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Risk Factors for Stunting In the First 1000 Days of Life

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ABSTRACT

This study analyzed risk factors (ANC, pregnant women's Fe, exclusive breast milk, complementary breast milk, vitamin A, and growth monitoring) associated with stunting at the Karamat Community Health Center, Buol Regency. The sample in the research was 149 mothers of toddlers with children aged 12-24 months. The research design used an analytical survey using a cross-sectional study design. The study results showed a significant relationship between ANC examination, MP ASI, and Vitamin A administration with the incidence of stunting in the first 1000 days of life at the Karamat District Health Center. Buol with Odds Ratio (OR) values respectively 2.43, 3.42 and 7.32. Multivariate test results show that the vitamin A program consumption factor (incomplete) with OR = 7.1 has a greater tendency to experience stunting compared to the MP-ASI provision factor (inadequate) with OR = 3.2. However, the two elements, MP-ASI and vitamin A work together to determine the incidence of stunting in toddlers in this study. The conclusion from this research is that Vitamin A is The most dominant variable is related to the incidence of stunting. Therefore, it is recommended that all health workers improve services in the form of health education related to the stunting reduction acceleration program in the Buol district.

KEYWORDS: ANC, Pregnant, Exclusive breastfeeding.

ARTICLE DETAILS

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INTRODUCTION

The problem of nutrition remains the Indonesian government's primary concern, especially regarding nutrition in toddlers. One of the issues that has become the focus is stunting, which refers to growth failure in children under five years of age (toddlers) due to chronic malnutrition and repeated infections, especially during the first 1,000 days of life (HPK). A child is considered stunted if his length or height is lower than the standard set for his age.

According to the 2018 Basic Health Research (Riskesdas), the stunting prevalence rate in Indonesia reached 30.8%. Even though it decreased compared to 2013, which was approximately 37.2%, it had a prevalence of shortness of 18.0% and very short of 19.2%. This figure is still in the large category because it is still above the optimal threshold of the World Health Organization, which is 20% and based on the results of the survey on the nutritional status of Indonesian toddlers in 2019, the prevalence of stunting in Indonesia is 27.7% and in 2021 based on the results of the Indonesian Nutritional Status Survey decreased to 24.4%.

Exclusive breastfeeding _ can reduce risk the occurrence of stunting in toddler . Achievements exclusive breastfeeding _ on Mother pregnant at the health center Karamat experience decline from 42.4% on in 2020 to 11.5% in in 2021. If compared to with the RPJMN (Term Development Plan) target Intermediate National), achievements on not yet in 2021 achieve the targets that have been set set amounting to 45.5%. Because importance Exclusive breastfeeding is necessary done study more carry on related influencing factors achievements (Department of Health District _ Buol , 2022).

After period Exclusive breastfeeding is important for baby For get intake proper nutrition _ via MP-ASI. MP-ASI plays important role in prevent the occurrence of stunting in baby And toddler. exclusive breastfeeding need given for 6 months first , next baby must quick get MP-ASI for development And growth optimal child. MP-ASI itself given in accordance with frequency, texture, amount , cleanliness , as well as diversity type food too _ in accordance For children (Ministry Health , 2014). Nutritional status toddler Also need noticed more by parent on period gold child. According to research conducted Noverian, et al (2018) stated that there is significant relationship _ providing MP-ASI against stunting. Results initial data acquisition from Service Health District _ Boo that Stunting prevalence based on e-PPGBM report data Public health center Karamat since 2020–2022 experienced _ enhancement that is on in 2020 it was 5.9%, then on in 2021 it

will increase to 7.9% and on in 2022 it will be 24.65%.

MATERIALS AND METHODS

This research was conducted at the Karamat Health Center, Buol district. This research was conducted from February to April 2023. This research method is a type of quantitative research that uses an analytic survey approach with a cross-sectional study research design. This study's population was all mothers with children aged 12-24 months in the Working Area of the Karamat Health Center, totaling 236 people. The sample in this study were mothers with toddlers aged 12-24 months who were in the working area of the Karamat Health Center. The technique used in sampling is using the Slovin formula, so 149 respondents obtained the number of samples in this study. This analysis used the Chi-Square statistical test with a 95% confidence level (α=0.05). Multivariate analysis used logistic regression analysis. Logistic regression To test the hypothesis on logistic regression analysis, the Wald test was used..

RESEARCH RESULTS

Table 1. The Relationship between ANC and Stunting in the First 1000 Days of Life

ANC	*Stunting* events				Total		P- *value*	OR
	Stunting		Not *Stunting*					
	N	%	n	%	N	%		
Incomplete	31	37.3	52	62.7	83	100	0.030	2,430
Complete	13	19.7	53	80.3	66	100		

Source: Primary data, 2023

From the statistical test results obtained p value = 0.030, because the p-value <0.05 where the degree of significance α = 0.05, then H0 is rejected. Statistically, it can be interpreted that there is a relationship between ANC examinations and stunting events in the first 1000 days of life.

Table 2. Correlation between Administration of Fe Tablets in Pregnant Women to Incidence of Stunting in the First 1000 Days of Life

Fe Tablets	*Stunting* events				Total		P- *value*	OR
	Stunting		Not *Stunting*					
	n	%	n	%	N	%		
Incomplete	28	33.3	56	66.7	84	100	0.329	1,531
Complete	16	24.6	49	75.4	65	100		

Source: Primary data, 2023

From the statistical test results obtained p value = 0.329, because the p-value> 0.05 where the degree of significance α = 0.05, then H0 is accepted. Statistically, it can be interpreted that there is no relationship between giving Fe tablets to pregnant women and the incidence of stunting in the first 1000 days at the Karamat Health Center, Buol District.

Table 3. The Relationship between Exclusive Breastfeeding and Stunting in the First 1,000 Days of Life

Exclusive breastfeeding	*Stunting* events				Total		P- *value*	OR
	Stunting		Not *Stunting*					
	n	%	n	%	N	%		
No	33	33.0	67	67.0	100	100	0.256	1,701
Yes	11	22.4	38	77.6	49	100		

Source: Primary data, 2023

The statistical test results obtained p value = 0.256 because the value of p> 0.05 where the degree of significance α = 0.05, then H0 is accepted. Statistically, it can be interpreted that there is no relationship between exclusive breastfeeding and the incidence of stunting in the first 1000 days.

Table 4. The Relationship of Giving MP-ASI to Stunting in the First 1000 Days of Life

MP ASI	*Stunting* events				Total		P- *value*	OR
	Stunting		Not *Stunting*					
	n	%	n	%	N	%		
Not good	39	34.8	73	65.2	112	100	0.024	3.42
Good	5	13.5	32	86.5	37	100		

Source: Primary data, 2023

The statistical test results obtained p value = 0.024 because the value of p <0.05 where the degree of significance α = 0.05, then H0 is rejected. Statistically, it can be interpreted that there is a relationship between the provision of MP ASI and the incidence of stunting in the first 1000 days of life

Table 5. The Relationship of Vitamin A to Stunting in the First 1000 Days of Life

Vitamin A	*Stunting* events				Total		P- *value*	OR
	Stunting		Not *Stunting*					
	n	%	n	%	N	%		
It is not following	25	61.0	16	39.0	41	100	0,000	7.32
In accordance	19	17.6	89	82.4	108	100		

Source: Primary data, 2023

The statistical test results obtained p value = 0.000 because the p-value <0.05 where the degree of significance α = 0.05, then H0 is rejected. Statistically, it can be interpreted that there is a relationship between the administration of vitamin A and the incidence of stunting in the first 1000 days of life.

Table 6. The Relationship between Growth Monitoring and Stunting in the First 1,000 Days of Life

Growth Monitoring	*Stunting* events				Total		P- *value*	OR
	Stunting		Not *Stunting*					
	n	%	n	%	N	%		
Not a routine	38	31.4	83	68.6	121	100	0.416	1,679
Routine	6	21.4	22	78.6	28	100		

Source: Primary data, 2023

From the statistical test results, it was obtained that p-value = 0.416 because the p-value> 0.05 where the degree of significance α = 0.05, then H0 is accepted. Statistically, there is no relationship between growth monitoring and the incidence of stunting in the first 1000 days at the Karamat Health Center, Buol District.

The results of the analysis using the chi-square test showed that of the six independent variables, 3 (three) variables were bivariate and significantly related to the incidence of stunting, namely ANC, provision of MP-ASI, and consumption of Vitamin A supplement programs (P value <0.05). The Odds Ratio (OR) values, respectively, are 2.43, 3.42, and 7.32. Variables that qualify for multivariate analysis are those with a p<0.05. Only three of the six independent variables meet the requirements to continue the multivariate test: ANC, MP-ASI, and Vitamin A.

Table 7. Analysis of the relationship between ANC examination, provision of MP-ASI and Vitamin A supplements to the incidence of stunting in the first 1000 days of life

	Variable	B	S.E	Wald	Df	Sig.	Exp (B)
Step 1	ANC	,432	,467	,856	1	,355	**1,540**
	MP-ASI	1,266	,570	4,943	1	.026	**3,548**
	vitamin A	1,767	,459	14,814	1	,000	**5,853**
	Constant	-2,738	,626	19,136	1	,000	**,065**
Step 2	MP-ASI	1,155	,557	4,295	1	,038	**3,175**
	vitamin A	1,958	,416	22,106	1	,000	**7,085**
	Constant	-2,460	,542	20,589	1	,000	**,085**

Source: Primary data

Table 7 shows that in the last stage, namely Step 2, the result was that the most dominant factor influencing the incidence of stunting was the administration of vitamin A with a p-value = 0.000 <0.05, the administration of vitamin A was the factor that had the most significant influence on the incidence of stunting, with the highest Wald statistical value, namely 22.106.

Based on the results of the multivariate analysis, the riskiest factor influencing stunting was vitamin A with a p-value = 0.000 <0.05, OR 7.085, and with the highest Wald statistical value, namely 22.106 (Jusuf et al., 2022). The number of Posyandu visits in the working area of the Karamat Health Center is still low, only around 40% - 50%; administration of high doses of Vitamin A is one of the government programs carried out twice a year every February and August. The low number of visits at Posyandu greatly affected the coverage of vitamin A administration.

These results align with Nabilla's research (2018), which stated that there was a significant relationship between the average intake of vitamin A and p = 0.006. Vitamin A has a role in visual function, cell epithelialization, growth and development, and reduced appetite (Almatsier, 2009). Provision of vitamin A is a government program in health centers, especially posyandu, which is given twice a year in February and August, together with measles immunization. Vitamin A is intended for children aged 6-59 months (Ministry of Health, 2016).

The main level of adequacy of vitamin A is through food intake, which can be obtained through fruits and vegetables full of vitamins. Usually, fruits and vegetables that are orange and red contain lots of vitamin A. You can also get them through side dishes such as fish, eggs, and shrimp. Vitamin A supplementation, regularly scheduled for February and then continued in August, is a preventive measure to prevent vitamin A deficiency and can reduce the incidence of measles and diarrhea. With a routine schedule for giving vitamin A to toddlers, it is hoped that children will become healthy and strong so that their immunity will increase, and growth and development will be optimal (PUSDATIN et al. of Health, 2016).

CONCLUSION

There are variables most at risk with stunting in the first 1000 days of life at the Karamat Health Center, Kab. Buol, i.e., Provision of vitamin A with a p-value = 0.000 <0.05, OR value of 7.085, and the highest Wald statistical value, namely 22.106

REFERENCES

I. Abbas F, Kumar R, Mahmood T, Somrongthong R. Impact of children born with low birth weight on stunting and wasting in Sindh province of Pakistan: a propensity score matching approach. Sci Rep [Internet]. 2021 Dec 7;11(1):19932

II. Anom Dwi Prakoso, Akhmad Azmiardi, Gabriela Advitri Febriani, Ayu Anulus. Case-Control Study: Growth Monitoring, Feeding and Its Relationship with Stunting in Orphanage Children in Semarang City. Journal of Health Sciences Bhakti Husada: Vol 12 no December 2, 2021.

III. Arfines, PP and FD Puspitasari. 2017. The Relationship between Stunting and Learning Achievement of Elementary School Children in Slum Areas, Central Jakarta Municipality. Health Research Bulletin.45 (1): 45-52.

IV. Arikunto, S. (2010). Research Procedures A Practice Approach. Jakarta: Rineka Cipta.

V. Aritonang, J., Nugraeny, L., Sumiatik, & Siregar, RN (2020). Increasing Health Understanding in Pregnant Women in the Prevention of COVID-19. SOLMA Journal, 9(2), 261–269.

VI. Aryastami NK, Shankar A, Kusumawardani N, Besral B, Jahari AB, Achadi E. Low birth weight was the most dominant predictor of stunting among children aged 12–23 months in Indonesia. BMC Nutr [Internet]. 2017 Dec 7;3(1):16.

VII. National Population and Family Planning Agency. 2018. Indonesian Health Demographic Survey (IDHS). Jakarta

VIII. Central Bureau of Statistics. 2011. Poverty Level Analysis and Calculation. Publications of the Central Bureau of Statistics

IX. Bella, FD, Fajar, NA and Misnaniarti, M. (2020). The relationship between parenting style and the incidence of stunting for toddlers from low-income families in Palembang City, JI, 8(1), p. 31. Available at: https://doi.org/10.14710/jgi.8.1.31-39.

X. Budiastutik, I. and Rahfiludin, MZ (2019) 'Risk Factors of Stunting in Children in Developing Countries', Amerta Nutrition, 3(3), pp. 122–129. doi: 10.2473/amnt.v3i3.2019.122-129.

XI. Chandra, (2020). "Pathophysiology of Stunting," JNH (Journal of Nutrition and Health), vol.8, no.2, pp.74–78, May. 2020.

XII. Danya Fatimah, Francisco Condro. "Relationship of Giving Vitamin A capsules and Knowledge of Caregivers and Stunting in Children aged 24-59 Months" Journal of Biomedical and Health. Vol. 3 No$ December 2020.

XIII. Damistri F, (2020). Analysis of Stunting Risk Factors in the First 1,000 Days of Life at the Seberang Padang Health Center, Padang City, 2019

XIV. Destiadi, A., TS Nindya and S. Sumarmi. 2016. Frequency of Posyandu Visits and History of Weight Gain as a Risk Factor for Stunting in Children Aged 3–5 Years. Media Nutrition Indonesia.10 (1): 71-75. [accessed May 3, 2019]

XV. Directorate of Community Nutrition. 2017. Nutrition Status Monitoring Book (PSG) 2017. Jakarta: Ministry of Health of the Republic of Indonesia.

XVI. Fatimah, NSH and B. Wirjatmadi. 2018. Adequacy Levels of Vitamin A, Zinc, Iron, and Frequency of

Infections among Stunting and Non-Stunting Children Under Five]. Media GiziIndonesia.13 (2):168-175 [accessed February 11, 2019]

XVII. Fikawati S, Syafiq A, Veratamala A. 2017. Child and Adolescent Nutrition. Depok : PT Raja Grafindo Persada, 2017

XVIII. Gibney, M.J., B.M. Margetts, J.M. Kearney, & L. Arab. (2010). Public Health Nutrition, translation Andry Hartono.

XIX. Hairunis, MN, N. Rohmawati and LY Ratnawati. 2016. Determinants of stunting in children under five in the working area of the Soromandi Health Center, Bima district of West Nusa Tenggara. Health Library.4 (2): 323-329.

XX. Harper A, Rothberg A, Chirwa E, Sambu W, Mall S. Household Food Insecurity and Demographic Factors, Low Birth Weight and Stunting in Early Childhood: Findings from a Longitudinal Study in South Africa. Matern Child Health J [Internet]. 2022 September 28

XXI. Hastuti M, (2018). The Relationship between Anemia in Pregnant Women and Stunting Incidents in Toddlers at UPTD Puskesmas Kampat in 2018.

XXII. Hidayati, L., H. Hadi and A. Kumara. 2010. Lack of energy and nutrients is a risk factor for stunted events in children aged 1-3 years who live in the urban slum area of Surakarta.

XXIII. International Food Policy Research Institute. 2014. Global Nutrition Report (Actions and Accountability to Accelerate the World's Progress on Nutrition). Washington DC: International Food Policy Research Institute

XXIV. Irwan. (2021a). Health research methods, Zahir Publishing Yogyakarta.

XXV. Istianah, I., Y. Hartriyanti and T. Siswani. 2015. Evaluation of Implementing the Complementary Food Program for Mother's Milk (MP-ASI) at the Kayumanis Village Health Center, East Jakarta. Journal of the Impuls University of Binawan.1 (2): 66-70.

XXVI. Jannah, N. (2012). Textbook of Midwifery-Pregnancy Care. Yogyakarta: ANDI OFFSITE.

XXVII. Ministry of Health. 2017. Regulation of the Minister of Health of the Republic of Indonesia Number 12 of 2017 concerning the Implementation of Immunizations. Jakarta.