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Faktor yang Berhubungan dengan Keragaman Konsumsi Balita Usia 24-59 Bulan

The Factors Associated with Consumption Diversity of Toddlers Aged 24-59 Months

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ABSTRAK

Latar Belakang: Masa balita merupakan masa yang memerlukan asupan gizi optimal untuk pertumbuhan dan perkembangan serta mencegah terjadinya masalah gizi. Keragaman konsumsi adalah salah satu indikator yang digunakan untuk menilai kualitas konsumsi dan kebutuhan zat gizi. Kualitas konsumsi secara langsung dapat memengaruhi status gizi balita.

Tujuan: Penelitian ini bertujuan untuk megidentifikasi keragaman konsumsi balita dan menganalisis faktor yang berhubungan dengan keragaman konsumsi balita usia 24-59 bulan di Kecamatan Gunung Halu Kabupaten Bandung Barat.

Metode: Penelitian ini menggunakan desain cross-sectional studi dengan 97 balita usia 24-59 bulan. Penelitian ini dilaksanakan pada bulan November hingga Desember 2019. Balita dipilih secara acak menggunakan teknik random sampling. Keragaman konsumsi didapatkan dari konsumsi makanan sehari sebelumnya dan dianalisis berdasarkan standar FAO yang terdiri dari 9 kelompok pangan tanpa jumlah konsumsi minimal. Faktor yang berhubungan dengan keragaman konsumsi dianalisis menggunakan model regresi logistik. Jika total skor keragaman konsumsi ≤4 diklasifikasikan sebagai tidak beragam dan >4 beragam.

Hasil: Sebanyak 76.3% balita pada penelitian ini mengonsumsi makan yang tidak beragam dan didominasi oleh makanan tinggi energi. Tidak terdapat hubungan yang signifikan antara keragaman konsumsi balita dengan kejadian stunting. Status pekerjaan ibu (OR:4,63;95%CI:1,1-18,9), jenis kelamin (OR:5,1;95%CI:1,7-15,7), dan pengetahuan gizi ibu (OR:3,4,95%CI1,1-10,3) berhubungan signifikan dengan keragaman konsumsi balita.

Kesimpulan: Faktor yang berhubungan dengan keragaman konsumsi balita diantaranya Ibu yang bekerja, balita laki-laki, dan pengetahuan gizi ibu yang rendah.

Kata kunci: Keragaman Konsumsi, Stunting, Status Pekerjaan, Pengetahuan Gizi, Jenis Kelamin

ABSTRACT

Background: Childhood is a period that needs adequate nutrients to support the growth process and prevents malnutrition. Dietary diversity is a useful indicator of dietary quality and nutrient adequacy. Dietary quality can directly affect the nutritional status of children.

Objectives: The study aimed to assess the dietary diversity and associated factors among children aged 24-59 months in Gunung Halu sub-district, West Bandung district.

Methods: A community-based cross-sectional study was conducted among 97 children age 24-59 months, from November until December 2019. The children were selected using a random sampling technique. Dietary diversity in the previous day of the survey was assessed using the FAO standard 9-food group score without minimum intake. Factors associated with dietary diversity were identified by modeling using logistic regression analysis. Accordingly, a child with a dietary diversity score ≤4 was classified as low dietary diversity and >4 was classified as adequate dietary diversity.

Results: Approximately 76.3% of children of this study had a poorly diversified diet that includes most the foods with high energy content. There was no significant correlation between dietary diversity scores with the incidence of stunting. Mother's working status (OR=4.63; 95%CI:1.1-18.9), child gender (OR=5.1;95%CI:1.7-15.7), and maternal nutritional knowledge (OR=3.4;95%CI:1.1-10.3) was significantly associated with a dietary diversity of children

Conclusions: Working mothers, male children, and poor maternal nutritional knowledge can significantly decrease dietary diversity of children.

Keywords: Dietary Diversity, Gender, Nutritional Knowledge, Stunting, Working Status

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INTRODUCTION

Toddler is one of the stages of growth and development and requires optimal nutritional intake to prevent nutritional problems, such as stunting[1]. *Stunting is the result of long-lasting growth failure indicated by z-score of height according to age less than -2 SD. As many as 22.2% or around 150.8 million toddlers in the world are stunted*[2]. According to Risksdas 2018 data, the prevalence of stunting in young children in Indonesia is recorded as 30.8%, which is a high category according to the WHO category[3]. West Java is an area with a fairly high prevalence of stunting toddlers. West Bandung is one of 27 districts in West Java with a prevalence of stunting in 2018 of 34.3% based on the results of Nutrition Status Monitoring (PSG)[4]. In 2018 West Bandung became one of the districts included in the 100 priority cities / regencies for stunting. The direct causes of stunting nutritional problems are poor quality intake and the presence of infectious diseases[5]. The diversity of consumption is an indicator of the quality of personal consumption. The difference in low consumption of toddlers will affect the food intake of young children, thereby making young children vulnerable to nutritional problems. Previous research has shown that most children with stunted toddlers have low eating diversity, or fewer than four food categories[6].

Food diversification plan is one of the recommended methods to solve nutritional problems caused by insufficient intake of micronutrients. Eating a variety of foods is one of the top ten points of balanced nutritional information. The diversity of personal consumption is affected by direct or indirect factors. Research from Madagascar shows that low maternal education and socioeconomic status are related to the non-diversified diet of toddlers[7]. Another study in China explained that parental education level and caregiver nutrition knowledge had a positive relationship with the diversity of consumption of toddlers[8]. Meanwhile, according to Ochola and Masibo, the diversity of food consumption in developing countries is mostly dominated by food sources of energy and low intake of animal protein, fruit and vegetables.[9]. Based on the above description, this study aims to determine the consumption diversity of toddlers in Saigon Haru District, West Bandung, and analyze the factors related to the consumption diversity of children toddlers. regent.

METHODS

This study was a cross-sectional study conducted in Sindangjaya Village, Gunung Halu District, West Bandung Regency from November 2019 to December 2019. The sample consisted of young children between 24 and 59 months old who have no physical disabilities and are cared for by their mothers. Sampling was performed randomly using simple random sampling techniques. The interviewees in this study were toddler mothers, and there were 97 interviewees. Conduct structured interviews through questionnaires to collect data on the characteristics of children, family characteristics and mother characteristics. Consumption diversity data was obtained from a 24-hour food recall interview using the Individual Dietary Diversity Score (IDDS) questionnaire and directly provided to the 9 food groups based on FAO's score.[10] is starchy foods, green vegetables, fruit and vegetable sources of vitamin A, other fruits and vegetables, organ meats (jeron), meat and fish, eggs, nuts, and milk and dairy products with a score of 1 if consumed and 0 if not consuming. The total score of diversity in consumption was then categorized into 2 categories, namely non-diverse (≤4 food groups) and diverse (> 4 food groups)[11]. Toddler height was obtained from direct measurement with microtoise. The nutritional status of TB / U was obtained from the z-score from data processing of height and age of toddlers using the WHO Anthro software. Stunting was defined when the z-score of TB / U toddlers is less than -2 SD. Data on knowledge, attitudes, and mother's eating patterns were measured using a questionnaire and then gave a score for each answer to the question. Nutritional knowledge consists of 15 true false questions, nutritional attitude consists of 10 questions with the choice of agree, doubt, and disagree, and dietary pattern consists of 11 questions. In this study, data processing was carried out using Microsoft Excel and data analysis using SPSS version 24 for Windows. The correlation test with Spearman was carried out to determine the relationship between the consumption diversity score and the z-score TB / U. The analysis of factors related to the diversity of consumption used the binary logistic test with a 95% confidence level. This study has received an Ethical Clearance from the Bioethics of Medical / Health Research Faculty of Medicine, Sultan Agung Islamic University Semarang with No. 724 / X / 2019 / the Bioethics Commission on October 31, 2019.

RESULTS AND DISCUSSIONS

The prevalence of stunting was 45.3%, and the rate of non-vertigo was 54.7%. In the non-stunting group, boys were bigger than girls. This result was consistent with Klaten's study, where the proportion of boys in the normal population were greater than that of girls[12]. The largest proportion of toddlers who were stunted was between 24 and 42 months of age. This result was consistent with the results of a study in Nepal. In Nepal, the oldest toddlers were stunted between 18-35 months[6].

In the developmental delay group and the non-developmental delay group, most people have a small family size (≤4 persons). Both the fathers and mothers of the two majority ethnic groups have very low education or were under 9 years old. According to the results of the interview, most parents' education was graduated from elementary school. The level of education may affect a person's nutritional knowledge and skills in regulating the diet of family members, which also contributes to the diversity of family food. The higher the education level of the father, the greater the variety of food in the family[13]. However, in relation to nutritional status, maternal education has a stronger effect on children's nutritional status than father's education[14].

Most mothers under the age of five in the two groups were not working, but the proportion of non-working mothers in the non-stun group was greater than that in the developmental delay group. These results were similar to previous studies conducted in Mimika, because the proportion of non-working mothers in the normal group is higher than that in the stunting group[15]. Mother who did not work will have the maximum time in caring for the child, while working mother may have less time in paying attention and caring for the child than housewives who do not work.

Table 1. Characteristics of Toddlers and Families

Variable	Stunting		Not stunting	
	n	%	n	%
Sex				
Men	20	45.5	28	52.8
Women	24	54.5	25	47.2
Age group (months)				
24-42	27	61.4	28	52.8
43-59	17	38.6	25	47.2
Great family				
Moderate (5-6 people)	9	20.5	10	18.9
Small (≤4 people)	35	79.5	43	81.1
Father's Education				
Low	39	88.6	46	86.8
High	5	11.4	7	13.2
Mother's Education				
Low	40	90.9	49	92.5
High	4	9.1	4	7.5
Mother's employment status				
Work	13	29.5	13	24.5
Does not work	31	70.5	40	75.5
Income (000)				
Poor (≤Rp 1990)	27	64.4	32	60.4
Not poor (> 1990)	17	38.6	21	39.6
Mean±SD	1791.4±1409.8		1926.8±1090	
Food Expenditure				
High (>60%)	24	54.5	26	49.1
Low (≤60%)	20	45.5	27	50.9

Most of the family income in both groups was categorized as poor based on the BPS category (2019)[16]. The proportion of non-poor families in the stunting group was greater than that in the non-coma group. Low income or poor conditions were the causes of low household food consumption, one of which was the food consumption of toddlers. Eating less food would lead to insufficient nutritional intake, thereby affecting the nutritional status of toddlers[17]. The proportion of high food expenditures in families with toddlers' years of age who were stunted was greater than that of families with toddlers who were not stunted. Lower food expenditures may also be affected by lower incomes. In this study, the average household income of the stunted and non-stunted groups was both lower than Rp1,990,000. Low income would affect people's low ability to buy food, resulting in lower quality and quantity of food required by each family member[18].

Table 2. Mothe's Characteristics

Variable	Stunting		Not Stunting	
	n	%	n	%
Mother's Age				
Early adulthood	22	50	25	47.2
Middle adult	22	50	28	52.8
Average±SD	31±7.1		30.6±5.8	

Variable	Stunting		Not Stunting	
	n	%	n	%
Mother's Nutritional				
Knowledge	28	63.6	16	30.2
Less (<average)	16	36.4	37	69.8
Good (≥ average)				
Average±SD	59.8±15.4		68±13.9	
Attitude Nutrition				
Negative (<80)	22	50	25	47.2
Positive (≥80)	22	50	28	52.8
Average±SD	78.3±7.8		79.2±8.8	
Eating Patterns				
Less (<average)	23	52.3	21	39.6
Good (≥ average)	21	47.7	32	60.4
Average±SD	70.6±8.9		72.1±8.2	

The mean maternal age in the non-stunting group was younger than in the stunting group. A young mother has the knowledge of caring for children obtained from her parents, while an aged mother was easier to do her role wholeheartedly. Both would affect the quality and quantity of care. The mean score of maternal nutritional knowledge in the stunting group was lower than in the non-stunting group. Research conducted in Ghana showed that knowledge of maternal nutrition was positively related to diversity of consumption of children under five, mothers with good nutritional knowledge had a significant relationship with high dietary diversity of children under five. The average score for the nutritional attitude of mothers under five who was not stunting was higher than that of mothers with stunting. Mother's attitude was one of the indirect factors affecting the nutritional status of toddlers, therefore, even though some mothers have a positive nutritional attitude, if the child consumes foods low in nutrients, it would affect the nutritional status of children who were deficient[19]. In the stunted group, mothers' parenting styles were dominated by mothers who raise fewer children, while in the non-stunted group, mothers with good parenting patterns dominate. This result was consistent with a study of poor families in Palembang, which explained that poorly developed groups mainly control poor eating habits, while normal groups dominate good eating habits[20]. Previous studies have shown that mothers of mothers with developmental delays did not have a fixed diet schedule for their children, except that they did not pay attention to the nutritional content of the food they give[12].

Table 3. The Relationship between Consumption Diversity and Stunting

Toddler Consumption Diversity	Stunting		Not Stunting		Total		R	p-value
	n	(%)	n	(%)	n	%		
No Variety (≤4)	37	84.1	37	69.8	74	76.3	0.122	0.235
Variety (>4)	7	15.9	16	30.2	23	23.7		
Average±SD	3.59±1.04		3.92±1.19					

Table 3 showed that as many as 76.3% of children under five eat non-diversified diets (≤4 foods), while 23.7% of children under five eat multiple foods (>4 foods). The results of the relationship test conducted with Spearman showed that there was no significant relationship between differences in diet in children under five and the incidence of stunting (p>0.05). Although the strength of this relationship was very strong, it still has a positive direction . This may be because even though the average total consumption diversity score of the non-stun group was higher, the types of food consumed between the two groups were almost the same. This result was consistent with study found in Nganjuk, which pointed out that there was no relationship between food diversity and the incidence of stunting in children under five, and that the diversity of consumption was not a risk factor for stunting[21]. On the other hand, these results were not in line with research conducted in India which stated that the diversity of consumption of children under five was significantly associated with the incidence of stunting[22]. The existence of a positive relationship showed that if the higher the diversity of consumption of children under five, the more likely they were not to be stunted. Research conducted in Nepal stated that toddlers with low consumption diversity scores or below WHO recommendations were 4 times more likely to be stunted than toddlers with high consumption diversity.[6]

Table 4. Factors related to the diversity of consumption of children under five

Variable	OR	95% CI		p-value
		Lower Limit	Upper Limit	
Mother's Work Status				
Work	4.631	1.136	18.872	0.033*
Does not Work	-	-	-	
The Gender of The Toddler				
Men	5.138	1.677	15.736	0.004*
Women	-	-	-	-
Maternal Nutritional Knowledge				
Less	3.373	1.109	10.258	0.032*
Good	-	-	-	-

*$p < 0.05$

Based on the bivariate analysis with Chi-Square, there are four variables that meet the requirements for logistic regression analysis including mother's employment status, gender, posyandu visits and maternal nutritional knowledge with a p-value less than 0.25. The results of the binary logistic analysis of factors related to the diversity of food consumption for children under five are presented in Table 4. Based on the logistic regression analysis, it was found that the mother's employment status, gender, and knowledge of maternal nutrition were significant factors related to the diversity of food consumption of children under five. Mother's employment status was a significant factor related to the diversity of consumption of children under five (p <0.05). Toddlers with working mothers have a 4.6 times risk of consuming non-diverse foods with an OR = 4.63; 95% CI: 1.1-18.9 compared to children under five with non-working mothers. This shows that mothers who do not work can increase the diversity of their children's consumption. This result is in line with research in Ghana which states that maternal occupation has a significant positive relationship with the diversity of consumption of toddlers[23]. This may be because working mothers show a lack of knowledge about the importance of toddlers to eat a variety of foods and show bad practices such as late introduction of animal protein sources and instant feeding to toddlers[24]. The gender of children under five is an important factor related to the diversity of consumption of children under five (p <0.05). The risk of male young children eating non-diversified food is 5.1 times the OR = 5.1; 95% CI: 1.7-15.7 compared with girls. This shows that girls' diets are more diverse than boys. Previous research has also shown that male toddlers are three times more likely to have low consumption diversity scores[25]. The nutritional knowledge of pregnant women is an important factor related to the consumption diversity of children under five years old, with an OR value of 3.4; 95% CI: 1.1 to 10.3. The risk of children from mothers with less nutritional knowledge of non-diversified diet is 3.4 times higher than that of mothers with rich nutritional knowledge. This result is consistent with research conducted in China, where preschool children with low nutritional knowledge, mothers or caregivers are significantly positively correlated with low child consumption diversity[8]. This is because knowledge plays an important role in determining a person's attitude and behavior. Mothers with good nutritional knowledge will pay more attention to the type and quantity of food provided to their children. In addition, knowledge also plays an important role in determining how mothers raise their children. Mothers with good nutrition knowledge often have good parenting methods in terms of diet and health care. This result is also consistent with the Ethiopian study, that is, mothers' understanding of consumption diversity and mothers' ability to buy food have a significant impact on the consumption diversity of children under five. Other studies have also pointed out that a good understanding of maternal nutrition can increase the total dietary diversity score of children under five by 0.41[27].
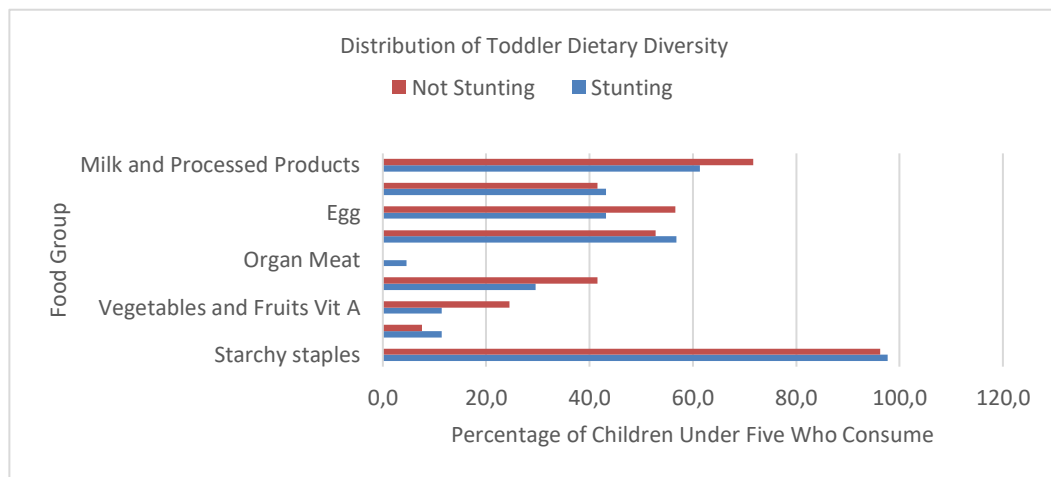
Figure 1. The Distribution of Food Consumption Diversity for Children Under Five in Each Food Group

Figure 1 showed the distribution of consumption of children under five in each food group. Based on the results of different tests using the Mann-Whitney test, there was no difference in the average total score of the diversity of food consumption for children under five between the two groups (p> 0.05). Figure 1 showed that the two groups of children under five with stunting and non-stunting have almost the same food consumption diversity. Starchy food was the food group most consumed by both stunted and non-stunted children. This was because the staple food at the research location was rice, which was a source of starch. The most commonly consumed starchy foods were rice and instant noodles. The proportion of children under five who consumed milk and dairy products in the non-stunting group was greater than the stunting group. The types of milk consumed most by toddlers were sweetened condensed milk and packaged milk. In the meat and fish food group, the percent of children under five who consumed in the stunting group was greater than the non-stunting group. It was in line with research in Klaten that the percentage of stunted toddlers consuming meat and fish was greater than normal children[12]. However, in this study, the two groups of most consumed meat and fish were salted fish, such as jalapenos, West African fish, and anchovies. Offal, green vegetables, vitamin A-derived vegetables, and other fruits and vegetables were food groups rarely consumed by young children in the two groups. The lower difference in dietary consumption among children under five may be due to the mother's lack of nutritional knowledge related to food and nutrition. This happens because posyandu's table 5 was not running, or Posyandu lacks nutrition education. At the same time, Posyandu was a way for mothers under five to obtain health and nutrition-related information[28].

CONCLUSION

In this study, almost half of toddlers were stunted and most were in the age range of 24-42 months. The majority of parents under five in both groups have low education or less than nine years. Most of the mothers of toddlers do not work. The average income in both groups is categorized as poor. The majority of toddlers eat a variety of foods. Working mothers, male toddlers, and the mother's lack of knowledge of nutrition are risk factors for toddlers to eat a variety of foods. It is necessary to improve the implementation of more active nutrition education at the posyandu to increase the nutritional knowledge of under-five mothers. Increase consumption of vegetables and fruit and consume a diet consisting of at least five food groups a day. Further research is needed by providing nutrition education interventions and monitoring until the behavior changes in mothers of toddlers.

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