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Original Articles

CHARACTERISTICS OF EATING PATTERN AND FOOD VARIETY IN TODDLER WITH NUTRITION PROBLEMS

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Abstract

Background: Developmental disorders such as malnutrition in a child's early years can have a detrimental impact on all developmental domains, as these years contain the most rapid changes in brain development. Behavior in implementing balanced nutrition by restraining consumption of vegetables, fish and fruit by maximizing local food, or local food with regional specialties according to local conditions.

Objective: The aim of this study was to determine the characteristics of eating pattern and food variety in toddler with nutritional problems.

Methods: This study used descriptive analysis design with cross-sectional approach. This study was conducted on 1-31 August 2022 with 54 participants of mothers and children (12-48 months). The instruments in this study used 24-hour food recall instrument. The analysis of this study used descriptive analysis.

Result: The characteristic of complementary feeding of children with nutrition problems was good eating patterns and 4 varieties of food every time they eat.

Conclusion: Food variety in children with nutritional problems was good eating patterns with an average consumption of 4 types of food at each meal.

INTRODUCTION

UNICEF (2012) states that chronic early malnutrition has caused stunting (height for age 2 SD below the standard not normalized Z-score for a population of well-nourished children of the same age and sex) and decades of research have documented a relationship between stunting and developmental delay. Developmental disorders such as malnutrition in plural-children early years can have a detrimental impact on all developmental domains, as these years contain the most rapid changes in brain development.

Good nutritional and health status is very important for the growth and development of children, as well as maintenance of the body and protection from communicable and non-communicable diseases during adulthood. Deficiency of micronutrients is very relevant for children because they are in a phase

of growth and development and have nutritional needs that vary according to the stage of growth and development (Hailemariam, Girmay, & Girmay, 2018).

The percentage of stunting cases in NTB fell from 37.2% in 2017 to 33% in 2018. However, there are still seven districts/cities that are in the red zone in NTB, because the stunting rate is still above 30% (NTB, 2019). Maternal factors and poor parenting, especially in behavior and feeding practices, maternal factors during their teenage years were malnourished, even during pregnancy, lactation also greatly influenced the growth of the child's body and brain.

Since ancient times, for generations the village community has been accustomed to utilizing these various food sources as a basis for fulfilling their daily basic food needs and as a snack. Based on this background, to improve the nutritional status of children, the researcher aims to find out the characteristics of local food supplementary feeding to children with nutritional problems.

METHODS

Study Design

This study used descriptive analysis design with cross-sectional approach. In this study, researchers specifically analyzed the characteristics of eating pattern and food variety in toddler with nutritional problems.

Settings

This research was conducted from 1st to 31st of August 2021 in working area of Nipah Primary Care and Tanjung Primary Care.

Research subject

The sample of this study were 54 pairs of mothers and children under five with weight below the red line (BGM) according to weight for age (BB/U) with using technique stratified sampling. The variables of this study were the characteristic of eating pattern and food variety as independent variable and undernutrition as dependent variable.

Instruments

Measurements were made using a 24-hour food recall instrument owned by the Indonesian Ministry of Health. Researchers recorded food consumed by BGM using a 24-hour food recall instrument for 1 month.

Data collection

Data collection was carried out from 1st to 31st of August 2021 for 31 consecutive days. Researchers filled out food recalls every day based on reports from research subjects regarding food consumed on that day.

Data Analysis

After collecting data for one month, the researchers used descriptive analysis for the analysis of the results data.

Ethical Consideration

This research has received approval from STIKES Yarsi Mataram and Health Office of Mataram City.

RESULTS

Characteristics of the Mothers

Table 1. Distribution Frequency of Respondents based on Age, Education Level of Mother, Occupation of Mother, and Income of Parents in Working Area of Nipah Primary Care and Tanjung Primary Care from 1st to 31st of August 2021.

Characteristic	Frequency (f)	Percentage (%)
Age		
Late adolescence	11	20.4
Early adulthood	25	46.3
Late adulthood	11	20.4
Total	54	100.0
Education level of mother		
Primary school	26	48.1
Senior high school	15	27.8
Junior high school	13	24.1
Total	54	100.0
Occupation of mother		
Housewife	52	96.3
Merchant	1	1.9
Farmer	1	1.9
Total	54	100.0
Income of parents		
> 1 million Rupiahs	22	40.7
<1 million Rupiahs	32	59.3
Total	54	100.0

Sources: Primary Questionnaire, 2021.

Based on table above, it shows that the age of the mother is dominated by the age of the early adulthood (18-30 years), as many as 25 respondents (46.3%), with the highest level of education being primary school graduates, as much as 26 respondents (48.1%). The majority of respondents were housewives, as many as 52 respondents (96.3%), with a monthly family income of under one million rupiah, as many as 32 respondents (59.3%).

Characteristics of the Toddler

Based on table 2, it shows that most of the children aged 25-36 months, as many as 17 respondents (31.4%). Most of the children were female, namely 34 respondents (62.9%). Most of the children had malnutrition, namely 29 respondents (53.4%).

Table 2. Distribution Frequency of the Toddler based on Age, Sex, and Nutrition Status (BB/U) in Working Area of Nipah Primary Care and Tanjung Primary Care from 1st to 31st of August 2021.

Characteristics	Toddler	
	Frequency (f)	Percentage (%)
Age group (months)		
12 – 24 months	11	20.5
25 - 36 months	17	31.4
37 – 48 months	16	29.6
49 – 60 months	10	18.5
Total	**54**	**100.0**
Sex		
Male	20	37.1
Female	34	62.9
Total	**54**	**100.0**
Nutritional Status (BB/U)		
Undernutrition	25	46.3
Malnutrition	29	53.7
Total	**54**	**100.0**

Sources: Primary Questionnaire, 2021.

Characteristics of Eating Pattern and Food Variety

The diversity of food is divided according to the type of food on the plate, namely staple food, animal food, vegetables, fruits and drinks. Researchers divided dietary diversity into 5 score categories, which consisted of category 1 to category 5. Category 1 means the participants' dietary diversity scores were 0 – 90, defined as 1 food group eaten by participants at every meal for 1 month. Category 2 means that participants get a food diversity score of 91 – 180, defined as the 2 food groups eaten by participants at each meal for 1 month. Category 3 means the participant's score of dietary diversity is 181 – 270, defined as the 3 food groups eaten by the participants at each meal for 1 month. Category 4 means that participants get a food diversity score of 271 – 360, defined as the 4 food groups eaten by participants at each meal for 1 month. Category 5 means that participants get a food diversity score of 361 – 450, defined as the 5 food groups eaten by participants at each meal for 1 month.

Diet provides an overview of the frequency of meals, types of food and ingredients consumed daily. The recommended diet is a balanced nutritious diet with five different types of food on an average, and with a frequency of three meals per day. Assessment is carried out using a score, by adding up the

frequency score and the type of food score. The cut-off point for eating patterns is dividing good eating patterns with a score of >271 and bad eating patterns with a score of <270.

Table 3. Distribution Frequency of the Toddler based on Eating Pattern and Food Variety in Working Area of Nipah Primary Care and Tanjung Primary Care from 1st to 31st of August 2021.

Characteristics	Participants	
	Frequency (f)	Percentage (%)
Eating Pattern		
Poor	15	27.7
Good	39	72.3
Total	**54**	**100.0**
Food variety		
2	13	24.0
3	10	18.5
4	31	57.5
Total	**54**	**100.0**

Sources: Primary Questionnaire, 2021.

DISCUSSION

The diversity of a person's diet reflects the variability of the foods consumed by individuals that are unique to them. For the classification of dietary diversity scores, a number of different food groups and scoring systems have been used in different countries. Although micronutrients are not taken into account, these children's diets may lack micronutrients necessary for growth and development. Low consumption of animal foods (including meat, poultry and dairy products) in these children can affect growth and protein (amino acid) bioavailability. The reason for the low consumption of animal products could be due to economic factors which make mothers unable to buy food for their children (Ogechi & Chilezie, 2017).

Dietary diversity can ensure adequate intake of essential nutrients to improve well-being (Boadi & Kobina, 2017) and identify positive relationships with nutritional deficiencies (Wittig & Rodriguez, 2019). Dietary diversity has a stronger relationship with protection against chronic disease and for ensuring good health. A positive relationship between dietary diversity and nutritional status has been previously documented in China, Kenya, Mali and Haiti. Two additional studies in Niger and Guatemala showed a positive, but not significant, relationship; but that may be due to the relatively small sample size of this study. The fact is, the positive relationship between dietary diversity and children's nutritional status is being studied in most studies, although the methodological and population approaches studied are imprecise (Ogechi & Chilezie, 2017).

Monotonous food consumption was found in this review to be a factor affecting the nutritional status of children under five in South Africa. Monotonous food consumption means that the food

consumed does not vary in nutrition and may lack other important nutrients, such as vitamins and minerals (Panda, Lakra, & Panda, 2019). Monotonous food consumption can reduce the adequacy of essential vitamins and minerals, which can affect children's nutritional status (Zhou et al., 2020). This finding is in line with a study conducted in Tanzania by Blakstad et al. (Blakstad et al., 2019), who found that children and women who eat monotonous meals experience malnutrition compared to those who eat variable foods Shakya (Pritika, 2017) also shows that most children who eat meals monotonously , especially those containing carbohydrates, suffer from malnutrition. Therefore, malnutrition caused by monotonous food consumption can lead to malnutrition in children.

One of the factors that affect children's nutritional status is a monotonous diet (Mkhize & Sibanda, 2020). Other factors that influence the formation of eating patterns are economic, socio-cultural, religious, educational and environmental factors. Even though their diet is good, children under five are still classified as malnourished according to real life situations, so it can be concluded that their diet is not as recommended (i.e. less than three times a day). This is because children prefer snacks and often refuse to eat and are forced to eat. Diet is a factor that is directly related to nutritional status, therefore consuming foods with low nutritional value causes malnutrition or undernourished conditions. Therefore, researchers assume that children with low eating patterns are caused by their parents not knowing the nutritional content of each food given to their children (Sari, M & Ratnawati, 2018). According to UNICEF in 1998, nutritional problems are caused by several factors, both directly and indirectly. The direct factors of nutritional status are food intake and infectious diseases (Vogt, Rukooko, Iversen, & Eide, 2016). So we can observe here that children have an appropriate diet (ie three meals per day) but their intake is low. Lack of awareness can lead to errors in selecting ingredients and how to feed children.

Having a good diet but with less nutrition is caused by the daily conditions of children under five which are thought to be caused by a lack of food intake. In addition, parents tend to give more snacks to children, so that children lose their appetite. This condition is significant, namely the better the practice of feeding in children (namely diet and food intake), the better the nutritional status of toddlers according to the BB/U index (Puspasari & Andriani, 2017).

LIMITATION

This study has limitation only descriptive and do not control the confounding factor.

CONCLUSION

Food variety in children with nutritional problems is considered good with an average consumption of 4 types of food at each meal. So, we hope that future researchers can analyze other factors that can be the cause of nutritional disorders in children.

AUTHOR CONTRIBUTION

Henny Yolanda: Literature review, conceptualization, methodology, investigation, resources, formal and statistical analysis, writing-original draft validation, project administration, and drafting the manuscript.

M. Karjono: Literature review, conceptualization, methodology, and drafting the manuscript.

Agus Supinganto: Literature review, conceptualization, methodology, and drafting the manuscript.

Misroh Mulianingsih: Literature review, conceptualization, methodology, and drafting the manuscript.

Abdul Haris: Literature review, conceptualization, methodology, and drafting the manuscript.

Hayana Hayana: Literature review, conceptualization, methodology, and drafting the manuscript.

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Misroh Mulianingsih : None.
Abdul Haris : None.
Hayana Hayana : None.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

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