

Factors Associated with Malnutrition in Adolescent Girls during the COVID-19 Pandemic

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ABSTRACT

This study aimed to analyze the factors associated with malnutrition in adolescent girls. The study design was a cross-sectional study with a stratified proportional random sampling, which resulted in samples of 156 adolescent girls aged 10 to 24 years in high schools in Tasikmalaya City. Chi-square test is used to analyze factors associated with malnutrition in adolescent girls. Menstrual cycle, knowledge, physical activity, and stress were significantly associated with malnutrition, while a history of infectious disease was not significantly associated. The implication of this research is that during the pandemic, adolescent girls need to maintain knowledge, physical activity, and coping skills to avoid malnutrition.

Keywords: adolescent girl, COVID-19, malnutrition, pandemic

INTRODUCTION

During a pandemic, it is very important for everyone, including adolescents, to pay attention to nutrition. Adolescents (10–24 years) are usually very susceptible to nutritional problems because they experience many hormonal changes during adolescence that affect their physical changes. Physical growth causes adolescents to require a greater intake of nutrients than in childhood. Normal nutritional levels are achieved when optimal nutritional needs are met.

Factors that directly affect nutritional status are knowledge, food intake, and infectious diseases. Lack of knowledge about nutrition can lead to behavioral problems, and eating habits can be the cause of nutritional problems. Nutrition knowledge can be improved through health promotion. Adolescents also experience menstruation, which causes a lot of blood loss every month, so the need for iron doubles during menstruation (MoH RI) 2016). In addition, stress and a lack of physical activity can lead to nutritional problems such as malnutrition. This study aimed to analyze the factors associated with malnutrition in adolescent girls during the covid-19 pandemic.

METHODS

The method was a cross-sectional study using stratified proportional random sampling, resulting in samples of up to 156 adolescent girls aged 10 to 24 years in private high schools from Bungursari District in Tasikmalaya City. The main variables were menstrual cycle, knowledge, physical activity, stress, history of infectious diseases, and malnutrition. The samples in this study met the following inclusion criteria: adolescent girls aged 10–24 years, unmarried women, and young girls who were willing to participate. Exclusion criteria were adolescent girls who were seriously ill and adolescent girls who refused to participate.

The instruments in this study were a questionnaire form that asked for the student's name, place and date of birth. Nutritional status was measured using Body Mass Index-for-Age (BAZ). Physical activity was measured with the activity recall questionnaire. Stress was measured with the Perceived Stress Scale-10 (PSS-10). Nutrition knowledge was measured by a questionnaire. Chi-square test was used to see the relationship between the independent and dependent variables.

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RESULTS AND DISCUSSION

The subjects in this study who were in the age range of 15 to 19 years were 41.7% and in the age range of 10 to 14 years were 21.8%. Meanwhile, the subjects who were at the high school education level were 49.4% and those who were at the elementary or equivalent education level were 4.5%.

The menstruation cycle was related to nutritional status. This statement is consistent with Pratiwi (2011), who found that most of the respondents who had regular menstrual cycles are female students with good nutritional status and normal weight, and those who had irregular menstrual cycles were female students with poor nutritional status indicated by underweight. Knowledge is associated with nutritional status (Nurwijayanti *et al.* 2019; Pantaleon 2019).

Physical activity was associated with nutritional status (Table 1).

This finding is consistent with the study conducted by Grygiel-Górniak *et al.* (2016), which also showed that physical activity is related to nutritional status ($p=0.046$). In relation to the stress variable, a person's stress can cause changes, one of which is a change in behavior that can affect nutritional status.

CONCLUSION

There is an association between menstrual cycles, knowledge, physical activity, stress, and malnutrition in adolescent girls during the COVID-19 pandemic. The implication of this research is that during a pandemic, adolescent girls need to maintain knowledge, physical activity, and coping skills to avoid malnutrition.

Table 1. Factors associated with malnutrition in adolescent girl

Variable	Nutritional status				Total		<i>p</i>	OR (95% CI)
	Good		Poor		n	%		
	n	%	n	%				
Menstrual cycle								
Regular	35	76	21	24	56	100	0.002	1.964 (0.974–3.961)
Irregular	62	58.3	38	41.7	100	100		
History of infectious disease								
Yes	1	50	1	50	2	100	0.736	0.621 (0.038–10.119)
No	95	61.7	59	38.3	154	100		
Knowledge								
Good	71	67	35	33	106	100	0.042	2.209 (1.021–4.030)
Poor	25	50	25	50	50	100		
Physical activity								
Low	41	49.4	42	50.6	83	100	0.001	3.310 (1.579–6.206)
High	55	75.3	18	24.7	73	100		
Stress								
High	57	55.9	45	44.1	102	100	0.046	0.487 (0.239–0.993)
Low	39	72.2	15	27.8	54	100		

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DECLARATION OF CONFLICT OF INTERESTS

The authors have no conflict of interest in relation to this study.

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