THE RELATIONSHIP OF ANXIETY LEVEL AND NUTRITIONAL STATUS OF MEDICAL STUDENTS IN UNIVERSITAS MUHAMMADIYAH SUMATERA UTARA

Sheila Zalfa Isrovian, Eka Febriyanti

Universitas Muhammadiyah Sumatera Utara, Medan, Indonesia

e-mail: ekafebriyanti@umsu.ac.id

ABSTRACT

Abstract: Anxiety is a psychological disorder with an increasing prevalence in adolescents or young adults, especially in women. The sources of anxiety for medical students consist of several factors, namely academic pressure, social problems, and financial problems. Anxiety can affect appetite so that a person can experience nutritional problems, such as malnutrition or excess nutrition. **Purpose**: This study aims to assess the relationship between anxiety level and nutritional status of UMSU FK students. **Methods**: This research is a cross-sectional study with a sample of 96 students who will then be examined for their body mass index and filling out the HARS questionnaire. The data obtained will be analyzed using Spearman Correlation. **Results**: Based on data analysis, a P value <0.002 was obtained where there was a relationship between the level of nutritional anxiety and the status of FK UMSU students. **Conclusion**: There is a significant relationship between the level of anxiety and the nutritional status of students at the Faculty of Medicine, Muhammadiyah University, North Sumatra.

Keywords: Anxiety., Nutritional Status., Medical Student

INTRODUCTION

Nutritional status is the condition of an individual's body as a result of food consumption and use of nutrients which is divided into poor nutrition, undernutrition, normal, overnutrition and obesity.[1] One way to measure nutritional status is by calculating the body mass index (BMI), namely by measuring the individual's weight and height and then assessing using the formula body weight (kg)/ height (m) 2.[2] If the BMI result is <18.5, it can be interpreted as malnutrition, a BMI of 18.5 - 22.9 is interpreted as normal , BMI 23 - 24.9 is called overweight, BMI 25 - 29.9 is interpreted as obesity I, and BMI >30 is obesity II.[3] There are several factors that influence nutritional status such as different dietary patterns, digestive and metabolic functions of each individual , as well as psychological factors that can be seen through the status of depression, stress and anxiety.[4] Anxiety is a group of psychiatric disorders that are often found and are also the impact of emotional mental disorders. The prevalence of emotional mental disorders in Indonesia is 6.0% and there has also been an increase in the prevalence of emotional anxiety disorders, from 6.1% in 2013 to 9.8% in 2018.[1] The Hamilton Anxiety Rating Scale (HARS) was one of the first assessments used was developed to measure the severity of anxiety symptoms. This scale consists of 14 items, each defined by a set of symptoms, and measures psychological anxiety.

Depression, anxiety and stress disorders in medical students are more common in women, increasing age and increasing BMI.[5] The reason for the high incidence of depression, anxiety and stress in medical students is due to the study load and busy schedules.[6]

Regulation of nutrition and anxiety is by influencing the microbiome and inflammation. Anxiety is the impact of an imbalance of neurotransmitters and receptors in the brain such as Gamma-Aminobutyric Acid, norepinephrine, dopamine and serotonin. Serotonin plays a role in regulating mood, impulses, pain, body temperature and appetite. In anxiety sufferers, the autonomic nervous system will experience hypersensitivity and will respond excessively to various stimuli.[5] An anxious person tends to lose appetite, this is in accordance with research by Lee (2020) which revealed that anxiety symptoms affect cognitive abilities (repetitive thinking, worrying, dreaming, and imagining), dysfunctional behavior, avoidance behavior and compulsive behavior, emotional disorders in the form of fear, anxiety, anger, and physiological disorders, sleep disorders, dizziness, weakness, loss of appetite, digestive disorders and immobility.[7]

BAHAN DAN METODE

This research is a descriptive analytical study with a cross-sectional approach by filling in the Hamilton Anxiety Rating Scale (HARS) questionnaire and measuring body weight and height to obtain BMI values. Ethical approval was obtained from the Health Research Ethics Committee, Faculty of Medicine, Muhammadiyah University, North Sumatra No. 1031/KEPK/FKUMSU/2023. This research was conducted from June - July 2023 at the Faculty of Medicine, Muhammadiyah University, North Sumatra. Primary data was obtained by measuring the respondents' weight and height and then determining their BMI and nutritional status. Next, respondents were asked to fill out a questionnaire. This research involved 96 respondents with inclusion criteria: active students at the Muhammadiyah

Faculty of Medicine, North Sumatra, willing to sign informed consent, and exclusion criteria: subjects on a diet, subjects suffering from metabolic diseases, subjects who were pregnant/breastfeeding.

The data obtained were analyzed using the Spearman Correlation test with a significance value of p<0.05. Data analysis also assessed the direction and correlation strength of the relationship.

HASIL

There are several characteristics of the subjects involved in this research with the results can be seen in table 1.

Table 1. Subject Characteristics Based on Gender, Age and Place of Residence

Subject Characteristics	Value
Gendere (n,%)	
Male	33 (34.4%)
Female	63 (65.6%)
Age (n,%)	
17 years	1 (1%)
18 years	6 (6.3%)
19 years	16 (16.7%)
20 years	31 (32.3%)
21 years	18 (18.8%)
22 years	17 (17.7%)
23 years	7 (7.3%)
Residence (n,%)	
Boarding House	57 (59.4%)
House	39 (40.6%)
Anxiety level (n,%)	
No Anxiety	58 (60.4%)
Mild Anxiety	17 (17.7%)
Moderate Anxiety	9 (9.4%)
Severe Anxiety	12 (12.5%)
Nutritional status (kg/m^2)	23.6(16.53, 39.07)

The dominant gender of respondents in this study was female, 63 people (65.6%). Meanwhile, the age distribution of students shows that the majority of respondents are 20 years old (32.3%). The characteristics of subjects who live in a boarding house, which means living alone, get the highest score with 59.4% and the lowest is 40.6% with the characteristics of subjects who live in a house, which means living with family. The level of student anxiety showed that 58 students (60.4%) did not experience anxiety, 17 students (17.7%) experienced mild anxiety, 9 students (9.4%) experienced moderate anxiety, and 12 students (12.5%) experienced severe anxiety. This information provides further understanding of the extent of anxiety experienced by students in this study, which can be an important element in analyzing the relationship between anxiety and their nutritional status.

Body Mass Index (BMI) shows variations between 16.53 to 39.07, with a mean BMI of around 23.6 and a standard deviation of 4.4

Table 2. Hypothesis Test Results

Correlations			
			Nutritional Status
Spearman's rho	Anxiety Level	*Correlation Coefficient*	-0.318
		Sig. (2-tailed)	0.002
		N	96

The results of the Spearman Correlation test using SPSS 26 obtained a P-Value (Sig.) value that was smaller than 0.05 (0.002), so it could be stated that H0 was rejected. Thus, from the test results it can be concluded that there is a relationship between the level of anxiety and the nutritional status of students at the Faculty of Medicine, Muhammadiyah University of North Sumatra. The negative coefficient (-0.318) indicates that there is a unidirectional relationship between anxiety and nutritional status, meaning that the worse the student's anxiety level, the better the nutritional status of students at the Faculty of Medicine, Muhammadiyah University of North Sumatra. Then the correlation value (Spearman Correlation) between anxiety and nutritional status is -0.318, where the correlation value is included in the fairly strong correlation category.

DISSCUSSION

This study aims to investigate the relationship that exists between nutritional status and the level of anxiety of FK UMSU students. The results of research using Spearman correlation analysis obtained a significance figure (p-value) smaller than 0.05, this shows that there is a significant relationship between the level of anxiety and the nutritional status of FK UMSU students. This finding is consistent with research conducted by Cheng, M., Y., etc. (2018) and research from Garcia, S., C., etc. (2020) which states that anxiety can trigger maladaptive eating behavior, both in the form of overeating and under-eating. The research results also indicate that there is a relationship between anxiety and appetite, a person's level of anxiety can influence eating patterns and then have an impact on the individual's nutritional status.[8,9]

The results of this study also revealed that the majority of students did not experience anxiety (60.4%). Marwati (2020) revealed in her research that psychological disorders such as depression, anxiety disorders, and stress often occur in medical students who are in their early adulthood. Early adulthood is for people aged 18 to 25 years, where this period is a transition period from adolescence to adulthood which is filled with changes both physically and mentally. This is different from research by Marwati (2020) which stated that the majority of respondents aged over 20 years experienced depression, anxiety and stress disorders which were more common in medical students in early adulthood with an initial age range of approximately 20 to 40 years.[5] However, on the other hand, the theory states that the higher the age, the more it will show the individual's growth and development in mental development. Maturity in the thinking process in older individuals is more likely to use good coping mechanisms compared to children or teenagers.[10]

The majority of this research was conducted on students who were still in the transition to early adulthood. When viewed from gender, anxiety in women is rated 2 times higher than the level of anxiety in men. This is due to the differences in hormones found in women and men which influence a woman's personality and emotional condition. Therefore, it can be said that women are more likely to suffer from this anxiety disorder.[11]

The characteristics of subjects with boarding houses and houses have an influence on nutritional status and anxiety levels. Living in the same house as your parents has a great opportunity to have a more regular lifestyle, because the role of parents in looking after their children is still large. People who live in their own homes are calmer because there is someone who takes care of them, one example is when their bodies are unwell (sick), while the lives of students who live in boarding houses basically experience more difficulties in their lives than those who live in their own homes and can seen from his lifestyle such as his diet.[12]

The nutritional status of students based on BMI was obtained between 6.53 and 34.41, with an average BMI of around 23.5 and variations indicated by a standard deviation of 4.1. These results highlight the important role of anxiety in influencing individuals' eating behavior. In other words, a high level of anxiety can be a triggering factor for unhealthy eating behavior, including the tendency to overeat or undereat. This phenomenon provides a deeper understanding of the complexity of interactions between psychological factors and dietary patterns, which can ultimately influence an individual's nutritional status.[6]

There are differences that distinguish the eating behavior of students who live at home and boarding students. Students who live at home tend to be more secure in terms of food availability for three meals a day. However, students who live at home admit that even though their food intake is more secure, their busy lives require them to be out of the house for several hours per day and make them skip breakfast or lunch at home. The busyness caused by their lecture activities also encourages them to have irregular eating patterns or rarely eat 3 times a day. This can then affect their nutritional status. Just like students who live at home, students who live in boarding houses also have a greater chance of having irregular eating patterns, rarely eating, or paying less attention to the nutrition that enters their bodies.[11]

This research is supported by research conducted by Khairiyah, (2016) which was conducted on students of FKIK UIN Syarif Hidayatullah Jakarta, namely that more students had poor eating patterns, namely (59.5%), this was due to changes in irregular eating patterns in overseas students who are far from their parents and only live in boarding houses.[13]

According to Hussenoeder, F., S., etc. (2021) in their research stated that the relationship between anxiety and eating behavior can also be understood from a neurobiological perspective. A recent review suggests that neuropeptides released during hunger can reduce anxiety, so that hunger can be interpreted as a form of subconscious neurobiological regulation of anxiety. Furthermore, neuropeptides released during satiety can increase anxiety, which in turn can amplify hunger as a form of emotional regulation. This provides a deeper understanding of the complex interactions between anxiety, eating patterns, and neurobiological responses that may play a role in the relationship between anxiety and nutritional status.[10]

CONCLUSIONS AND SUGGESTIONS

Based on the results of this research, it can be concluded that there is a relationship between anxiety levels and the nutritional status

of FK UMSU students with a negative type of correlation. Further research is needed to develop the inclusion of other variables that can influence the relationship between anxiety and nutritional status, such as environmental factors, sleep patterns, physical activity, and social support. This will provide more complete insight into the factors that contribute to this relationship.

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