

Stunting Incidence in Tegalrejo Yogyakarta

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Abstract—Stunting is a major public health problem in low- and middle-income countries because of its association with an increased risk of morbidity and death during childhood. The impact of stunting is reducing children's intelligence so that it will affect the quality of life of children in the next life. The purpose of this study is to analyze the characteristics of stunted children under five in the Tegalrejo Public Health Center in Yogyakarta. It is descriptive, explanatory research. The population of this study is all stunted children under five years old aged 24-59 months, with a total sampling method. The instruments used infatometer, height gauge, and z score table. The results showed that the number of stunting children was 55 children with 25 (45.5%) z-scores <-3SD and 30 (54.5%) children with z-scores <-2SD. The findings also revealed that the sex who experienced the most stunting was boys (67.3%), the age of the most stunted children was 24-36 months, 87.4% of respondents were given exclusive breastfeeding, 89% of the stunted children had a regular eating pattern, 60% of the respondents came from families that their income was > minimum wage of Yogyakarta City, 60% of respondents were educated mothers graduated from high school, 60% of respondents were housewives, and 60% of respondents were the first child

Keywords— *Stunting, toddlers, malnutrition, short height*

I. INTRODUCTION

One of the nutritional problem that often occurs in Indonesia is Stunting. Stunting is a chronic malnutrition problem caused by a lack of nutrition in a long time due to food that does not meet per nutritional needs. Stunting occurs when the fetus is still in the womb and only appears when the child is two years old. Malnutrition at an early age increases infant and child mortality, causes sufferers to get sick easily, and has a posture that is not optimal when they are adults [1]. Based on the Basic Health Research in 2018, the national stunting prevalence reached 30,8% [2]. This shows that around 8 million Indonesian children experience suboptimal growth. The prevalence of stunting in Indonesia is higher than in other countries in Southeast Asia, such as Myanmar (35%), Vietnam (23%), and Thailand (16%). Indonesia is in the fifth rank in the world for the number of children with stunting. More than a third of children under the age of five in Indonesia are below average height.

Yogyakarta City is one of the regency-level regions in the Special Region of Yogyakarta, which has the narrowest area with densely populated areas. The prevalence of stunting in Yogyakarta City is 12.82%, while the prevalence in DIY in 2018 is 13.86%. Yogyakarta stunting prevalence occupies the third number after Gunungkidul and Kulon Progo [4]. Yogyakarta City has several sub-districts, one of which is Tegalrejo sub-district. The height monitoring activities in the working area of the Tegalrejo Primary Health Care have been carried out regularly by the growth monitoring at the posyandu, but in the implementation of height measurements / lengths of the child's body is still not done properly and does not interpret the measurement results. This result is in an unidentified case of stunting. According to a research there were four factors related to the occurrence of stunting, namely birth weight, gender, a region of residence, and economic status [5].

The determinant risk factors of stunting are income, many household members, father's height, maternal height, and exclusive breastfeeding [6]. The results of the study showed that the determinant factors causing stunting were family income, maternal nutritional knowledge, maternal parenting, history of infectious disease, history of immunization, protein intake, and maternal education [7]. Students who are stunting have less learning achievement, while non-stunting students have better learning achievement. It is in light of this that the researchers sought to assess the characteristics of stunting toddlers in the Tegalrejo Public Health Center in Yogyakarta

II. METHOD

This research is descriptive research with cross-sectional time approach. The variables in this study include gender, age of the child, mother's occupation, mother's education, socioeconomic status, weight at birth, diet, and exclusive breastfeeding. The population in the study were all children under five who experienced stunting. Respondents in this study were stunting children aged 24-59 months, living in the District of Tegalrejo. The sampling technique used was purposive sampling, with the number of samples used by 55 respondents. The data collection tool used is in the form of questionnaires.

III. RESULT AND DISCUSSION
TABLE I. RESEARCH RESULTS

Variable	<-3SD	Percentage	<-2SD	Percentage	Total	Percentage
Gender						
Male	18	32.7%	19	34.5%	37	67.3%
Female	7	12.8%	11	20%	18	32,7%
Amount	25	45.5%	30	54.5%	55	100%
Toddler Ages						
24- <36 month	9	16.4%	12	21.8%	21	38,2%
≥36- <48 month	8	14.5%	12	21.8%	20	36,3%
≥48- 59 month	8	14.5%	6	10.9%	14	25,5%
Amount	25	45.5%	30	54.5%	55	100%
Birth Weight						
< 2500 gram	3	5.45%	4	7.3%	7	12,7%
2500- 4000 gram	22	40%	26	47.3%	48	87,3%
Amount	25	45.45%	30	54.5%	55	100%
Exclusive Breastfeeding						
Yes	12	21.8%	20	36.4%	32	58,2%
No	13	23.6%	10	18.2%	23	42,8%
Amount	25	45.45%	30	54.55%	55	100%
Social Economy						
High	13	23.6%	9	16.36%	22	40%
Low	12	21.8%	11	20%	33	60%
Amount	25	45.45%	20	36.36%	55	100%
Education Level of Mother						
Basic School	7	12.73%	4	7.27%	11	20%
Middle School	13	23.64%	20	36.36%	33	60%
HighSchool	5	9.09%	6	10.91%	11	20%
Amount	25	45.45%	30	54.55%	55	100%
Mother Occupation						
Working	15	27.27%	7	12.73%	22	40%
Jobless	11	20%	18	32.73%	33	60%
Amount	26	47.27%	25	45.45%	55	
Children Amount						
1	9	16.36%	13	23.64%	22	40%
≥2	16	30%	17	30%	32	60%
Amount	25	45.45%	29	52.73%	54	100%

Based on Table 1, the number of boys under five who experienced stunting was 37 children with 18 (32.7%) with a value of <-3SD and 19 (34.5%) with <-2SD. While the

number of stunting girls was 18 children with 7 (12.8%) -3SD and 11 (20%) with values <-2SD. Boys and girls had the same chance of stunting with OR = 1.03 CI 95% between 1.18-1.75

[8]. The other research state that male sex is at 4 times higher risk of being stunted than girls [9]. But it is in contrast with the other of the last research stated that girls had a smaller chance of experiencing stunting (AOR = 0.72, 95% CI: 0.58 - 0.90; p = 0.005) [10].

Based on Table 1, the most stunting children aged 24-36 months were 21 children with the highest proportion of <-2SD (12 children). Stunting children aged \geq 36 months-48 months numbered 20, and children aged \geq children. Children aged 2-3 years have a risk of experiencing stunting of 1.64 times more significant 95% CI (1.22-2.21) [11]. The results of the study mentioned that the risk of stunting increases when the child is > 24 months. This is because at the age of > 2 years the child has begun to be weaned / does not get adequate breast milk intake. Moreover the children are more exposed to contaminated food so that the feeding is not in accordance with the children's need can cause children to experience malnutrition [9].

Based on table 1, most of the birth weight of respondents born with 2500-4000gram body weight were 48 children with a percentage of 47.3% of children with a value of <-2SD and 40% of children with <-3SD. This study means that low birth weight is not contributing a length of body. Its similar with the last research that there was no relationship between LBW status and the incidence of stunting in children under five in both rural and urban areas [12]. But the other studies stated that children born with low birth weight have is associated with the incidence of stunting [13] [9] and had a risk of stunting 1.8 times with 95% CI (1.17-2.4) [11].

Based on table 1, respondents who were given exclusive breastfeeding were 32 (48.2%), while the remaining 33 respondents (51.8%) were not given exclusive breastfeeding. According to last research the risk of stunting can be reduced if children get exclusive breastfeeding and MP-ASI according to their needs [12]. Babies who are given exclusive breastfeeding have a stronger immune system than babies who are not given exclusive breastfeeding. Infants aged > 6 months given MPASI according to their needs also reduce the risk of stunting. The last research states that from a total of 1366 respondents aged 0-23 months, 54.1% were given exclusive breastfeeding and were stunted, this can be concluded that there was no relationship between exclusive breastfeeding and the incidence of stunting [14].

Based on table 1, the majority of respondents or 49 (89%) people have a regular eating pattern in which they eat approximately 2-3 times/day, as well as getting used to breakfast, while 11% (6 respondents) do not have a regular eating pattern. Knowledge of parents, especially mothers in child feeding, is very important because it will affect the practice of feeding. Poor feeding practices such as irregular eating patterns, poor nutrition, inadequate feeding during illness, inadequate amounts of food and poor nutritional content are risk factors for stunting [15]. Food diversity also affects the types of nutrients absorbed by the body. Food diversity affects the kinds of nutrients absorbed by the body, the more the kinds of food consumed by children will further reduce the risk of malnutrition, one of which is stunting. Feeding that is not age-appropriate will increase the risk of stunting [16]. Children who are fed according to their needs have a chance of 24.2% experiencing stunting, while children

who are not given food according to their needs are at risk 31.3% have stunting [14]. Besides, giving mineral micronutrients can increase the frequency of eating per day and improve the nutritional status of children (Candra, 2017).

Based on table 1, 33 (60%) respondents came from families with monthly income <UMK Yogyakarta. It is supported by the last research which states that families with low-income increase the risk of stunting by 1, 35 times greater OR = 1.35, 95% CI 1.12-1.66 [8]. But this study reveals from the other study that there is a significant relationship between family income and the incidence of stunting in children under five in both rural and urban areas [12]. Low family income will affect the ability of families to meet the nutritional needs of children, thereby increasing the risk of stunting. Other research conducted in India and Guatemala states that the lower the socioeconomic level of the family, the higher the risk of stunting with p-value = <0,0001 OR 3.36 (India) and p-value: = <0,0001 OR 8.35 (Guatemala) [17]. But the other study states that the level of the socioeconomic family does not affect the incidence of stunting [18].

Majority of mothers' education is in the Middle School (Senior High School) with 33 respondents (60%), 11 mothers with primary education (20%), and 11 mothers graduated from tertiary education (20%). The mother's education level affects their parenting in children. Uneducated mothers increase the risk of stunting by 1.3 times (OR) = 1.27, 95% confidence interval (CI) 1.11-1.61 (Syed et al., 2003). Research (Manggala et al., 2018) reports that low maternal education increases the risk of stunting by 2.53 times (CI = 2.12-5.52) p-value = 0.013. The mother's education level has a significant effect on the incidence of stunting [12]. But it is not similar with the other study which states that mothers who received less than nine years of education / did not complete primary education increase the risk of stunting by 2.6 times more (RR = 2.60, 95% IK = 1, 23-5.46; p = 0.02)[19].

The majority of mothers who do not work/are housewives are 33 (60 %), and as many as 22 mothers (40%) work outside the house. In Jakarta, the mother's work does not influence the incidence of stunting [19]. Mothers who work outside the house or who do not work do not affect the incidence of stunting [9]. Another study states that the mother's work affects the occurrence of cases of malnutrition in children, children having mothers who are still studying / school are at greater risk of stunting after the age of 3 years, while children having working mothers are at higher risk of overweight, this is because the child gets more food intake because families have better financial abilities [20].

The majority of respondents are not the first child / do not have siblings 32 (58.2%) children are the second child / or third child. While 22 (41.8%) are the first children. The sequence of childbirths does not affect the incidence of stunting; both the first, second, and third and fourth children do not affect the risk of stunting [19] [18]. But there is a research that the incidence of stunting is statistically related to the presence of 2 toddlers in one house [9]. The greater the number of children, the higher the risk of stunting. This is due to the less intake and diversity of food received by children for families with low socioeconomic[20].

IV. CONCLUSION

The findings of this research were the characteristics of stunting toddlers (the standard deviations of stunting toddlers was <-3SD), stunting is more common in male toddlers, under three years of age, having normal birth weight, history of being given exclusive breastfeeding, regular eating patterns, and toddlers not single children., come from families with an income above MSE, middle-educated mothers and mothers not working.

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