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Original Article

Association Between Eating Habit, Sedentary Lifestyle, and Place of Living with Nutritional Status Among College Students at Sebelas Maret University

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ABSTRACT

Advances in technology cause shifts in trends, changes in eating patterns, and sedentary activities in college students can impact nutritional status. This study aimed to analyze the relationship between eating habits, sedentary lifestyle, and place of residence on the nutritional status of Sebelas Maret University students. This is was a quantitative analytical study with a cross-sectional design. Study samples were selected using an accidental sampling technique, which obtained 206 samples aged 17-29 years. The research was conducted in March-April 2023. Eating habits were measured using a questionnaire that had gone through reliability and validation tests and sedentary data using the Adolescent Sedentary Activity Questionnaire (ASAQ) instrument. Bivariate data were analyzed using the Chi-Square test. The results showed that there was a significant relationship between eating habits (p<0.00), sedentary lifestyle (p<0.00), and place of residence (p<0.015) and the nutritional status of students. 11.2% were overweight and 52.4% of students were obese. It was concluded that eating habits, sedentary lifestyle, and place of residence are related to the nutritional status of students at Sebelas Maret University. Future researchers should add indicators of the type, amount, and frequency of food consumed to the eating habits variable to deepen the research results.

Keywords: Eating Habit, Sedentary Lifestyle, Place Of Leaving, College Student.

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INTRODUCTION

Technological developments and globalization in various parts of the world have made life easier and faster. This convenience creates a feeling of laziness, changes in eating habits, rarely doing physical activity or sports and a lifestyle that increases the incidence of obesity[1]. Being overweight or obese has become a serious global health problem in many parts of the world. More than 340 million adolescents worldwide are obese[2], while 21.8% of Indonesia's population is obese[3].

Advances in technology that are increasingly modern have increased sedentary lifestyles, as well as influenced and encouraged the public, especially students, to prefer eating activities outside the home and consuming

processed foods [4]. The phenomenon shows that eating habits have shifted from a home-cooked food environment to a public one that provides more ready-to-eat food through various food outlets or online delivery services[5]. Eating habits refer to what we eat, why we eat, and how a person obtains food sources [6].

The trend shift among students is motivated by the desire and encouragement from the environment[7]. According to Surjadi, the busyness of students studying, doing coursework, or other lecture activities creates conditions where students no longer have much time to cook or relax, so they prefer to eat outside the home and eat ready-to-eat food (4). Behaviour of consuming unhealthy food outside the home can be a source of health problems that should not be ignored.

The college period is critical for changing unhealthy eating behaviours[8], while college students are among the populations most at risk of experiencing weight gain associated with decreased food quality[9]. This period is often characterized by unhealthy food choices, highly sedentary lifestyles [10], reduced levels of physical activity, poor overall quality of diet, and high risk of weight gain which can lead to obesity[11].

College students' eating habits are influenced by a series of complex factors, one of which is where they live. Students living in boarding houses eat less well than those living with their parents [12]. In addition, students who live in boarding houses tend to eat out more often, but it is possible that students who live with their parents also have similar habits due to their busy parents [13].

A study by Kim said that the high frequency of eating outside the home increases a person's risk of developing obesity and is associated with higher nutritional status [14]. In contrast, consuming home-prepared food more frequently (11-14 times per week) was associated with less weight gain than eating home-prepared food 0-6 times per week[15]. Other research reveals that eating at home is associated with better food choices, whereas other locations are associated with poor food choices[16].

This research was conducted to determine the relationship between eating habits, sedentary behaviour, and place of residence on the nutritional status of students at Sebelas Maret University.

METHOD

This was quantitative analytical study with a cross-sectional design. The population in this study was Sebelas Maret University students. Study samples were selected using an accidental sampling technique which obtained a total sample of 206 students in the age range between 17-29 years coming from 10 faculties. This research has passed ethical due diligence based on the letter 34/UN27.06.11/KEP/EC/2023 issued by the Ethics Commission of Sebelas Maret University on February 14, 2023.

The collection of data on characteristics of the respondents, including gender, age, place of residence, pocket money, faculty, and eating habits was done by interviews using a questionnaire by google form. Data on eating habits consist of how to get food, frequency of cooking, buying food out directly, buying through delivery services, menus cooked/purchased and reasons. Sedentary lifestyle data was measured using the Adolescent Sedentary Activity Questionnaire (ASAQ). Measurement of height and weight were collected based on the results of each respondent's independent report. Bivariate data analysis was performed using the Chi-Square test and multivariat data analysis was performed using ordinal regression.

RESULTS

Tabel 1. Frequency Distribution by Characteristics of Respondents

General Characteristic	n	%
Age		
17-20 years	98	47,6
21-25 years	95	46,1
>25 years	13	6,3
Gender		
Male	63	30,6
Female	143	69,4
Faculty		
Postgraduate School	15	7,3
Medicine	23	11,2
Agriculture	63	30,6
Engineering	33	16
Social & Political Science	8	3,9
Economics & Business	29	14,1
Mathematics & Natural Science	12	5,8
Law	16	7,8
	7	3,5

Vocasional School		
Place of Recident		
Indekost	128	62,1
Rent House	35	17
Family's house	43	20,9
Status Gizi		
Underweight	19	9,2
Normal	56	27,2
Overweight	23	11,2
Obesity	108	52,4

Table 1 shows an overview of the characteristics of the respondents. Most respondents were female as much as 69.4%, aged 17-20 years 47.6% and most came from the Faculty of Agriculture as much as 30.6%. Most of the respondents live in indekost 62.1%. Based on the body mass index (BMI) calculation, 52.4% of respondents had obesity.

DISCUSSION

Place of Residence and Nutritional Status

The study results in Table 2 show that student residence is related to nutritional status. Although it shows a relationship, it should be noted that in all types of residence, the tendency for the proportion of nutritional status to be obese is the greatest. It shows that the incidence of obesity does not only occur in students who live in boarding houses. However, some studies state that residence is one-factor influencing student eating habits. Gazibara stated that students who live in boarding houses or dormitories tend to have unhealthy eating habits [17].

The boarding area around the campus is synonymous with various types of heavy food or snack vendors, which offer various foods. It makes access to food places around student residences quite easy to reach so students are more free to choose. Nurlita (2017) states that students who live in boarding houses have a habit of eating out [13], for reasons that are easy to obtain in stalls around campus and boarding houses [18].

The incidence of obesity is smaller for students who live at their parents' homes because generally the food prepared at home is much healthier. According to Mills' research, consuming more home-cooked meals is associated with better food quality and lower fat mass [19].

Tabel 2. Bivariate test Association Between Eating Habit, Sedentary Lifestyle and Place of Living With Nutritional Status

Variabel	Nutritional Status								p-value
	Underweight		Normal		Overweight		Obesity		
	n	%	n	%	n	%	n	%	
Place of Recident									0,015
Indekost	7	3,4	41	19,9	16	7,8	64	31,1	
Rent House	3	1,5	4	1,9	4	1,9	24	11,7	
Family's house	9	4,4	11	5,3	3	1,5	20	9,7	
Eating Habits									0,000
Cooking	13	6,3	28	13,6	7	3,4	17	8,3	
Eating Out purchased directly	6	2,9	19	9,2	11	5,3	77	37,4	
Eating Out purchased by online	0	0	9	4,4	5	2,4	14	6,8	
Sedentary Lifestyle									0,000
Low	17	8,3	27	13,1	2	1,0	9	4,4	
Moderate	2	1,0	27	13,1	11	5,3	32	15,5	
High	0	0	2	1,0	10	4,9	67	32,5	

Table 2 were obtained by analyzing using the Chi-Square test. The results of the relationship between student residence and nutritional status on Table 2 show that there is a relationship between these variables as shown p value = (0.015) < α (0.05). The results of the relationship between eating habits and nutritional status show that there is a relationship between these variables as shown p value = (0.000) < α (0.05). And the results of the relationship between sedentary lifestyle and nutritional status show that there is a relationship between variables as shown p value = (0.000) < α (0.05).

Eating Habits and Nutritional Status

In this study, the variable of eating habits is seen from another perspective. Researchers believe that eating habits can also be assessed by how a person gets food, including cooking and buying from outside the home, whether purchased directly or through delivery services. According to Rodrigez, eating habits refer to what is eaten, why, how people eat, and how to obtain food [6].

This study reports a significant relationship between eating habits and nutritional status with a p-value of 0.00 <0.05. Table 2 shows that students who have a habit of buying food directly from outside are more dominantly overweight (5.3%) and obese (37.4%) compared to the other two categories of eating habits, namely cooking and buying through delivery services. With an average purchase of ≥4-6 times/week. As many as 49.03% of students in this study reasoned that they bought food out because they did not have time to cook and were busy.

The results of this study are in line with several previous studies. According to research by Nago et al. in 2014, frequent eating out was positively related to the risk of being overweight or obese and to changes in body weight [20]. Research by Kim et al. 2019 stated that a high frequency of eating out could be correlated with higher nutritional status among women[14].

Eating habits obtained from outside the home have become dietary behaviour in developing and developed countries. The increase in consumption of food obtained from outside the home has increased by almost 50% in developing countries[21]. In this study, it appears that the habit of eating outside the respondent's home is obtained by buying directly or through a delivery service. The proportion of obesity incidence in delivery services is much lower than in buying directly. It is thought to be due to buying through delivery services not being the main way for respondents to get food. With so much coursework and busy class schedules, students tend to want to get things done quickly. Using delivery services is a choice for students to get food.

This habit is strongly related to an increased risk of non-communicable diseases and obesity [21]. Food purchased from outside the home is known to be energy dense with poor food quality. Food purchased outside the home causes weight gain and adverse health problems [22].

Even though both methods are obtained from outside the home, the incidence of obesity in students who eat from outside is directly greater than using delivery services. It is because buying directly can be obtained at a cheaper price than through an application and generally, you can choose side dishes and food portions directly.

***Sedentary Lifestyle* and Nutritional Status**

The term sedentary lifestyle is described as sedentary or sedentary behaviour, sitting and lying down a lot, with little or no exercise [23]. The study results in Table 2 show that high sedentary behaviour is associated with obesity in college students. High sedentary behaviour refers to low physical activity or lack of movement in daily life. The average student spends 4 hours on sedentary behaviour. A 2020 Ohlsson study reports that the cause of weight gain is the long duration of sitting [24]. The World Health Organization (WHO) states that a sedentary lifestyle is one of the leading causes of death worldwide.

The problem of obesity is not only related to the problem of excessive food consumption, but lack of physical activity also plays an important role which is believed to be one of the causes of obesity [25]. Advances in technology have provided, spoiled and made it easier for every activity to be faster, and as a result, a person becomes lazy to move. Research results in China suggest that as many as 38.65% of young adults use their spare time to watch TV or videos for 2 hours or more. In addition, 10.9% of young adults play video games for 1 hour or more daily [26]. Sedentary behaviour can lead to a lack of activity and an energy imbalance. The energy that is not used will be stored in adipose tissue in the form of fat and cause obesity [27].

Adolecensts spend more time sitting, playing games, listening to music and using computers or laptops to do assignments. [28]. Students tend to spend more time sitting and relaxing. Students' social environment is thought to be a barrier to building exercise habits, especially among women [29]. Low physical activity in overweight and obese adolescents is related to sedentary lifestyle behaviour. In contrast, in adolescents with normal nutritional status, it is associated with participation in sports and extracurricular

activities [30].

This study has limitations in this case. The values for body weight and height are obtained based on individual reports. This assessment may not accurately reflect the actual weight status and may reduce the magnitude of the observed association and differences in nutritional status ratings. In addition, this study has not paid attention to the type, amount and frequency of food per individual.

CONCLUSION

Based on the results of the study, it showed that there was a relationship between residence, eating habits and sedentary lifestyle on the nutritional status of Sebelas Maret University students. Future researchers should add indicators of the type, amount and frequency of food consumed to the eating habits variable to deepen the research results.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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