



ANALYSIS OF MATERNAL AND FAMILY FACTORS ON THE INCIDENCE OF STUNTING

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ABSTRACT

Indonesia is the 5th most stunting in the world. Stunting has long-term impacts both individually and socially, including reduced cognitive & physical development, lower productivity, and increased risk of degenerative diseases such as diabetes. Situbondo is also the district with the third rank of stunting cases in East Java. As of February 2019, Banyuputih Community Health Center has the highest stunting rate of children under five in Situbondo Regency, which is 42.7%, with details of 25.21 very short children and 17.49% short. The purpose of this study was to analyze maternal and family factors on the incidence of stunting in children under five in the Banyuputih Health Center, Situbondo Regency. This research was a quantitative study with a cross-sectional design. The sample in the study was 274 children under five in the Banyuputih Health Center working area with inclusion and exclusion criteria. The sampling technique used was proportional random sampling. This research instrument used an observation sheet in collecting the independent and dependent variables. The dependent variable of this study was stunting. While the independent variables consist of maternal and family factors (maternal nutritional status (history of maternal anemia, history of maternal LILA), maternal height, family income, mother's education, number of family members). Data analysis was performed using univariate and bivariate tests. The results showed that anemia (Pvalue 0,000), LILA (Pvalue 0,000), maternal height (Pvalue 0,000) and family income (Pvalue 0,000) were proven to be related to the incidence of stunting in children under five in the Banyuputih Community Health Center. Meanwhile, the variable of mother's education (Pvalue 0.510) and number of family members (Pvalue 0.238) was the opposite.

Keywords: *Maternal and Family Factors, Stunting, Toddlers*

INTRODUCTION

Stunting is a chronic nutritional problem in children, namely a short and very short body condition that exceeds the -2SD deficit which results in failure to reach a normal height according to the child's age (Proverawati & Wati, 2011).

On the Global Nutrition Targets 2025, stunting is an incident that occurs globally, it is estimated that around 171 million to 314 million children under five years of age are stunted and 90% of them are in countries in Africa and Asia. The Global Nutrition Report

shows Indonesia is included in 17 countries out of 117 countries, which have three nutritional problems, namely stunting, wasting and overweight in children under five (WHO, 2014).

The impact of toddlers who experience stunting is not only having suboptimal growth, but also having difficulty achieving optimal physical and cognitive development, having a low level of intelligence, being more susceptible to disease (as adults they are at risk of faster metabolic disorders such as diabetes, hypertension), and decreased productivity. In



the end, stunting will broadly inhibit economic growth, increase poverty and widen inequality (TNP2K, 2017).

Many factors cause stunting, including maternal and family factors. Maternal nutrition has a profound effect on all aspects of reproduction. Maternal health before conception affects his ability to conceive, maintain fetal health, and maintain his own health, including the mother's height. The results of Riskesdas (2013) show that the incidence of stunting is influenced by the low income and education of parents. High economic status and family education will make it easier to get access to education and health so that the nutritional status of children will be better (Bishwakarma, 2011). Research in Semarang showed that the number of family members was a risk factor for stunting in children under five (Nasikhah & Margawati, 2012).

Based on Riskesdas (2018), the incidence of stunting in Indonesia is still high even though it has decreased in 2018 with a prevalence of 30.8% compared to 2013 (37.2%) and 2010 (35.6%). Where the prevalence of stunting was 30.8% in 2018, consisting of 11.5% very short and 19.3% short. With this number, Indonesia is in the 5th rank of stunting in the world (this condition is only better than India, China, Nigeria, and Pakistan). Meanwhile, East Java is a province that has a high prevalence, namely 26.7%. (Directorate of Community Nutrition, Ministry of Health RI, 2017).

Situbondo District has a high and increasing prevalence of stunting. Situbondo is also the district with the third rank of stunting cases in East Java. Based on Monitoring Data on Nutritional Status of East Java Province in 2016, Situbondo Regency has a prevalence of children under five with stunting of 23.0%, in 2017 it was 30.5% and as of February 2018, of 44,386 children under five, 30.3% were recorded as having stunting.

Based on the results of interviews with the data and information section of the Situbondo District Health Office, it was stated

that so far there was no special recording of stunting (TB / U) under five. Until 2018, only sufficient data on the Nutrition Status Monitoring Survey which is conducted by the Province every year. And only in 2019, the number of TB / U is recorded for stunting detection, even then only in the weighing month (February and August). So that there has been no specific analysis per Puskesmas / Subdistrict regarding the stunting case in Situbondo until 2019.

Based on the report for the weighing month of February 2019, Banyuputih Health Center is the Puskesmas that has the highest stunting rate of children under five in Situbondo Regency, which is 42.7%, with details of 25.21 very short children and 17.49% short (Banyuputih Puskesmas, 2019). Therefore, it is necessary to conduct research on the analysis of risk factors for stunting in children under five in the Banyuputih Health Center, Situbondo Regency.

The purpose of this study was to determine maternal and family risk factors for the occurrence of stunting in toddlers so that the risk factors for stunting in the Banyuputih Health Center work area can be addressed appropriately.

MATERIAL AND METHODS

This research was a quantitative study with a cross-sectional design. The research location was conducted in the Banyuputih Health Center, Situbondo Regency. The research was conducted for 10 months in 2020. The population in this study were all toddlers who were measured TB / U in the Banyuputih Health Center Work Area. The sample in the study was 274 Toddlers in the Banyuputih Public Health Center with inclusion and exclusion criteria. The sample was calculated using a formula (Lemeshow, 1997) :

$$n = \frac{Z^2_{1-\frac{\alpha}{2}} P(1-P)N}{d^2(N-1) + Z^2_{1-\frac{\alpha}{2}} P(1-P)}$$

Inclusion Criteria,

1. Toddlers aged 0-59 months



2. Toddlers are included in the data where TB / U measurements are taken in the last weighing month

3. Toddlers have complete supporting data

Exclusion Criteria,

1. Incomplete supporting data

The sampling technique used was proportional random sampling. With the following proportions:

1. Banyuputih Village = $(113/949) \times 100 = 12\% \times 274 = 33$ Ballita

2. Sumberejo village = $(310/949) \times 100 = 33\% \times 274 = 90$ toddlers

3. Sumberanyar Village = $(328/949) \times 100 = 34\% \times 274 = 93$ toddlers

4. Sumberwaru Village = $(199/949) \times 100 = 21\% \times 274 = 58$ toddlers

The instruments used in this study were observation sheets, supporting documents in the form of a cohort of children under five, the MCH Handbook, MCH and Nutrition reports. In this study, univariate and bivariate analyzes were carried out. Univariate analysis was performed on each variable from the research results by describing each variable by making a frequency distribution table. Bivariate analysis was carried out to see the relationship between each independent and dependent variable using the chi square test.

RESULTS

The research results are as follows:

1. Univariate Analysis

Table 1.

General description of stunting in the Banyuputih Community Health Center

No.	Inf	N	%
1	Normal	203	74
2	Stunting	71	26
Total		274	100

Based on Table 1, it showed that some of the toddlers with stunting in the

Banyuputih Health Center work area were 71 toddlers or 26%.

Table 2.

Overview of Maternal and Family Factors in the Banyuputih Health Center Work Area

No.	Inf	N	%
Anemia (Mother's Nutritional Status)			
1	No	205	75
2	Yes	69	25
Total		274	100
LILA (Mother's Nutritional Status)			
1	Normal	245	89
2	Less	29	11
Total		274	100
Mother's Height			
1	≥ 150 cm	208	76
2	< 150 cm	66	24
Total		274	100
Family Income			



No.	Inf	N	%
1	≥Average Minimum Wage	221	81
2	< Average Minimum Wage	53	19
Total		274	100
Mother's Education			
1	Completed PT	8	3
2	Graduated from high school	13	5
3	Graduated from junior high school	118	43
4	Graduated from elementary school	135	49
5	Did not finish elementary school / no school	0	0
Total		274	100
Number of Family Members			
1	2-4 Members	151	55
2	5-7 Members	112	41
3	>7 Members	11	4
Total		274	100

Based on Table 2, it showed that 25% anemia during pregnancy, 11% less of the upper arm circumference (LILA), 24% of short mother's height (<150cm), 19% less family income than the minimum

wage, the mother's education is mostly 49% graduated from elementary school, and the number of family members is mostly 2-4 people.

2. Bivariate Analysis

Table 3.

Maternal and Family Risk Factors (Maternal Nutritional Status (Anemia and LILA), Maternal Height, Family Income, Mother's Education, Number of Family Members) with Incidence of Stunting in the Banyuputih Health Center Work Area

No	Keterangan	Status PB/U				Total N	Pvalue
		Normal N	Stunting %	Stunting N	Stunting %		
Anemia							
1	No	177	86	28	14	205	0,000
2	Yes	26	38	43	62	69	
Total		203	74	71	26	274	100
LILA							
1	Normal	196	80	49	20	245	0,000
2	Les	7	24	22	76	29	
Total		203	74	71	26	274	100
Mother's Heigh							
1	≥150cm	169	81	39	19	208	0,000
2	<150cm	34	52	32	48	66	



Total		203	74	71	26	274	100	
Family Income								
1	≥ Aaverage Minimum Wage	202	91	19	9	221	100	0,000
2	< Aaverage Minimum Wage	1	2	52	98	53	100	
Total		203	74	71	26	274	100	
Mother's Education								
1	Completed PT	6	75	2	25	8	100	0,510
2	Graduated from high school	10	77	3	23	13	100	
3	Graduated from junior high school	82	70	36	31	118	100	
4	Graduated from elementary school	105	78	30	22	135	100	
5	Did not finish elementary school / no school	0	0	0	0	0	100	
Total		203	74	71	26	274	100	
Number of Family Members								
1	2-4 Members	116	77	35	23	151	100	0,238
2	5-7 Members	81	72	31	28	112	100	
3	>7 Members	6	55	5	45	11	100	
Total		203	74	71	26	274	100	

Based on Table 3, it showed that the statistical test results for anemia, LILA, maternal height, family income obtained a value of Pvalue = 0.000 ($P \leq 0.05$), with a degree of significance α (5%), it can be concluded that the alternative hypothesis (H_a) is accepted. or the null hypothesis (H_o) is rejected, which indicates a relationship among anemia, LILA, maternal height, family income and the incidence of stunting. On the other hand, maternal education (Pvalue 0.510) and number of family members (Pvalue 0.238) had no relationship with the incidence of stunting.

Maternal nutrition (Anemia, LILA) has a major effect on all aspects of reproduction. The health of the mother

before conception affects her ability to fertilize, maintain the health of the fetus, and maintain one's own health. The results of this study are consistent with Lestari et al (2014), Nadiyah et al (2014), Oktariana and Sudiarti (2014) that there is a relationship between nutritional status, namely anemia and maternal LILA with the incidence of stunting.

The results of this study are also in line with Wahdah et al. (2015), Lestari et al (2014), Nadiyah et al (2014), Oktariana and Sudiarti (2014) that there is a relationship between maternal height and the incidence of stunting. Mothers who are less than 150cm tall are more likely to have stunted chicks than mothers who are rhino taller than 150cm.



Likewise, this research is in accordance as according to Ni'mah and Nadhiroh (2015) and Aprilluana and Fikawati (2018) showing that there is a relationship between low family income and the incidence of stunting because family income will make it easier for toddlers to fulfill their nutrition and easily get access to health services so that it suppresses the risk of stunting (Bishwakarma, 2011).

This study also did not show a relationship between maternal education and the number of family members with the incidence of stunting, in line with the research of Wahdah et al. (2015).

CONCLUSION

The conclusion of this study shows that there is a relationship between anemia (Pvalue 0,000), LILA (Pvalue 0,000), maternal height (Pvalue 0,000), family income (Pvalue 0,000) with the incidence of stunting. On the other hand, there was no relationship between maternal education (Pvalue 0.510), number of family members (Pvalue 0.238) with the incidence of stunting.

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