1) increases to 121.514 after including both independent variables. It can be concluded that the initial -2Log likelihood value (block number = 0) is higher than the final -2Log likelihood value (block number 1), so there is an increase of 9.355. This shows that the relationship between the hypothesized models is appropriate (fits) with the data. The addition of independent variables to the model shows that the regression model is better, so Ha is accepted.

Tabel 5. Hosmer and Lemeshow Test

Chi-square	Df	Sig.
3.027	8	0.002

Based on table 4.3, the results of the Hosmer and Lemeshow Goodness of Fit Test show a chi-square value of 3.027 with a significance level of 0.002, which indicates that the probability value (P-value), or significant value, is below 0.05, or Ha. This shows that there is no significant difference between the data and the model, which means the regression model used in this study is feasible and able to predict the observed values.

Table 6. Logistic Regression

Variabel	B	S.E	Wald	DF	Sig.
Baby's birth weight	4,243	1,223	9,235	1	0.001
Not risk					
Risk					
Family income	1,122	0,713	3,532	1	0,004
> UMR					
< UMR					

Based on the logistic regression equation above, we can see how the independent variable influences the dependent variable. The birth weight variable has a positive coefficient value of 4.243, which means that if each increase in value assumes the values of other variables are constant, then the stunting risk value will increase by 4.243. The family income variable has a positive coefficient value of 1.122, which means that if each increase in value assumes the values of other variables are constant, it will increase the stunting risk value by 1.122.

The influence of birth weight on the incidence of stunting

According to the World Health Organization, stunting, or shortness of breath, is a condition that indicates poor nutritional status that continues during a child's growth and development from the start of life. This condition is represented by a height-for-age z-score value that is less than two standard deviations based on growth standards (Sari & Zelharsandy, 2022).

The results of the research showed that the birth weight of the baby and the incidence of stunting showed a significant influence, with a significance value of 0.001 (< 0.05). These results are in accordance with research by Kamillia (2019) which states that the incidence of stunting in children is influenced by low birth weight (LBW). Babies with LBW have intrauterine growth restriction which causes their growth and development to be slower and often do not reach the growth rate that should be achieved at their age after birth. This causes a reduction in growth, which causes stunting. (Kamilia, 2019). Apart from that, according to Sholikhah; et al, 2023) shows that statistical test results show a significant relationship between LBW and cases of stunting in toddlers (Sholihah, 2023). This is the same as research conducted by Ayuningtyas and Puspitasari (2022) which shows that there is a significant relationship between low birth weight and the incidence of stunting (p = 0.007; OR 4.080 (1.412 – 11.193)) (Ayuningtyas & Puspitasari, 2022).

There are also research results that contradict the results of this study, namely research by Trisiswati et al (2021) which shows that there is no significant or meaningful relationship between LBW and the incidence of stunting but does not mention other possible factors that could be related to the incidence of stunting (Lestari et al ., 2022).

The influence of family income on the incidence of stunting

Family income level also greatly influences a person's socio-economic status. If food access at the household level is disrupted, especially due to poverty, stunting and other malnutrition diseases will emerge (Trisiswati et al., 2021).

The results of this research show that there is a significant influence of family income on the incidence of stunting with a significance value of 0.003 (< 0.005). These results are in line with the results of research from Lestari; et al (2022) which states that there is a relationship between parental income and stunting in children aged 4 to 5 years.

According to Adebisi et al (2019) in Lestari; et al (2022), unaffordability in fulfilling daily nutrition can be caused by low economic status, which ultimately influences the incidence of malnutrition (Lestari et al., 2022). Research by Agustin and Rahmawati (2021) Family income is related to the incidence of stunting. Families with income less than the Minimum Wage (Agustin & Rahmawati, 2021).

IV. Conclusion

The results of the research show that the birth weight of the baby and the incidence of stunting show a significant influence, with a significance value of 0.001 (< 0.05), as well as the family income variable showing a significant influence on the incidence of stunting with a significance value of 0.003 (< 0.005).

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Conflict of Interest

Stunting is a problem that is still a main topic in government programs, because stunting has a serious impact on the nation's future generations. So the problems related to stunting still need to be explored

References

Agustin, L., & Rahmawati, D. (2021). Hubungan Pendapatan Keluarga dengan Kejadian Stunting. *Indonesian Journal of Midwifery (IJM)*, *4*(1), 30. https://doi.org/10.35473/ijm.v4i1.715

Ayuningtyas, M. R., & Puspitasari, D. I. (2022). Hubungan BBLR dan Pendidikan Ibu dengan Kejadian Stunting Anak Usia 6-36 Bulan di Desa Jekani, Mondokan Sragen. *The Journal of Indonesian Community Nutrition*, *11*(1), 56–63. http://journal.unhas.ac.id/index.php/mgmi/article/view/18918%0Ahttps://journal.unhas.ac.id/index.php/mgmi/article/download/18918/8197

BKKBN. (2021). Indonesia Cegah Stunting. Jakarta Timur: BKKBN

Dahlan, M Sopiyudin. (2014). Statistik Untuk Kedokteran dan Kesehatan Deskriptif, Bivariat, dan Multivariat Dilengkapi Aplikasi dengan Menggunakan SPSS Seri 1 Edisi 6. Jakarta : Salemba medika

Dinkes Jateng. (2019). Profil Kesehatan Provinsi Jawa Tengah Tahun 2019. Semarang: Dinkes Jateng

Dinkes Kabupaten Tegal. (2020). Rekap Status Gizi Bulan Agustus 2020. Tegal: Dinkes Kabupaten Tegal

Dinkes Kabupaten Tegal. (2021). Rekap Status Gizi Bulan Agustus 2021. Tegal: Dinkes Kabupaten Tegal

Kamilia, A. (2019). Berat Badan Lahir Rendah dengan Kejadian Stunting pada Batita. *Jurnal Ilmiah Permas: Jurnal Ilmiah STIKES Kendal*, *10*(2), 311–315. https://doi.org/10.35816/jiskh.v10i2.175

Kementerian Kesehatan Republik Indonesia. (2021). *Hasil Survei Status Gizi Balita Indonesia Tahun 2021*. Jakarta: Kementerian Kesehatan Republik Indonesia

Larasati, N.(2017). Faktor-Faktor Yang Berhubungan Dengan Kejadian Stunting Pada Balita Usia 25-59 Bulan Di Posyandu Wilayah Puskesmas Wonosari II Tahun 2017. Skripsi. Politeknik Kesehatan Kementerian Kesehatan Yogyakarta

Lestari, W., Samidah, I., & Diniarti, F. (2022). Hubungan Pendapatan Orang Tua dengan Kejadian Stunting di Dinas Kesehatan Kota Lubuklinggau. *Jurnal Pendidikan Tambusai*, *6 Nomor 1*(2614–3097), 3273–3279.

Sari, S., & Zelharsandy, V. (2022). Hubungan Pendapatan Ekonomi Keluarga dan Tingkat Pendidikan Ibu terhadap Kejadian Stunting faktor keberhasilan penentu tumbuh kembang anak . Gizi yang cukup anak . Periode emas dimulai sejak sering disebut dengan istilah " seribu hari pertama kehidupan ". *Jurnal Kebidanan Harapan Ibu Pekalongan*, *9*(2), 108–113.

Sholihah, S. C. (2023). Hubungan Berat Badan Lahir Rendah (Bblr) Terhadap Kejadian Stunting Di Wilayah Kerja Puskesmas Dradah. *Prepotif: Jurnal Kesehatan Masyarakat*, *7*(1), 135–140. https://journal.universitaspahlawan.ac.id/index.php/prepotif/article/view/10859

Stunting,B. Situai Balita Pendek (Stunting) Di Indonesia. Jakarta: Pusat data dan Informasi, Kemenkes RI

Trisiswati, M., Mardhiyah, D., & Maulidya Sari, S. (2021). Hubungan Riwayat Bblr (Berat Badan Lahir Rendah) Dengan Kejadian Stunting Di Kabupaten Pandeglang. *Majalah Sainstekes*, *8*(2), 061–070. https://doi.org/10.33476/ms.v8i2.2096