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Relationship Between Nutrition Knowledge and Body Mass Index (BMI) in Nutrition Students

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ABSTRACT

The balance of nutritional consumption with metabolic needs in the body has an impact on an individual's nutritional status. Knowledge is included in one of the factors that influence an individual's nutritional status. This research aims to ensure the level of nutrition knowledge had a relation to the Body Mass Index (BMI) of students in Kepulauan Riau. The approach used in this research used a cross-sectional research design. The sample used in this research was 50 students of the undergraduate program of nutrition science in Kepulauan Riau. Nutritional knowledge data was collected by using an electronic questionnaire and BMI was measured by weight and height. Data was analyzed by descriptive and regression. The results showed that the average nutrition knowledge score was in the medium category (66.6±12.34). Whereas BMI score shows that 62% of students have got normal BMI, while 20% and 18% are overweight and underweight. Regression analyses showed that r=0.172 with p=0.233. Our findings stated that nutritional knowledge had no significant difference in BMI.

Keywords: Nutrition, knowledge, body mass index

Introduction

The balance of nutritional consumption with metabolic needs in the body has an impact on an individual's nutritional status (Bede, 2020). The choice of food for daily consumption is influenced by many factors such as social, economic, and knowledge factors. Nutritional knowledge is related to an individual's decision to choose healthy foods that impact nutrition and health. Adolescent nutritional and health problems can be solved by providing knowledge and awareness in habits of eating or lifestyles. The nutritional problem often faced by teenagers is a double nutritional problem, namely undernutrition and overnutrition (Lestari, 2022).

According to WHO data, more than 1.9 billion individuals aged 18 years old have an overweight nutritional status, with more than 600 million of those adults being obese (Wojzischke et al, 2020). In Indonesia, the prevalence of overweight and obesity in adults has increased in recent years, 14,4% and 23,4% respectively. Meanwhile, Kepulauan Riau has a higher prevalence of overweight and obesity than the other provinces in the west region of Indonesia, which is 17,4% and 26,8%, respectively (Kemenkes, 2023).

The nutritional education aspects that a person has impacted their nutritional status, therefore someone with high nutritional knowledge is believed to be able to keep nutritional status within acceptable ranges (Kalkan, 2019). Lack of knowledge can lead to inadequate nutritional intake of a person. This will result in an imbalance between macro and micronutrient intake (Crowley, 2019).

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Material and Methods

The research approach used in this research used quantitative with cross-sectional research design. Data analysis uses correlation tests. The choice of correlation test in this study was to analyze the relationship between nutritional knowledge and BMI among nutrition students at the Institut Kesehatan Mitra Bunda. The location of this research is at the Institut Kesehatan Mitra Bunda, specifically the undergraduate nutrition study program. Data was collected by measuring body weight and height and using a questionnaire to assess nutritional knowledge involving the knowledge about carbohydrates, proteins, fats, and balanced nutrition which was distributed via Google Form to students. The sampling technique used total sampling with a total of 51 students. Category of Nutritional knowledge into good (75 – 100%), sufficient (61 – 75%), and poor (<61%) (Kanah, 2020). However, BMI was categorized into underweight (≤18.5kg/m2), normal (18.5 – 24.9kg/m2), and overweight (≥25.0kg/m2).

Results and Discussion

The study findings are provided using univariate and bivariate analysis. Univariate analysis was carried out by exhibiting the frequency distribution of each variable, as shown in Table 1.

Table 1. Demographic data

Variable	Category	Quantity	Frequency (%)
Gender	Male	7	14
	Female	43	86
Age (y.o)	18	7	14
	19	17	34
	20	17	34
	21	8	16
	22	1	2

86% samples are female and the other 14% are male. 34% of students are 19 and 20 years old, while 16% are 21 years old, 14% are 18 years old and only 2% are 22 years old. During the research, the respondent had the status of a student undergraduate program of nutrition science. This research had a perspective that all respondent applied nutrition nutrition-balanced lifestyle for the body metabolism and provide their health. Continuously low nutritional intake will result in low nutritional status and vice versa if excessive nutritional intake is sustained it can result in excessive nutritional status (Condo et al., 2019).

Table 2. Nutrition knowledge and physical characteristics

Variable	Mean ± SD
Nutrition Knowledge	66.6 ± 12.34
Weight (kg)	55.37 ± 15.55
Height (cm)	157.8 ± 8.88
BMI (kg/m^2)	22.07 ± 5.07

Table 3. BMI classifications

BMI	Quantity	Percentage (%)
Underweight	9	20
Normal	31	62
Overweight	10	18

The results of this study indicate that the correlation between nutritional knowledge and the nutritional status of students is very weak (r=0.172), with a p-value of 0.23 (p>0.05), thus reporting that there is no relationship between nutritional knowledge and BMI. This has the meaning

that the higher the level of nutritional knowledge, the better the nutritional status. Students who have a good level of nutritional knowledge do not necessarily apply healthy, diverse, nutritious consumption patterns to improve nutritional status.

In line with research conducted by Wulandari et al. (2021) which reported results that nutritional knowledge had no relationship with nutritional status (p=0.319). This is thought to be influenced by several factors, namely the research sample was not homogenized so the education level of the sample was different. In this study, the samples were in different semesters so the knowledge related to nutrition obtained would also be different.

Pantaleon (2019) stated that knowledge has indirect factors on nutritional status, meanwhile, a direct factor that affects nutritional status is intake and infectious diseases. A person's nutritional knowledge is related to attitudes and behavior in determining food choices and whether it is easy for someone to understand the benefits of the nutritional content of the food they consume (Lestari, 2022). Besides that, lack of knowledge can affect the nutritional status, especially in middle age (18 – 25 years old) are generally still unstable and easily influenced, such as media social, friends, family, and others.

Conclusion

The study indicated that 62% of 50 samples with an age range of 18-22 years had normal BMI, 20% were underweight, and 18% were overweight. The correlation coefficient test findings were both positive and very weak. The relationship between nutritional knowledge and BMI had no significant difference.

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