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Factors Associated with the Nutritional Status of Toddlers at the Limo Community Health Center, Depok City, Indonesia

Abstract

Undernutrition in urban areas remains a serious public health problem in Indonesia. The study aimed to find out what factors were related to the nutritional status of children under five in the working area of the Limo Community Health Center, Limo District, Depok City, Indonesia in 2019. This research was conducted in June-July 2019 using a cross-sectional study design with a sample of 118 mothers who have toddlers aged 6-59 months in the Limo Health Center work area in 2019. The sampling technique used simple random sampling. The analysis was performed using chi-square ($\alpha = 0.05$). Undernutrition is defined as the condition of children under five which is determined based on the anthropometric index measurement results of body weight for age with a Z-score of -2 SD to ≤ -3 SD, while good nutrition is at a Z-score of -2 SD to 2 SD. As a result, the prevalence of undernutrition was 16.1%. As much as 50% of the respondents had high school education and mothers with low education were 32.2%. The results showed a prevalence of working mothers (13.6%), family income < Rp. 4,600,000 (52.5%), mothers with low knowledge (25.4%), male children (53.4%), poor parenting (3.4%), and mothers who did not use health services properly (3.4%). There was a significant relationship between maternal education ($p = 0.004$; OR: 4.813; 95% CI: 1,711-13,537), family income ($p = 0.006$; OR: 6.145; 95% CI: 1.68-22.43), and maternal knowledge ($p = 0.007$; OR: 4.389; 95% CI: 1.57-12.23) with the nutritional status of children under five in the working area of the Limo Community Health Center. The suggestion is that the Limo Community Health Center make a program to increase the knowledge capacity of mothers regarding the nutrition of their children.

Keywords: Factors Associated, Nutritional Status of Toddlers, Community Health Center.

Introduction

Nutrition is an important part of creating quality human resources. Achieving a balanced nutritional consumption for each individual or

family is also influenced by many factors, such as socio-cultural economy, habits, preferences, health conditions including education and knowledge about nutritional issues. The problem of malnutrition seems to have not been resolved

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properly on an international or national scale, it is recorded that 149 million children in the world under five years of age suffer from malnutrition in 2018 (Eliana & Solikhah, 2012). According to WHO (2018), by 7, 3 % or 49 million children in the world under five suffer from malnutrition. South Asia is a region that has the largest prevalence of undernourished children under five years of age in the world, namely 25.3 million, followed by sub-Saharan Africa 14 million, and Latin America / Caribbean 0.7 million. As much as 73% of malnutrition in children under five years of age occurs in countries with lower middle income according to the classification set by the World Bank, including Indonesia (WHO, 2019).

Basic Health Research (2018) shows the prevalence of underweight in 2018 in Indonesia is 17.7% consisting of 3.9% severe undernutrition and 13.8% undernutrition. The national prevalence rate than in 2013 (19.6 %) is seen to decline. Changes especially in the prevalence of severe undernutrition at 5, 7 % in 2013 to 3.9% in 2018. The percentage of undernutrition also decreased, which was 13.9% in 2013 to 13.8% in 2018. This indicates that there is a decrease in the number of severe undernutrition and undernutrition every year from 2013 to 2018 (Ministry of Health, 2018)). Based on the Health Profile Report of West Java Province 2017, in 2017 it was known from the results of weighing babies aged 0-59 months (toddlers) as many as 3,162,074 under five from the total target of 4,027,769 under five (78.5%). It was reported that 1.7% of children under five were over-nutrition, 83.2% of children under five were well-nourished, 12.2% of children under five were undernutrition, 2.9% of children under five were severe undernutrition (Department of Health, 2018). According to WHO, an area is considered a good category if the prevalence of under-five with undernutrition is less than 5%, while the average case finding of undernutrition in districts/cities throughout West Java is above 5%. Especially the percentage of undernutrition in under five in Depok City was 8.6 % (The Indonesian Ministry of Health, 2018).

Data from the Depok City Health Office in 2018 stated that the number of toddlers aged 0-59 months who were weighed was 124,862. The number of underweight children is as much as 4320 (3.46 %), the number of good nutrition as much as 114 962 (92.07%), the number of undernutrition as much as 10, 418 (8.34%), and the number of children severe undernutrition as much as 452 (0.36%). The highest percentage of undernutrition in children under five was in Limo District as much as 677 (18, 14 %) and the lowest was in Cipayang District as much as 343

(3.3%). Based on the description above, the authors are interested in researching factors related to the nutritional status of children under five in the Limo Community Health Center work area in Depok City, Indonesia in 2019 (Depok City Health Office, 2019).

Research Methods

This research is a quantitative study using a *cross-sectional* study design. This research was conducted in the Limo Health Center working area in June-July 2019. The choice of location was based on the data obtained that the percentage of undernutrition in Limo District was quite high compared to other districts in Depok City. The sample used is a mother who has a toddler aged 6-59 months with a minimum sample size of 107, then to avoid bias, add 10% so that the study sample is 118. Sampling with simple random sampling technique. The data collection tool uses a questionnaire. Nutritional status is defined as the condition of children under five which is determined based on the anthropometric index measurement results of body weight for age. Undernutrition is defined as low weight for age with a Z- score of -2 SD to \leq -3 SD, while good nutrition is at a Z-score of -2 SD to 2 SD.

The analysis in this study was carried out using statistical software with two stages, namely univariate analysis to determine the frequency distribution of the dependent variable (nutritional status of children under five) and independent variables (mother's education, employment status, income, gender of children under five, level of knowledge, and parenting), and the second is bivariate analysis to determine the relationship between the independent variables and the dependent variable. Bivariate analysis was performed using the *chi-square* test. The measurement of the dependent variable (nutritional status of children under five) was carried out by measuring the weight of children under five using baby scales which have been calibrated, for variables of age and sex of children under five, mother's education, employment status, family income, maternal knowledge, and parenting styles were measured by a questionnaire.

Research Findings

Based on table 1, it can be seen that as many as 16.1% of children under five have an undernutrition status and as many as 83.9% of children under five have good nutrition. The percentage of mothers with higher education (\geq SMA) was more than those with low education

(\leq SMP), namely (67.8 %: 32.2%). The results of the analysis on the variable of employment status, 86.4% of mothers do not work and only 13.6% of mothers have a job. Of the family income, 52.5% had a family income $<$ Rp. 4,600,000 and 47.5% have a family income of \geq Rp. 4,600,000. The maternal knowledge

variable obtained 25.4% mothers with low knowledge and 74.6% mothers with high knowledge. Of the 118 toddlers, 53.4% were male and 46.6% were female. For the parenting style variable, almost all mothers had good parenting, namely 96.6% and only 3.4% had poor parenting styles.

Table 1.

Frequency Distribution of Respondents in the Limo Community Health Center, Limo District, Depok City, Indonesia in 2019

Variable (n = 118)	Frequency (n)	Percentage (%)
Toddler Nutritional Status		
Undernutrition	19	16.1
Good Nutrition	99	83.9
Mother's Education		
Low	38	32.2
High	80	67.8
Job-status		
Work	16	13.6
Does not work	102	86.4
Family Income		
$<$ Rp. 4.600.000	62	52.5
\geq Rp. 4.600.000	56	47.5
Mother's knowledge		
Low	30	25.4
High	88	74.6
Gender of Toddler		
Man	63	53.4
Women	55	46.6
Parenting		
Not good	4	3.4
Good	114	96.6

The results of statistical analysis in table 2, showed that there was a significant relationship between education and nutritional status of children under five $p = 0.004$ ($p < 0.05$). From the results of these statistics, there is a tendency for mothers with low education to have under five with undernutrition (31.6%) almost 5 times more likely than mothers with high education. On the variable of work status, the results of statistical analysis showed that there was no significant relationship between work status and nutritional status of children under five $p = 0.721$ ($p > 0.05$). The results of statistical analysis showed that there was a significant relationship between

family income and nutritional status of children under five $p = 0.006$ ($p < 0.05$). From the results of these statistics, mothers with family income $<$ Rp. 4,600,000 have children with malnutrition (25.8 %) have a six times greater chance than mothers with family income \geq Rp. 4,600,000. In the variable of maternal knowledge, the results of statistical analysis showed that there was a significant relationship between maternal knowledge and nutritional status of children under five $p = 0.007$ ($p < 0.05$).

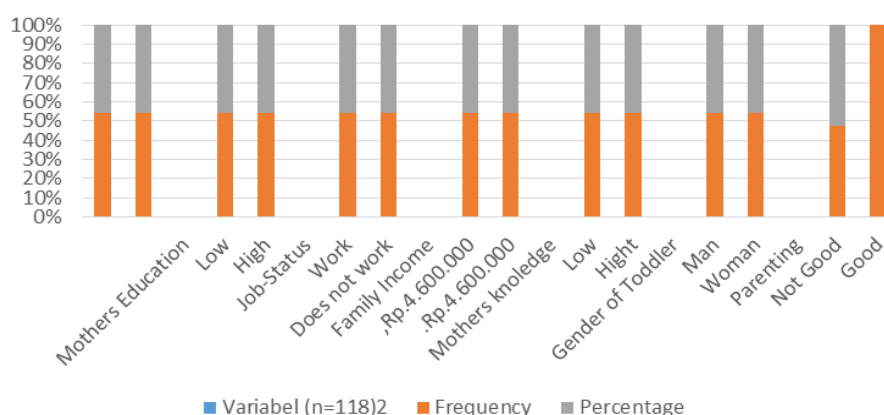


Chart 1.
Frequency Distribution of Respondents

From the results of these statistics, there is a tendency for mothers with low knowledge to have under-fives with undernutrition (33.3 %) to have a 4.3 times greater chance than mothers with high knowledge. The results of statistical analysis showed that there was no significant relationship between the sex of children under five and the nutritional status of children under five,

$p = 0.067$ ($p > 0.05$). The results of statistical analysis showed that there was no significant relationship between parenting styles and nutritional status of children under five $p = 0.509$ ($p > 0.05$). Mothers with poor parenting were 1.7 times (95% CI 0.175-18.06) more likely to have under-fives with undernutrition than mothers with good parenting.

Table 2.
Factors Related to the Nutritional Status of Toddlers in the Limo Health Center, Limo District, Depok City, Indonesia in 2019

Variable	Toddler Nutritional Status				Total		OR (95% CI)	P-Value
	Undernutrition		Good Nutrition		n	%		
	n	%	n	%				
Mother's Education								
Low	12	31.6	26	68.4	38	100	4,813 1.711-13.53	0.004
High	7	8.8	73	91.3	80	100		
Job-status								
Work	3	18.8	13	81.3	16	100	1.24 0.317-4.85	0.721
Does not work	16	15.7	86	84.3	102	100		
Family Income								
<Rp. 4,600,000	16	25.8	46	74.2	62	100	6,145 1.68-22.43	0.006
≥ Rp. 4,600,000	3	5.4	53	94.6	56	100		
Mother's knowledge								
Low	10	33.3	20	66.7	30	100	4,389 1.57-12.23	0.007
High	9	10.2	79	89.8	88	100		
Gender of Toddler								
Boys	6	9.5	57	90.5	63	100	0.34 0.119-0.968	0.067
Girls	13	23.6	42	76.4	55	100		
Parenting								
Not good	1	25	3	75	4	100	1,778 0.175-18.06	0.509
Good	18	15.8	96	84.2	114	100		

Discussion

Based on the results of the bivariate analysis showed that there was a significant relationship between the education variables and the nutritional status of children under five ($p < 0.05$). The results of this study are in line with research conducted by Hidayah, et al. (2018), bivariate analysis obtained a *p-value* of 0.017, indicating a significant relationship between education and nutritional status of children under five in the work area Kertak Hanyar Community Health Center, in Banjar Regency. A mother's good education is one of the factors in determining the nutritional status of children under five (Hidayah, et al, 2018). The higher education owned by the mother the greater the opportunity to provide enough food nutrition and nutrition were appropriate and optimal for toddlers. A good education that a mother has will also affect her nutrition education so that she is better able to determine the appropriate food for the fulfillment of growth and development for toddlers and is an effort to be able to overcome nutritional problems.

On the variable of work status, the bivariate results showed that there was no significant relationship between work status and nutritional status of children under five ($p > 0.05$). The results of this study are in line with research conducted by Ihsan et al. (2012), the bivariate analysis obtained a *p-value* of 1,000 so that there is no significant association between maternal occupation and nutritional status of children under five in Teluk Rumbia Village, Singkil District, Aceh Singkil Regency. This is because there is no reason why mothers are busy or not enough time to take care of their children because most mothers do not work. Even a small number of mothers who work, still provide time for their children (Ihsan, Hiswani & Jemadi, 2012). In contrast to this, research conducted by Firmana et al (2015) with a *cross-sectional* research design in the work area of the Nanggalo Community Health Center, in Padang, stated that there was a significant relationship between work status and nutritional status of children under five (*p-value* = 0.000) (Firmana, Delmi & Yuniar, 2015).

The results of statistical test analysis showed that there was a significant relationship between family income and the nutritional status of children under five ($p < 0.05$). The results of this study are in line with research conducted by Helmi (2013), the bivariate analysis obtained a *p-value* of 0.007, so that there is a significant relationship between family income and nutritional status of children under five in the working area of the Margototo Community Health Center, in Metro Kibang District, in East

Lampung Regency. High income in the family is a big influence in the fulfillment of daily nutrition in the family, especially for children under five. The high income affects the purchasing power of the family to buy the food suitable for nutrition (Helmi, 2013). Low-income family, usually no longer pays attention to the food consumed by considering the nutritional value. They pay more attention to food prices as a consideration. However, it is possible for low-income families to consume well-nourished foods.

The statistical test results showed that there was no significant relationship between the sex of children under five and the nutritional status of children under five ($p > 0.05$). This result is in line with research conducted by Lestari (2016), the bivariate analysis obtained a *p-value* of 0.528 so that there is no significant relationship between the sex of under five and the nutritional status of children under five in Kulon Progo, Yogyakarta. This indicates that both boys and girls have a relatively equal probability of experiencing an undernutrition status. Based on the results of statistical tests, maternal knowledge had meaningful relationships with nutritional status (*p-value* < 0.05) (Lestari, 2016). Toddlers who have mothers with low knowledge have a 4.3 times greater chance of being undernourished than toddlers who have mothers with good knowledge. This result is in line with research conducted by Klemens (2014), the bivariate analysis obtained a *p-value* of 0.005, that there is a significant relationship between maternal knowledge and nutritional status of children under five in the work area of Puskesmas Payo Selincah, Jambi City. If there is a lack of knowledge about nutrition in the community, then the community does not pay attention to well-nourished food so that the nutritional status of toddlers is less (Klemens, 2015).

Based on the results of statistical tests showed that there was no significant relationship between parenting and nutritional status of children ($p > 0.05$). This result is in line with the research conducted by Helmi (2013), bivariate analysis obtained a *p-value* of 1,000, so the *p-value* is greater so that there is no significant relationship between parenting style and nutritional status of children under five in the working area of the Margototo Community Health Center, in Metro Kibang District, in East Lampung Regency.¹⁰ In contrast to this, research conducted by Handayani (2017) in Seberang Padang Village in the work area of the Seberang Padang Community Health Center stated that there was a significant relationship between parenting patterns and the nutritional status of children under five (*p-value* = 0.001).

Adequate parenting practices are very important not only for the child's endurance but also for optimizing the physical and mental development of the child and the good health of the child. Parenting also contributes to welfare and happiness as well as a good quality of life for the child as a whole. Conversely, if the child care is inadequate, especially food security and children's health, it can be one of the factors that cause children to suffer from undernutrition (Handayani, 2017).

Conclusions

1. The results of statistical tests showed that there was a significant relationship between the variables of maternal education, family income, and maternal knowledge on the nutritional status of children under five ($p < 0.05$). It is recommended that the health center should increase the monitoring and assessment of the nutritional status of children under five regularly at the integrated service post, and provide regular guidance/training to mothers of health cadres who are assigned to the integrated service post in carrying out the activities.
2. Measurement of body weight or height of infants/toddlers to avoid errors in recording reporting. Increasing the knowledge of mothers under five about the nutritional status of children under five through informal programs such as monthly recitation and social gathering so is expected to increase the knowledge capacity of mothers regarding the nutrition of their children. Increase access to health services to the community in terms of affordability evenly so that it can be utilized properly by the community in their working area.

Suggestions

1. This research is a quantitative study with a *cross-sectional* study design, so it is necessary to research with the cohort method (*prospective*) to determine the causality relationship and the more precise value of each variable.
2. In further research, it is hoped that research will be carried out on the effect of disease infection so that a picture of disease infection can be seen on the nutritional status of children under five.

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