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FACTORS ASSOCIATED WITH STUNTING INCIDENT IN SUKOHARJO

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ABSTRACT

Background: Indonesia faces nutritional problems that have an impact on the quality of human resources. One of the nutritional problems is the incidence of stunting experienced by more than half of stunting toddlers in the world who come from ASIA (55%). The highest number of stunting cases is based on e-PPGBM data for 2020-2021 in Sukoharjo Regency in Gatak District. In Gatak District, from 2020 to 2021, there has been an increase in stunting cases in toddlers. In 2020 in Gatak District, the number of stunted toddlers was 414 toddlers while in 2021 the number of stunted toddlers increased to 463 toddlers.
Method: This research is a quantitative research with a cross-sectional approach. The dependent variables in this study are the incidence of stunting in toddlers, while the independent variables in the study are maternal knowledge about nutrition, exclusive breastfeeding status, parental income, low birth weight history and child care. The research sample was taken with a sampling quota with a total sample of 96 respondents who were toddlers in Gatak District, Sukoharjo Regency in 2021. The analysis used by researchers to determine the relationship of each variable using chi square analysis.
Result: There is a significant relationship between maternal knowledge, exclusive breastfeeding status, LBW history and parenting with stunting events (p-value < 0.05), While parental income does not exhibit any significant correlation with occurrences of stunting events (p-value > 0.05).
Conclusion: There is a significant relationship between maternal knowledge, exclusive breastfeeding status, low birth weight history and parenting with stunting.

Keywords: *Nutritional Knowledge, Exclusive Breastfeeding, Income, Low birth weight , Parenting*

INTRODUCTION

In Indonesia, stunting is a nutritional problem that has an impact on the quality of human resources (HR)[1]. One of the most important factors in developing the quality of human resources with the adequacy of nutrition and food as an indicator of the success of a nation's development. Nutrition is very influential on the intelligence and work productivity of human resources[2]. Short-term risks due to stunting include increased morbidity and mortality, developmental disorders, increased burden of care and treatment. The long-term risk of stunting can result in impaired reproductive health, learning concentration, and decreased work activity[3].

Stunting is a condition of growth and development disorders in children under five years old (infants under five years old) due to malnutrition, recurrent infections so that children are short for their age[4]. The method of stunting assessment can be seen from the nutritional status based on the PB / U or TB / U index in the anthropometric standards for assessing children's nutritional status, the measurement results are at the threshold (z-score) <-2 SD to -3 SD (short / stunted) Stunting is a chronic nutritional problem caused by insufficient nutritional intake for a long time due to feeding that is not in accordance with nutritional needs [5].

Based on data on the prevalence of stunting toddlers in the world collected by WHO, in 2020 as many as 22% or around 149.2 million toddlers were stunted[6]. Based on this, Indonesia was once ranked 2nd as the highest prevalence of stunting for toddlers in Southeast Asia in 2020[7]. In Indonesia, related to the prevalence of nutritional status of stunting toddlers in 2021, namely 24.4% or around 5.33 million toddlers are stunted [8]. Based on data on the prevalence of stunting of toddlers according to 34 provinces in Indonesia as seen from the Results of the Indonesian Nutritional Status Study (SSGI) in 2021, the province with the first rank of the highest stunting prevalence cases was in East Nusa Tenggara (37.8%), then Central Java was ranked 28th (20.9%), while the lowest prevalence was obtained by Bali with 10.9% [8].

In 2021, the Central Java Provincial Health Office stated that the prevalence of stunting in Sukoharjo Regency reached 7.11% or around 3296 stunting toddlers spread across 12 districts. Based on the results of a preliminary survey on April 6, 2022 to the Sukoharjo Health Office, results were obtained related to stunting data for toddlers in Sukoharjo Regency in 2020-2021, the highest number of stunting cases was found in Gatak District. In Gatak District, from 2020 to 2021, there has been an increase in stunting cases in toddlers about 11,8%. The number of toddlers in Gatak District in 2021 was 3,083 toddlers [9].

The high number of stunting cases in toddlers is caused by various factors, namely direct and indirect factors. Direct causes are causes that have a direct impact on stunting conditions such as feeding, and infectious diseases or children's health status [10]. Indirect causes of stunting are parenting, low birth weight infants, exclusive breastfeeding status, health services, sanitation and water availability, education, economic status [11]. This is supported by research from Pratama et al (2019), that low socioeconomic problems, food insecurity, nutritional status of mothers when pregnant, low birth weight infants, childcare, nutritional status, sanitation and water availability have a relationship with the incidence of stunting[10]. According to the results of research from Qodrina HA (2021) that the direct causes of stunting include child and maternal anthropometry, age, gender, diversity of intake, vaccination and diseases experienced by children. Then the indirect causes of stunting such as maternal height, lack of maternal knowledge, separated parents, number of family members, health insurance, socioeconomic status, parental education, water sources

and sanitation facilities[12]. Seeing the dangers posed by stunting, the Government of Indonesia is committed to addressing and reducing the prevalence of stunting [13].

The government has tried to prevent and overcome the problem of stunting in toddlers through various nutritional programs, both specific and sensitive, such as giving blood-added tablets to pregnant women, promoting exclusive breastfeeding, providing macro and micronutrient supplements to providing non-cash food assistance. However, the results have not been able to overcome the problem of stunting [14]. Efforts are needed to reduce the prevalence of stunting as a capital towards Indonesia's golden generation 2045. The target of reducing stunting prevalence in Indonesia is aligned with the global target, namely the World Health Assembly (WHA) target with a target of 40% by 2025 from 2013 conditions. In addition, the target goal of the SDGs is to eliminate all forms of malnutrition by 2030. For this reason, efforts are needed to accelerate the reduction of stunting from current conditions so that the prevalence of stunting for toddlers drops to 19.4% by 2024 [15]. Therefore, the research team of the Univet Bantara Public Health S1 Study Program is interested in conducting research related to the determinants of stunting in toddlers in Gatak District, Sukoharjo Regency.

METHODS

This research is a quantitative research with a cross-sectional approach. The dependent variables in this study are stunting in toddlers, while the independent variables in the study are maternal knowledge about nutrition, exclusive breastfeeding status, parental income, LBW history and child care. The research sample was taken with a sampling quota with a total sample of 96 respondents who were toddlers in Gatak District, Sukoharjo Regency in 2021. The analysis used by researchers to determine the relationship of each variable using chi square analysis.

RESULT

Respondents Characteristics

In this study, the characteristics of respondents were: age, education, father's occupation, mother's occupation, and income.

Table 1. Respondents's Characteristics

Variables	n	%
Age		
20-35	71	74
>35	25	26
Education		
Low	44	45,8
High	52	54,2
Fathers' work		
Work	95	99,0
Doesn't work	1	1,0
Mothers' work		
Work	36	37,5
Doesn't work	70	62,5

Based on table 1, the majority of respondents aged between 20-35 years were 74%. The respondents' education level is included in the high category of 54.2%. Almost all heads of households have worked as much as 99.0%, while non working mothers are only 62.5%.

Table 2. Distribution of Respondents

Stunting	(n)	(%)
Stunting	49	51,0
Not stunting	47	49,0
Total	96	100,0

Based on Table 2, the distribution of stunting events in respondents was 51.0%, and those who were not stunted were 49.0%.

Caracteristics of The Respondents

Table 3 Caracteristics of The Respondents

Factors	n	%
Breastfeeding		
Not Exclusive	56	58,3
Exclusive	40	41,7
Nutritional knowledge		
Less	47	49,0
Good	49	51,0
Condition		
LBW	45	46,9
Not LBW	51	53,1
Parenting		
Less	50	52,1
Good	46	47,9

Based on table 3, most toddlers did not get exclusive breastfeeding as much as 58.3%. Meanwhile, those who have received exclusive breastfeeding are 41.7%. Most of mother's nutrition knowledge levels are good at 51.0%. Toddlers conditions are mostly not LBW as much as 53.1%. Most maternal parenting styles are still in the less category of 52.1%

Bivariat Analysis

The results of data analysis with the chi square test, it was found that the variable maternal knowledge about nutrition showed a significancy value of 0.000. Based on this value because the value of $p<0.05$ can be concluded that there is a relationship between maternal knowledge related to nutrition and the incidence of stunting. In the history variable LBW shows a significancy value of 0.000. Based on this value because the value of $p<0.05$ can be concluded that there is a relationship between the history of LBW and the incidence of stunting. In the parenting variable indicates a significancy value of 0.000. Based on this value because the value of $p<0.05$ can be concluded that there is a relationship between parenting and stunting events. In the parent income variable shows a significancy value of 0.067. Based on this value because the value of $p>0.05$ can be concluded that there is no relationship between parental income and stunting events. Based on the status of breastfeeding, it shows a significancy value of 0.000. Based on this value because the value of $p<0.05$ can be concluded that there is a relationship between the status of breastfeeding and the incidence of stunting.

DISCUSSION

The Relationship of Maternal Knowledge About Nutrition to The Incidence of Stunting in Toddlers

Based on the results of the study, there is a relationship between maternal nutrition knowledge and the incidence of stunting in toddlers with a p value = 0.000. This is in line with some previous studies. Toddlers with mothers who have low knowledge will have a greater risk of stunting [2]. The results of the research by Caesarani explained that there is a significant relationship between parental knowledge factors and stunting incidence in toddlers and children. If parents' knowledge is lacking regarding prevention and good nutrition in children, then 11.13 times their children are at risk of stunting (16).

In Olsa's research, Sulastri & Anas explained that knowledge is closely related to education. If a person's education is high, then the wider the knowledge will be. Low education does not guarantee that mothers do not have sufficient knowledge about nutrition for their families. The existence of high curiosity can influence mothers in obtaining information related to the right food for the child's health (17). Uliyanti, et al (2022) in their research explained that high low maternal nutritional knowledge will provide changes in nutritional status. The higher the mother's nutritional knowledge, the better the nutritional status(18).

Tabel 4. Factors associated with breastfeeding, nutritional knowledge, birth condition, parenting, household income and stunting incidence

Variable	Stunting		Not Stunting		*p*-value
	n	%	n	%	
Breastfeeding					
Not Exclusive	39	79,6	17	35,2	0.000
Exclusive	10	20,4	39	63,8	
Nutritional Knowledge					
Less	42	85,7	5	10,6	0.000
Good	7	14,3	42	89,4	
Birth Condition					
Low birth weigh	45	91,8	0	0	0.000
Not LBW	4	8,2	47	100	
Parenting					
Less	41	83,7	9	19,1	0.067
Good	8	16,3	38	80,9	
Household Income					
<below minimum wage	30	61,2	20	42,6	0.000
>above minimum wage	19	38,8	27	57,4	

The Relationship of LBW To Stunting in Toddlers

Based on tests on the results where there is a relationship between the LBW infants and the incidence of stunting in toddlers with a value of p = 0.000. This is because the majority of babies with Low Birth Weight (LBW) are born aterm and already suffer from intrauterine growth retardation as a result of maternal stunting and malnutrition that occurs before and during pregnancy and/or as a result of frequent infections such as malaria.

In contrast, in developed countries, biomedical causes, such as multiple pregnancies and prematurity are the cause of a high proportion of LBW infants [(19).] This occurs because the effect of birth weight on stunting occurs at the beginning of 6 months of age, then decreases until the age of 2 years. If in the first 6 months, the pursuit of growth can be done by the toddler then there will be a possibility that the toddler can grow to a normal height.

The results of a study conducted by Anugraheni showed that there was no relationship between birth weight and stunting of toddlers aged 12-36 months in the work area of Pati public health center I, Pati I Regency [(20)]. Najahah's research also showed similar results to this study, namely in a multivariate analysis carried out birth weight is not a risk factor for stunting events in toddlers aged 12-36 months in the working area of the Dasan Agung Health Center, Mataram, NTB Province [(21)]. Inadequate intake of nutrients received by children with normal birth weight can result in growth faltering. Low nutritional intake and simultaneous exposure to infectious diseases will have a heavier growth failure impact on children with normal birth weight. If a child with low birth weight receives adequate nutritional intake, eating normal growth can be caught up.

The Relationship of Exclusive Breastfeeding Status to Stunting In Toddlers

Exclusive breast milk (breast milk) is breast milk given to babies since birth for 6 (six) months, without adding and/or replacing with other foods or drinks. Breast

milk contains strong antibodies to prevent infection and a very ideal source of nutrition, balanced in composition, and naturally adapted to the needs of the baby's growth period. Based on the results of the study, there is a relationship between exclusive breastfeeding and stunting incidence in toddlers . Najahah's research in the working area of the Dasan Agung Health Center, Mataram is also in line with this study, where in the multivariate analysis carried out, exclusive breastfeeding does not act as a risk factor for stunting toddlers. Breastfeeding alone that has been too long or more than 6 months is related to stunting. In this study, there were 8 children who received breast milk only until they were more than 6 months old. Children who are more than 6 months old should have received complementary milk to meet their nutritional needs, so that if they are not given complementary milk, it can cause children to lose the opportunity to practice the ability to receive other foods that cause growth faltering because the child has nutritional deficiencies [21].

The Relationship of Parental Income To of Stunting in Toddlers

Toddlers from families with per capita income are less at risk of 5,385 times stunting compared to toddlers from families with sufficient income. Economic status less than the family causes less purchasing power to food that has good nutrients so that the risk of macro and micronutrient deficiencies, malnutrition in toddlers or pregnant women can increase the risk of stunting in children. The results of the study found that the incidence of stunting occurs more in low socioeconomics. Stunting that occurs in the poor is caused by a low understanding of nutrition and dietary management as well as personal hygiene practices. reported the same thing that family income affects the incidence of stunting in toddlers. Family income related to the fulfillment of energy and protein intake for children can be an indirect factor related to stunting events. Family income related to the provision of family food, access to food in the family and adequate distribution of food for the family can be risk factors for growth inhibition. However, in this study, there was no relationship between income and the incidence of stinding in toddlers in Gatak.

The Relationship of Parental Parenting To Stunting In Toddlers

Based on the results of statistical tests, a p value of 0.000 was obtained, which means that there is a relationship between maternal parenting and stunting events, so it can be interpreted that if the parenting style is good, the stunting category is lower, as well as if the mother's parenting is in the bad category, the stunting category will be high. In this study, most mothers with elementary school education were also obtained. Maternal education can influence the incidence of stunting [7], so the probability of stunting is higher in parents who have low education compared to those with higher education.

CONCLUSION

There is a significant relationship between maternal knowledge, exclusive breastfeeding status, LBW history and parenting with stunting.

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