

RELATIONSHIP OF BIOLOGICAL FACTORS WITH STUNTING IN WEST PASAMAN DISTRICT

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ABSTRACT

Stunting reflects the failure of child growth (growth faltering) in the long term. The impact of stunting that occurs before children are 2 years old can increase the risk of cognitive decline, that is, they tend to have lower IQs than normal children (Ministry of Village Disadvantaged, 2018). This study aims to determine the relationship between biological factors and the incidence of stunting. The research design used analytic observational design, namely cross sectional comparative. The research was conducted in the working area of Puskesmas Sukamenanti Pasaman Barat from July to June 2020. The total sample was 100 which were selected by consecutive sampling. which were divided into 2 groups, namely mothers who had editing children aged 6 - 23 months, while for control, mothers who had normal infants. then the data were analyzed by using the Chi-Square test. The results of the study were categorized as food intake, exclusive breastfeeding, age, gender, low birth weight. The conclusion of this study is a significant relationship between the level of energy intake and a history of low birth weight with the incidence of stunting in West Pasaman Regency.

Keywords : *Stunting, Biological Factors, food intake, exclusive breastfeeding, age, gender, low birth weight,*

INTRODUCTION

Stunting is a condition of failure to thrive in children under five years of age as a result of chronic malnutrition so that the child is too short for his age. Deficiencies occur from the time the baby is in the womb and at the beginning after the baby is born, however, stunting in new children appears when they are 2 years old (Secretariat of the Vice President of the Republic of Indonesia, 2017)

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According to UNICEF in 2013, nearly 200 million children in poor countries have stunted growth and development due to malnutrition. Stunting is a problem because it is associated with an increased risk of illness and death, suboptimal brain development, resulting in delayed motor development and mental growth retardation (Unicef, 2013).

Stunting results in a child's brain being underdeveloped. This means that 1 in 3 Indonesian children will lose better opportunities in terms of education and work for the rest

of their life. Stunting is not just a short physical size, but rather the concept that the process of stunting coincides with the process of inhibiting growth and development of other organs, including the brain (Oktarina, Z, 2013).

The bad effects of stunting in the short term can cause disruption of the brain, intelligence, physical growth disorders, and metabolic disorders in the body. Whereas in the long term the bad consequences that can be caused are decreased cognitive abilities and learning achievement, decreased immunity so that they get sick easily, a high risk of diabetes, obesity, heart and blood vessel disease, cancer, stroke and disability in old age, and quality of work. which is not competitive which results in low economic productivity (Kemenkes RI, 2016).

Two districts in West Sumatra, namely Pasaman and West Pasaman, have a fairly high prevalence of stunted children. The prevalence of children under five with short stature in Pasaman was 55.2% and 51.54% for West Pasaman. "This means, out of 100 toddlers born, there are 50 toddlers who grow with the risk of stunting. This condition affects children's development and cognitive development (Profile of West Sumatra Health Office, 2017).

Basic Health Research data, shows that 15,025 toddlers are at risk of stunting in Pasaman and 23,435 children under five in West Pasaman (Risksedas, 2018). This is supported by data on the target of the national maritime health program in 2018, there are 10 village stunting and the highest stunting rate is in the working area of the Sukamenanti Health Center, which is 25.1% with 399 baduta. (Data on Mass Weighing of West Pasaman Health Office, 2019). Many factors cause stunting in children under five. The direct cause is a lack of food intake and an infectious disease. Other factors are maternal knowledge, wrong parenting, poor sanitation and hygiene and low health services. (Unicef Indonesia, 2013).

This research is based on the phenomena obtained in Community Service conducted in 10 West Pasaman stunting loci villages regarding the Growth and Development Monitoring Room and with this research it is hoped that it can support and provide data to the West Pasaman Health Office and related agencies in preparing programs for handling stunting. The purpose of this study was to determine the causes of stunting which are categorized as biological factors

Biological factors are food intake, exclusive breastfeeding, age, gender, low birth weight.

METHODS RESEARCH

This research is an observational analytic study with a cross sectional comparative approach to see biological factors consisting of food intake, exclusive breastfeeding, age, gender, low birth weight and the incidence of stunting.

The population in this study were mothers who had stunting children aged 6-23 months, while for the control, mothers who had normal children under five were taken and a sample of 100 people was taken by consecutive sampling technique. Data were collected by means of a questionnaire conducted by home visit in the Sukamenanti Health Center working area and also made in the form of a google form. Data collection was carried out by interviewing while still applying the covid 19 health protocol (if possible), if not via WhatsApp video call or by zooming the meeting to find out the characteristics of the respondent and observation after the researcher measured the height using a height measuring device (Microtoise) with accuracy. 0.1 cm. . After all samples have been collected, data analysis is performed using statistical tests. Data analysis was performed by univariate and bivariate. Univariate analysis is presented in the form of frequencies and percentages for the Biological Factors variable consisting of food intake, exclusive breastfeeding, age, gender, low birth weight, while the variable incidence of stunting is presented in mean form. Bivariate analysis was conducted to see the relationship between food intake, exclusive breastfeeding, age, gender, low birth weight and the incidence of stunting using the chi-square test.

RESULT AND DISCUSSION

A. Univariate Analysis

Table 1. Characteristics of Research Subjects Based on food intake, exclusive breastfeeding, age, gender, low birth weight

Variable	f	%
Food intake		
Good	35	35
Bad	65	65
Exclusive breastfeeding		
Not Exclusive breastfeeding	45	45
Exclusive breastfeeding	55	55
Age of mother		
Kurang dari 20 tahun	24	24
21 - 35 tahun	56	56
Keatas 36 tahun	20	20
Gender		

Man	66	66
Women	34	34
Low birth weight		
BBLR (BBL < 2.500 gram)	38	38
Normal (BBL ≥ 2.500 gram)	62	62

Table 1. Shows that more than half of the respondents (65%) have a bad food intake, 55% have a history of Exclusive breastfeeding, 56% mother's age are 21-35 years old, with the sex of 66% is male and 62% born with normal weight

B. Bivariat Analysis

Table 2. Relationship food intake, exclusive breastfeeding, low birth weight with stunting.

Variable	Stunting		Normal		OR (95%CI)	p
	f	%	f	%		
Food intake energy						
Low	29	80,5	7	19,5	7,8 (2,5 – 29,7)	0,001
Enough	12	18,75	52	81,25		
Food intake protein						
Low	5		7		2,9 (0,9 – 7,5)	0,491
Enough	13		42			
Exclusive breastfeeding						
Not Exclusive breastfeeding	10	27	27	73	1,7 (0,7 – 4,8)	0,564
Exclusive breastfeeding	17	26,9	46	73,1		
Low birth weight						
BBLR (BBL < 2.500 gram)	10	58,83	7	41,17	12,5 (1,2 -13,8)	0,002
Normal (BBL ≥ 2.500 gram)	23	27,71	60	72,29		

Table 2 shows that there is a significant relationship between the level of energy intake and a history of low birth weight with the incidence of stunting in West Pasaman Regency.

CONCLUSION

The conclusion of this study is that there is a significant relationship between the level of energy intake and a history of low birth weight with the incidence of stunting in West Pasaman Regency.

REFERENCES

- Kementerian Desa, Pembangunan Daerah Tertinggal dan Transmigrasi.2018
- UNICEF. 2013. The State of the World's Children 2013. [online]. Tersedia: https://www.unicef.org/sowc2013/files/SWCR2013_ENG_Lo_res_24_Apr_2013.pdf
- Dinas Kesehatan Kota Padang.2017.Hasil Pemantauan Status Gizi.Padang : Dinkes Kota Padang
- Dinas Kesehatan Kabupaten Pasaman Barat 2019. Hasil Pemantauan Status GiziBalita : Dinkes Kabupaten Pasaman Barat
- Sophia, A., dan S. Madaniyah. 2014. Pola Asuh Makan Ibu serta Preferensi dan Konsumsi Sayur dan Buah Anak Usia Sekolah di Bogor. *Jurnal GiziPangan*, 9(3): 151158
- Kemenkes RI. 2016. Situasi Balita Pendek. Jakarta. PUSDATIN
- Sekretariat Wakil Presiden RI. 2017. 100 Kabupaten/ Kota Prioritas untuk Intervensi Anak Kerdil (Stunting). Jakarta. Tim Nasioanal Percepatan Penanggulangan Kemiskinan
- Oktarina, Z., dan T. Sudiarti. 2013. Faktor Risiko Stunting pada Balita (24-59 Bulan) di Sumatera. *Jurnal Gizi dan Pangan*, November 2013, 8(3): 175-180.
- Kemenkes RI. 2016. Situasi Balita Pendek. Jakarta. PUSDATIN
- Spears, D., A. Ghosh., dan O. Cumming. 2013. Open Defecation and Childhood Stunting in India: nn Ecological Analysis of New Data from 112 Districts. *Plos One*, september 2013, volume 8, issue 9
- Supariasa, I.D.N. 2012. Pendidikan dan Konsultasi Gizi. EGC. Jakarta
- WHO. 2014. Global Nutrition Targets 2025: Stunting Policy Brief. [online]. http://www.who.int/nutrition/publications/globaltargets2025_policybrief_stunting/en/. [4 Februari 2019
- Kemenkes RI. 2013. Riset Kesehatan Dasar. Jakarta. Balitbang.diakses tanggal 23 November 2014:<http://www.depkes.go.id/resources/download/general/Hasil%20Riskasdas%202013.pdf>
- Oktarina, Z., dan T. Sudiarti. 2013. Faktor Risiko Stunting pada Balita (24-59 Bulan) di Sumatera. *Jurnal Gizi dan Pangan*, November 2013, 8(3): 1