Association between types of domicile and nutritional status of college students in Indonesia

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Abstract

Nutritional status is a requirement of a person's health convinced by the diet, the levels of nutrients containing in the body, and normal metabolic integrity. Types of domicile generally impact the behavior of daily consumptions, which further can affect the health of students. The objective of this study was to identify the types of domicile associated with the nutritional status of college students in Indonesia University of Education. Nutritional status was assessed based on body mass index, and categorized as normal, overweight, and obese. The collected data were analyzed using multinomial regression logistic method. Samplings were carried out among 322 students with 39.75% of students were living with parents and the remaining of 60.25% were living in boarding house or dormitory. Based on nutritional status categories, 24.84 % of the students were categorized as obese, 40.99 % were overweight, and the remaining 34.16% were categorized as normal. The results showed that there are no significant differences between types of domicile with the nutritional status of college students. It is recommended to further investigate the eating habits of college students in Indonesia University of Education and propose interventions to improve nutritional status.

Keywords: body mass index, college students, nutritional status

Introduction

The nutritional status of an individual is generally dependent on two factors, external factors such as food safety, cultural, social, economic factors and internal factors, which include age, sex, nutrition, behavior, and physical activity and diseases of the person (Upadhyay and Tripathi, 2017). The prevalence of malnutrition occurring in various forms (obesity and being overweight/ underweight) in the world, particularly among adolescents and young people, is a cause for concern (Abedi et al., 2011). The transition of young people from school to university has many health implications. Many of the students find difficulties in food choices and practices (Baric et al., 2003). The food consumption patterns and associated nutritional risks specific to college students (Gores, 2008). Most college students did not have enough daily recommended intakes for macronutrient and micronutrient (Sanlier and Unusan, 2007). Moreover, college students tend to have poor dietary practices, such as skipping meals; especially breakfast, low consumption of fruits and vegetables, eating junk food, and less physical activity (Abolfotouh, 2007).

Food choice at the university can differ because of childhood food consumption patterns, sex and the types of domiciles. Food consumption may change, especially if students are living away from home (El Ansari, 2012). Study on nutritional status of college students have been conducted in many Asian countries (Abdull Hakim et al., 2012; Sengupta, 2014; Gaowei et al., 2013), however, most studies examined dietary habit, nutrition knowledge, physical activity, and focused only on one sex (Irazusta *et. al.,* 2006). There were many factors related to college student eating behavior, thus their nutritional status. Parental food behavior and friends' social pressure were considered to have both positive and

negative influences on individual eating habits (Sogari et al., 2018). Poor eating behavior or eating disorder may lead to both acute and chronic health problems (Syed et al., 2017). Only a few studies have associated nutritional status with types of domicile in college students. Previous study discovered that students living at the parental home displayed more healthy nutrition habits (El Ansari, 2012). Therefore, the current study was conducted to assess whether type of domicile related to college student nutritional status. Hypothetically, college students who lived at home with their family/ relatives had better nutritional status.

Method

This research is using a cross sectional method. There were 322 undergraduate students enrolled in the second years of a degree course at the Indonesia University of Education. There are no special requirements for students to be participating in this study. Once their willingness to participate was verified, participants were informed about the objective of the study and how the study would be carried out. The body mass index (BMI) measurement was carried out using The Quetelet Formula (World Health Organization Expert Committee 1995) in which weight is divided by height in square (kg/m2). The interpretation of BMI actually depends on age and gender since men and women have different fat level. Nutritional status was assessed based on the BMI number. Categories of nutritional status was determined using the International Obesity Task Force (IOTF) standard. The classifications are normal (Male: < 20,2; Female: <20,3), overweight (Male: <24,6; Female: <24,8), and obese (Male: >24,6; Female: >24,8) (Cole et al., 2000). The student types of domicile was categorized in 2 groups, i.e. the student lives with parents and student living without parents.

The collected data were analyzed using STATA 13 (StataCorp, 2013), with statistical significance level set at $p < 0.05$. First, frequency distribution of each variable was calculated. The dependent variables are sex, age, body weight, body height, body mass index, and types of domicile. Bivariate comparisons were tested by chi-square test. Second, when the interaction was not significant, the model was re-estimated using main effects only. Third, the interaction between nutritional status and the types of domicile was determined to predict either the effect was significant or nonsignificant.

Results and Discussion

The student characteristics were presented in Table 1. From 322 students involved in this research, the proportion of female students was double or more the males. As much as 71.43% of participant in this research were female students, while the remaining 28.57% were male students. The age of students was varied from 17 years old until 24 years old. Most of the students involved in this research are 19 years old. As much as 66.15% of the students are 19 years old when the data collection was conducted. Based on data analysis, most of the students involved in this research are living outside their family home. There is an amount of 60.25% students who are living outside their family home, while the remaining 39.75% are living with their parents. Most of the students involved in this research are living in dormitories or boarding house. The student nutritional status was categorized in 3 groups, i.e. normal, overweight and obese. Most of the students were categorized as overweight. As much as 24.84% of the students were categorized as obese, 40.99% were overweight, and the remaining 34.16% were normal.

The control variable in the data analysis was nutrition status (normal), sex (male), and types of domicile (living with parents). Nutritional status of the sample was categorized as normal, overweight and obese. Meanwhile, types of domicile was classified as student which lives with parents and students which living without parents. Data analysis showed that there is no significant correlation between types of domicile with the nutritional status of college students. Either overweight or obese

case has no correlation with types of domicile among college student that participate in this study (Table 2.).

Table 1. Descriptive Data of College Students

Categories		Number
Sex (%)	Female	71.43
	Male	28.57
Age (%)	(17 years old)	0.93
	(18 years old)	14.91
	(19 years old)	66.15
	(20 years old)	15.53
	(21 years old)	2.17
	(24 years old)	0.31
Types of domicile (%)	With parents	39.75
	Without parents	60.25
Nutritional status (%)	Normal	34.16
	Overweight	40.99
	Obese	24.84

Table 2. Multinomial Logistic Regression Analysis Between Nutritional Status and Types of domicile of College Students.

Nutritional status	RRR	Std.Err	z	p>|z|	95% conf.	Interval
Normal	(base outcome)					
Overweight						
Living without parents	0.9305114	0.2454822	-0.27	0.785	0.5548333	1.560561
Sex						
Female	1.049502	0.3038483	0.17	0.867	0.5950401	1.851059
Age	0.9920704	0.1885421	-0.04	0.967	0.6835533	1.439834
_cons	1.406932	5.138958	0.09	0.926	0.0010944	1808.716
Obese						
Living without parents	1.202404	0.3665057	0.60	0.545	0.661599	2.185273
Sex						
Female	0.8860198	0.2870894	-0.37	0.709	0.4695003	1.672057
Age	1.253771	0.2580473	1.10	0.272	0.8375804	1.876765
_cons	0.0094543	0.037551	-1.17	0.241	$3.93x10^{-6}$	22.72312

In this research we find that about 60% of the students who participate in this study were living outside their parents/ family home. Most of them living in boarding house which is located near the university. In Indonesia, boarding house usually located near the local cafeteria or canteen which provide abundant choices of food. Most studies suggested that college students who lived outside their parents/ family house might develop more unfavorable eating habits than those living with their parents. This might be due to the fact that parents willing to prepare meals containing vegetables and other healthy food item, thus more healthy food is available for them. As college students leave home and adjust to independent living, good dietary habits decline (Harris et al., 2006). The habit of preparing food was related to healthier food choices in terms of lower intakes of fat and fried foods and higher intakes of fruits and vegetables (Larson et al., 2006). These factors affect students when they move to a different city or goes abroad, where they should be adapted with new eating patterns and food choices (Arvanity et al., 2006; Kremmyda, 2008). Although most of the college students in Indonesia live in a boarding house, it does not necessarily make them tend to prefer fast food. Consumption of fast food was suggested to be major factors that influence nutritional status in college students, since they were forced to spend many hours away from home and inevitably change their eating habits. College student activity requires more frequent consumption of foods in restaurants and canteens, as well as an increased reliance on fast foods (Bagordo et al., 2013).

This research indicates that either overweight and obese students is not affected by their types of domicile. In this study, nutritional status of the students may be affected by other factors such as parents potential influence on their children's diets, in agreement with studies which found associations between intakes of parents and their adolescent children for fruit, vegetables and dairy foods (Young & Fors, 2001; Hanson et al., 2005). Parents can possibly inspire their children's food intake positively through role modeling and the food environment they provide at home (Hill et al., 1998; Baranowski et al., 1999). The consumption of healthy food items like fruits and vegetable more likely to occur in students who have moved out from parental home, but this was not accompanied by a significant increase in fast food, snacks or sweet consumption (El Ansari et al., 2012).

In this study, we found several limitations. Data of students eating behavior, frequency and types of food consumption as well as social economic status of parents are not collected properly. It is recommended to further investigate the eating habits of college students in Indonesia University of Education and propose interventions to improve nutritional status.

Conclusions

The results show that there is no correlation between nutritional status with types of domicile in college students in Indonesia University of Education. Either overweight or obese case has no correlation with types of domicile among college student that participate in this study.

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