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Research Article

Parental Characteristics and Its Association with Nutritional Status among Girls in Padang Pariaman District, West Sumatera, Indonesia

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Abstract.

The prevalence of being underweight amongst adolescent girls has increased in Indonesia. One of the factors hat affects weight is parental characteristics. The study aimed to describe and analyze the association between parental characteristics and the nutritional status of adolescent girls. A cross sectional study was conducted to collect data characteristics of girls and their parents related to nutrition. 112 girls in MTSN 2 Padang Pariaman were respondents selected through a proportional stratified random sampling technique. The nutritional status of adolescent girls was determined through weight and height measurement; after that, it was compared with age. Data was collected using a standardized questionnaire, and then the data was analyzed using a computer program. Chi-square tests were used to analyze bivariate with a significant level determined if p-value was less than 0.05. The result showed that about 50% of girls were underweight. The percentage of underweight girls was higher for girl's whose father's were less educated and mother's highly educated, but itwas not statistically significant. There was an association between economic status and nutritional status (p-value<0.05), and other factors tended to be associated with underweight status among adolescent girls. Health and nutrition education is needed to increase the knowledge of adolescent girls about nutritious food and nutritional status. Collaboration activities of health institutions with health education institutions could be done routinely in schools to prevent and combat malnutrition problems, specifically among adolescent girls.

Keywords: Adolescent Girls; Nutritional Status; Parental characteristics

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1. Introduction

Malnutrition particularly undernutrition is nowadays still a big problem to be solved in the developing countries, such as Indonesia. Based on World Health Organization (WHO), an adolescent group is one of crucial period in a person's life cycle that has a risk of undernutrition. This condition might impact to the performance in school and physical status in later life especially for adolescent girls.

In the worldwide, more than 16.2 million adolescent girls were suffering from under-nutrition.

According to the National Basic Health Research Survey or Riskesdas year 2018 indicated that the burden of undernutrition in Indonesia was considerable, with over a fourth of the adolescent population aged 13–15 years stunted (approximately 26%) and 9% underweight (thin). Furthermore, it was found the higher prevalence of anaemia among girls (22.7%) compared with boys (12.4%).[1,2]

Multifactors are related with the child's nutrition, including family factors such as parent's income.[3] Previous study showed that the family environment can affect nutritional status of child and physical activity habits. This finding is also indicate that family factors may have more influence on nutritional status in girls than boys.[4] Therefore, the present study aimed to analyse the association between parental factors with nutritional status of adolescent girls in the rural area of the Western Sumatera, Indonesia.

2. Research Method

The study was conducted using cross sectional study on adolescent girls who was in yunior high school. The location of the study was in the Padang Pariaman District, Western Area of West Sumatera Province whereas the prevalence of chronic energy malnutrition was higher among productive age women than others area. Sample was 112 adolescent girls which have selected through simple random sampling and the criteria was have ability to communicate and in the healthy status.

Collecting data consisted of primary and secondary by using standardized and validated questionnaires. Nutritional status of adolescent girls was determined through assess weight and height, after that it was counted for body mass index and compared with age. Body weight was assessed by weighing digital scale which was calibrated before it was used. Nutritional status of adolescent girls was categorized based on Health Ministry year 2020. Data was collected by two enumerators which was coached before collecting data to have the same perception about the aim of the study and what kind of data was collected.

Ethical clearence was obtained through Ethical Committee of Faculty of Public Health, Andalas University with reference number No.25/UN16.12/KEP-FKM/2023. Moreover, informed consent was obtained from respondents which were agreed to participate in the study through signed the form of informed consent.

Unviariate, and bivariate data was performed in the result. Data analysis was processed with computer statistical program. Specifically, bivariate analysis was done with chi-square test to know the association between independent variables with dependent variable. The association between variables is meaningful if the test result p value <0.05.

3. Result

Of 50.0% from 112 adolescent girls was underweight status, eventhough we still found girls with overweight status (6.3%) (Table 1).

TABLE 1: Nutritional Status based on Body Mass Index of Adolescent Girls.

Nutritional Status	n	%
Severe underweight	5	4.5
Underweight	56	50.0
Normal	44	39.3
Overweight	7	6.3

Univariate analysis was showed that more than half father of adolescent girls were in high education level (57.5%) and almost all fathers were in working status (94.2%). Besides that, more than half mother of adolescent girls were in high education level (59.2%) and no working status or as a housewive (59.2%). About economic status of adolescent girls showed that about 77.7% girls were in low economic status (Table 2).

TABLE 2: Parental Characteristics of Adolescent Girls.

Parental Characteristics	n	%
Father's Education Level		
Low (≤Yunior high school)	38	33.9
High (>Yunior high school)	74	66.1
Father's working status		
No	0	0.0
Yes	112	100.0
Mother's Education Level		
Low (≤Yunior high school)	36	32.1
High (>Yunior high school)	76	67.9
Mother's working status		
No	63	56.2
Yes	49	43.8
Economic Status		
Low	87	77.7
High	25	22.3

Further analysis was conducted to determine the association between two variables or bivariate analysis by using chi-square test. Father's working status could not proceed in bivariate analysis because all father's girls were in working status (Table 2).

Table 3: Parental factors and it's association with nutritional status of adolescents girls.

Variables	Underweight	Not underweight	P-value
	n (%)	n (%)	
Father's Education Level			
Low (≤Yunior high school)	21 (55.3)	17 (44.7)	1.000
High (>Yunior high school)	40 (54.1)	34 (45.9)	
Mother's Education Level			
Low (≤Yunior high school)	16 (44.4)	20 (56.6)	0.207
High (>Yunior high school)	18 (15,9)	64 (56,6)	
Mother's working status			
No	37 (58.7)	26 (41,3)	0.403
Yes	24 (49.0)	25 (51.0)	
Economic Status			
Low	52 (59.8)	35 (40.2)	0,035
High	9 (36.0)	16 (64.0)	

From bivariate analysis, there was a tendency of father's education level and mother's working status of adolesecent girls were higher on risk of underweight girls than non underweight girls. However, low economic status was higher on risk of underweight girls than non underweight girls, and there was an association between economic status with nutritional status of adolescent girls (p-value=0.035).

4. Discussion and Analysis

The study was conducted in one of rural area in the West Sumatera Province. Overall, the present study was found the prevalence of underweight and severe underweight was 50.0% and 4.5%, respectively. This number was similar to the prevalence of underweight from Preethi Subramanian's study in Telangana, India (46.8%).[5]

The present study found that parental educational level has statiscally no relationship with nutritional status of adolescent girls. However, there is a tendency a higher percentage to be not underweight girls if mother' have high education level compared with underweight girls. It is argued that mother has an important role according to decision-making for consuming a diverse diet and improving her child's nutrition including adolescent.[6,7,8] The different result regarding to father's education level showed that even low or high education level of father is a higher risk to be underweight than

not underweight among girls. This finding according to parental educational level is different with the previous study.[5] The study found that mother educational status has a moderate correlation with nutrition status of children aged 10-16 years, and also the study showed that father's educational status has a weak correlation with nutrition status of children aged 10-16 years. This study explained that lower the educational status of the father, the adolescent children would be more undernourished than fathers with higher educational status.

This study identified that almost a half of mother (43.8%) are working or not a housewife. It means mother in the family also supported family's income, but there was no association between mother's working with nutritional status of adolescent girls. This result was higher than Abdur Razzak's finding in rural Bangladesh. The study reported that about 25% to 27% of the mothers were related to economical activity other than housewives.[9] The study was supported by Getachew Arage, et al, 2019 in Northwest Ethiopia. The finding showed that mother's job was positively associated with the thinness of adolescent girls. Girls may be at significantly higher risk of malnutrition due to different socio-demographic and economic factors.[10] However, the present study indicated the economic of family was in low category and it was statistically associated with nutritional status of adolescent's girls. The same result was also reported in the previous study.[11,12] Low level of economic or income may lead to food insecurity and lack of dietary diversity in the family, and moreover that may affect the nutritional status in girls.[10]

There are some of different results between present study with the previous studies. It might be related with number and characteristics of age of respondents. The present study was specifically among adolescent girl and also on the specific age (13-16 years). The limitation of the study is the findings were based on cross-sectional study, which makes it is difficult to explaine the causality association in manner.

5. Conclusion

Underweight are prevalent among adolescent girls in rural area of western Sumatera, Indonesia. There is an association between economic status with underweight of girls. More attention should be given to adolescent girls through nutrition education about consuming nutritious food.

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Declaration of Conflict Interest

The author declares no conflict of interest

Biography

Azrimaidaliza is a doctor of public health science, specifically public health nutrition science. She works as a lecturer at the Department of Nutrition, Faculty of Public Health, Universitas Andalas. She is interested to research about the determinants of nutritional status of women and nutritional status of child. She is ever as vice-dean in the academic affairs of the Faculty of Public Health, Universitas Andalas in 2016-2020, and now she is the chairman of the faculty academic senate. She likes writing and has authored several references books and textbooks published by Andalas University Press and National Publishers.

Tariyana Sari Nasution graduated from Study Program of Nutrition, Faculty of Public Health, Universitas Andalas. She is interested with research about adolescent nutritional status. Now, she is involved in lecturer research about factors related with adolescent girls in Padang.

Resmiati is a lecturer at the Department of Nutrition, Faculty of Public Health, Universitas Andalas. She is interested in the fields of nutrition science and technology. Her earlier research was related to the development of an Android application for stunting prevention and also the development of an Internet of Things-based nutritional status measurement tool. She is also interested in researching general public health issues. She has authored several books published by national publishers such as Mega Press and Deepublish.

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