The Relationship between Parenting Patterns and Nutritional Status of Toddlers Age 12-24 Months

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Abstract. Malnutrition in toddlers can occur at the age of 0-5 years which can affect growth, intelligence and endurance. Parenting pattern is one of the factors causing malnutrition. There are still many cases of malnutrition in Indonesia, especially in the areas where the research took place. The aim of this research is to find out whether there is a relationship between parenting patterns and the nutritional status of toddlers. This research is analytic by design cross-sectional study. The population of this study is all mothers and young people aged 12-24 months in the village of Jaan Kecamatan Gondang district of Nganjuk a total of 187. Independent variable parenting eating pattern, dependent variable nutritional status of toddlers. Collecting data using a questionnaire, weigh weight and height. Analysis of the relationship using the test Kolmogorov Smirnovwith a significance level of 0.05. The results of Kolmogorov Smirnov's analysis showed that the nutritional status based on BB/TB has a relationship between nursing patterns and youth nutrition status (p value=0,000). The results of the study concluded that mothers who applied proper nursing patterns, then the nutritional status of babies aged 12-24 months based on BB/TB was good. Meanwhile, the nursed pattern did not relate to the nutrition status based on TB/U. It is advised that the mothers pay more attention to the intake of nutrients in the baby and be able to present a more creative and varied menu of food.

Keywords: Parenting pattern, Nutritional status, Toddler

1 Introduction

The success of the national development of a nation is determined by the availability of qualified Human Resources (HR) who are physically tough, mentally strong and have excellent health and master science and technology. Lack of nutrients can damage the quality of human resources, making the body unable to normally perform its functions and thus leading to an increased risk of several diseases like cancer, diabetes, and heart disease [1]. Parents exert a strong influence on their children's diet [2]. Based on the results of the Ministry of Health's Basic Health Research (Riskesdas) in 2018, the problem of malnutrition was still experienced by toddlers under 5 years of age by 17.7% [3]. Based on the Indonesian Nutritional Status Study (SSGI) in 2021, the percentage

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of underweight in toddlers was 17% [4]. The health profile data for East Java Province in 2021 obtained an underweight result of 9.8%, while the RPJMN target was 15% [5]. The percentage of stunting toddlers (TB/U) in Indonesia is 24.4% and in East Java Province it has a percentage of 12, 4% while the RPJMN target is 18.4% [6]. The percentage of wasting toddlers in Indonesia. Indonesia is 7% and the percentage of East Java Province is 8.0% while the RPJMN target is 7.8% [6].

The causes of malnutrition in children under the age of 5 years are direct and indirect factors. Direct factors include food, infectious diseases, and child characteristics (male sex, low birth weight (LBW), and food consumption). Meanwhile, indirect factors include non-exclusive breastfeeding, health services, and family characteristics (parents' occupation, parents' education, and family's economic status [7]. Low socio-economic status is one of the major causes of malnutrition. However, several studies of students at private elementary schools, which are often considered to have a good socio-economic status, show that malnutrition (both under and overnutrition) is quite high as measured based on BAZ (BMI-for-aged-Z-score) indicator [8].

The nutritional status of children has an impact on child growth and development [9] Children with severe malnutrition have an increased risk of serious illness and death, primarily from acute infectious diseases. International growth standards are used for the diagnosis of severe malnutrition and provide therapeutic end points. [10]. Children who do not receive sufficient nutrition are at high risk of exhibiting impaired cognitive skills [11]. Stunting in children occurs within a certain time; its incidence is closely related to the quantity and quality of food intake, especially the adequacy of energy and protein [12]. Acute malnutrition can lead to morbidity, mortality and disability, as well as impaired cognitive and physical development with an increased risk of concurrent infections. Physical and mental health development is a fundamental right of a child, and their optimum level of health can be accessed with good nutritional support.10 Figure 1 demonstrates the consequences of malnutrition under the age of 5 years [13]. Parents have the opportunity to positively influence their children's weight status and dietary intake by providing healthful foods at home, teaching their children about nutrition, and modeling healthful food choices[14].

The government has committed to tackling stunting by implementing the five pillars of stunting prevention and the eight convergent stunting actions. As the drivers of stunting reduction, national and community stakeholders and mothers, at the village level, cited a combination of poverty reduction, years of formal education, prevention of early marriage, access to food, enhanced knowledge and perception, and increased access to sanitation and hygiene[15]. Organisations such as UNICEF are working proactively to train and support community-based care workers to improve care, support and identify children with malnutrition and their families [16].

2 Methods

This research uses this type of research survey analytic with approach cross- sectional study. When this research was carried out from September 2022 to April 2023 at Jaan Village, the working area of the Gondang Health Center, Nganjuk Regency. The

population was 187 mothers and toddlers with a sample of 100 mothers and toddlers. The data collected in this research uses primary data. Primary data was obtained from respondents based on the results of interviews using a questionnaire about parenting and eating patterns, and mother's knowledge of toddler nutrition. Height measurement using microtoise, and body weight using a scale. The independent variable of this research is parenting style. The dependent variable in this study is nutritional status. The analytical method used is univariate analysis and bivariate analysis Kolmogorov Smirnov test. Prior to conducting this research, an ethical test was carried out and passed having ethical eligibility.

3 Results

The results of this study present the characteristics of toddlers and mothers of toddlers, food parenting patterns, nutritional status of toddlers based on Weight/Height and Height/Age, and the relationship between parenting patterns and nutritional status based on Weight/Height and Height/Age which can be seen in the following table.

Table 1. Frequency Distribution of Toddler Characteristics in Jaan Village, District Gondang, Nganjuk Regency, Februari 2023

Characteristic	Category	Frequency(F)	Presentage (%)
Gender	Man	56	56,0
	Women	44	44,0
	Total	100	100,0
Age	12-15 months	27	27,0
	16-19 months	43	43,0
	20-24 months	30	30,0
	Total	100	100,0

Based on table 1. showed that out of 100 toddlers aged 12-24 months, the majority were boys with a total of 56 toddlers (56.0%). Nearly half of the toddlers aged 16-19 months amounted to 43 toddlers (43.0%).

Table 2. Frequency Distribution of Mothers of Toddlers in Jaan Village, District Gondang, Nganjuk Regency, Februari 2023

Characteristics	Category	Frequency(F)	Percentage (%)
Age	< 20 years	9	9,0
	20-35 years	70	70,0
	> 35 years	21	21,0
	Total	100	100
Knowledge	Good	64	64,0
	Enough	10	10,0
	Not enough	26	26,0
	Total	100	100
Education	Base	15	15,0

	Intermediate	69	69,0
	Tall	16	16,0
	Total	100	100
Work	Work	23	23,0
	Doesn't work	77	77,0
	Total	100	100
Income	Tall	20	20,0
	Intermediate	56	56,0
	Low	24	24,0
	Total	100	100
Parity	Primipara	39	39,0
	Multiparous	61	61,0
	Grands multip-arous	0	0
	Total	100	100

Based on table 2, the characteristics of mothers who have toddlers aged 12-24 months show that most are aged between 20-35 years (70.0%), have good knowledge (64.0%), have secondary education (69.0%). Almost all of the mothers of toddlers do not work (77.0%). Most of the mothers of toddlers are middle income (56.0%) and have multiparous parity (61.0%).

Table 3. Parenting Patterns for Toddlers aged 12-24 Months in Jaan Village, District Gondang, Nganjuk Regency, Februari 2023.

Eating Parenting Patt	Frequency (F)	Presentage (%)
Appropriate	68	68,0
Not Exactly	32	32,0
Total	100	100

Based on table 3, it shows that most of mothers of toddlers apply appropriate parenting patterns for the first age in complementary feeding, delivering complementary feeding (choosing the type of food, giving the type of food texture, amount and frequency of feeding, giving snacks and variety of food) namely as many as 68 toddlers (68,0%).

Table 4. Frequency Distribution of Nutritional Status based on BB/TB and TB/U in Toddlers aged 12-24 Months in Jaan Village, District Gondang, Nganjuk Regency, Februari 2023 Normality Test Results on Knowledge Variables.

Category	Nutritional Status	Frequency (f)	Presentage (%)
BB/TB	Skinny Nutrition	1	1,0
	Malnutrition	19	19,0
	Good Nutrition	80	80,0

	Total	100	100
TB/U	Very Short	1	1,0
	Short	13	13,0
	Normal	86	86,0
	Total	100	100

Based on table 4, it can be explained that almost all of the nutritional status of toddlers based on Weight/Height, namely 80 toddlers (80.0%) are in the good nutritional status category and only a small portion, namely 1 toddler (1.0%) is in the underweight nutritional status category. Meanwhile, almost all of the nutritional status of toddlers based on Height/Age is 86 toddlers (86.0%) in the Normal nutritional status category and a small portion, namely 1 toddler (1.0%) in the very short category.

Table 5. Cross table of The Relationship between Parenting Eating Patterns and Nutritional Status based on BB/TB in Toddlers aged 12-24 Months in Jaan Village, District Gondang, Nganjuk Regency, Februari 2023 Normality Test Results on Knowledge Variables

Eating Parenting Patterns	**BB/TB Nutritional Status**								**P Value**
	Skinny Nutrition		**Malnutrition**		**Good Nutrition**		**Total**		
	F	%	F	%	F	%	F	%	
Appropriate	0	0,0	2	2,9	66	97,1	68	100,0	
Inappropriate	1	3,1	17	53,1	14	43,8	32	100,0	
Total	1	1,0	19	19,0	80	80,0	100	100,0	**0,000**

Table 5 shows that children under five with underweight nutrition are more likely to be found in mothers who implement inappropriate parenting patterns (3.1%). Children with less nutrition are more likely to be found in mothers who use inappropriate parenting patterns. Children with good nutritional status were more likely to be found in mothers who implemented appropriate eating patterns (97.1%). Based on the Chi Square test, the p-value was 0.000, but there were 2 cells that had an expected value of less than 5 or 33.3% or >20% so the conditions were not met. Therefore, an alternative test was carried out, namely using the Kolmogorov Smirnov test. The results of the Kolmogorov Smirnov test showed a p value of 0.000 or <0.05, so the null hypothesis (H0) was rejected. H1 was accepted. Which means there is a relationship between parenting patterns and nutritional status based on BW/TB in toddlers aged 12-24 months in Jaan Village. Working Area of Gondang Community Health Center.

Table 6. Cross table of The Relationship between Parenting Eating Patterns and Nutritional Status based on Height/Age in Toddlers aged 12-24 Months in Jaan Village, District Gondang, Nganjuk Regency, Februari 2023

Eating Parenting Patterns	**TB/U Nutritional Status**								**P Value**
	Very Short		**Short**		**Normal**		**Total**		
	F	%	F	%	F	%	F	%	

Appropriate	1	1.5	4	5.9	63	92.6	68	100	0.305
Not Exactly	0	0,0	9	28.1	23	71.9	32	100	
Total	1	1.0	13	13.0	86	86.0	100	100	

Table 6 shows that short children are more common in mothers who implement inappropriate parenting patterns (28.1%). Children with normal nutritional status were more likely to be found in mothers who implemented appropriate eating patterns (92.6%).

Based on the Chi Square test, a p-value of 0.01 was obtained, but there were 3 cells that had an expected value of less than 5 or 50.0% or > 20% so that the conditions were not met, so an alternative test was carried out, namely using the Klomogorov Smirnov test. The results of the Kolmogorov Smirnov test showed a p value of 0.305, so the null hypothesis (H0) was accepted and H1 was rejected. Which means there is no relationship between parenting patterns and nutritional status based on TB/U in toddlers aged 12-24 months in Jaan Village. Table 6 shows that short children are more common in mothers who implement inappropriate parenting patterns (28.1%). Children with normal nutritional status were more likely to be found in mothers who implemented appropriate eating patterns (92.6%).

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4 Discussion

4.1 Parenting Patterns

Many factors are related to the growth and development of children. The parent factors are important, such as knowledge and parenting pattern [17] The results of this research show that most of the parenting patterns for toddlers in Jaan Village are appropriate. This shows that there are more toddlers who have proper eating parenting styles compared to toddlers who have improper eating parenting patterns.

Children's dietary intakes could be influenced by their parents' general parenting approach (i.e., parenting styles) or by specific parenting practices (e.g., food parenting practices) [18]. Parenting style refers to the parenting across situations and reflects on the emotional climate in which children are raised [13]. In previous studies, some have shown that parenting styles influence children's dietary behaviors and weight status [19–21]. Findings showed that food parenting practices had a higher number of specific significant findings on children's nutrient and food group intakes than parenting styles. Positive parenting practices within Structure were significantly related to healthier

children's dietary intakes (e.g., vegetables, iron, and folate) and less unhealthy dietary intakes (e.g., sweets and total fats) [21].

Children with authoritative parents consumed more fruits compared to children with authoritarian parents and indulgent parents [21] If the pattern of feeding is wrong it can cause a lack of intake of nutrients received by toddlers. The parenting pattern of feeding babies that is not creative and varied is an important thing that needs to be considered by mothers so that their children's nutritional needs are met. Intake is a direct factor causing nutritional problems, including stunting the height growth of toddlers. Complementary food is food or drink that contains nutrients given to infants or children aged 6-24 months to meet their nutritional needs[22] The quality and quantity of nutrient intake as well as food consumption that does not vary will affect the fulfillment of the nutritional needs of toddlers in the process of growth and development.

This study relate to another research Diets that include a range of foods encourage children to eat more legumes and nuts, dairy products and their derivatives (dairy products), meats, eggs, vitamin A-rich fruits and vegetables, and other fruits that contribute significantly to their overall nutritional intake, particularly in terms of nutritional micronutrient adequacy [23]. In addition to the availability of food variety, infants and children who are breastfed have a better chance of maintaining a healthy nutritional status [24]. According to Damanik et al [25] shows that Feeding practices that fail to meet the standard can increase the risk of stunting in toddlers.

4.2 Nutritional Status

The results of the study based on table 4.4 show that out of 100 toddlers aged 12-24 months nutritional status based on weight/height, most of the results were good nutritional status, namely as many as 80 toddlers. Based on TB/U nutritional status, most of the results were normal, namely 86 children under five. This shows that there are more toddlers who have normal nutritional status compared to toddlers who have less nutritional status or are short. According to the RI Ministry of Health, (2020) PMK No. 2 of 2020 concerning anthropometric standards for children, the assessment of nutritional status is based on weight/height, namely by calcifying nutritional status as fat, normal, thin, very thin and nutritional status based on height/age, namely high, normal, short, very short. The BB/PB or BB/TB index describes whether the child's weight corresponds to his length or height wasted), malnutrition (severley Wasted) as well as children who are at risk of overweight (possible risk or overweight).

4.3 Relationship between Parenting Eating Patterns and Nutritional Status of Toddlers

Based on the results of the study, it was shown that there was a relationship between parenting and nutritional status based on weight/height in toddlers aged 12-24 months.This is indicated by a p-value of 0.000 (<0.05).

According to et al, 2019 different feeding patterns affect growth and nutritional status in children, so proper guidelines should be implemented to improve nutritional status and promote the growth of children [26]. Interventional programs to reduce the

burden of malnutrition should continue to focus on strategies to improve birth weight as it was the only risk factor associated with malnutrition [27]

Researchers assume that proper parenting patterns given by parents will be able to improve nutritional status child. Appropriate parenting patterns are given to parents based on the first time they are fed, and providing distraction food is able to make toddlers have good nutritional status.

Meanwhile, the results of the study based on the height/age indicators showed that there was no relationship between parenting and nutritional status. This is demonstrated by the resultsp-values=0.305 (>0.05). Researchers assume that toddlers with short nutritional status based on height/age are not only caused by factors of intake of complementary foods, but there are other factors that influence them. Environmental factors can also affect the nutritional status of children. Educational background of the mother is one of the factors that influence stimulation. Based on the analysis results, it was found that the most respondents were junior high school graduates with early stimulation, including the sufficient category, namely 69 respondents (69.%) [28] This is because, despite the background of junior high school education, respondents still had limited knowledge and insight, including insights on early stimulation for the development of their children, resulting in providing early stimulation but only up to the good category. Number of children in family is one of the fact. Another factors is infectious disease and maternal nutritional intake during pregnancy.

Infectious disease factors also affect the absorption of nutrients in the body and appetite in children. Even though the mother gives solid complementary food properly, if the child does not receive good complementary feeding in terms of quantity (frequency of giving, portion) due to decreased appetite, nutrition fulfillment still cannot be maximized.

5 Conclusion

Based on the results of the study it can be concluded that the characteristics of mothers under five are mostly aged between 20-35 years, have good knowledge, have middle education, middle income and have multipara parity. Almost all of the mothers of toddlers do not work.

Most mothers of toddlers apply appropriate parenting patterns to toddlers, The nutritional status of toddlers based on BW/TB is classified as good nutrition and for the TB/U category, the majority of toddlers have normal nutritional status. Based on the results of the study, it can be concluded that parenting style has a relationship with the nutritional status of toddlers based on weight/height. Meanwhile, based on height/age there is no relationship between parenting and nutritional status. So it is advisable for mothers to pay more attention to their babies' nutritional intake and be able to present a more creative and varied food menu.

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