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Differences in Anxiety in Second and Third Year Medical Undergraduate Students Faculty of Medicine, Nursing and Health Science, Universitas Gadjah Mada

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A B S T R A C T

Background: Anxiety is a condition in which a person experiences concern about an unpleasant event that will occur in the future. Medical students tend to experience anxiety during their studies. This study was attributable to the differences in anxiety in second and third-year medical students at the Faculty of Medicine Nursing and Health Science, Universitas Gadjah Mada. **Methods:** This research is an observational study with a cross-sectional design. The research will be conducted online using a self-reported questionnaire. Respondents' level of anxiety was measured by the general anxiety disorder-7 (GAD-7) questionnaire. Analysis of the data used is using the Mann-Whitney test method. **Results:** Of the total 109 respondents, the majority had a mild level of anxiety, with a total of 45 people. The majority of respondents are third-year students (59%), female (76%), and over 20 years old (69%). After analyzing using the Mann-Whitney Test between the GAD-7 score and the year of study, the p-value was 0.622. **Conclusion:** There is no difference in the level of anxiety in the second and third-year undergraduate medical students at the Faculty of Medicine, Nursing and Health Science, Universitas Gadjah Mada.

1. Introduction

Mental health in college students is an important component of public health.¹ Student face considerable demands at school and family, resulting in psychological stress and causing serious disorders and mental health problems such as depression and anxiety.² Anxiety symptoms can be in the form of fear which is also accompanied by autonomic symptoms such as headache, shortness of breath, and restlessness, which in each person can be found different symptoms.³ Anxiety can affect the way of thinking, perception, and learning process and can cause confusion and distortion both to space and time,

as well as to other people and the meaning of an event. The prevalence of anxiety disorders in 2015 was 3.6%, or around 264 million people globally and 3.3% in Indonesia.⁴ Data from Riskesdas in 2018 shows the prevalence of mental-emotional disorders in the population aged over 15 years in Indonesia is 9.8%. From the results of Riskesdas in 2018, it can be seen that the prevalence of mental and emotional disorders has increased both nationally and in every province.⁴

In a meta-analysis conducted in 2019, it was found that medical students had a prevalence of anxiety level of 33.8%.⁵ Some facts show that medical students feel

overwhelmed by the amount of material given in a short time to prepare for the existing exam. This amount of information received will lead to feelings of disappointment related to academic abilities by most medical students because they feel unable to review the material that has been obtained to support their abilities according to the goals that have been set at the beginning.⁷ Several other factors were found to trigger stress and anxiety in medical students, including early adaptation during lectures, economic problems, understanding of exams, and future careers. In addition, it was also found that the level of stress in the second and third-year students was quite significant. The main factors that can increase anxiety and depression experienced by medical students include exam passing criteria, too many exams, little free time, work pressure, and too many activities.⁸ This study aimed to describe the difference in anxiety in second and third-year medical students at the Faculty of Nursing and Public Health, Universitas Gadjah Mada.

2. Methods

This research is an observational study with a cross-sectional design. The research will be conducted online using a self-reported questionnaire created on the JotForm. Platform and distributed to students through class groups. Data collection was carried out from May to June 2021. The sampling method used was consecutive sampling. The inclusion criteria for

the subjects of this study were students in the second and third years of the medical study program, active in college, and willing to participate in research. Prior to conducting the study, participants were given informed consent and signed an agreement to participate in the study. This study has received ethical approval from the Medical Research Ethics Committee Faculty of Medicine Public Health and Nursing, Universitas Gadjah Mada (Ref. Number: KE/FK/0484/EC/ 2021).

Data were collected using a general anxiety disorder-7 (GAD-7) questionnaire. GAD-7 is a measuring tool to evaluate anxiety disorders in the last two weeks.^{9,10} The cut-off point on the GAD-7 is 5 for mild anxiety symptoms, 10 for moderate anxiety symptoms, and 15 for severe anxiety symptoms. Statistical analysis was performed with the SPSS for Windows version 25.0 program. The normality test was conducted to determine whether the data taken were normally distributed. Bivariate analysis was performed by using an independent sample t-test.

3. Results

The total number of participants who took part in this study was 109 people. In table 1 it can be seen that the majority of respondents are third-year students (59%), women (76%), and over 20 years old (69%), with the average age of respondents being 20.17 years. Table 2 shows that the majority of respondents have a mild level of anxiety (41%).

Table 1. Demographic data of respondents (n=109)

No	Characteristics	Mean±SD	f	%
1	Length of study			
	3 rd year		64	59
	2 nd year		45	41
2	Gender			
	Female		83	76
	Male		26	24
3	Age	20,17±0,918		
	≤ 20 years		75	69
	> 20 years		34	31

Table 2. Frequency distribution of anxiety level (N=109)

No	Anxiety level	f	%
1	Minimum	18	17
2	Mild	45	41
3	Moderate	33	30
4	Severe	13	12

Table 3. Relationship between anxiety level

Variables	Anxiety Level							
	Minimum		Mild		Moderate		Severe	
	N	%	N	%	N	%	N	%
Age								
≤ 20 years	10	13.3	35	46.7	22	29.3	8	10.7
> 20 years	8	23.5	10	29.4	11	32.4	5	14.7
Gender								
Female	9	10.8	38	45.8	25	30.1	11	13.3
Male	9	34.6	7	26.9	8	30.8	2	7.7

In the age variable, the p-value is 0.314, which shows that there is no significant relationship between age and anxiety levels. The majority of respondents aged ≤20 years experienced mild anxiety. Meanwhile, respondents with age >20 years experienced moderate levels of anxiety. Severe anxiety was experienced by 10.7% of respondents aged ≤20 years and 14.7% of

respondents aged >20 years.

Mann Whitney Test Analysis shows a p-value of 0.622 with a cut point value of 0.05. If the p-value <0.05, then there is a difference. The p-value obtained was 0.622 or >0.05, so there was no difference in the level of anxiety between first and second-year medical students (Table 4).

Table 4. Comparison of GAD scores based on length of study

Length of study	GAD Score		
	Mean Rank	U-value	p-value
3 rd year (n=64)	56.25	1360	0.622*
2 nd year (n=45)	53.22		

*Mann Whitney Test, p=0.05

4. Discussion

The results of this study indicate that younger respondents (less than 20 years) are more likely to experience symptoms of anxiety than older students. Previous research has reported increased anxiety in young adults. Anxiety risk factors in the form of stress facing lectures and workloads, as well as psychological unpreparedness in dealing with stressful moments in adulthood, cause the incidence of anxiety to increase in teenagers and young adults.^{11,12}

Furthermore, the gender variable obtained a p-value of 0.029, which indicates that there is a significant relationship between gender and anxiety levels. This is in line with previous research, which

states that social demographic variables that affect symptoms and anxiety disorders, for example, are female gender.¹³ Women are twice as likely to experience an anxiety disorder as men. Puberty experienced by women can lead to activation of the hormone estrogen, which may be involved in the development of anxiety disorders among adolescent girls.¹⁴

Different results were shown by the study by Cao et al., namely that there was no significant relationship between gender and anxiety of medical students during the Covid-19 epidemic in China.¹⁵ This is probably due to the Covid-19 epidemic, so both men and women experience stress and negative

emotions. In a study conducted by Singh et al., it was also found that there was no significant relationship between gender and anxiety in medical students. This is possible because social perceptions and people's beliefs about gender roles and gender abilities change as women become emotionally competent.¹⁶

The analysis of the Mann-Whitney test, which compares the year of class with the level of anxiety, shows a p-value of 0.622. The p-value obtained showed no significant difference between the anxiety levels of medical students in the first and second years of study. This is in line with a study comparing the anxiety levels of first and second-year medical students with third and fourth-year medical students where there was no significant difference between the two groups.^{17,18}

In a study, it was stated that the level of anxiety in medical students would increase as students progress through the learning and training provided. The only exception to this trend is in the first year.¹⁹ At this time, the prevalence of anxiety is greater than in other years. This can happen because of a number of stressors faced by first-year students related to the transition from high school to university, homesickness, not being able to get used to academic procedures and demands, time management, the process of making new friends, and increasing expectations from family, and faculty.

Another study found the most common sources of stress experienced during the preclinical and clinical years.²⁰ Students from the first through fourth years of medical school tended to report more academic problems, such as excessive self-pressure to do well on exams, while students from later years reported lack of time, such as lack of free time and lack of time with friends and family. However, both junior and senior students reported the same thing, namely lack of time to study and lack of sleep as a stressor.

Several strategies can be adopted to adapt to and manage stressors and fatigue. The strategies in question are problem-solving, positive reflection, and expressing emotions. This allows student adaptation which can reduce anxiety and depression. Using the

arts of music and physical exercise in extracurricular activities is associated with a reduction in stress and fatigue levels in medical students.^{19,20}

5. Conclusion

There is no difference in the level of anxiety in the second and third-year students of the Undergraduate Medical Study Program, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada.

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