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THE RELATIONSHIP BETWEEN BODY MASS INDEX AND CHRONIC ENERGY DEFICIENCY IN HIGH SCHOOL STUDENTS IN THE LEUWIGAJAH

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ABSTRACT

The nutritional problem that often occurs in young women is a lack of nutritional intake which will cause malnutrition bad, chronic lack of energy and lack of protein energy. This problem will have a negative impact on level of public health, for example there is a problem of decreased concentration in learning among teenagers. This study aims to determine the relationship between BMI and CED of adolescent girls. This research used a quantitative descriptive design with the research subjects being high school students in Leuwigajah Village. A sample of 204 people was selected using the probability sampling method, stratified random sampling. Data collection was carried out from January to October 2023 through observations, checklist sheets and questionnaires. Data analysis uses correlation tests Spearman. The research results show that there is a relationship between BMI and nutritional status (p value: 0.000). It is hoped that teenagers can improve their diet so that they do not experience chronic energy shortages

Keywords**:** BMI, CED, adolescent girls

INTRODUCTION

Adolescence is a period of human development. This period is a period of change or transition from childhood to adulthood which includes biological changes, psychological changes and social changes. In most societies and cultures, adolescence generally begins at the age of 10-13 years and ends at the age of 18-22 years. This period plays a big role in determining the future of the nation, because teenage girls are prospective mothers who are at risk of pregnancy and childbirth, and are exposed to other health problems that have an impact on mental health, economic conditions and long-term social welfare. [1] Twenty-three percent of Indonesia's population are teenagers [2] Based on the results of the 2018 Riskesdas, the incidence of KEK among young women from 2007-2018 experienced fluctuating with results in 2018 of 33.5%

A nutritional problem that often occurs in young women is a lack of adequate nutritional intake causes poor nutrition, chronic lack of energy, lack of protein energy and anemia can occur. The problem will have a negative impact on the level of public health, for example there is a problem of decreased concentration studied in adolescents, women of childbearing age (WUS) are at risk of giving birth to babies with low birth weight (LBW) and decreased physical fitness [3].

The risk factors for chronic energy deficiency (KEK) in adolescent girls are the result of indirect factors such as age, knowledge, attitudes, socio-economics (family income) and direct factors, namely the amount of intake food, activity and infectious diseases, and Body Mass Index (BMI).

Previous research conducted by (Fakhriyah, et al. 2022) found that there was a relationship between BMI and the incidence of CED with a p value of 0.001. This study aims to determine the relationship between body mass index and the incidence of chronic energy deficiency in female high school students in the Leuwigajah area. [4]

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METHOD

This research used a quantitative descriptive design with the research subjects being high school students in Leuwigajah Village (424 people). A sample of 204 people was selected using the probability sampling method, stratified random sampling. Data collection was carried out from January to October 2023 through observations, checklist sheets and questionnaires. Data analysis uses correlation tests Spearman.

RESULT

Table 1. Frequency distribution table describing body mass index and the incidence of chronic energy deficiency in female high school students in the Leuwigajah area

Variable	Amount (n=204)	%
Body Mass Index		
Thin	75	36,8
Normal	98	48,0
Fat	26	12,7
Excess	5	2,5
Total	204	100
Chronic Energy Deficiency		
CED	73	35,8
Not CED	131	64,2
Total	204	100

The research results showed that the majority of respondents had a normal body mass index, namely 98 people (48%). Meanwhile, for the chronic energy deficiency variable, it was found that the majority of respondents did not experience chronic energy deficiency, namely 131 people (64.2%)

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Table 2. Relationship between Body Mass Index and Nutritional Status in High School Students in the Leuwigajah Village Area

BMI	CED						p value
	CED	%	Not CED	%			
Thin	60	80	15	20	75	100	0,000
Normal	12	12,2	86	87,8	98	100	
Fat	1	3,8	25	96,2	26	100	
Excess	0	0	5	100	5	100	
Total	73	35,8	131	64,2	204	100	

The research results show that there is a relationship between body mass index and the incidence of chronic energy deficiency with a p value of 0.000. It can be seen that of the 98 respondents who had a normal body mass index, 87.8% of female students did not experience chronic energy deficiency.

DISCUSSION

Body mass index according to age is an assessment of the nutritional status of children aged over 5 years to 18 years [5]. Chronic energy deficiency is a condition of malnutrition, where there is a chronic lack of energy over a long period of time. If the upper arm circumference (LLA) is <23.5, a person experiences chronic energy deficiency.

In general, the nutritional status of adolescents is influenced by eating habits [6]. Adolescents' bad eating habits, such as skipping breakfast, low consumption of vegetables and fruit, high consumption of fast food, consumption of unhealthy snacks, and consumption of processed foods high in sugar [7].

Many teenagers do not attach importance to incoming and outgoing energy intake [8]. If the energy out is greater than the energy in, it can result in malnutrition [9]. Adolescents who experience malnutrition for a long time can cause CED [10]

This research is in line with research conducted by Arista et al., 2017 which states that there is a relationship between body mass index according to age (BMI/U) and the incidence of CED in young women with a significance value of 0.000. If young women have a lower BMI/U (thin and very thin), they are at risk of developing CED. [11]

CONCLUSIONS AND SUGGESTIONS

Research shows that chronic energy deficiency can be influenced by BMI factors, where young women with normal BMI do not show chronic energy deficiency. It is hoped that teenagers can improve their diet so that they can prevent abnormal BMI which can cause chronic energy deficiency.

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