



Correlation of Characteristics, Maternal Nutrition Knowledge with Nutritional Status (H/A) in Baduta in Sumbang District, Banyumas Regency, Central Java, Indonesia

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Abstract

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BACKGROUND: Older toddlers period (children aged 6–23 months) is often referred to as the “golden age,” “critical period.” The World Bank (2006) refers to it as the “window of opportunity” because it is one of the periods of dealing with stunted and severe stunted the most effective. The immediate cause of stunting is a lack of food intake and infectious diseases. Therefore, maternal knowledge about nutrition influences behavior and attitudes in choosing food. Ignorance of foods with good nutrition will cause the selection of the wrong food, and poor nutrition will cause the child’s nutritional status to be poor and lacking.

AIM: This study aimed to determine the relationship of nutritional knowledge to the nutritional status of the height/age index in older toddlers in Sumbang District, Banyumas Regency, Central Java.

METHODS: This descriptive-analytic study was taken from secondary data using a cross-sectional design conducted on 736 mothers who have older toddlers in Sumbang District, Banyumas Regency, Central Java.

RESULTS: There is no relationship between the nutritional status of children under 2 years old (H/A) with maternal age ($p = 0.441$), mother’s education ($p = 0.232$), and mother’s occupation ($p = 0.284$). There is a relationship between the nutritional status of children under 2 years (H/A) and mother’s knowledge ($p = 0.002$).

CONCLUSION: This study aimed to determine the relationship of nutritional knowledge to the nutritional status of the height/age index in older toddlers in Sumbang District, Banyumas Regency, Central Java. There is no relationship between the nutritional status of children under 2 years old (H/A) with maternal age ($p = 0.441$), mother’s education ($p = 0.232$), and mother’s occupation ($p = 0.284$). There is a relationship between the nutritional status of children under 2 years (H/A) and mother’s knowledge ($p = 0.002$).

Introduction

Baduta is used for babies under 2 years or 0–23 months [1]. This period is also referred to as the “golden period,” “critical period,” and the World Bank (2006) refers to it as the “window of opportunity” because it is one of the most influential periods for dealing with stunting [2].

Stunting is a chronic malnutrition problem caused by a lack of nutritional intake for a long time, resulting in growth disorders in children, namely, lower or shorter height (short) than the standard age [3]. The prevalence of stunting in infants under 2 years old in Indonesia is 29.9% (short is 17.1% and very short is 12.8%) [4]. This figure is still above the 2019 RPJMN target of 28%, while the prevalence of stunting is 24.5% and the prevalence of wasting is 10%. It shows that in the Banyumas district, there are acute-chronic nutritional problems, where the prevalence of stunting is more than 20% and the prevalence of wasting is more than 5% [5].

The role of parents, especially mothers, is crucial in fulfilling nutrition, because children need

parental attention and support in facing very rapid growth and development [6]. According to In’am (2016), parental nutrition knowledge influences their children’s behavior and attitudes in choosing food. Ignorance about proper nutrition and nutrients’ requirements leads to choosing the wrong food of low nutritional contents which might cause poor nutritional status of children [7].

Therefore, the purpose of this study was to determine the relationship between nutritional knowledge and the nutritional status of the height/age (H/A) index in infants below 2 years old in the subdistrict of Donor, Banyumas Regency, Central Java in 2018.

Methods

This research was conducted on children under 2 years old (aged 6–23 months) in the subdistrict of Donor, Banyumas Regency, Central Java, on October 22–26, 2018.

This study was taken from the secondary data using a retrospective design, where the nutritional status of the H/A index was the dependent variable, while occupation, education, and knowledge of nutrition in the mother were the independent variables.

The population of this research was baduta, who live in the subdistrict of Donor. The sample is part of the baduta population. By fulfilling several criteria, namely, the inclusion criteria, namely, infants aged 6–23 months, if there was more than one child in one household, the sample was the oldest child. At the same time, the exclusion criteria were baduta and their families who were not at home during data collection.

The data used are data from the survey results of nutrition program planning, namely, data on age, education level, mother's occupation, and nutritional status of children under 2 years old. Data from the survey were collected and then verified.

Mother's characteristics data include age, education level, occupation, nutritional knowledge, and nutritional status of baduta H/A index obtained from secondary data in questionnaires and statistical software. Primary data were obtained by interviewing respondents.

Data of the nutritional status of children under 2 years old data of the nutritional status of children under 2 years old were obtained from anthropometric survey previously collected data. Baduta's body length was measured with an infantometer, with a measuring tape length of 94.5 cm and an accuracy of 0.1 cm. The requirements for measuring the length of a child's body are Children under 2 years of age are measured lying down and If there are children who are measured standing up, then the measurement results are converted by adding 0.7 cm.

After obtaining the data, the maternal characteristics data were categorized and analyzed descriptively using SPSS. Meanwhile, the stunting status data were obtained from anthropometric length data, which were calculated to get the Z-score value, then compared with the category and threshold for child nutritional status based on the H/A index. Based on anthropometric data processing using the WHO Anthro software, the result is a Z-score which is analyzed according to nutritional status indicators according to the WHO 2005 standards.

Results and Discussion

The sample in this study amounted to 736 mothers. Mothers who have children under 2 years old are at most 21–35 years old, namely, 539 people or 73.3%. This shows that the majority of mothers who have children under the age of two are at an age that is not at risk during childbirth. Meanwhile, 27.7% of

mothers who have children under the age of 5 years are classified as at risk ages, namely, <21 years and >35 years. As for the level of education, it can be seen that most of the mothers who have children under the age of seven (73%) have low education, namely, junior high school and below.

In this study, the mothers who have children under 2 years old who did not work or became housewives were 616 or 83.7%. Meanwhile, the total number of working mothers is 120 people or 16.3%.

A total of 357 people, or 48.5% of mothers, had a good level of knowledge. However, there are still 98 mothers who have children under 2 years old or 13.3% whose knowledge was still relatively lacking. The stunting rate of baduta in the subdistrict of Donor was 18.5%.

Based on the 2018 Riskesdas, the data on stunting children in Indonesia are 29.9% [8]. Meanwhile, the prevalence of stunting in Banyumas Regency is 24.5% [9]. It shows that the proportion of stunting children under 2 years old in the subdistrict of Donor is still relatively low.

Table 1 shows that the prevalence of stunting was greater in children whose mother's age is classified as risky (20.3%), that is, age <21 years and >35 years. Meanwhile, the prevalence of not stunted children was greater in children whose mother's age is classified as not at risk, 82.2% with a maternal age group of 21–35 years.

Table 1: Relationship of maternal age with nutritional status of baduta (H/A)

Mother's age	Nutritional status H/A				Total	
	Stunting		Normal		n	%
	N	%	n	%		
At-risk	40	20.3	157	79.7	197	100
No-risk	96	17.8	443	82.2	539	100

*p = 0.441, R = 0.028.

Maternal age at delivery plays a key role in determining the baby's nutritional status. Mothers who are pregnant and give birth at an age at risk are more prone to babies with genetic disorders [10]. In addition, mothers who give birth to children at a risky age can give birth to children with low body weight who have risk of becoming stunted. The correlation test results showed p = 0.441, which means that there was no significant relationship between maternal age and the nutritional status of children under 2 years old based on H/A. The results of this study are in line with research conducted by Ekawati *et al.* (2015), which showed that there was no significant relationship between maternal age and the nutritional status of children under 2 years old [11].

From Table 2, it is known that the prevalence of stunting is greater in children whose mothers have a history of low education, namely, 19.5% in the category of low education, junior high school graduates, and below. Meanwhile, the prevalence of not stunted children is greater in children whose mothers have

a history of high education, namely, high school and university graduates, which is 84.3%. The correlation test results show a value of 0.232, which indicates that there is no significant relationship between a mother's education and the nutritional status of children under 2 years old based on H/A. This result is in line with research conducted by Lette *et al.*, in 2015, which showed no significant relationship between a mother's education and the nutritional status of children under two with $p = 0.120$ [12].

Table 2: Relationship between mother's education and nutritional status of baduta (H/A)

Education	Nutritional status H/A					
	Stunting		Normal		Total	
	N	%	n	%	n	%
Low	105	19.5	433	80.5	538	100
High	31	15.7	167	84.3	198	100

* $p = 0.232$, $R = 0.04$.

Mothers who are highly educated are expected to have more insight and more quickly receive nutrition information. However, in this study, mothers with low education did not always have stunted children. It is because many other factors can affect the occurrence of stunting. For example, if the mother has low education but is active in Posyandu activities and routinely checks the child's growth and development, then the child's health will also be good [12].

Table 3 shows that the prevalence of stunting is greater in children whose mothers do not work, 19.2%. Meanwhile, the prevalence of not stunted children is greater for working children, 85%. The correlation test results showed $p = 0.284$, which indicated no significant relationship between the mother's occupation and poor nutritional status based on H/A. The results of this study are in line with research conducted by Oesmaini *et al.*, in 2015, which stated that of the 76 respondents who did not work, the nutritional status of children under 2 years of age was normal (72%) [13], [14]. In this study, most children who were not stunted had working mothers. Other family members can assist working mothers in taking care of their children to monitor their nutritional status.

Table 3: Relationship between mother's occupation and nutritional status of baduta (H/A)

Occupation	Nutritional status H/A					
	Stunting		Normal		Total	
	N	%	n	%	n	%
Do not work	118	19.2	498	80.8	616	100
Work	18	15	102	85	120	100

* $p = 0.284$, $R = 0.04$.

Table 4 shows that the prevalence of stunting among children with stunting is greater in children with less knowledge of their mothers, namely, 26.5%, while the prevalence of not stunted children is greater in children whose mother's knowledge is good, namely, 82.8%. The correlation test results showed $p = 0.02$, which means a significant relationship between the mother's knowledge and the nutritional status of under-fives based on H/A. It is in line with research conducted by Nurma *et al.*, which states that there is a

significant relationship between a mother's knowledge and the nutritional status of children under 5 years old. A mother's level of knowledge is the key in household management; this affects the mother's attitude in choosing food ingredients that will be consumed by the family. Mothers with good nutrition knowledge understand the importance of good nutritional status for health and well-being [13].

Table 4: Relationship of mother's knowledge with baduta nutritional status (H/A)

Knowledge	Nutritional status H/A					
	Stunting		Normal		Total	
	N	%	N	%	n	%
Lack of knowledge	26	26.5	72	73.5	98	100
Good knowledge	110	17.2	528	82.8	638	100

* $p = 0.2$, $R = 0.08$.

Stunting incidence in toddlers is related to nutrient intake in toddlers. The daily intake of nutrients eaten by toddlers depends on the mother so that the mother has a vital role in changing the intake of nutrients in toddlers. Mothers with a better level of knowledge are more likely to apply their knowledge in caring for their children, especially providing food according to the nutrients needed by toddlers so that toddlers do not experience a lack of food intake. Mothers who have good knowledge are expected to apply it in everyday life [11].

Conclusion

1. The characteristics of mothers who have children under 2 years old are mostly 21–35 years old (73.3%), have low education (73%), do not work (83.7%), and have good knowledge (86.7%)
2. The nutritional status of children under 2 years of age based on H/A, namely, stunting 18.5% and normal 81.5%
3. The prevalence of stunting is greater in children whose mothers are at risk age (20.3%), have low education (19.5%), do not work (19.2%), and lack knowledge (26.5%).
4. There is no relationship between the nutritional status of children under 2 years old (H/A) with maternal age ($p = 0.441$), mother's education ($p = 0.232$), and mother's occupation ($p = 0.284$)
5. There is a relationship between the nutritional status of children under 2 years (H/A) and mother's knowledge ($p = 0.002$).

Suggestion

It is important to provide education about 1000 HPK to prospective pregnant women to increase mother's knowledge and regular monitoring of mothers who are at risk of having stunting children to prevent stunting.

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References

1. Ministry of Health of the Republic of Indonesia. Dictionary of the Ministry of Health of the Republic of Indonesia. Indonesia: Ministry of Health of the Republic of Indonesia; 2017.
2. Mebus G. Short Toddler Situation. *ACM Sigapl App Quote Quad*. 1998;29(2):63-76. <https://doi.org/10.1145/379277.312726>
3. Ministry of Health of the Republic of Indonesia. Prevent Stunting With Improved Diet, Parenting, and Sanitation. Indonesia: Ministry of Health; 2022.
4. Mansbridge J. Skin substitutes to enhance wound healing. *Expert Opin Investig Drugs*. 1998;7(5):803-9. <https://doi.org/10.1517/13543784.7.5.803>
PMid:15991970
5. Ministry of Health of the Republic of Indonesia. Nutritional Status Monitoring Pocket Book 2017. Indonesia: Ministry of Health Republic of Indonesia; 2017. <https://doi.org/10.3870/tzzz.2010.07.001>
6. Nirmala D. Nutrition for School Children. Jakarta: Kompas; 2012.
7. In'am M. The Relationship between Parents' Knowledge Level and Nutritional Status of Children Under 5 Years Old at the Posyandu in the Working Area of the Nusukan Public Health Center, Surakarta. Surakarta: Science and Technology Publications; 2016.
8. Riskesdas K. Main results of basic health research (RISKESDAS). *J Phys A Math Theor*. 2018;44(8):1-200. <https://doi.org/10.1088/1751-8113/44/8/085201>
9. Banyumas District Health Office. Health Profile of Banyumas Regency. Vol. 1. Tamil Nadu: Banyumas District Health Office; 2015. p. 1-180.
10. Shukri A. Childbirth at the Age Above 35 Years. *J e- Biomedik*. 1(1). 2013.
11. Ekawati M, Kawengian SE, Kapantau NH. Relationship between mom's knowledge of nutrition with the nutritional status of children aged 1-3 years in Mopusi village Lolayan district, Bolaang Mongondow Induk North Sulawesi. *J E Biomedik*. 2015;3(2):237-48.
PMid:25076661
12. Lette S, Wungouw HP, Woda RR. Relationship between parenting patterns and mother's education level with nutritional status of toddlers at Posyandu Melati, Naimata Village, Penfui Health center work area. *Cendana Med J*. 2019;16:35-43.
13. Mulyadi. Relationship on education level and mother's attitudes about exclusive association with nutritional status of children. *Eduvest*. 2021;1(5):3727.
14. Oesmaini M, Faridah, Fatmawati TY. Characteristics of mothers and nutritional status of toddlers age 0-2 years in the work area of Rawasari health center. *Baiturrahim Acad J*. 2015;4(2):18-25.