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The Relationship Between Feeding Patterns and Stunting Incidents in Toddlers Aged 12-59 Months in the Working Area of the Jelbuk Jember Community Health Center

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Abstract

Background: Children under five who experience stunting in Jember Regency according to SSGI in 2022 are 34.9%, which is the highest figure in East Java. Based on initial studies conducted by researchers, it was found that 356 children (17.8%) were stunted in the weighing month of February 2023 and 381 children (18.46%) were stunting in the weighing month of August 2023. The diet of toddlers plays a very important role in the process of growth and development because food contains a lot of nutrients. Objective: This research aims to analyze the relationship between feeding patterns and the incidence of stunting in toddlers aged 12-59 months in the working area of the Jelbuk Health Center, Jember Regency. **Method:** The method in this research is quantitative correlational with observational approach and cross-sectional research design. The total sample was 95 respondents using a cluster sampling technique using the Slovin formula. The measurement instrument for this research uses the CFQ (Child Feeding Questionnaire) questionnaire, followed by microtoice measurements to assess stunting toddlers, which are then compared with the WHO-2005 Child Anthropometric Standards which are converted into standardized scores (Zscore). Statistical analysis uses Chi Square with significance < 0, 05. **Results:** The results of this study show that the majority of respondents have inappropriate eating patterns, 61 (64.2%) respondents and the majority of respondents experience stunting, 65 (68.4%) respondents. The results of the Chi Square statistical test show that the p-value = 0.000 so there is a significant correlation between eating patterns in toddlers aged 12–59 months and stunting. **Discussion:** The possibility of stunting in toddlers is lower if mothers implement appropriate dietary management, including the type, amount and schedule of feeding.

Keywords: Feeding Patterns, Stunting, Toddlers

Introduction

Nutrition problems in Indonesia are currently increasingly complex. The problems faced include malnutrition and excess nutrition which must be treated seriously. Term Development Plan. The Ministry of Health's 2015-2019 National Middle School (RPJMN) states that improving the nutritional status of the community is one of the main priorities. Efforts made are to reduce the prevalence of underweight toddlers from 19.6% in 2013 to 17% in 2019. In addition to reducing the prevalence of stunted toddlers from 32.9% to 28%(Rodiah et al., 2018). Stunting is an indicator of chronic malnutrition caused by long-term lack of nutritional intake, poor diet quality, increased morbidity rates, and increased height inappropriate for age (TB/U)(Ernawati et al., 2013). One of the national development priorities listed as the main objective in the 2015-2019 Medium Term Development Plan is efforts to improve the nutritional status of society, including reducing the prevalence of stunting in children(Amalia et al., 2021).

2020 UN (United Nations) statistics recorded that more than 149 million (22%) toddlers worldwide experienced stunting, of which 6.3 million were young children or stunted toddlers, namely Indonesian toddlers. The prevalence of Stunting children in Indonesia decreased from 24.4% in 2021 to 21.6% in 2022(SSGI, 2022). According to the 2022 Indonesian Nutrition Status Survey (SSGI), the incidence of stunting in East Java was 19.2%. According to SSGI, the incidence of stunting in Jember Regency in 2022 will still be 34.9%, the highest in East Java(SSGI, 2022). Jelbuk Community Health Center is one of the Community Health Centers with the highest incidence of stunting in Jember Regency in 2023. Based on initial studies conducted by researchers, there were 356 children (17.8%) with stunting in the weighing month of February 2023 and 381 children (18.46%) with stunting. in the weighing month of August 2023. The nutrition staff at the Jelbuk Community Health Center and the coordinating midwife at the Jelbuk Community Health Center revealed that stunting in the area was caused by mothers of toddlers not adopting the right diet. This feeding pattern is related to the type, amount and schedule of food given. However, until now, the relationship between diet and the incidence of stunting in toddlers aged 12 to 59 months in the Jelbuk Jember Health Center work area has not been proven.

One of the long-term cumulative processes of malnutrition is stunting(Damayanti et al., 2017). Apart from adequate nutritional intake, a history of LBW, infectious diseases, health services and environmental cleanliness are also factors that cause stunting. Usually the activity carried out by mothers is feeding their children(Niga & Purnomo, 2016). The diet of toddlers plays a very important role in the child's growth and development process because food contains many

nutrients. Nutrition is closely related to physical condition and intelligence. Lack of nutrition makes toddlers susceptible to infections. If toddlers' nutrition is not implemented well, their growth can also be hampered, causing underweight, poor nutrition, and even stunted growth. Therefore, a proper diet must also be developed to avoid malnutrition(Purwani, 2018). According to UNICEF, stunting impacts intelligence, vulnerability to disease, and reduced productivity, which in turn hinders economic growth and contributes to increased poverty and inequality(Rodiah et al., 2018).

The government has taken several initiatives to address and reduce stunting. These efforts include allocating funds to provide healthy and nutritious food, health checks and pre-marital counseling for teenagers and prospective brides and grooms, as well as support for pregnant women, breastfeeding mothers and children. The government has encouraged many policies such as the establishment of educational forums and socialization on stunting for teenagers (prospective brides and grooms) and pregnant women, as well as the promotion of public sanitation development activities(Hariyanto, 2023). At the Jelbuk Community Health Center, several initiatives and programs have been implemented to increase public knowledge about the importance of good nutrition, including counseling and providing PMT and MP ASI. However, nutritional problems still continue to occur in toddlers and are the most serious problem in Jember Regency.

Methods

This research applies quantitative correlational methods with an observational approach and a cross-sectional research design. The study population included 2003 toddlers aged between 12 and 59 months. The sampling technique for this research uses cluster sampling. The Slovin formula was used to determine the sample size in this study. Therefore, the sample size for this study was 95 mothers and toddlers aged 12 to 59 months. Next, the sample was eliminated based on the inclusion criteria, namely mothers who were willing to be respondents, mothers who had toddlers aged 12-59 months, toddlers who visited posyandu, toddlers who had KIA books, and toddlers aged 12-59 months. Exclusion criteria include mothers of toddlers who are illiterate, toddlers who have congenital diseases, toddlers who are not targeted at the Jelbuk posyandu, and toddlers who are sick. The research was carried out from January 20 to February 20 2024 at 43 Posyandu in 6 villages in the working area of the Jelbuk Health Center, Jember Regency. This research tool uses the Child Feeding Questionnaire (CFQ)(Ice, 2022)which is a standard questionnaire from previous researchers consisting of 3 indicators including type of food, amount of food and feeding schedule, followed by microtoice

measurements to assess stunting toddlers, which are then compared with Child Anthropometric Standards. WHO-2005 which is converted into a standardized score (Z-score). In this study, the Chi Square correlation test was used and processed using the SPSS version 23 data processing application. Respondent characteristics data included child gender, birth weight, maternal education and maternal occupation. Considering the large number of samples and the vast area, the researchers were assisted by enumerators who had the same understanding of the research who were coordinated with the midwife coordinating the health center. In this research, the Chi Square test was used. The use of initials in the informed content and disguising the respondent's image is done to maintain research ethics. This research passed the ethical test and met the ethical requirements number: 30/KEPK/UDS/I/2024 dated January 12 2024 by KEPK dr. Soebandi University.

Results

3.1 RESULTS

The results of data collection are presented in the form of a table containing explanations.

Table 1. Frequency distribution of demographic characteristics of toddler respondents

No	Characteristics	Category	f	%
1	Gender	Man	44	46,3
		Woman	51	53,7
	Total		**95**	**100**
2	Birth Weight	Normal	87	91,6
		LBW	8	8,4
	Total		**95**	**100**

Source: primary data, 2024

A total of 51 respondents in Table 1 above were women, and most of the respondents (a total of 87 people) had normal birth weight.

Table 2. Frequency distribution of demographic characteristics of maternal and family respondents

No	Characteristics	Category	f	%
1	Mother's Education	Elementary School	50	52,6
		Junior High School	20	21,1
		High School	17	17,9
		DIII/ S1	8	8,4
	Total		**95**	**100**
2	Mother's Job	Housewife	71	74,7
		Farm Workers	7	7,4
		Factory Workers	14	14,7
		Self-employed	3	3,2
	Total		**95**	**100**

Source: primary data, 2024

The majority of mothers under five in Table 2 above are elementary school graduates (50 respondents) and the majority are housewives or do not work (71 respondents)

Table 3. Frequency distribution of feeding patterns for toddlers aged 12-59 months in the Jelbuk Community Health Center working area, Jember Regency.

Feeding Pattern	Frequency (f)	Percentage (%)
Appropriate	34	35,8
Not exactly	61	64,2
Total	**95**	**100.0**

Source: primary data, 2024

Table 4. Frequency distribution of stunting incidents for toddlers aged 12-59 months in the Jelbuk Health Center working area, Jember Regency.

Stunting Events	Frequency (f)	Percentage (%)
Stunting	65	68.4
Not *Stunting*	30	31.6
Total	**95**	**100.0**

Source: primary data, 2024

Table 3 above shows that the majority of respondents have inappropriate eating patterns, 61 (64.2%) respondents and table 4 shows that the majority of respondents experience stunting, 65 (68.4%) respondents.

Table 5. Statistical test of the relationship between feeding patterns and the incidence of stunting in toddlers aged 12-59 months in the Jelbuk Community Health Center working area, Jember Regency.

Feeding Pattern	Stunting				Total		*Approximate Significance*
	Yes		No				
	f	%	f	%	f	%	0,000
Appropriate	4	11,8	30	88,2	34	100	
Not exactly	61	100	0	0	61	100	
Total	**65**	**68,4**	**30**	**31,6**	**95**	**100**	

The results of statistical tests using Chi Square in table 5 obtained an Approximate Significance of $p = 0.000$ by setting the significance degree $\alpha < 0.05$, which means H1 is accepted. Based on this analysis, there is a relationship between feeding patterns and the incidence of stunting.

Discussion

Looking at the results listed in table 3 shows that 61 respondents (64.2%) adopted an inappropriate diet and 34 respondents (35.8%) adopted an appropriate diet. Based on filling out the CFQ (Child Feeding Questionnaire) questionnaire, the majority of mothers of toddlers never give food items (mothers give children food containing fat (avocado, nuts, meat, fish, eggs, milk) every day), as well as the majority of feeding schedule items. Mothers of toddlers do not provide snacks, do not provide food on time and do not make a feeding schedule. According to research from Priyono et al, toddlers who experience stunting are a collection of

previous eating habits, so current feeding patterns cannot directly affect their nutritional status(Priyono et al., 2015). The results of this research are in line with the opinion expressed by Subratha et al. That children aged 12 months to 59 months are included in the high risk age group, so children need more attention from their parents(*No Title*, 2025).

A toddler's diet plays a very important role in the growth and development process of toddlers. The nutrients contained in food are very closely related to health and intelligence. If the diet is not implemented properly in toddlers, their growth will be disrupted, their body will be thin, short and even malnutrition will occur(Sambo et al., 2020). The opinion above is also in line with research conducted by Abi Khalil et al. which states that one of the main factors causing less than optimal nutritional intake in toddlers is the lack of food diversity in their diet at the age of 6 to 59 months. The diet adopted by mothers is also influenced by their economic background and knowledge about food diversity and nutrition(Sambo et al., 2020). The economic situation of parents and families plays an important role in the stunting status of children. Parents determine the quantity and quality of health services provided to their children, the food they eat, the amount of physical activity they undertake, the emotional support they provide, and the quality of the environment before and after birth.

Based on the research results in table 4 above, stunting among toddlers aged 12-59 months at the Jelbuk Community Health Center was 65 respondents (68.4%), and 30 respondents (31.6%) did not experience stunting. Stunting is a manifestation of impaired physical growth in children. The brain is one of the organs most vulnerable to its effects. This is because anatomically in the brain there are nerve cells that are related to the child's response, including the child's visual, hearing and cognitive abilities in the learning process(Elni & Julianti, 2020). Decreased cognitive ability, decreased learning ability, weakened immune system and increased susceptibility to disease, risk of diabetes, obesity, heart disease, cancer, stroke, blood vessels and disability in old age(Putri et al., 2019).

The correlation test results of this research in table 5 show that in toddlers with the right eating patterns, 4 toddlers experienced stunting, 30 toddlers did not experience stunting. Meanwhile, 61 toddlers experienced stunting due to inappropriate eating patterns. The results of statistical tests using Chi Square in table 5 obtained Approximate Significance of $p = 0.000$ by setting the significance degree $\alpha < 0.05$, which means H1 is accepted. Based on this analysis, there is a relationship between feeding patterns and the incidence of stunting. The results of this research are strengthened by the results of research conducted by Hutabarat et al that stunting is a chronic malnutrition problem caused by a prolonged lack of nutritional intake due to the provision of food that does not meet nutritional needs. Mothers generally have a greater

influence on the care of their children, both in terms of time and frequency of interactions(Hutabarat et al., 2021). Apart from that, in research conducted by Ludong et al, they argue that economic status is closely related to a family's ability to provide adequate nutrition and optimal health services. Children from economically poor families are at higher risk of experiencing malnutrition due to long-term nutritional deficiencies, which can lead to stunted growth(Ludong & Lubis, 2021).

Proper eating habits should be implemented from an early age, including by providing a variety of types of food and educating children about the right time to consume them. This approach will facilitate the child's adaptation to healthy eating habits. Nutritional problems and stunting are generally caused by children who do not receive balanced nutritional intake or poor parenting patterns. Toddlers who use the wrong feeding pattern every day have a greater chance of experiencing stunting compared to toddlers whose daily life does not use a good feeding pattern. If the feeding pattern is wrong it can cause stunting in toddlers(Hamid et al., 2023). The above opinion is strengthened by research conducted by Phu, Hine-W. et al who stated that the majority of stunting incidents in toddlers aged 6 to 24 months were caused by toddlers not getting maximum nutrition or proper eating patterns(Andolina & Aatina Adhyatma, 2023). On average, parents only provide a simple diet, so the need for animal protein is not met. Apart from that, parents are more inclined to follow the wishes of children who only want to eat foods with a monotonous menu. The key factor in instilling good eating habits in children is the timing and schedule of their meals, which is why most parents ignore these things. It can be concluded that the availability of nutrition through providing appropriate diets to toddlers can lead to a reduction in stunting rates, but inappropriate diets can result in increased stunting rates in toddlers. Efforts to prevent and handle stunting can also be carried out by increasing family empowerment through nutrition park activities with several efforts, including socialization and counceling, hydropine training for limited land and training on making complementary foods for breast milk (Kustin, 2021).

Conclusion

Based on the research objectives and research results, the following conclusions were obtained:

1. The feeding pattern of toddlers aged 12-59 months at the Jelbuk Community Health Center, Jember Regency, shows that 61 respondents (64.2%) were given inappropriate diets.
2. 65 toddlers aged 12-59 months who experienced stunting in the Jelbuk Community Health Center working area, Jember Regency, were stunted.

3. There is a significant relationship between feeding patterns and the incidence of stunting in toddlers aged 12 to 59 months at the Jelbuk Community Health Center, Jember Regency based on the results of the Chi Square analysis test (p value = 0.000; $\alpha < 0.05$).

Suggestions for parents of toddlers or respondents can use the results of this research as a reference for increasing awareness of the importance of nutrition for toddlers which influences the incidence of stunting through appropriate feeding patterns. Continuous education and food support by authorities to fulfill nutritional intake for toddlers. For future researchers to be able to develop and deepen the discussion regarding Kadzi behavior and the incidence of stunting in toddlers. If necessary, provide intervention or look for other variables that are closely related to the incidence of stunting. It is hoped that researchers will be able to increase insight into the behavior of Kadzi and efforts to prevent stunting. And for institutions, it is hoped that this research can be used as basic information and guidance for further research.

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Conflict of Interest

Writer state that there is no conflict of interest.

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