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Research article

Analysis of Factor Feeding Patterns For Stunting In Toddlers Aged 24-59 Months

Aisyah Lahdji[1], Krishnapatti Panjalu[1], Hema Dewi Anggraheny[1]

[1] Faculty of Medicine, Universitas Muhammadiyah Semarang, Indonesia

Article Info	Abstract
	In 2019, the prevalence of stunting was 3.91 percent. In 2020, the prevalence of stunting was 3.72 percent, and will grow to 3.93% in 2021. The prevalence in February of 2022 is 2.60%. The purpose of this study was to determine the factors of feeding patterns for stunting in toddlers aged 24-59 month at Karanganyar I Public Health Center, Demak Regency. This study uses a cross-sectional, quantitative, analytic observational design. Mothers of children aged 24-59 months make up the research sample using the Total Sampling technique. Collecting data using primary, secondary data, interviews with respondents using questionnaire on the factors of feeding patterns which have been tested for validity and reliability. The logistic regression test and the chi square correlation test can be used to determine the relationship between independent and dependent variables and their risk factors. Most mothers of toddlers with stunting have inappropriate eating habits (type, amount, and schedule). Knowledge, education, profession, income, and technology all have relationship with one another (p value 0.05). Knowledge has the greatest impact on incidence stunting, with a p value of 0.015 OR 11.182; (95% CI 1.613 - 77.529). In the working area of the Karanganyar I Public Health Center, Demak Regency, the majority of mothers with toddlers stunting have knowledge about feeding patterns that still need to be improved. The feeding pattern (type, amount, and schedule) used by the mother to meet her toddler's nutritional demands will be more appropriate the greater the mother's knowledge, educational background, employment status, family income, and technological used.

INTRODUCTION

Children who are shorter than other children of their age in both height and body length are said to be stunted.[1,2,3] It is intermittently explained that children are short or stunting, specifically nutritional status based on the height-based index for age (TB/U) with z score -2 SD, with reference to Regulation of the Ministry of Health in the Republic of Indonesia No. 2 of 2020 concerning anthropometric standards for assessing the nutritional status of children.[2]

According to the Asian Development Bank (ADB), Indonesia has the greatest frequency of stunting in Southeast Asia and is ranked

second in the nation overall with a total percentage of 31.8% in the South East Asia Regional (SEAR).[1] In 2020, stunting will impact 151 million children under the age of 5, or almost 55% of all children in Asia, with an average case rate of 24.1% in Southeast Asia.[2]

According to data from the 2019 Status Gizi Balita Indonesia (SSGBI), stunting is relatively common in Indonesia, where its prevalence is 27.67%, compared to Southeast Asia's prevalence of 24.7%.[3] According to statistics from 2021 received from the Studi Status Gizi Indonesia (SSGI), there are around 24.4% of children in Indonesia who are between the ages of 24 to 59 months who have stunting.[4]

The Ministry of Health's 2019 Riskesdas (Basic Health Research) study confirmed the prevalence value of children stunting very short in the Central Java Province, namely in children aged 0 to 59 months, with a prevalence value of 27.7%.[4] According to the 2020 SSGBI, which was conducted by the Ministry of Health, 20% of toddlers in Central Java Province had stunting, it was reported.[5]

In the Demak Regency region, the prevalence of stunting in 2017 was 27%, while in 2018, it was 26.7%, including a high prevalence rate and rank number 7 in Central Java.[6]

Based on the most recent information based on Damayanti's research in 2019, the prevalence of stunting in Demak Regency has substantially increased to 50.23%.[6] So, in 2024 the target problems with stunting, particularly in Demak Regency, must be immediately remedied and the prevalence rates until they reach the objective of 14%[3]

In the Demak Regency's work area of the Karanganyar I Public Health Center in 2018, the prevalence value for stunting in children under five was 4.26%. 2019 have seen a 3.91% increase in the frequency of stunting in children under five. In 2020, the prevalence of stunting was 3.87% in a single year, and it will rise to 3.93% in a single year in 2021. According to the most recent data in 2022 from February, the frequency of stunting is as high as 2.60%. Since the goal prevalence rate for stunting at this health facility is 2.00%, the number of cases of prevalence rate stunting should be handled very quickly.

The most important element that also affects the probability of stunting is a child's nutritional consumption during the first 1000 days of life. The pattern of foods served can give a general overview of nutritional intake, including the timing, quantity, and kind of food to match nutritional needs.[7] The method in which children are feeding considerably affects their diet; if done incorrectly, it can lead to eating disorders, preventing the child's nutritional needs from being met. The process of preparing meals, becoming accustomed to children eating on time, soothing children with food, and paying attention to how to feed children can all have an impact on these situations.[7]

There are short- and long-term impacts of stunting on children. In the short term, it is likely that there will be an increase in mortality and morbidity as well as a decline in cognitive, motoric, and linguistic growth and development. However, there are long-term effects, such as allowing people to have less-than-optimal body posture, obesity, decreased reproductive health, insufficient learning performance in children, and decreased productivity and work capacity in the economy.[8,4]

According to 2016 Subarka research, feeding toddlers in a specific pattern will result in children with a normal nutritional status. When a mother can successfully implement a feeding pattern, it can be proved that she is doing the right thing by giving her toddlers food that is age-appropriate and fits their nutritional needs.[9]

The authors are looking to conduct research on Analysis of Factor Feeding Patterns for Stunting in Toddlers Aged 24-59 Months based on these descriptions and data.

METHODS

Cross sectional analysis is used in this analytical study to look at the relationship between the independent and dependent variables. This type of research, known as analytical observational research, collects data by starting with current effects or effects without intervening or treating the research variables.

Based on secondary data from the Health Center, the sample for this study was determined to be 63 mothers with stunted toddlers. Data were then collected using a total sampling technique under conditions that satisfied the inclusion and exclusion criteria, resulting in the collection of 62 mothers with stunted toddlers as research subjects.

Mothers of toddlers who were agreed to participate in the study and who had children between the ages of 24-59 months with a height/age index of -2 SD were included in the study. The excluded criteria for this study were moms with stunted children between the ages of 24-59 months who have been ill or getting medical treatment.

Collection of data using primary, secondary, and questionnairebased interviews with respondents. This study included univariate, bivariate, and multivariate data analysis. Method chi squares and test logistic regression were used in this study to find the relationship between the independent and dependent variables.

RESULTS

The acceptability of the feeding pattern, knowledge, education, profession, income, and technology included the characteristics of the research subject.

Table 1
Univariate Analysis Results

Subject Characteristics	f	%
Feeding Patterns		
Appropriate (type, quantity, and schedule)	17	27,4
Not Appropriate	45	72,6
Knowledge		
Good	32	51,6
Not good	30	48,4
Education		
High school or college	26	41,9
No school, elementary, or middle school	36	58,1
Profession		
Doesn't work	32	51,6
Work	30	48,4
Income		
≥ UMK Rp. 2.500.000,-	23	37,1
< UMK Rp. 2.500.000,-	39	62,9
Technology		
Utilize	34	54,8
Doesn't Utilize	28	45,2

Inadequate feeding habits dominated among respondents; 45 mothers (72.6%) gave a score of 9 on the questionnaire. By selecting 15 right responses from a possible 50.6% of possible answers, the majority of mothers of stunting toddlers show solid knowledge. As many as 36 mothers (58.1%) reported having attended elementary or junior high school in the past. With a total of 32 mothers, the majority of mothers (51.6%) have jobs. With a total of 39 families, UMK Kab. Demak Year 2022 has the highest percentage of family income (62.9%). 34 mothers (54.8%) in total reported utilizing technology.

To examine the impact of knowledge, education, employment, income, and technology on toddlers' feeding habits, bivariate analysis was utilized. The statistical test analysis used to analyze the study data squared the results, which are regarded significant or have a significant effect if the results are achieved at p 0,05.

The most significant relationship between knowledge, education, employment, income, and technology on feeding patterns in stunted toddlers was determined using multivariate analysis.

The results of this study's data were collected through the use of logistic regression analysis with the Backward Stepwise method, which is seen to be the most significant or relevant when a result of p 0.05 is collected and the highest Odd Ratio (OR). The results of a multivariate analysis of technology, knowledge, education, employment, and income are presented below.

Based on the results of the multivariate study, knowledge, income, and education variables are the top 3 risk factors that have the most impact. Family income, mother's education, and mother's poor knowledge all have risk factor values of 11.182 times, 9.709 times, and 8.501 times respectively. The three factors listed above represent the majority of the potential causes of mothers who have improper feeding patterns.

Tabel 2
Bivariate Analysis Results

Risk Factor	Feeding Patterns				OR (95% CI) Low-Up	p value
	Appropriate		Not Appropriate			
	f	%	f	%		
Knowledge					7,00 (1,75-27,80)	0,003
Good	14	82,4	18	40,0		
Not Good	3	17,6	27	60,0		
Education					5,31 (1,57-17,99)	0,012
Hight school or college	12	70,6	14	31,1		
No school, elementary, or middle school	5	29,4	31	68,9		
Profession					4,44 (1,25-15,79)	0,034
Work	13	76,5	19	42,2		
Doesn't work	4	23,5	26	57,8		
Income						
≥ UMK Rp. 2.500.000,-	11	64,7	12	26,7	5,04 (1,53-16,64)	0,013
< UMK Rp. 2.500.000,-	6	35,3	33	73,3		
Technology					10,26 (2,09-50,30)	0,003
Utilize	15	88,2	19	42,2		
Doesn't Utilize	2	11,8	26	57,8		

Tabel 3
Multivariate Analysis Results

Variabel	B	P-Value	OR	95% CI	
				Lower	Upper
Knowledge	2,414	0,015	11,182	1,613	77,529
Income	2,273	0,023	9,709	1,364	69,110
Education	2,140	0,032	8,501	1,204	60,016
Technology	2,049	0,040	7,759	1,102	54,607
Profession	1,276	0,227	3,584	0,452	28,399

DISCUSSION

Considering that it has a p value of 0.003, mother's knowledge was found to be a risk factor for feeding patterns based on the research that the conducted. By select 15 right responses from a possible 30 from their level of knowledge (51.6%), the majority of mothers with toddlers who are stunted have good knowledge.

According to the knowledge variable questionnaire's findings, the majority of mothers had good knowledge, that meant they already knew about balanced nutritional food, the benefits of eating well, the dangers of eating excessive amounts, and the consumption of toddler snack foods.

The mother's knowledge and abilities are important for satisfying the child's eating patterns. The mother's expertise and abilities are evident in the food preparation, which is done precisely in accordance with the feeding schedule.[9] The mother's expertise may have an impact on how accurately children follow their feeding schedules. The significance of the mother's knowledge in deciding on the mealtime schedule and selecting the right amount and kind of food for kids, in order to ensure that the feeding plan is suitable for kids between 24 and 59 months.[10]

According to research from Aridiyah 2018, one of the factors that can effect child stunting is the mother's knowledge of feeding patterns. This study supports that finding. The mother's level of education will indirectly affect her skills and ability to care for the child, especially knowledge related to appropriate feeding schedules for toddlers.[11]

According to Toni Subarkah's 2017 study, respondents who have proper feeding habits are those who have good understanding and education about feeding children. The mother's cooking abilities and understanding of how to prepare meals in accordance with nutritional needs have a significant impact on healthy eating habits.[9]

The risk factor for mother's education level is a risk factor for feeding patterns because it has a p value of 0.013. The majority of mothers have low education, namely not going to school, elementary or junior high, as many as 39 mothers (62.9%).

In the results of the questionnaire on the education variable, the majority of mothers had low education, meaning that their education was only limited to elementary or junior high school, and some of the respondents did not even go to school.

A woman's ability to acquire knowledge from healthcare professionals (nurses, doctors, midwifery, and/or public health units), as well as from electronic or print media, would definitely be impacted by their high level of education. Mothers' formal education has an effect on their degree of knowledge; lower formal education will result to less knowledge acquired, and higher formal education will lead to better acquiring knowledge.[9] Nutritional demands can be met, and food ingredients can be chosen based on a mother's knowledge of accurate feeding habits and nutritional requirements. The nutritional needs of children are generally balanced by higher education.[9]

Erni's 2018 research, that found that responders with the proper pattern of giving generally come from highly educated backgrounds, validates this.[12]

According to research from Toni Subarkah published in 2017, money and education are the two main determinants of feeding patterns. Because a person with a high level of education is more likely to choose and balance the nutritional demands of children, mothers' education in meeting nutritional needs can have an impact on the fulfillment of nutritional needs and the selection of food items.[9]

According to the research, family income has a p value of 0.013, which indicates that it is a risk factor for feeding practices. As households with low incomes dominate, UMK Kab. Demak Year 2022 will also have 39 families (62.9%).

The majority of families have low income, according to the results of the income variable questionnaire; therefore, the respondent's family will get money from the mother and/or father in the amount of UMK Kab. Demak in 2022.

According to research from Roberta Lintang 2019, there is a relationship between economic variables and feeding habits for children who are stunted. This study supports that finding.[13]

The pattern of eating in toddlers is also influenced by the family's income. The cost of food items and income both have an impact on the amount of food consumed. The ability to purchase high-quality foods will be impacted by the high income. On the other hand, a family's decision to buy nutritious food for toddlers will be impacted if they have a poor income.[13]

The results of this research are in agreement with the results of a study from 2019 from Fauziah, it found that a person's income level will affect the type and quantity of food consumed for his family. The ability to purchase higher-quality meals increases with income, resulting in better-quality food consumption.[14]

The use of maternal technology, which has a p value of 0.003, was found to be a risk factor for feeding patterns based on the research that the researcher conducts. A total of 34 mothers (54.8%) could use technology, which is the majority.

The majority of mothers could use technology, based on the results of the technology variable questionnaire, that means that they can utilize technological media like the internet, Google, YouTube, or applications to learn more about toddler feeding habits.

The majority of mothers can benefit from technology, namely by utilizing the accessibility of health service facilities, according to these findings, which are in accordance with study from Subramanian 2017; additionally, the majority of active mothers visit Posyandu on a monthly basis. The majority of mothers utilize electronic media to learn about child feeding habits that are age-appropriate.[13]

It is stated in the notion of transcultural nursing presentation from Leininger 2020 that technological variables also affect how people are behaving depending on their culture. Everything that acts as a link in the transfer of information and the ability to influence is a product of technology. The rate of technological advancement today makes it easier for mothers to find information about proper feeding schedules based on the ages of their particular children. [15]

CONCLUSION

In the Karanganyar I Health Center in Demak Regency, risk variables for feeding patterns in children between the ages of 24-59 months include knowledge (p = 0.003), education (p = 0.012), work (p = 0.034), income (p = 0.013), and technology (p = 0,003).

The most important factor among the other variables is mother's knowledge about feeding patterns, with a risk factor of 11.182 times, and it definitely needs to be improved for the majority of mothers with stunting under five in the working area of the Karanganyar I Public Health Center, Demak Regency.

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CONFLICTS OF INTEREST

Neither of the authors has any conflicts of interest that would bias the findings presented here.

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