Achievement of Height and Weight Based on Family Characteristics as Early Detection of Nutritional Disorders in Toddlers

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ABSTRACT

Achievement of optimal height and weight of toddlers in their growth is very necessary to improve and determine the quality of human resources in the future. Many factors affect this achievement, one of which is external factors, namely family characteristics (mother's age, family income, mother's employment status, mother's education and number of children). This study aims to determine the achievement of children's height and weight based on family characteristics (mother's age, family income, mother's employment status, mother's education and number of children). This type of research is an analytic survey, with a cross sectional observation design. The sampling technique used was Total Sampling. The sample size in this study was 45 respondents. This research was conducted in January-March 2022. Statistical analysis used in this study the Pearson Chi-square test. Based on the results of statistical tests, the correlation coefficient table shows that the mother's age, p value = 0.242, mother's education level, p = 0.018, number of children, p = 0.552, mother's work status, p = 0.183, and family income, p = 0.022. The conclusion in this study is that there is a relationship between mother's education level and family income with the achievement of toddler height and weight, there is no relationship between maternal age, number of children and mother's work status with achievement of toddler height and weight. It is recommended to mothers who have toddlers to pay more attention and monitor the growth process of their children.

Keywords: Toddler Height and Weight Achievement, Toddler Nutrition, Level of education

INTRODUCTION

Toddler period is a golden period in children's physical, intellectual, mental and emotional growth. In addition to the golden period, toddlerhood is a critical period[1]. This period is a golden opportunity as well as times that are vulnerable to negative influences. Good and sufficient nutrition, good health status, proper parenting, and proper stimulation during this period will help children to grow up healthy and able to reach their optimal abilities so that they can contribute better in society[2]. The problem of under-five nutrition is still a problem in Indonesia and in the world. Many toddlers experience less than optimal growth where their weight and height are not normal. Currently, the prevalence of chronic malnutrition in Indonesia is 24.4% better than Myanmar (35%), but still higher than Vietnam (23%), Malaysia (17%), Thailand (16%) and Singapore (4%) while at the provincial level the number of malnutrition problems in East Java is 23.5%, which is still high for provinces that have data on malnutrition rates[3].

The development of the quality of human resources (HR) is an important concern for the current government, where the quality of resources is closely related to the nutritional status of the Indonesian people[4]. The Ministry of Health of the Republic of Indonesia has priority programs, one of which is to improve the health and nutritional status of mothers and children[1]. At the age of toddlers, it is necessary to fulfill balanced nutrition in order to increase the process of optimal height and weight growth[5]. In fulfilling a balanced nutrition for toddlers, there are many factors that influence it, both internal and external factors. Internal factors include history of exclusive breastfeeding, history of IMD, gender, infectious diseases, energy intake and external factors include maternal education level, family income, employment status[6]. By monitoring the nutritional status of children, it is not only important for growth, but the development of children will also be monitored, because with good nutritional status they have a 1.3 times more chance to improve child development[7]. Because of that factor from parents which is one of the external factors that can affect the nutrition of toddlers, therefore as parents it is also important to know and understand how to check and stimulate early growth and development of their children, so that delays or deviations that occur in their children can be detected and treated. stimulation quickly[8].

The several external factors that cause toddlers to experience malnutrition are age and mother's education. Mothers who are educated and have a mature age are better prepared and able to prevent their toddlers from experiencing malnutrition and malnutrition[9]. In another study conducted it was stated that mother's education was also related to nutritional status but the family income factor was not related to nutritional status in toddlers. Food for his family will have an impact on the lack of food intake for his toddler[10]. With the availability of anthropometric data, height and weight by age group can be used as a method of assessing nutritional status. In general, the anthropometric indices used are weight for age (W/W), height for age (TB/U) and weight for height (W/W)[11].

Monitoring of growth using weight and height is carried out routinely at the posyandu every month. The schedule for measuring BB/TB is adjusted to the schedule for early detection of toddler growth and development. Measurements can be carried out by trained health or non-health workers[2]. Based on the results of a preliminary study that has been carried out, at Posyandu 1 in Balongrejo Bagor Nganjuk Village, from interviews with 15 respondents, it was found that the characteristics of 10 respondents were working mothers, 5 respondents had a high level of education, 8 respondents had high incomes, and Anthropometric measurements were obtained from 15 respondents, 9 toddlers had less nutrition and 6 toddlers had normal nutrition. Based on the description above, the researcher is interested in conducting research on "Achievement of Height and Weight Based on Family Characteristics as Early Detection of Nutritional Disorders in Toddlers"

METHOD

The type of research used in this research is an analytical survey research type with a cross sectional research design. This research was conducted at Posyandu 1, Balongrejo Village, Bagor District, Nganjuk Regency. This research was conducted in January – March 2022. The research population was all mothers and toddlers participating in Posyandu 1 Balongrejo Bagor Nganjuk Village. The number of samples in this study were 45 respondents. The sampling technique used was Total Sampling. The instruments used were questionnaires and observation sheets for data on maternal characteristics (mother's age, family income, mother's employment status, mother's education and number of children) while the height and weight achievement used anthropometric measurements of height and weight. The independent variable is the characteristics of the mother (mother's age, family income, mother's employment status, mother's education and number of children) while the dependent variable is the achievement of height and weight of toddlers. The data analysis used was univariate analysis using the frequency distribution table for each variable, namely independent and dependent. To find out whether there is a relationship between the variables of maternal characteristics and the achievement of height and weight of toddlers, it was analyzed using the Pearson Chi-square test. The data is processed using the SPSS program. It is said that there is a significant difference and there is a relationship if the level of significance (p) < 0.05.

RESULTS

Table 1. Frequency Distribution Based on Characteristics of Respondents (n=45)

Family Characteristics	N	Percent (%)
Mother's Age		
≤ 20-25 age	6	13,3
26-30 age	26	57,8
31-35 age	8	17,8
36-40 age	5	11,1
Mother's Education Level		
<9 Years	14	31,1
>9 Years	31	68,9
Number of Children		
1 children	26	57,8
≥2 children	19	42,2
Mother's Employment Status		
Working	30	66,7
Doesn't work	15	33,3
Family Income		
> Rp 2.100.000	38	84,4
< Rp 2.100.000	7	15,6
Gender		
Female	27	60
Male	18	40
Children Age		
0-12 month	9	20
13-24 month	15	33,3
25-36 month	8	17,8
37-48 month	7	15,5
49-60 month	6	13,3
Toddler Weight		
6-12 kg	26	57,8
13-19 kg	16	35,6
20-26 kg	2	4,4
27-33 kg	1	2,2
Toddler Height		
60-70 cm	9	20
71-80 cm	10	22,2
81-90 cm	6	13,3
91-100 cm	11	24,4
101-110 cm	5	11,1
111-120 cm	4	9
Achievement of weight/height Toddlers		
Bad	1	2,2
Not enough	16	35,5
Normal	20	44,4
Obesity	8	17,8

The distribution of respondents' family characteristics is in table 1. Based on maternal age, it can be seen that the largest age group is in the 26-30 year age group as many as 26 respondents (57.8%) and the least in the 36-40 year age group as many as 5 respondents (11, 1%). In table 1 it can be seen

that the most respondents in the maternal education group were with education > 9 years as many as 31 respondents (68.9%) and the least in the mother group with education < 9 years as many as 14 respondents (31.1%). Table 1 shows that the largest number of respondents in the group of mothers with children 1 were 26 respondents (57.8%) and the least respondents were in the group of mothers who had children 2 as many as 19 respondents (42.2%). In table 1, it can be seen that the occupational status group of mothers with the highest number in the working status group was 30 respondents (66.7%) and the least was in the group of mothers who did not work as many as 15 respondents (33.3%).

In table 1 it can be seen that the group of respondents with the most family income at income > Rp. 2,100,000 as many as 38 respondents (84.4%) and the group of respondents with the least family income at < Rp. 2,100,000 as many as 7 respondents (15.6%).). Table 1 also shows the characteristics of toddlers that according to age group, the most toddlers are 13-24 months old as many as 15 toddlers (33.3%) and the least age group is 49-60 months old with 6 toddlers (13, 3%). In table 1 it can also be seen that the maximum weight of toddlers is 6-12 kg as many as 26 toddlers (57.8%), and toddlers' weight is at least 27-33 kg as many as 1 toddler (2.2). In table 1 it can also be seen that the maximum height of toddlers is 91-100 cm as much as 11 cm (24.4) and the minimum height of toddlers is 111-120 cm as many as 4 toddlers (9%). Table 1 shows that 20 (44.4%) toddlers have normal status, and 1 toddler (2.2%) has poor status.

Tabel 2. Bivariate Analysis Results

Independent	Dependent	P
Mother's Age	Weight/Height	0,242
Mother's Education Level	Weight/Height	0,018
Number of children	Weight/Height	0,552
Mother's Employment Status	Weight/Height	0,183
Family Income	Weight/Height	0,022

Based on Table 2, it is known that the variables that have a p-value <0.05, which means that there is a significant relationship between variables, are the mother's education level, p-value <0.018 and family income, p-value <0.022. For variables Mother's Age, Number of Children, Mother's Employment Status has no relationship with p value > 0.05

DISCUSSION

Toddler Weight and Height Achievement

Human Resource Development is closely related to growth and development from an early age, namely in the toddler years, this period is a golden period as well as a critical period. It is necessary to monitor growth at this time, it can be done by measuring the weight and height of toddlers. By looking at the assessment of the achievement of weight and height on a regular basis, it will provide very important information in planning and intervention efforts to improve the nutritional status of children under five. Based on the results of the analysis that the achievement of height and weight of toddlers is

mostly good with normal growth of 20 toddlers (44.4%), but there are also toddlers with less growth as many as 16 toddlers (35.5%), poor growth of 1 toddler (2,2) and have obesity as many as 8 toddlers (17,8). In the growth process of toddlers, many factors influence, both internal and external factors. Internal factors include history of exclusive breastfeeding, history of IMD, gender, infectious diseases, energy intake and external factors include maternal education level, family income, employment status[6].

Achievement of Weight and Height Based on Mother's Age Characteristics

Mother's age is closely related to the level of maturity or readiness to play a role as a mother in providing treatment in her family. Mothers of toddlers who are less than 20 years old usually have poor parenting for their children where this parenting can affect the nutritional status of toddlers and make the toddler's growth process not optimal[12]. However, in this study, it was found that there was no relationship between maternal age and the achievement of weight and height of toddlers with p value = 0.242. In this study, although the mother's age is young, the mother's level of education is high, which in practice feeding her child is correct so that the toddler does not experience a lack of nutritional intake in the growth process. The results of this study are also supported which states that there is no relationship between maternal age and the achievement of nutritional status of children under five[13].

Achievement of Weight and Height Based on Characteristics of Mother's Education Level

Based on the results of the analysis that the achievement of weight and height based on the characteristics of the mother's education level, the results obtained with a p value = 0.018, which means that there is a relationship between the achievement of weight and height of children under five with the level of education of the mother. The level of education referred to in this study is the last education that the mother completed in formal school, low if 9 years and high if > 9 years. Mothers with high levels of education make it easier for mothers to receive and seek information from outside about nutrition and health related to the growth of toddlers compared to mothers who have lower levels of education[10]. The results of this study are in line which states that there is a significant relationship between maternal education and the incidence of chronic malnutrition with a sig. (2-tailed) 0.001. With a high level of education will affect knowledge so that positive behavior changes occur[14]. The level of education of the mother plays an important role in the growth process, when in the process of observing her child if there is an abnormality or health problem in the child, it can be addressed immediately, so that the growth process experienced by the child is not disturbed.

Achievement of Weight and Height Based on Characteristics of Number of Children

Based on the results of the analysis of the achievement of weight and height based on the characteristics of the number of children, the p value = 0.552, which means that there is no relationship between the achievement of weight and height of children under five with the number of children. The results of this study are not in line which states that there is a relationship between the number of children in the family and the nutrition of children under five. With a large number of children in the family,

when followed by an unequal distribution of food will cause children to experience nutritional deficiencies so that the growth process is disrupted[15]. However, in this study, the distribution was found to be at most 57.8% of new mothers having one child, so mothers are still focused and their attention has not been shared with other family members in fulfilling nutrition for their children.

Achievement of Weight and Height Based on Characteristics of Mother's Occupational Status

Based on the results of the analysis of the achievement of weight and height based on the characteristics of the number of children, it was found that the p value = 0.183, which means that there is no relationship between the achievement of weight and height of children under five with the work status of the mother. The results of this study are in line which states that there is no relationship between the work status of mothers and the nutrition received by toddlers. Mother's participation in work is directly related to the time provided to care for and breastfeed their children, so it has negative consequences on the nutrition of their children, but on the other hand it will have a positive impact on increasing family income so that families can provide better nutritional needs[15]. In this study, almost all respondents were 30 (66.7%) working mothers. Although working mothers have a high level of education, almost all respondents have a higher education level of 31 (68.9%) and have an income above the minimum wage as much as 38 (84.4%), with this it can be concluded that although mothers work but with a high level of education mothers are more able to manage their time and receive information more easily about care or about the health of their children, and with high incomes mothers can provide adequate nutritional needs for their children.

Weight and Height Achievement Based on Family Income

Based on the results of the analysis of the achievement of weight and height based on the characteristics of family income, the results obtained are p value = 0.022, which means that there is a relationship between the achievement of weight and height of children under five with family income. From the results of this study, almost all respondents have income above the minimum wage. The results of this study are also supported, which states that there is a relationship between family income and the nutritional status of children under five with a p-value of 0.002 and states that generally if a family's income is high, the amount and type of food tends to vary[16]. . The level of income determines what kind of food will be purchased with the additional money. Other research results that support this research which states that there is a relationship between family income and the nutritional status of children under five with p value = 0.029[17]. With a high level of family income along with the number of children owned by the mother, which is still one, the mother is more optimal in meeting nutritional needs both in terms of quality and quantity given to her children.

CONCLUSION

Based on the results of the research conducted, it can be concluded that there is a relationship between the achievement of height and weight of toddlers with the level of mother's education and family income. There is no relationship between the achievement of height and weight with maternal age, number of children and maternal employment status. Suggestions that can be given from the results of this study are suggested to mothers who have toddlers so that in the future they can monitor and pay more attention to the growth process of their toddlers, one of which is by providing adequate nutrition and always monitoring growth and development at the local posyandu.

REFERENCES

1. Kemenkes RI. 2021. Profil Kesehatan Indonesia, Jakarta: Kemenkes RI

2. Kemenkes, R. I. (2016). Pedoman Pelaksanaan Stimulasi, Deteksi dan Intervensi Dini Tumbuh Kembang Anak. Jakarta: Kementrian Kesehatan RI.

3. Badan Pusat Statistik. 2017, Depkes RI Survay Demografi dan Kesehatan Indonesia, Jakarta: BPS

4. Kemenkes RI. 2019. Profil Kesehatan Indonesia, Jakarta: Kemenkes RI

5. Irfiani, E., & Rani, S. S. (2018). Algoritma K-Means Clustering untuk Menentukan Nilai Gizi Balita. JUSTIN (Jurnal Sistem dan Teknologi Informasi), 6(4), 165-172.

6. Sari, D. F., & Oktacia, R. (2018). Gambaran Faktor Risiko Kejadian Stunting Pada Balita Di Wilayah Kerja Puskesmas Nangalo Kota Padang. Jurnal Kesehatan Mercusuar, 1(1).

7. Sari, P. M., Nurdina, N., & Siyoto, S. (2020). Analysis of Determinants that Influence on Development of the Participants Family of the BPJS Health Recipient Dues (PBI) in Balongrejo Village, Bagor Subdistrict, Nganjuk District. Journal for Quality in Public Health, 3(2), 176-185.

8. Padila, P., Andari, F, N., Andri, J. (2019).Hasil Skrining Perkembangan Anak Usia Toddler antara DDST dengan SDIDTK.Jurnal Keperawatan Silampari, 3(1),244–256.

9. Rahma, R. Y. D., Sholichah, F., & Hayati, N. (2020). Karakteristik Ibu Dan Status Gizi Balita Menurut Bb/U Di Desa Tambakan Kecamatan Gubug Kabupaten Grobogan Tahun 2019. Journal of Nutrition College, 9(1), 12-19.

10. Hayyudini, D., Suyatno, S., & Dharmawan, Y. (2017). Hubungan karakteristik ibu, pola asuh dan pemberian imunisasi dasar terhadap status gizi anak usia 12-24 bulan (studi di wilayah kerja Puskesmas Kedungmundu Kota Semarang tahun 2017). Jurnal Kesehatan Masyarakat (Undip), 5(4), 788-800.

11. Muljati, Sri, et al. "Gambaran Median Tinggi Badan Dan Berat Badan Menurut Kelompok Umur Pada Penduduk Indonesia Yang Sehat Berdasarkan Hasil Riskesdas 2013." Nutrition and Food Research, vol. 39, no. 2, 2016, pp. 137-144,

12. Khusna, N. A., & Nuryanto, N. (2017). Hubungan usia ibu menikah dini dengan status gizi Balita

di Kabupaten Temanggung. Journal of Nutrition College, 6(1), 1-10.

13. Mey Liswati, E., Widyaningsih, E. N., Hapsari, I. B., & SiT, S. (2016). Hubungan karakteristik ibu dengan status gizi anak balita yang memiliki jamkesmas di desa tegal giri kecamatan nogosari kabupaten boyolali (Doctoral dissertation, Universitas Muhammadiyah Surakarta).

14. Siregar, S. H., & Siagian, A. (2021). Hubungan Karakteristik Keluarga dengan Kejadian Stunting pada Anak 6–24 bulan di Kabupaten Langkat. Tropical Public Health Journal, 1(1), 1-8.

15. Labada, A., Ismanto, A. Y., & Kundre, R. (2016). Hubungan karakteristik ibu dengan status gizi balita yang berkunjung di Puskesmas Bahu Manado. Jurnal Keperawatan, 4(1).

16. Kasumayanti, E. (2020). Hubungan Pendapatan Keluarga dengan Status Gizi Balita di Desa Tambang Wilayah Kerja Puskesmas Tambang Kabupaten Kampar Tahun 2019. Jurnal Ners, 4(1), 7-12.

17. Jago, F. (2019). Pengetahuan ibu, pola makan balita, dan pendapatan keluarga dengan status gizi pada balita di wilayah kerja Puskesmas Danga Kecamatan Aesesa Kabupaten Nagekeo. Lontar: Journal of Community Health, 1(1), 16-22.

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