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Relationship between Parent Characteristics and Economic Status with Nutritional Status among Toddlers 0-24 Months in Sumedang

Muhamad Jehan Ramadhan, Nashilah Musyaropah, Isti Kumalasari, Asti Dewi Rahayu, Muchamad Rizki Sentani*

Universitas Pendidikan Indonesia, Bandung, Indonesia

**Corresponding Author. E-mail: rsentani@upi.edu*

ABSTRACTS

Introduction: Nutritional status serves as a gauge to depict an individual's dietary well-being, stemming from the equilibrium between nutritional requirements and the intake of essential nutrients necessary for sustained bodily metabolism. The aim of this research is to analyze the characteristics of families with incidents of malnutrition, stunted, and waste in children aged less than two years in Sukamandiri Village, Sumedang Regency.

Method: The research used a cross-sectional design with 117 toddlers selected using a purposive technique. The instruments were questionnaires, weight scales, and microtoise. The assessment was categorized by weight/age, height/age, and weight/length. The relationship between variables was analyzed using the chi-square test.

Result: The results of the study stated that there were no characteristic variables that were related to malnthe utrition of toddlers. The factor related to the incidence of stunted toddlers is the mother's occupation as evidenced by the p-value = 0.000 (p <0.05). Father's educational background was associated with wasted toddlers (p-value = 0.045; p<0.05). It is needed for local government to increase the socio-economic status of families in controlling nutritional problems in the future.

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1. Introduction

Nutritional status serves as a gauge to depict an individual's dietary well-being, stemming from the equilibrium between nutritional requirements and the intake of essential nutrients necessary for sustained bodily metabolism. This status can act as a yardstick for assessing the body's state, discernible through dietary patterns. The significance of nutritional status is particularly pronounced in toddlers, aligning with their growth and developmental trajectory (Kemenkes RI, 2014). Gauging the nutritional status of toddlers entails considering age, weight, and body length. For toddlers, the gauges of nutritional status can be segregated into three categories: weight for age (BB/U), categorized as below-normal, normal, or above-normal; height indicators based on age (PB/U), distinguished by short and normal classifications; and weight relative to height (BB/PB), characterized as normal, underweight, or overweight (Almatsier, 2009).

The high prevalence of stunting can be caused by many factors. According to the World Health Organization (WHO, 2014), causes of stunting in children include maternal nutritional status, exclusive breastfeeding, inadequate food intake, and infectious diseases. Apart from that, there are other factors that can influence the nutritional status of stunting, namely maternal characteristics (age, education, occupation, and height). Teenage pregnancy can have an impact on a child's linear growth due to nutritional competition between the mother and the baby's colon (Stephenson, T., J. & Schiff, W., J. 2019).

Those factors are categorized into two distinct sources: direct and indirect factors. The immediate triggers encompass infections and dietary intake, whereas the more remote causes involve parental knowledge, employment status, income level, food availability, healthcare access, parenting approaches, and environmental surroundings (Supariasi, 2013). Information extracted from the Basic Health Research (Riskesdas) of 2013 underscores that issues related to the nutritional status of toddlers can be influenced by limited income and parental educational background. This correlation stems from the fact that lower income tends to hinder access to education and healthcare facilities in contrast to those with higher income, while education, which affects health comprehension, tends to be less comprehensive among those with lower educational attainment compared to individuals with higher levels of education (Ni'mah and Nadhiroh, 2015).

According to findings from the 2022 Indonesian Nutrition Status Survey (SSGI), the nutritional condition of young children in Indonesia continues to face challenges. The survey's outcomes reveal that the prevalence of stunting among children under the age of five is 21.6, showing a decline of 2.8 in cases, and the prevalence of overweight toddlers has seen a 3.5 reduction, amounting to a decrease of 0.3 as compared to the figures from 2021. Additionally, the prevalence of underweight children under five has exhibited a slight increase of 0.1, while the cases of toddlers experiencing wasting, which stands at 7.7, have risen by 0.6 compared to the previous year (SSGI, 2022).

Similar challenges regarding toddlers' nutritional status are also evident in Sumedang Regency, where the prevalence rates for stunting, overweight, underweight, and wasting are 27.6, 2.4, 15.7, and 3.7 respectively. These statistics position Sumedang Regency as the region with the highest incidence of stunting cases in West Java during the year 2022 (SSGI, 2022). Given these concerns, it becomes imperative to investigate the potential correlations between parental characteristics, economic status, and the nutritional status of toddlers aged 0-24 months in Sumedang.

2. Materials and Methods

This research is an observational study with a cross-sectional design. The research was conducted in Suka Mandiri Village, Tanjungsari Subdistrict, Sumedang. The research sample was toddlers aged 0-24 months who met the criteria: toddlers came from permanent resident families and did not have physical disabilities or mental disorders. The sample size was 117 toddlers selected using a purposive technique.

Data collected included: family characteristics (parent's education, parent's employment status, and family income), and characteristics of toddlers (birth weight, and birth length). Data collection was carried out through interviews referring to questionnaires. The assessment of toddler stunting is measured anthropometrically with the height/age index (TB/U). Toddler height data was obtained by measuring height using microtoise.

Descriptive data is presented using tables 1-4. The relationship between variables was analyzed using the chi-square test with the help of computer applications and SPSS (IBM ver.23).

3. Results and Discussion

The characteristics of respondents in this study are presented in Table 1.

Table 1. Characteristics of Respondents

Variables	Amount (n=117)	Percentage (%)
Father's education		
- Elementary	20	17.1
- Junior high school	31	26.5
- Senior high school	57	48.7
- University	9	7.7
Mother's education		
- Elementary	15	12.8
- Junior high school	40	34.2
- Senior high school	52	44.4
- University	10	8.5
Father's occupation		
- Employee	21	17.9
- Enterpreneur	47	40.2
- Labour	46	39.3
- Civil servant, professionals	1	0.9
Mother's occupation		
- Housewife	97	82.9
- Employee	6	5.1
- Entrepreneur	12	10.3
- Labour		

Variables	Amount (n=117)	Percentage (%)
	2	1.7
Income		
- > regional minimum wage	44	37.6
- ≤ regional minimum wage	73	62.4
Weight/ age		
- Underweight	13	11.1
- Normal	83	70.9
- Overweight	21	17.9
Length/ age		
- Stunted	28	23.9
- Normal	89	76.1
Weight/length		
- Wasted	6	5.1
- Normal	82	70.1
- Fatty	29	23.8

Based on table 1, it can be stated that the majority of respondents are children of two parents with a high school education background (48.7% and 44.4%). Most fathers work as entrepreneurs (40.2% and 39.3%) and most mothers are housewives (82.9%). Most family incomes are lower than the minimum wage (62.4%). Most of the nutritional status of the clowns was normal for all indicators, weight/age (70.9%), length/age (76.1%), and weight/length (70.1%). However, a small proportion were underweight (11.1%), stunted (23.9%) and wasted (5.1%).

Table 2. Factors Related Weight for Age of Toddlers

Variables	Weight for age			P-value
	Underweight, n(%)	Normal, n(%)	Overweight, n(%)	
Father's education				0.799
- Elementary	15.0	60.0	25.0	
- Junior high school	12.9	77.4	9.7	
- Senior high school	8.8	71.9	19.3	
- University	11.1	66.7	22.2	
Mother's education				0,654
- Elementary	0 (0.0)	12 (80.0)	3 (20.0)	
- Junior high school	5 (12.5)	28 (70.0)	7 (17.5)	
- Senior high school				
- University				

Variables	Weight for age			P-value
	Underweight, n(%)	Normal, n(%)	Overweight, n(%)	
	8 (15.4)	35 (67.3)	9 (17.3)	
	0 (0.0)	8 (80.0)	2 (20.0)	
Father's occupation				0.089
- Employee	4 (19.0)	14 (66.7)	3 (14.3)	
- Entrepreneur	6 (12.8)	27 (57.4)	14 (29.8)	
- Labor	3 (6.5)	39 (84.8)	4 (8.7)	
- Civil servant, professionals	0 (0.0)	1 (100.0)	0 (0.0)	
Mother's occupation				0,708
- Housewife	9 (9.3)	69 (71.1)	19 (19.6)	
- Employee	2 (33.3)	4 (66.7)	0 (0.0)	
- Entrepreneur	2 (16.7)	8 (66.7)	2 (16.7)	
- Labour	0 (0.0)	2 (100.0)	0 (0.0)	
Income				0.202
- > regional minimum wage	3 (6.8)	30 (68.2)	11 (25.0)	
- < regional minimum wage	10 (13.7)	53 (72.6)	10 (14.7)	

Based on table 2, it can be stated that there is not one family characteristic variable that is related to undernutrition in children under two years old in Suka Mandiri Village, Sumedang Regency.

Table 3. Factors Related Length for Age of Toddlers

Variables	Length for age		P-value
	Stunted, n (%)	Normal, n (%)	
Father's education			0.648
- Elementary	7 (35.0)	13 (65.0)	
- Junior high school	7 (22.6)	24 (77.4)	
- Senior high school	12 (21.1)	45 (78. 9)	
- University	2 (22.2)	7 (77.8)	
Mother's education			0.540
- Elementary	4 (26.7)	11 (73.3)	
- Junior high school	8 (20.0)	32 (80.0)	
- Senior high school	15 (28.8)	37 (71.2)	
- University	1 (10.0)	9 (90.0)	
Father's occupation			0.935
- Employee	5 (23.8)	16 (76.2)	
- Enterpreneur	11 (23.4)	36 (76.6)	
- Labour	12 (26.1)	34 (73. 9)	

Variables	Length for age		P-value
	Stunted, n (%)	Normal, n (%)	
- Civil servant, professionals	0 (0.0)	1 (100.0)	
Mother's occupation			0.000
- Housewife	23 (23.7)	74 (76.3)	
- Employee	1 (16.7)	5 (83.3)	
- Entrepreneur	4 (33.3)	8 (66.7)	
- Labour	0 (0.0)	2 (100.0)	
Income			0.833
- > regional minimum wage	11 (25.0)	33 (75.0)	
- ≤ regional minimum wage	17 (23.3)	56 (76.7)	

Based on Table 3, the factor related to the incidence of stunted toddlers is the mother's occupation as evidenced by the p-value = 0.000 (p <0.05).

Table 4. Factors Related Weight for Length of Toddlers

Variables	Weight for length			P-value
	Wasted, n (%)	Normal, n (%)	Overweight, n(%)	
Father's education				0.045
- Elementary	3 (15.0)	8 (40.0)	9 (45)	
- Junior high school	1 (3.2)	22 (71.0)	8 (25.8)	
- Senior high school	2 (3.5)	44 (77.2)	11 (19.3)	
- University	0 (0.0)	8 (88. 9)	1 (11.1)	
Mother's education				0.480
- Elementary	0 (0.0)	13 (86.7)	2 (13.3)	
- Junior high school	3 (7.5)	25 (62.5)	12 (30.0)	
- Senior high school	3 (5.8)	35 (67.3)	14 (26. 9)	
- University	0 (0.0)	9 (90.0)	1 (10.0)	
Father's occupation				0.916
- Employee	2 (9.5)	13 (61.9)	6 (28.6)	
- Entrepreneur	2 (4.3)	35 (74.5)	10 (21.3)	
- Labor	2 (4.3)	32 (69.6)	12 (26.1)	
- Civil servant, professionals	0 (0.0)	1 (100.0)	0 (0.0)	
Mother's occupation				0.799
- Housewife	1 (1.0)	70 (72.2)	26 (26.8)	
- Employee	2 (33.3)	4 (66.7)	0 (0.0)	
- Entrepreneur	3 (25.0)	6 (50.0)	3 (25.0)	
- Labour	0 (0.0)	2 (100.0)	0 (0.0)	

Income				0.689
- > regional minimum wage	3 (6.8)	29 (65.9)	12 (27.3)	
- < regional minimum wage	3 (4.1)	53 (72.6)	17 (23.3)	

Based on Table 4, the factor related to the incidence of wasted toddlers is the father's educational background as evidenced by the p-value = 0.045 (p <0.05).

3.1. Discussion

Stunting is a measure of chronic malnutrition expressed in body length or height according to age (PB/U or TB/U). Stunting in the first 1000 days of life (HPK) is irreversible and closely related to functional failure which has an impact on high morbidity and mortality rates in children, increased vulnerability to disease and disruption of cognitive and psychomotor development. The long-term impact that can arise due to stunting is reduced learning achievement and work capacity and causes high losses (De Onis & Branca, 2016).

The high prevalence of stunting can be caused by many factors. According to the World Health Organization (WHO, 2014), causes of stunting in children include maternal nutritional status, exclusive breastfeeding, inadequate food intake and infectious diseases. Apart from that, there are other factors that can influence the nutritional status of stunting, namely maternal characteristics (age, education, occupation and height). Teenage pregnancy can have an impact on a child's linear growth due to nutritional competition between the mother and the baby's colon (Stephenson, T., J. & Schiff, W., J. 2019).

Stunting in children under five years old is still a major nutritional problem in Indonesia. There are many factors that play a role in the occurrence of stunting, including direct causal factors (characteristics of the child, infectious diseases and inadequate food intake) and indirect causal factors, one of which is the characteristics of the mother (being too young when pregnant and having children, having a poor body posture. short, low level of education and knowledge, as well as work related to family income and food availability in the household) (Kemenkes, 2018).

The results of this study show that working mothers are related to the incidence of stunting among toddlers in Sukamandiri Village. These results are in line with research by Savita and Amelia (2020) which states that maternal employment is related to the incidence of stunting. Mothers who do not work are 5 times more likely to have stunted children.

The results of this study are different from research conducted by Wanimbo and Wartiningsih (2020) which stated that maternal employment was not related to the incidence of stunting. Working mothers cannot care for their children well because they don't have much time to spend with their children, so this can be a risk factor for children experiencing stunting. Mothers not working can also be associated with low levels of education. Mothers with low education are more likely not to work so they have time in the morning to come to the posyandu every day to get additional food and receive nutrition and health education. This can be seen from the level of attendance of mothers at the posyandu every day which is listed on the attendance list at the posyandu.

Apart from stunting, another nutritional problem experienced by toddlers in Indonesia is wasting. The results of this study show that the family characteristic that is related to wasting is father's education. Previous studies stated that the factor associated with malnutrition was maternal education. Ramli et al's research in Maluku (2009) found that maternal education was significantly related to the incidence of stunting in toddlers. This can be caused by the mother's greater parenting role than the father's. Fathers work more so they spend less time with their children (Ni'mah, 2015). Research in Nepal by Tiwari, et al (2014) shows the same

thing that maternal education is related to the incidence of toddler stunting. The mother's level of education also determines the ease with which the mother can absorb and understand the nutritional knowledge obtained. This can be used as a basis for distinguishing appropriate counseling methods.

The results of this research are in line with research by Hapsari and Ichsan (2018) which states that father's education is related to the incidence of stunting. The father's education level can influence the father's job, which in turn will affect family income. Fathers with higher education tend to have jobs with better incomes. So, the family income allocated to purchasing food is higher.

4. Conclusion

Most respondents are children of two parents with a high school education background. Most fathers work as entrepreneurs and most mothers are housewives (82.9%). Most family incomes are lower than the regional minimum wage (62.4%). Most of the nutritional status was normal for all indicators. However, a small proportion were underweight (11.1%), stunted (23.9%) and wasted (5.1%). Factor related to the incidence of stunted toddlers is the mother's occupation and the incidence of wasted toddlers is the father's educational background. ncreasing the level of education and family income is expected to improve the nutritional status of children under five.

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