

Factors Associated with Stunting in Children Aged 0-24 Months : Studies in Sukaluyu, Karawang, Indonesia (Citarum Project)

Faktor-faktor yang Berhubungan dengan Stunting pada Anak Berusia 0-24 Bulan di Sukaluyu, Karawang, Indonesia (Proyek Citarum)

ABSTRACT

The period of early life (0-24 months) is a golden period of growth and development that determines the quality of health in the next age. Double malnutrition, including stunting, at the early life will inhibit the growth and development, also increase the risk of noncommunicable diseases (NCDs) in the next stages of life. Methods: This study was aimed to analyze prevalence and factors associated with stunting in children aged 0-24 months in Sukaluyu, Karawang, Indonesia (Citarum Project). A cross sectional study was conducted in 130 children aged 0-24 months during oktober-november 2018 in Sukaluyu Village, Karawang District, Indonesia (sector 17 of Citarum Harum project). The data were collected by questionnaires and anthropometric assessment. Pearson correlation was used to analyze the association between birth weight, early breastfeeding initiation, breast milk, and hygiene and healthy lifestyle. Results: The prevalence of stunting (length/height for age z-scores < -2.0) among children was 20% (male 58%, female 42%). Factor associated with stunting among children was breast milk ($p < 0.05$), meanwhile for birth weight, early breastfeeding initiation, and hygiene and healthy lifestyle are not associated. Conclusions: This study found that stunting can be prevented through exclusive breastfeeding (until 6 months) and continued for up to 2 years with giving complementary feeding.

Keywords— Children, Citarum, Stunting

ABSTRAK

Periode awal kehidupan (0-24 bulan) adalah periode emas pertumbuhan dan perkembangan yang menentukan kualitas kesehatan anak pada usia selanjutnya. Masalah gizi ganda, termasuk stunting, pada awal kehidupan akan menghambat pertumbuhan dan perkembangan, serta meningkatkan risiko penyakit tidak menular pada tahap kehidupan selanjutnya. Metode : Penelitian ini bertujuan menganalisis prevalensi dan faktor yang berhubungan dengan stunting pada anak berusia 0-24 bulan di Sukaluyu, Karawang, Indonesia (Proyek Citarum). Desain penelitian yang digunakan adalah cross sectional dengan jumlah responden sebanyak 130 anak berusia 0-24 bulan selama Oktober-November 2018 di Desa Sukaluyu, Kab. Karawang, Indonesia (Sektor 17 Citarum Harum). Data dikumpulkan melalui kuesioner dan pengukuran antropometri. Korelasi Pearson digunakan untuk menganalisis hubungan antara berat badan lahir, inisiasi menyusui dini (IMD), pemberian ASI, dan perilaku hidup bersih dan sehat (PHBS). Hasil : Prevalensi stunting (z -skor PB atau TB/U < 2.0) terdiri dari anak laki-laki 58% dan anak perempuan 42%. Faktor yang berhubungan dengan stunting adalah pemberian ASI ($p < 0.05$), sementara untuk faktor yang lain tidak berhubungan. Kesimpulan : Penelitian ini membuktikan bahwa stunting dapat dicegah melalui pemberian ASI eksklusif (sampai 6 bulan) dan dilanjutkan sampai 2 tahun dengan ditambahkan MP-ASI.

Kata kunci— Baduta, Citarum, Stunting

INTRODUCTION

The period of early life (aged 0-2 years) is a golden period of growth and development

that determines the quality of health in the next age. At this time, many factors play important

role in supporting physical growth and development of children in various aspects, one of which is nutrition. Multiple nutritional problems, including stunting, early in life will inhibit growth and development and increase the risk of chronic noncommunicable diseases (NCDs) in the later stages of life. Barker's theory states that nutrition has an important role in shaping life (Koletzko et al. 2011).

The results of the Indonesia's basic health research on 2018 showed that the prevalence of stunting in children under five was 30.8%, which declined compared to 2013 (37.2%) (Ministry of Health Indonesia 2018). Karawang Regency (downstream area of Citarum Harum) is one of the priority districts for the intervention of stunting because of its high prevalence, which is 34.87%. Some of the factors that cause stunting are: poor parenting practices, limited health services, lack of household access to nutritious food, lack of access to clean water and sanitation (National Team for Accelerating Poverty Reduction 2017). Stunting problem in Karawang Regency is estimated to be caused by poor sanitation conditions considering that Karawang is an industrial area with high pollution conditions and lack of clean water.

Through this research, it is expected that the prevalence and causes of stunting can be produced, so that it can help the Karawang Government reduce the incidence of stunting. This study aims to analyze the causes of stunting in Karawang Regency (Citarum Harum) with the specific objectives as follows: (1) analyze the prevalence of stunting in

children aged 0-24 months in Sukaluyu, Karawang, Indonesia; (2) analyze the factors associated to the incidence of stunting in children aged 0-24 months in Sukaluyu.

METHODS

Study Design and Respondents

The design of this study was cross sectional. Data collection was carried out by the enumerator team in October - november 2018. The research was conducted in Sukaluyu villages, Karawang Regency. The reason for choosing Sukaluyu Village is because it belongs to sector 17 in the implementation of the Thematic Practical Lecture "Citarum Harum" in accordance with the Ministry of research, technology, and higher education Number: 628/L3/KM/2018.

Respondents from Sukaluyu Village numbered 150 people, but after cleaning, there were 130 people who were used for the respondents.

Study Dimensions

The independent variables in this study were birth weight, early breastfeeding initiation (IMD), exclusive breastfeeding, and hygiene and healthy lifestyle. The dependent variable in this study is the nutritional status of the under-two children using length / age z-score.

Statistical Analysis

Descriptive statistic and correlation test were used for analyzing the data.

RESULTS AND DISCUSSIONS

The results of data collection from five areas in Sukaluyu Village, Karawang, Indonesia

showed that the nutritional status of a total of 130 respondents consisted of severely stunted as much as 9.2%, stunted as much as 10.8%, and normal as much as 80%. It can be concluded that the prevalence of stunting in Sukaluyu Village is 20% (26 childrens). This data is still lower than national stunting prevalence data, namely 30.8% in 2018 (Ministry of health 2018) and Karawang Regency, which is 34.87% in 2013 (National Team for the Acceleration of Poverty Reduction 2017). However, this case still needs to be a concern to develop policies in reducing the stunting prevalence through specific and sensitive interventions and preventing new stunting problems.

Table 1 shows that the average of childrens's birth weight 3101 grams with the highest birth weight is 4200 grams and the lowest birth weight is 1600 grams. The number of respondents with birth weight <2500 grams is 13 people (10%). This number is higher than the number of children under five with birth weight <2500 grams nationally, which is 6.2% (Ministry of Health Indonesia 2018). In fact, the Indonesia's target in health sector of 2019 for this prevalence is 8%. This needs to be an important concern considering birth weight is one of the factors causing stunting in children aged 0-23 months (Nadiyah et al. 2014).

Table 1. Children's birth weight

Data	Value
Average birth weight	3101 grams
Maximum birth weight	4200 grams
Minimum birth weight	1600 grams
Respondents with birth weight < 2500 gram	13 childrens (10%)

Respondents with birth weight \geq 2500 gram	117 childrens (90%)
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Table 2 shows that more than half of the respondents (60.7%) knew about early breastfeeding initiation with the highest source of information from cadres of integrated health service post (75%). However, the number of early breastfeeding initiation practices was higher than the number of respondents who had knowledge about it. The number of respondents implementing early breastfeeding initiation is 99 people (76.2%). It can be concluded that 1.2% of respondents implement IMD with referrals from doctor or midwife without knowledge of early breastfeeding initiation. This data is higher from the national data of early breastfeeding initiation in 2018, which is 58.2% (Ministry of Health Indonesia 2018).

Table 2. Children's early breastfeeding initiation

Data	N	%
<u>Mother's knowledge about early breastfeeding initiation</u>		
1. Yes	96 respondents	(73.8%)
2. No	34 respondents	(26.2%)
<u>Source of information about early breastfeeding initiation</u>		
1. Cadres of integrated health service post	72 respondents	(75%)
2. Internet/tv	7 respondents	(7.3%)
3. Family/neighbor	8 respondents	(8.3%)
4. Others (book/health cards)	9 respondents	(9.4%)
<u>Implementation of early breastfeeding initiation</u>		

1. Yes	99 respondents	(76.2%)
2. No	31 respondents	(23.8%)

Table 3 shows that 62.3% of respondents received breast milk on day 1 after birth and the second highest prevalence was after day 2 after birth (18.5%). This shows that there are new mothers giving birth who are working hard and motivated to produce breast milk for their children. Unfortunately, there are newborns who are given food/drinks with details: formula milk, honey, biscuits / bread / instant porridge, and mineral water. Meanwhile, 57.7% of children only get breast milk after birth. This data is higher than the national data, which is 37.3% (Ministry of Health Indonesia 2018). The proportion of children getting breast milk is still relatively high at 71.5% with the most age group receiving breast milk is children aged 0-6 months.

Tabel 3. Children’s breast milk

Data	N	%
<u>Day of breastfeeding</u>		
1. Day-1	81	62.3%
2. Day-2	24	18.5%
3. Day-3 and others	23	17.7%
4. No breastfeeding	2	1.5%
<u>Food/drinks after birth</u>		
1. Yes	55	42.3%
Formula milk	54	98.2 %
Honey	1	0.8%
Biscuits / bread / instant porridge	-	
Mineral water	-	
2. No (breast milk only)	75	57.7 %
<u>Breastfeeding</u>		
1. Yes	93	71.5%
0 – 6 months	62	66.7%

6 – 24 months	31	33.3%
2. No	37	28.5%

Table 4 shows that from ten indicators of hygiene and healthy lifestyle, the most widely applied indicator by households is that labor is assisted by health workers, while the least indicator applied by households is no smoking. Most of the respondent's households have implemented hygiene and healthy lifestyle related to environmental health. Nadiyah et al. 2014 states that poor environmental sanitation is one of the factors causing stunting in children aged 0-23 months in the provinces of Bali, West Java and East Nusa Tenggara.

Tabel 4. Respondent’s hygiene and healthy lifestyle

Indicators	N	%
1. Labor is assisted by health workers	129	99.2%
2. Exclusive breastfeeding	83	63.8%
3. Monitoring babies and toddlers’s growth regularly every month to the integrated health service post	114	87.7%
4. Use clean water	130	100%
5. Wash hands with soap	128	98.5%
6. Personal toilet at home	129	99.2%
7. Eradicate mosquito larvae once a week	103	79.2%
8. Consume fruit and vegetable every day	103	79.2%
9. Physical activity every day	91	70%

10.	No smoking	75	57.7%
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Pearson correlation was used to analyze the relationship between length/age z-scores, birth weight, early breastfeeding initiation, breastfeeding, and hygiene and healthy lifestyle. Test results show that stunting is associated with breastfeeding ($p < 0.05$). Meanwhile, there was no relationship between stunting and birth weight, early breastfeeding initiation, and hygiene and healthy lifestyle.

CONCLUSION AND SUGGESTION

Stunting can be prevented through exclusive breastfeeding (until 6 months) and continued for up to 2 years with giving complementary feeding.

Prevention and control of stunting can be done through specific and sensitive programs through collaborative efforts between the government, private sector and academics.

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