ORIGINAL ARTICLE

Influence Stunting with Children's Development of Emotional Behavior

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ABSTRACT

Background: Stunting is a problem of chronic malnutrition caused by insufficient nutrition in a long time due to the provision of food that is not in accordance with nutritional needs. So that, stunting causes development of the motor system which is one important aspect because motor development is the beginning of the intelligence and emotional behavior's children. The purpose of this study was to determine the stunting relationship with the development of emotional behavioral problems in children aged 36-72 months in the Community Health Center.
Method: This study is an observational study, with a retrospective cohort study design. This study used a purposive sampling technique, with a total sample of 128 respondents. The instrument of this study used the Emotional Behavior Problem Questionnaire (KMPE). The study analysis used chi-square and logistic regression analysis, with a confidence level of 95%.
Results: Based on logistic regression analysis, it was known that stunting, child sex, maternal occupation, and family income had a significant relationship with the problem of developing emotional behavior. Stunting is the most related variable because it has the lowest p-value and largest Exp (B) (p-value 0,000, RR 11,662, 95% CI (2,318-13,393)). Thus, the chance of developing emotional behavior problems in stunting children, male sex, working mothers, and income less than MSE is 78%.
Conclusions: This study concluded that there was a significant relationship between the development of emotional behavior in children aged 36-72 months and at a risk of 11,662 times than children who were not stunting.
Keywords : Relationship, stunting, children's development

INTRODUCTION

Stunting is a growth disorder that describes the failure to achieve growth potential as a result of health and nutritional status is not optimal,[1] *Stunting* is a problem of chronic malnutrition caused by lack of nutrient intake in a long time due to improper feeding nutritional needs. Stunting occurs from fetuses still in the womb and only appear when children aged two years.[2]

The incidence of stunting in the world according to the United Nations International Children's Emergency Fund (UNICEF) in 2017 was 22.2% or 150.8 million children worldwide aged below five years of exposure to stunting. If the current trend continues the projected 127 million children under 5 years old will suffer stunting in the year 2025.[3]Based on the results of Nutritional Status Monitoring (PSG) toddlers in 2017, the prevalence of stunting (short) and severe stunting (very short) toddler in Indonesia is 29.6%. Prevalence short in Yogyakarta province in 2015 was 14.36% down padah 2016 to 11% and an increase of 13.86% back in 2017.

In Yogyakarta the highest prevalence of stunting in 2007 is Gunungkidul (20.60%), According to a preliminary study conducted by researchers at Gunungkidul District Health Office prevalence short toddler in Gunung Kidul Regency Year 2017 highes on Community Health Care. At the Community Health Care during the period of the last 2 years the prevalence of stunting increased in 2016 33.23% to 35.60% in 2017. According to WHO toddlers prevalence short of being a public health problem if prevalence 20% or more. Percentage of short children's in Indonesia still highand is a health problem that must be addressed.

Globally 45% of deaths in children under 5 years are caused by various forms of malnutrition, stunting is a major contributed.[4] Stunting described the events of malnutrition in infants that lasts a long time and its impact not only physically, but rather on cognitive function. [5]Stunting can also caused delays in the development of motoric system, which one important aspect for the motor development is the beginning of intelligence and social emotional.[6]A child who would change his emotional behavior, including increasing the negative effects such as apathy, decreased activity of play and interest in exploring their environment.[7]

Based on the description that has been described by knowing these data, it will be further investigated the relationship of stunting with emotional behavioral developmental problems in children aged 36-72 months in Community Health Center.

METHOD

The research was conducted in Community Health Center in 2018 until 2019. Sampling technique with simple random sampling. This study used observational research, withretrospective cohort study design. The research sample of 128 subjects and divided into two groups, the exposed group of risk factors that children aged 36-72 months stunting since the age 24 months of 64 subjects and the group not exposed to risk factors that children aged 36-72 months who are not stunting 64 subjects. The inclusion criteria used are willing to become respondents and exclusion criteria were used: whenever there is a change in status of the z-score becomes stunting in monitoring the nutritional status of children, the child has a

birth defect, the child died and moved from Community Health Center.

The type of data this research is secondary data and primary. Secondary data includes the child's emotional and behavioral development of primary data include child stunting status obtained from monitoring the nutritional status of Community Health Center. Emotional Behavior Problems Questionnaire Instrument (KMPE) was used to measure the development of emotional behavior.

Analysis data used the univariate, bivariate, and multivariate analyzes. The univariate analysis to determine the distribution of each variable., Bivariate analysis to determine the relationship of each variable using the chi-square and multivariate analyzes to examine together all the variables by using logistic regression analysis.

RESULT

Based on Table 1 shows the distribution of data; that most stunted children was abnormal emotional development (85.9%). The proportion of boys for abnormal emotional development was (68.6%). The proportion of malnourished children with the most abnormal emotional development is 93.8%. In working mothers, 71.9% of children experience abnormal emotional development. Families who have an income below the family minimum wage have an abnormal child emotional development of 69.0%.

Based on Table 2, it can be seen that there is a significant correlation between stunting status with emotional behavioral development of children (p-value = 0.000), the respondents were stunting 14.4 times likely to have emotional behavioral developmental problems compared with respondents who did not stunting.

Based on Table 3 can be seen there is the meaningfulness of the relationship between gender's children with emotional behavioral development of children (p-value = 0.011). In children with the male sex has the opportunity to experience 2.6 times emotional behavioral developmental problems than girls.

The results analysis of the nutritional status, can be seen there is a significant association between nutritional status and development of the child's emotional behavior (p-value = 0.004). In children with poor nutritional status have a chance of 1.7 times experiencing emotional problems behavioral development of children with good nutritional status.

Result analysis of maternal employment, we can know there is no significant relationship between maternal employment with emotional behavioral development of children (p-value = 0.098). In children with working mothers have 2.2 times more chances to experience emotional behavioral developmental problems than children whose mothers did not work.

Next on the analysis of family income, it can be seen there is a significant relationship between family income with emotional behavioral development of children (p-value = 0.000). In children from families of respondents who have a family income of less than MSE 4.2 times more likely to have emotional problems behavioral development of children from families whose income is more than equal to the MSE.

Based on the results of logistic regression analysis showed that the variables sex of the child, family income and mother's occupation means a significant, so there are no excluded variables. Therefore, the second step becomes final modeling of logistic regression analysis. Based on this analysis, it is known that there are four variables significantly associated with a problem that is stunting the development of emotional behavior, child gender, maternal occupation, and family income. The most pertinent variables are variables that had a p-value <0.05 and had a RR (Exp B) at most. So seen from Table 4 that stunting is most variable related because it has the lowest p-value and the greatest RR (p-value 0.000 and RR 11.662).

To identify opportunities variables associated with emotional behavioral developmental problems can be seen from the equation following models:

y = - 11.756 + 2.456 (stunting) + 1,454 (sex of the child) + 1.895 (a mother's occupation) + 1.623 (family income) = - 4.328

So, it can be calculated chance four factors to the problem of emotional behavioral development are:

$$p = \frac{1}{1 + e[-(y)]} = \frac{1}{1 + 2{,}714(-(-4{,}328)} = \frac{1}{12{,}68} = 0{,}78$$

That odds of emotional behavioral developmental problems in children are stunted, male gender, working mothers, and family income is less than MSE by 78%.

Table 1. Characteristic Frequency Distribution

Variables	Behavioral development emotional Child			
	Abnormal		Normal	
	N	%	n	%
Stunting Children's Status				
stunting	55	85.9	9	14.1
not Stunting	19	29.7	45	70.3
Child gender				
Male	48	68.6	22	31.4
Female	26	44.8	32	55.2
Nutritional status				
Malnutrition	15	93.8	1	6.2
Good Nutrition	59	52.7	53	47.3
Mothers Work				
Work	23	71.9	9	28.1
Does not work	51	53.1	45	46.9
Family income				
<Minimum Family Income (MFI)	60	69.0	13	36.1
≥ Minimun Family Income (MFI)	14	34.1	27	65.9

Table 2. Relationship Stunting with Emotional Behavior Problem Child Development

Stunting status	Emotional development Children's Behavior				*P-Value*	RR 95% CI (Lower-Upper)
	Abnormal		Normal			
	F	%	F	%		
Stunting	55	85.9	9	14.1	0,000	14.474
not Stunting	19	29.7	45	70.3		(5.970 to 35.089)
Total	74	57.8	54	42.2		

Table 3. Characteristic with Problem Behavior Emotional Development of Children

Variables	Emotional development Children's Behavior				*p-value*	RR 95% CI (Lower-Upper)
	Abnormal		Normal			
	F	%	F	%		
Child Sex						
Man	48	68.6	22	31.4	0,011	2.685 (1.303 - 5.532)
Woman	26	44.8	32	55.2		
Nutritional status						
Malnutrition	15	93.8	1	6.2	0,004	13.475 (1.721 - 105.504)
Good Nutrition	59	52.7	53	47.3		
Mothers Work						
Work	23	71.9	9	28.1	.098	2,255 (0.946 - 5.375)
Does not work	51	53.1	45	46.9		
Family income						
<MFI	60	69.0	13	36.1	0,000	4.286 (1.946 - 9.436)
≥MFI	14	34.1	27	65.9		

Table 4. Logistic Regression Analysis of Stunting, Gender Child, Employment Mother, Capital and Income Families toward Problem Behavior Emotional Development of Children

Variables	B	*P-Value*	Exp (B)	95% CI	
				Lower	Upper
Status of stunting	2,456	0,000	11.662	2,318	13.393
Gender Children	1,454	0,004	4.280	1,587	11.546
Mothers Work	1,895	0.007	6,653	1,661	26.645
Family income	1,623	0,014	5.070	1.380	18.626
Constant	-11.756	, 000	, 000		

DISCUSS

One important aspect development stage of children aged 36-72 months, namely the development of mental emotional or social development emotion. In children aged 36-72 months, have a great responsibility in everyday activities and show greater level.[8]Children with abnormal body length / short stature has a score of cognitive, motor, social-emotional and bad. Children with short stature likely to experience sub-optimal brain development, causing disruption of cognitive abilities, so that children tend to behave passively and less exploration, decreased ability to think, impaired neurological development, IQ and kognitif.[9]

This is in line with the results of this study show that stunting significantly associated with the development of emotional behavior (p-value = 0.000). The results are consistent with research Mwanki and Makoha 2013 that high short pravalensi among children show that there will be long-term negative impact on mental and physical development that makes children unable to take advantage of learning opportunities with other research maksimal.[10] by Ernawati 2014 says that of measurement of progress made include cognitive, language, motor and social emotional. Found in the group of children with normal body length status, has a score of cognitive, motor, social-emotional and very good.[11] However, unlike Cassale 2014 study conducted in South Africa in pre-school children showed different results with this study. They show no association between stunting the ability or behavior of a child's daily and social skills child.[12]

In this study also examined external variables that may affect the development of emotional behavior are sex of the child, child's nutritional status, maternal employment and family income. One aspect is the language developmental delays, the male maturation and development of the left hemisphere of the brain associated with verbal function less well than girl's children.[13]Addition to aspects of language, social personal aspects that assesses the child's independence also allows girls better the score is because the pattern parenting and gender roles that emphasize girls to be better able to perform various tasks itself.[14]

These results indicate that the respondents were male gender more likely to have emotional behavioral developmental problems. In this study, there is a significant relationship between the gender of the child with emotional behavioral development of children (p-value = 0.011). This study is in line with research Shinto (2008) states that the rate of developmental disorders in boys was higher than girls. However, different studies show Harahap (2006) results that girls get a greater developmental disorders compared with boys.[15]

Then, the child's behavior is also influenced by nutritional status, malnutrition or more can lead to a decrease in the interaction with the environment and this situation may indicate the development of poor, characterized by reduced activity, more cranky and unhappy, and didn't show any curiosity knows when compared with children whose good nutrition.[16] this is in line with the results of this study that shows there is no

significant relationship between nutritional status and development of the child's emotional behavior (p-value = 0.004). In line with the results of the study by Gunawan in 2011 showed no relationship between nutritional status and child development. The results of processing data from these studies in mind the significance of p>0.05. Unlike the research of Primasari (2018) that affects the development of children's nutritional status. Malnutrition resulting in impaired growth and development. Disorders of nutrition is acute lead skinny kid. Growth and development of infants in need of essential nutrients include protein, fat, vitamins and water must be consumed in a balance way.[17]

In this study, the majority of women respondents did not work. However, there were not statistically significant relationship between maternal employment with emotional behavioral development of children (p-value = 0.098). This study is in line with the results of research conducted by Latifah in 2010 obtained results showed that there is no significant relationship between socio-emotional development in the mother works and does not work. Because, the mother's work does notcause negative impacts of adverse behavior and adjustment in children. Experts agree that the most decisive is not the amount of time a mother there with her son, but how is time spent together.[18]

However, in contrast to the results of research Wijirahayu (2016) states that mothers' employment status social-emotional development had a positive effect. At a working mom, has a dual role that is often faced with a1. conflict between the interests of the work and its existence in the family. so time consuming often almost the fulfillment of the need for unity in the family, treat, and care for children so that if a mother has a good knowledge of the development, but the mother was too busy with his work resulted in the development of knowledge about giving stimulation in children is not optimal. If a woman's work2. brings stress of work at home then the children develop negative behavioral.[19]

Socio-economic situation of parents will have an impact on the maintenance of children in the family. Parents with higher incomes will strive to meet all the needs of their children, ranging from basic needs, education, and financial needs are met. Parents with low3. income levels will lead to a lack of attention to children, lack of reward praise, less taught ana doing good and following the rules, lack of exercise and cultivation of values and norms in society so it will result in children having problems in the growth process.

In this study the majority of respondents have family income known under the MSE. According to the statistical test found significant association between family income with emotional behavioral development of children (p-value = 0.000). This study is in line with Ozkan research that says that the social economy has a great influence on development of children up to the age of five. Other research that is consistent with this research is research Matwally (2016) states that higher family income better's emotional development of children, this is due to insufficient food intake (nutrition), fulfillment facility to stimulate the development of children and opportunities for children to learn and interact with the social environment.[20] In contrast to research Prabosiwi (2017) said total income has no statistically relationship with the child's development are marked with p> 0.05.

Based on logistic regression analysis of the main independent variable (stunting status) and external variables (sex of the child, child's nutritional status, maternal employment and family income states that the status of stunting is the most dominant variable (p-value = 0.000 RR = 11.66 CI 4.2 to 32.1) with emotional behavioral developmental problems of children. children with potentially stunting status 11.6 times more likely to have emotional behavioral developmental problems compared with children who have no stunting status. This is in line at Prendergast research and Humphrey (2014) as well as research Onis and Branca in 2016 explained that short stature is a failure of linear growth that can increase morbidity and mortality, loss of physical growth potential, reduce neurodevelopmental and cognitive function and increased risk of chronic disease in adulthood. Physical deficiencies and neurocognitive severe and irreversible stunted growth accompanies a major threat to the development of human beings.[14] It can be a threat because of the growing child with developmental disorders will be difficult to adapt to the surrounding environment, being personally covered and felt himself unworthy around children other-children, less able to control their emotions, had difficulty speaking, and less able to solve problem.[21]

CONCLUSION

Most respondents were exposed to stunting have abnormal emotional behavioral development amounted to 55 children (85.9%) and 9 children (14.1%) had a normal emotional behavioral development. While respondents were not exposed stunting have development of abnormal emotional behaviors of 28 children (43.8%) and 36 children (56.2%) had a normal emotional behavioral development.

Multivariate Analysis factors of Stunting, Gender Child, Nutritional Status, Employment Mother, Capital and Income Families toward Problem Behavior Emotional Development of Children, shows stuntingis the most dominant variable had a statistically significant influenced with emotional behavioral developmental problems in children aged 36-72 months(p-value = 0.000 RR = 11.66 CI 4.2 to 32.1).

Respondents with potentially stunting status 11.662 times experienced emotional behavioral developmental problems than those without stunting.

RECOMMENDATION

For Health Workers: For health workers related can improve the early detection of developmental stimulationespecially early detection of emotional behavioral development of children and make serious efforts to prevent of stunting, because stunting have the most dominant influence to emotional behavioral development. For related health worker be needed consider that gender child, employment mother, capital and income Families have influence with Problem Behavior Emotional Development of Children.

For Further Research: Expected to conduct further research and to include more variables studied were associated with the development of the child as parenting parents and infectious disease ever suffered.

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