THE EFFECT OF FAMILY INCOME WITH STUNTING EVENTS IN PRE-SCHOOL CHILDREN AT PUSPA BANGSA KINDER GARTEN SCHOOL BOGOR 2020

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Abstract

Background: One of the nutritional problems that are often encountered in toddlers is stunting. In addition, stunting in children under five is an indicator of nutritional status that can give you an idea disruption overall socio-economic situation in the past. WHO (2017) stated that if the problem of stunting is above 20% it is a public health problem. Globally, an estimated 165 million children under-five years of age, or 25%, were stunted in 2011, while for the Asian level in 2012-2017 Indonesia was ranked the fifth highest stunting prevalence. So that, the purpose of this study was to determine the effect of family income during the COVID-19 pandemic on the incidence of stunting in pre-school children.

Method: This type of research is an analytic survey with a cross sectional approach. It means that the researcher conduct obersavtional in nature and are known as descriptive research. The population in this study was 35 respondents. The sample size required was 35 respondents, with a total sampling technique. The instrument in this study was filling out a questionnaire using google form on family income and weight of pre-school children to determine the incidence of pre-school child stunting.

Conclusion: The results of univariate analysis for family income variables found that most of the respondents whose family income during the COVID-19 pandemic was in the category less than the Regional Minimum Wage (UMR) /> 4,189,708 million / month, namely 28 respondents (80%) and the results of univariate analysis for incident variables stunting in normal height category 23 (65.7%), very short height category 4 (11.4%) and the results of further statistical analysis obtained p value 0.02, which means there is a relationship between family income and the incidence of stunting in Puspa Bangsa Kinder Garten School, Bogor City.

Keywords: Children, COVID-19, Family, Income, Kinder Garten, Stunting.

Introduction

The nutritional must be met and balanced in early childhood. It also often called the golden age. Stunting has long-term effects on individuals and societies, including: diminished cognitive and physical development. Based on the results of Government Health Ministry *Riskesdas* 2018, on a national scale, the prevalence of stunting in Indonesia of children under fiveyears old amounted 30.8%, while for West Java Province in 2018 the prevalence of stunting was 29.2% .[1]

According to, Özaltin et., al that stunting is one of the nutrional problems that adversely affect the quality life of children in achieving optimal growth and development appropiate genetic potential. In addition, factors that are contribute to stunted growth and include poor maternal health and nutrition, inadequate infant and young child feeding practices, and infection. Specifically, these include: maternal nutritional and health status before, during and after pregnancy influences a child's early growth and development.[2]

Consequently, Black (2013) stated that stunting is a well-established risk marker of poor children development. Stunting before the age of 2 years predicts poorer cignitive and educational outcomes in later childhood. In short, childhood period is an importat period in growth that will influence and determine the development of golden age. One of the nutritional problems that are often encountered in children is stuting that adversely affect the quality of children in achieving optimal growth. Consquently, stunting is a well-established risk marker of poor children development.[3]

In conclusion, the purpose of this study was to determine the relationship between family income during the Covid 19 pandemic and the incidence of stunting in pre-school children in Puspa Bangsa Kinder Garten School, Bogor City.

Methodology

This research uses descriptive quantitative data. In short, quantitative data is measurable and expressed in numerical form, which means primary data taken through a questionnaire with google form. On the other hand, the population in this study were parents who sent their children to Puspa Bangsa Kinder Garten School Bogor with a number of 35 respondents. The independent variable in this study was family income and the dependent variable in this study was the incidence of stunting, the researcher also used Kendal tau statistical test to measure the data.

Research Result
 a. Univariate Analysis Results
   1. Univariate Analysis Data
   Tabel 1
   The Frequency Distribution of Family Income in Puspa Bangsa Kinder Garten School Bogor City in 2020

Income	Frequency	Percenta
		ge (%)
< 4.189.708 Million / Month	7	20
> 4.189.708 Million / Month	28	80 %
Total	35	100 %

From the table above, it can be seen that most of the respondents whose family income during the COVID-19 pandemic was in the category of more than the Regional Minimum Wage (UMR) /> 4,189,708 million / month, namely 28 respondents (80%).

Tabel 2
Distribution of Frequency of Stunting in Pre-School Children at Puspa Bangsa Kinder Garten School Bogor in 2020

Stunting	Frequency	Percentage (%)
Very short	4	11.4 %
Short	6	17.1 %
Normal	23	65.7 %
High	2	5.7 %
Total	35	100 %

From the table above, it can be seen that most of the respondents whose height was in the normal category were 23 respondents, 65.7% of 35 respondents, and height in the very short category, there were 4 respondents (30%) out of 11.4 respondents.

1. Bivariate Analysis Results
   Tabel 3
The Relationship betweenFamily Income during the Covid 19 Pandemic and Stunting Incidenceat Puspa Bangsa Kinder Garten School Bogor, Bogor City

INCOME	STUNTING EVENTS								Total		P Value
	LOW		MIDDLE		NORMAL		HIGH				
	n	%	n	%	n	%	n	%	n	%	
< 4.189.708 million/mo unth	3	8.6	3	8.6	1	4.3	0	0	7	20	0.002
>4.189.708 million/mo unth	1	2.9	3	8.6	22	62.9	2	5.7	28	80	
Total	4	11.4	6	17.1	23	65.7	2	5.7	35	100	

Based on table 3, it was obtained from 28 respondents whose family income was more than> 4,189,708 million / month with normal height, there were 22 respondents (62.9%), the results of further analysis obtained a p value of 0.002 which means there is a relationship between family income and incidence of stunting.

Discussion

1. Univariate Analysis

a. Family Income during COVID-19

Family income was drastically impacted due to coronavirus. In addition, economic growth and human development well nourished populations to learn new skills and think critically, then contribute to their communities. Consequently, child malnutrition also impacts to children's cognitive function. In addition, child malnutrition impacts cognitive function and contributes to poverty through impeding individuals' ability to lead productive lives.

According to Fikadu et al. (2014) that conducted research in South Ethiopia showed that the high risks of stunting are infants who are not exclusiverly breastfed their children for 6 months. In conclusion, parental education, family income and knowledge of nutrition can be associated to stunting events.[4]

Therefore, the results of univariate analysis for family income during the COVID-19 period obtained data from most respondents whose family income during the COVID-19 pandemic was in the category less than the Regional Minimum Wage (UMR) /> 4,189,708 million / month, namely 28 respondents (80%).

It also in line with the statement by Timothy et al (2020) that pandemic COVID-19 is affecting children far beyond those it directly infects stunting. The pandemic has already distruped families, institutions, increasing risks for children to exposure malnutrition.[5]

Consequently, income is potentially causes personal and family health needs stronger support. In addition it is in line with the research that has been conducted by Izah et al. (2020) wich entitled the relationship between family income, mother's knowledge of nutrition, parents' height, and father's education with the incidence of stunting, data shows that most of the

38 respondents (54.3%) had their family income above the minimum wage.[6]

Family income or economic uncertaunty, especially low-middle income settings can caused stress. In short, family income is one of the indicators that determines economic status, high family income can meet family needs, especially diverse food needs so that food intake for children under five is fulfilled, families that have economic access and meeting their needs will have an effect on increasing the quality of food consumption for family members is a overview of a good nutritional assessment.[7]

b. Stunting Incidents

The results of univariate analysis for the variable incidence of stunting obtained data from 23 respondents (65.7%) with the category of normal height. Consequently, Mercedes., et al (2016) showed that stunting is the highest prevalent of child malnutrition and reached 161 million children worldwide.[8]

In short, the statement above also in line with the research that has been conducted by Cipriano et al. (2017) entitled the relationship of family income, birth weight and birth length with the incidence of toddler stunting of 24 - 59 months, with 18 respondents (29%), and 44 respondents (71%) non-stunting.[9] And

also in line with research conducted by Dwi Ernawati (2018) entitled factors related to the incidence of stunting in children aged 24 - 59 months, with the results of the study that the proportion of stunting was 26.9% and the normal one was 73.1%.[10]

The further consequences of stunting in toddlers can result in disruption of physical growth, mental development and health status in children. In addition, Ty Beal, et., al (2018) stated that community and societal factors particularly, poor access to health care and living rural areas have been already associated with child stunting.[11]

It is also in line with the recent studies have shown that children who are stunted are associated with poor performance in school, low levels of education and low income as adults. Children who are stunted are more likely to develop into unhealthy and poor adults. Stunting in children is also associated with an increase in children's susceptibility to diseases, both infectious and non-communicable diseases (PTM) and an increased risk of overweight and obesity. Long-term overweight and obesity can increase the risk of degenerative diseases. Stunting cases in children can be used as a predictor of the low quality of a country's human resources. The state of stunting causes

poor cognitive abilities, low productivity, and an increased risk of disease resulting in long-term losses to the Indonesian economy.[12]

2. Bivariate Analysis

The results of bivariate analysis obtained data from 28 respondents whose family income was more than> 4,189,708 million / month with normal height, there were 22 respondents (62.9%), the results of further analysis obtained a p value of 0.002, which means there is a relationship between family income and the incidence of stunting.

The results of this study are in line with research conducted by Cipriano (2017) entitled the relationship of family income, birth weight, and birth length with the incidence of toddler stunting 24-59 months, with a p value of 0.08 which means there is a relationship between family income and the incidence of stunting.[9]

According to Izah et al. (2020) the purchasing power of families for nutritious food is influenced by family income because in determining the type of food to be purchased depends on the level of income. Household food purchasing power follows the level of family income. With a high income, it is possible to fulfill the food needs of all family members. On the other hand, the low level of family income results in low household food purchasing power.[6] The low purchasing power of foodstuffs results in inadequate fulfillment of the nutritional needs of children under five [13] .

References

1. Ministry of Health of the Republic of Indonesia. Indonesia Basic Health Research, 2018. Indonesia Basic Health Research, 2018. 2018.

2. Özaltin E, Hill K, Subramanian S V. Association of maternal stature with offspring mortality, underweight, and stunting in low- to middle-income countries. JAMA - J Am Med Assoc. 2010;

3. Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, De Onis M, et al. Maternal and child undernutrition and overweight in low-income and middle-income countries. The Lancet. 2013.

4. Fikadu T, Assegid S, Dube L. Factors associated with stunting among children of age 24 to 59 months in Meskan district, Gurage Zone, South Ethiopia: A case-control study. BMC Public Health. 2014;

5. Richards TJ, Rickard B. COVID-19 impact on fruit and vegetable markets. Can J Agric Econ. 2020;

6. Izah N, Zulfiana E, Rahmanindar N. Effect of Family Characteristics on Stunting Events in Toddlers Aged 6-59

Months. J Kebidanan Midwiferia. 2020;

7. Baye K, Laillou A, Chitweke S. Socio-economic inequalities in child stunting reduction in sub-Saharan Africa. Nutrients. 2020;

8. De Onis M, Blössner M, Borghi E. Prevalence and trends of stunting among pre-school children, 1990-2020. Public Health Nutr. 2012;

9. Pacheco CDR, Picauly I, Sinaga M. Health, Food Consumption, Social Economy, and Stunting Incidency in Timor Leste. J Kesehat Masy. 2017;

10. Ernawati D, Hastuti P, Rachmawati DS, Susanti A, Yuliastuti C, Widyastuti M, et al. The relationship of socio-economic and genetic factors with toddler stunting at Kenjeran public health center Surabaya. Indian J Public Heal Res Dev. 2018;

11. Beal T, Tumilowicz A, Sutrisna A, Izwardy D, Neufeld LM. A review of child stunting determinants in Indonesia. Maternal and Child Nutrition. 2018.

12. Torlesse H, Cronin AA, Sebayang SK, Nandy R. Determinants of stunting in Indonesian children: Evidence from a cross-sectional survey indicate a prominent role for the water, sanitation and hygiene sector in stunting reduction. BMC Public Health. 2016;

13. Rani Devayanti R, Agus Triwinarto A. The Relationship Of Children Knowledge Through 4 Healthy 5 Perfect Food Toward Under Health Services In School. J Ilm Wijaya. 2018;