Relationship between Employment Status and Knowledge of Balanced Nutrition with Nutritional Status Students

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Abstract

The Open University is one of the campuses of choice for students who work while studying. Limited time due to busy work while studying causes nutritional problems in students. This study aimed to determine the relationship between employment status and balanced nutrition knowledge with the nutritional status of Open University students. Cross-sectional research design with respondents totaling 84 people. The study was conducted from November 2022 to December 2022. Data collection using Google form containing respondent characteristics and a balanced nutrition knowledge questionnaire. The data is processed with the SPSS program and presented in the descriptive form andcorrelation tests. The relationship between variables is analyzed with the Spearman Test. 73.8% of respondents were employed and 26.2% were unemployed. As many as 67.8% of respondentshave sufficient nutritional knowledge, 15.5% lack, and only 16.8% have good nutritional knowledge, with an average of 68.78%. Some respondents (56%) had normal nutritional status, 38% had overweight problems, and 11.4% had malnutrition problems. The significance value obtained is greater than the significance level of 0.05. This shows that there is no relationship betweenemployment status and nutritional status. The correlation of nutritional knowledge with nutritional statuswas found to have a significance value greater than the significance level used ($0.04<0.05$), so there was a positive relationship between nutritional knowledge and nutritional status. The value of the correlation coefficient between occupational and nutritional status variables is 0.312, whichshows a positive correlation and relationship between the two variables with balanced nutrition knowledge.

Keywords: job status, balanced nutrition knowledge, nutritional status

INTRODUCTION

Adolescence is one of the critical periods in human life dominated by learning activities, including students. In adolescence, there is rapid and dynamic growth and development, including physical, psychological, intellectual, anatomical, and physiological development related to puberty. In addition, adolescence is a person's transition period before adulthood. Many problems arise related to nutrition and health in adolescence, which of course will put more people at high risk in the later stages of life if not handled properly. The COVID-19 pandemic has limited student activities, especially activities outside the home, resulting in lifestyle changes (Faridi & Puspita, 2022). Unbalanced consumption patterns and rapid technological developments cause *sedentary* lifestyles that have the potential for nutritional problems and non-communicable diseases.

When the COVID-19 pandemic hit almost all surfaces of the world, Universitas Terbuka (UT) still exists to provide learning services to its students. UT's education delivery platform is

already *online*. The ease of flexible study time has caused many UT students to work while studying.

Some working students may have good knowledge about nutrition and healthy food but are lacking in applying that knowledge in everyday life. This is due to busy work. Research results of Mardiyah *et al.* (2022) found that changes in eating behavior during the *COVID-19* pandemic among students in Indonesia increased snack consumption. Nutritional knowledge provides information or knowledge on how to choose healthy foods and can understand the relationship between food consumed with nutritional status and health (Wulandari *et al.*, 2021). Nutritional knowledge also has an essential role in forming one's eating habits because nutritional knowledge will influence a person in choosing the type and amount of food. A person's level of nutritional knowledge affects attitudes and behaviors in choosing food which will ultimately affect a person's nutritional status (Jauziyah *et al.*, 2021). Nutritional knowledge is knowledge about food and nutrients, sources of nutrients in food, foods that are safe for consumption, how to process good food so that nutrients in food are not lost, and how to live a healthy life. As a working student, having a good knowledge of nutrition can help them in choosing healthy and nutritious foods to support their health and performance at work (Yuliani, 2020). However, knowledge alone is not enough to ensure good nutritional status, as poor eating habits and lifestyle can affect a person's nutritional status.

The nutritional knowledge possessed by working students can vary depending on their educational background and experience. However, in general, working students are expected to have basic knowledge about nutrition and healthy foods to ensure that they can choose and consume the right foods and meet their body's nutritional needs. Food consumption is the most crucial factor in meeting the body's needs. Food choices and the amount of food consumed are influenced by knowledge of nutrition. Nutritional knowledge is a cognitive aspect that shows an understanding of nutritional science, types of nutrients, and their interaction with nutritional status and health. (Soraya *et al.*, 2017).

Nutritional status is a person's health condition related to the adequacy of food intake consumed. A balanced diet intake and adequate physical activity can describe normal nutritional status. But with his busy life as working students, they have limited time and energy to provide or get food. The nutritional status of working students can be influenced by various factors, such as the type of work, eating habits, levels of stress and fatigue experienced, and lifestyle. Working students have a higher risk of malnutrition and other nutritional problems due to busy work schedules, high-stress levels due to having to spend time for work and college, and lack of time to prepare healthy meals. But on the contrary, low physical activity, irregular eating patterns, and stress experienced while working with snack eating habits to relieve stress can cause more nutritional status in working students (Miko *et al.*, 2017). Therefore, it is vital for working students to have good nutritional knowledge so that it can impact nutritional status. Working students can

make better decisions in choosing food and keeping their bodies healthy. This study aims to determine the relationship between employment status and nutrition knowledge and the nutritional status of students at UT Medan.

METHODS

The research design uses a *cross-sectional study design* that measures variables at the same time. This research was conducted at the Open University (UT), Medan City, North Sumatra Province. The study was conducted from November 2022 to December 2022. The population of this study is all students majoring in Food Technology, Open University of Medan, class of 2021. Respondents in this study amounted to 84 people.

Data collection using *Google Forms,* which contains respondent characteristics, a balanced nutrition knowledge questionnaire, weight data, and height, will then be used to calculate the BMI of each respondent. The balanced nutrition knowledge data consists of 34 questions. Each question with the correct answer is scored 1, and the wrong answer is 0. The nutrition knowledge variable is processed by summing the scores of each question based on the correct answer. The percentage score is obtained from the sum of the correct scores divided by the total score multiplied by one hundred. The behavioral level category uses good categories if the score is >80%, medium 60-80%, and less if the score is <60% of the total score (Khomsan, 2021). Assessment of nutritional status of respondents based on BMI (kg/m^2). The classification of nutritional status with BMI is <18.5 (malnutrition), 18.5-24.99 (normal); 25-29.99 (*overweight*); ≥30 (obesity). The data is processed with the SPSS program and presented in descriptive form and correlation tests. The relationship between the variables analyzed and the Spearman Test.

RESULT AND DISCUSSION

Universitas Terbuka (UT) is a State University in Indonesia that implements a distance learning system (SBJJ) (Sugilar &; Abzeni, 2014). The purpose of establishing UT is to expand learning opportunities in higher education for high school graduates and equivalent without age and year of diploma (Sugilar &; Abzeni, 2014). This causes Open University students' age, educational background, and socioeconomic status to vary significantly. In this study, the most age range was 19-29 years by 65.5% and 29-40 years by 34.5%, with an average age of 25.9 years.

This study found that there were more women than men, where women were 86.9% and men were 13.1%. The results of a survey conducted by the Association of Indonesian Internet Service Providers (APJII) stated that 51.43% of men dominate the composition of internet users compared to women, which is 48.57%. However, from the involvement of students in this study, it is known that the percentage of women is more significant than men.

Occupational Status

The ease of the learning process causes the Open University (UT) to be in great demand by working students (Sugilar &; Abzeni, 2014). Employment status is a person's position in working in a business unit or activity. For working students, continuing their education to a higher level is a priority to improve their career path in the world of work. The results found that 73.8% of respondents were at work, and 26.2% were not. This shows that most Open University students have jobs. A person's employment status will also affect nutritional status because the activities carried out are more than students who do not work. The research results on the types of jobs held by Open University students in this study can be seen in Table 1.

Based on the type of work, the Open University students have the most as self-employed (44%), private employees or employees as much as 10.7%, and as laborers or drivers 11.9%. There are only 6% of the total respondents as civil servants/TNI.

Table 1. Distribute Respondents Based on Employment Status

No	Occupational Status	N	%
1	Public officer/army	5	6,0
2	Private employees	9	10,7
3	Enterpreneur	37	44,0
4	Labor/driver	10	11,9
5	Unemployed	23	27,4
	Total	84	100

Working students are found in every college. Many factors cause a student to work. Starting from economic factors, looking for work experience, expanding social networks, and other reasons (Yuliani, 2020). However, on the contrary, some students already have permanent jobs. They want to pursue higher education, so they work while studying. When viewed from the busy life of students who study while working, they have double activities for a limited time. Working students have a higher risk of experiencing malnourished and overnourished nutritional problems due to work schedules and lecture schedules, high-stress levels, and lack of time to prepare healthy meals (Miko *et al.*, 2017). Factors such as diet, exercise, and stress experienced while working can affect the nutritional status of working students.

Knowledge of Balanced Nutrition

Nutritional knowledge is related to food and health, sources of nutrients in food, foods that are safe for consumption so as not to cause disease, how to process food properly so that the nutritional content in food is not lost and live a healthy lifestyle. (Paat *et al.*, 2021). Knowledge of balanced nutrition is very important for everyone to be able to meet optimal nutritional needs to maintain a good nutritional status. Knowledge of balanced nutrition can be applied in everyday life by making nutritious and healthy food choices to meet the needs of the body. Based on the results of the study

can be seen in Table 2, only 14 respondents have good nutritional knowledge (16.8%), 57 respondents have sufficient nutritional knowledge (67.8%), and 11 respondents have insufficient nutritional knowledge (15.5%). Some of the respondents' balanced nutrition knowledge was in the sufficient category, with an average balanced nutrition knowledge of 68.78%. The results found in this study are the same as research conducted by Lestari (2020) which found that the average respondent's nutritional knowledge was sufficient. Nutritional knowledge and food intake are related to the nutritional status of respondents, so it is necessary to increase respondents' nutritional knowledge (Lestari, 2020).

Table 2. Presentation of Balanced Nutrition Knowledge

No	Nutrition Knowledge	n	%
1	Good	14	16,7
2	Sufficient	43	51,2
3	Bad	27	32,2
Total		84	100
Min-max		26,47 - 91,18	
Average±SD		68,78 ± 13,45	

Insufficient nutritional knowledge is one of the risk factors for nutritional problems and changes in eating habits (Roring *et al.*, 2020). Nutritional knowledge includes food and nutrients, sources of nutrients, safe food for consumption, how to process good food so nutrients are not lost, and how to live a healthy life. Nutritional knowledge will affect food intake that enters the body because nutritional knowledge provides information related to nutrition, food, and its relationship with health (Herviana *et al.,* 2022).

Table 2 shows that respondents' average balanced nutrition knowledge is 68.78%, included in the low category. Knowledge of balanced nutrition is very important for every individual because it can affect the nutritional status of individuals. Knowledge of balanced nutrition includes knowledge of the selection and consumption of a good daily food that provides all the nutrients for the needs of the normal functioning of the body. The selection and consumption of foodstuffs affect a person's nutritional status (Wulandari *et al.,* 2021). Good nutritional status or optimal nutritional status occurs when the body obtains enough nutrients needed by the body. Less nutritional status occurs when the body lacks one or more essential nutrients. In contrast, nutritional status occurs more when the body obtains excessive nutrients, causing harmful effects (Damayanti, 2016).

Nutritional Status

Nutritional status is a state of fulfillment of a person's nutritional needs. Nutritional status in adults can be determined by anthropometric measurements, namely weight and height calculated using the Body Mass Index (BMI) formula. The results found that some respondents (56%) had

normal nutritional status, 38% had overweight problems and 11.4% had malnutrition problems (Table 3).

Table 3. Distribution of Respondents by Nutritional Status

No	Nutritional Status	Category	BMI	N	%
1	Severe obesity	*Obese*	>27.0	18	21.4
2	Mild obesity	Overweight	>25.0-27.0	12	17.1
3	Normal	Normal	>18.5-25.0	46	65.7
4	Mild underweight	Underweight	17.0-18.5	4	5.7
5	Severe underweight	Severe underweight	<17.0	4	5.7
Total				84	100
Min-max				15.6 -33.3	
Average±SD				23.5 ± 4.7	

Various research results show that nutritional status greatly determines a person's health. The overweight BMI is a vulnerable point where attention to weight needs more attention. Maintaining a diet and physical activity is associated with the potential for obesity (Rukmana *et al*., 2020). Nutritional status is determined by the level of physical need for energy and nutrients obtained from food intake with measurable physical impact. Nutritional status is one of the good and bad indicators of daily food provision. In addition, nutritional status is a form of expression of equilibrium conditions presented in certain variables (Wulandari *et al*., 2021).

The Relationship of Employment Status and Balanced Nutrition Knowledge with Nutritional Status

Based on the study's results, the significance value obtained was 0.062. The significance value obtained is greater than the significance level of 0.05. This shows that there is no relationship between employment status and nutritional status. The value of the correlation coefficient between employment and nutritional status variables is 0.195.

Students who work with sufficient income can consume excess food because of the available funds to buy food. In addition, access to order food *online* with various types of food available and attractive food promotions allows working students to get food easily. Insufficient nutrient intake is a factor causing students to have underweight nutritional status. Conversely, consuming excessive sources of carbohydrates, fats, and proteins causes students to have excess nutritional status. It takes knowledge of balanced nutrition and choosing healthy and balanced foods to gain normal weight (Aulia et al., 2021).

The results of the *Spearman Rank test* found a significance value (2-tailed) of 0.004. The significance value obtained is greater than the significance level of 0.05. This shows that there is

a relationship between nutritional knowledge and nutritional status. The value of the correlation coefficient between employment status and nutritional status variables is 0.312, which shows a positive relationship between the two variables. This means the higher the respondent's balanced nutrition knowledge, the better their nutritional status. The results of the *Spearman rank* test related to the relationship between balanced nutrition knowledge and nutritional status show a relationship between balanced nutrition knowledge and nutritional status (p < 0.05). The results of this study are the same as those conducted by Wulandari *et al.* (2021). This means a higher level of nutritional knowledge has no meaning in showing the better the nutritional status of Ibn Khaldun University students. Students with good nutritional knowledge do not necessarily apply healthy, diverse, nutritious consumption patterns, so their nutritional status cannot be good.

Current technological developments make it easier for people to obtain various foods. Insufficient knowledge in choosing food according to the body's requirements leads to various nutritional problems. In addition, lack of physical activity causes many people to be overweight (Herviana *et al.*, 2022; Miko *et al.*, 2017). A sedentary lifestyle triggers the accumulation of food in the body, which causes weight gain (Roring *et al.*, 2020). Some eating patterns that have become habits of students until they experience excess weight include eating too many snacks, lack of physical activity, missed meals, especially breakfast, frequent consumption of *fast food*, irregular eating, and less consumption of vegetables (Faridi &; Puspita, 2022). Adolescent obesity is a risk factor caused by excessive food consumption patterns (Miko *et al.*, 2017). The multiple linear regression analysis results showed a positive and significant relationship between employment status, balanced nutrition knowledge, and nutritional status ($Y = 1.29 + 0.54X_1 + 0.11X_2$). Employment status supported by insufficient nutritional knowledge can lead to more nutritional problems and undernutrition problems. Working students have the income to buy the desired food (Yuliani, 2020) freely. Thus, the potential for students to have more nutritional problems is very large. Nutrition education is needed to increase students' knowledge in choosing nutritionally balanced foods. Nutrition education on knowledge about balanced nutrition and fluid intake carried out on soccer athletes at SSB Baturetno provides additional information and understanding to athletes about the importance of fulfilling balanced nutrition and fluid intake according to the amount, type, and schedule of feeding (Afriani *et al.*, 2021).

CONCLUSION

Based on the research results, it is known that the significance value obtained is greater than the level of significance used, which is 0.05. This shows that there is no relationship between employment status and nutritional status. The correlation of nutritional knowledge with nutritional status found that the significance value obtained was greater than the level of significance used (0.04<0.05), so there was a positive relationship between nutritional knowledge and nutritional status. The value of the correlation coefficient between the variables of employment status and

knowledge of balanced nutrition is 0.312, which shows a positive correlation and relationship between the two variables with nutritional status.

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