CORRELATION BETWEEN DIET DIVERSITY AND TODDLER'S NUTRITIONAL STATUS

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Abstract

Objective: This study aims to determine correlation between diet diversity and nutritional status in toddler. Method: This is a descriptive correlation study with a cross-sectional approach. Furthermore, the samples were mothers who have toddler with total of 77 respondents. Data were collected using diet diversity questionnaire to assess food diversity and anthropometrics for toddler's nutritional status. Result: It was found that most respondents are between 17 – 25 years (98.7%), senior high school education (58.5%) and are housewives (71.4%). Furthermore, the toddlers were mostly female (53.2%) aged 12 – 24 months (57.1%). The food diversity they consume was more than 6 groups, hence high category was classified by diet diversity tools for 73 toddlers (94.8%). Also, their nutritional status was in good category by anthropometrics (84.4%). The data analysis results using Somers'd correlation test obtained p value of 0.059 and alpha 0.05. Conclusion: In this study, diet diversity was not associated with toddler's nutritional status.

Keywords: Diet Diversity, Nutritional Status, Toddler.

Introduction

Physical growth occurs rapidly during infancy, but slows down at toddlerhood. Children at this stage will experience physical maturation, especially in gastrointestinal system, musculoskeletal, and sensory perceptions, which allows them to experience growth – spurt. However, this does not always happen because some may experience physiological anorexia, which is characterized by decreased appetite and changes in eating habits. Physiological anorexia causes the child to experience nutrition deficiencies, weight loss and stunted growth, even though toddlers actually show an increase in weight (2.5 kg / year) and stable height (12.5 cm / year). Also, toddlers in Ghana exhibit varying amounts of energy requirements[1]. The food they consume can be assessed using the Individual Dietary Diversity Score (IDDS) compiled by Kennedy, G. Ballard, T. MarrieClaude, D[2]. Furthermore, IDDS can be used to assess the variety or food diversity consumed in order to determine nutrients adequacy. Nutrition affects toddler's growth, which can be monitored by the child's nutritional status. This can be measured using anthropometry based on the ratio of body weight, height and child's age. In addition, toddlers who do not show an increase in weight and height are at risk of growth problems called malnutrition, which can cause stunted growth when not prevented.

Method

This is a descriptive correlative study involving mothers who have toddler aged ≥12 –36 months in Labuh Baru Timur Village, Payung Sekaki District, Pekanbaru. The sample was taken by purposive sampling technique with a size of 77 respondents. Furthermore, this study was conducted for 6 months, from May to October 2020. The questionnaire used was the Individual Dietary Diversity Score (IDDS) to assess toddler's food diversity and anthropometry (weight/age) for nutritional status. In addition, data analysis used Somers'd test to ascertain the correlation between diet diversity and nutritional status.

Results

Data collection was carried out from July to August 2020. This study involved mothers who has toddler, aged ≥ 12 – 36 months, totaling 77 child.

Table 1.
Distribution of Respondent's Characteristic

Variable	n	%
Mother's Age		
Early Adulthood	76	98.7
Middle Adulthood	1	1.3
Late Adulthood	0	0
Education		
Elementary	1	1.3
Junior High School	10	13
Senior High School	45	58.4
University	21	27.3
Occupation		
Housewive	55	71.4
Government Employees	0	0
General Employees	12	15.6
Entrepreneur	10	13
Toddler's gender		
Boy	36	46.8
Girl	41	53.2
Total	77	100

Table 1. the results found that average respondents aged 17 – 25 years were 76 people (98.7 %) and 55 (71.4%) were housewives, with educational level of Senior High School (58.4 %). In addition, most of the respondent's children were females (41 children 53.2%).

Table 2.
Dietary Diversity and Nutritional Status of Toddler

No	Variable	n	%
1.	Dietary Diversity		
	Low	2	2.6
	Moderate	2	2.6
	High	73	94.8
2.	Nutritional Status		
	Obesity	0	0
	Good nutrition	65	84.4
	Undernutrition	9	11.7
	Malnutrition	3	3.9
	Total	77	100

The given diet diversity had a high level in 73 children, and 65 toddlers (84.8 %) had good nutritional status.

Table 3
Correlation of diet diversity and nutritional status of toddler

Diet Diversity	Nutritional Status			Total	R	p
	Mal-nutrition	Under-nutrition	Good nutrition			
Low	0	0	2	2	-0.059	0.059
Moderate	0	0	2	2		
High	3	9	61	73		
Total	3	9	65	77		

Somers'd test found that there was no significant association between dietary diversity and toddler's nutritional status (p value 0.059 ; alpha 0.05), with very weak correlation (r – 0.059).

Discussion

Respondents aged 17 – 25 years, based on Erickson's theory of eight developmental stages in are in the category of early adulthood (young adulthood). This category is characterize by being committed to someone, which is wedding in this case. Meanwhile, individuals in early adult category according to age have developmental tasks, including starting a family, raising children, and managing the home. This supports the findings that many respondents in that age range have toddler-age children and choose to be a housewife who stay at home, as many as 55 people (71.4%). Also, mothers can focus on taking care of their family, raising toddlers, and have more time and attention devoted to the health of their children. Furthermore, they can use their time to increase their knowledge by searching the internet, which provides knowledge without limits on time and distance. Mother can also exchange experiences with family, friends, neighbors or the community. Therefore, even though the respondents (58.4%) have senior high school education, this is not a factor that limits the mother's knowledge of healthy food and diet diversity

which can affect the nutrition status of their toddler.

The respondent's ability to vary the food given to their children depend on their education and knowledge. Both factors can support each other, but education cannot be used as a benchmark for someone's knowledge. Meanwhile, most of the respondent's education in this study was senior high school. Therefore, education is not a challenge to increase their knowledge, which can be obtained from experience, or interaction with others. Knowledge will also increase along with the ability to take advantage of technology, which is growing rapidly. These results are consistent with Solomon, Aderaw and Tegegne[3] in Ethiopia, which found that mother's educational and knowledge level, as well as family financial income were positively related to the practice of diet diversity in children aged 6 – 23 months.

The food that respondents gave to their toddlers, showed a high diversity (≥ 6 food group). This means that mothers have been able to provide varied foods more than 6 out of 9 groups determined by the WHO[4]. The group consists of (1) carbohydrates (rice, corn, cereals and tubers) (2) vegetables, tubers, fruits rich in vitamin A, (3) dark green leafy vegetables, (4) vegetables and other fruits, (5) meat and processed product (6) fish and seafood (7) eggs (8) nuts and seeds (9) milk and its product. The nutritional content in the various food groups have benefits for the child's growth.

The nutritional status of toddler in this study was assessed using anthropometry, which was carried out by comparing weight to age (BW/U). The result showed that the majority of toddlers are in the good nutrition category with 65 children (84,4%). Also, a good nutritional status can be represented by achieving weight and height that is appropriate for their age. Weight and height illustrate that there is adequate nutrition from the food consumed. Furthermore, good nutritional status shows that they obtain healthy food in accordance with WHO. This also shows that mothers are able to meet the nutrient needs for their child's growth. Sometimes, one food contains only one to two macronutrients and micronutrients, while the body needs all of the components. The Food and Nutrition Technical Assistance states that diversity is a source of macro and micronutrients, hence food diversity will ensure nutritional adequacy, which can be observed from the toddler's weight and height.
This study is different from Khamis, Mwanri, Ntwetya and Kreppel[5] in Tanzania which found that consumption of various foods was associated with reduced undernutrition rates in children aged 6 – 23 months. They then suggested that an assessment of the complementary foods was carried out in order to assess and improve the variety that would meet children's energy needs.

This study did not show a significant correlation between the two variables, which may be due to the absence of direct observation of the food variety provided for children. Meanwhile, research only asked about the food consumed by the children in the last 24 hrs. Another factor which can also influence the results is study location, which includes the city center area, making it easier for family to access food to meet children's nutritional needs. In addition, the data collection process was carried out in one sub-district, in order to maintain physical distancing and prevent the spread of corona virus, hence the obtained data were less varied.

Conclusion

This study did not find significant correlation between diet diversity and nutritional status in toddler

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