

Relationship between Depression, Anxiety, and Stress with Eating Disorders in Medical Faculty Students Class of 2019 Which are Working on Their Final Project at Airlangga University

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Abstract

Conditions of depression, anxiety, or stress experienced by a person can cause eating disorders. Airlangga University Faculty of Medicine student class of 2019 who is working on his final project because eating disorders are very capable of affecting a person's physical condition which is currently being investigated as well as its relation to depression, anxiety, and stress. **Method:** The sampling technique for this study was non-probability sampling with purposive sampling method. The instruments used were in the form of data from the factors studied as well as the EDDS and DASS 2 questionnaires which had been filled out by students of the Faculty of Medicine class of 2019 at Airlangga University, Surabaya. **Results:** The number of subjects in this study were 130 students of the Faculty of Medicine class of 2019 at Airlangga University, Surabaya. p value = 0.039 ($p < 0.05$) with a χ^2 value of 1.044. The second relationship between anxiety and eating disorders is said to have a significant relationship with a value of $p = 0.033$ ($p < 0.05$) with a χ^2 value of 7.953. The third hypothesis is the relationship between stress and eating disorders, which results in a significant value of $p = 0.007$ ($p < 0.05$) with a χ^2 value of 0.780, meaning that there is a relationship between depression, anxiety and stress with eating disorders experienced by 2019 Faculty of Medicine students who are currently studying doing his final assignment at Airlangga University. **Conclusion:** Most of the 2019 batch of Medical Faculty students who are working on their final project at Airlangga University experience eating disorders. The cause of the occurrence of eating disorders in the subject is that the subject is depressed, some are experiencing anxiety and there are also students who experience stress when faced with their final assignment.

Keywords: Depression, Anxiety, Stress, Eating Disorders, Universitas Airlangga

1. Introduction

Studying up to university is a dream for many young Indonesians. In order to achieve a bachelor's degree in undergraduate education, there is a mandatory requirement set in most universities in Indonesia, namely compiling a thesis. Students who are working on their thesis are very vulnerable to stress, be it mild, moderate, or severe. Symptoms of stress include headaches that often interfere with daily activities, complaints about sleep disturbances in the form of difficulty sleeping, often looks anxious, often looks irritable, and some students show symptoms of impaired memory¹.

This is of course not impossible for medical students to experience. The educational process is longer than other majors, the study load can be said to be quite heavy, and academic activities such as lectures, practicums, block exams, and Community Service Programs (KKN) and even non-academic activities such as part-time jobs or organizational activities which take place at almost the same time can be a stressor for students of the Faculty of Medicine². The existence of a final assignment or thesis which is one of the determining factors for

graduation for medical students at Airlangga University makes students susceptible to depression, anxiety, stress, and eating disorders.

In fact, in a study it was stated that out of 140 students who were working on their final thesis assignment, of them there were 59 students who experienced mild stress and 81 experienced moderate stress, although no students were found to experience severe stress³. Kugu et al (2006) stated that depression, anxiety, or stress experienced by a person can cause eating disorders²⁵. Generally, eating behavior in a person is closely related to a person's state of mind and mood. If a person continues to experience disturbances in his state of mind, then it is not impossible that his eating behavior will also be disturbed so that a person's eating behavior disorder appears or what is commonly called an eating disorder.

Therefore, to find out further and in depth the relationship between eating disorders, and depression status, anxiety, and stress, this research was conducted. The subjects in this study were chosen with the consideration that medical students are one of the studies that has a relatively large study load and a relatively longer study period compared to other studies, coupled with a block system that must be passed when taking this study. The demands of studying and completing the study period in accordance with the applied block system can be suspected that medical study students experience relatively greater anxiety compared to other studies⁴.

Research related to eating disorders has been studied before by several researchers, such as Noe et al (2019) who correlated stress levels with eating disorders among university students. It was found that there were 37 respondents in the moderate stress category, eating disorders occurred in 36 people, and the results of the analysis showed that there was a relationship between stress levels and eating disorders in students living in the UNITRI female dormitory.

As we know that every student must go through the process of working on the final project. So it is believed that during the process, students may experience negative emotions⁵. This is what may be at risk of increasing excessive stress levels and affecting eating disorders. Through this research, researchers want to know the extent of the influence. Therefore, it is necessary to pay attention to students of the Faculty of Medicine, Airlangga University class of 2019 who are working on their final project because eating disorders are very capable of affecting a person's physical condition which is currently being investigated in relation to depression, anxiety and stress.

Subsequent research was conducted by Laila (2013). Research with a cross-sectional study design found that out of 120 students it was found that 47.5% of adolescents had eating disorders which were divided into anorexia nervosa 4.2%, bulimia nervosa 6.7%, Binge Eating Disorder 6.7% and Eating Disorder Not Otherwise Specified 30.8%. The causal factors that the researchers found were the relationship between body image, dietary history, family influence, peer influence, and ridicule about weight and body shape.

Although there have been several studies that have observed depression, anxiety, stress, and eating disorders, there are aspects that differentiate between the current research and previous studies, namely previous research focused on adolescents as respondents, while this study conducted research on college students. semester 4 which is categorized as an adult and is working on the final thesis project. Besides that, research related to this phenomenon has never been studied in students of the Faculty of Medicine, Airlangga University. With this it can be said that this research has an urgency in terms of its implementation.

2. Method

This type of research includes analytic observational research with a cross-sectional research design, i.e. an observational study that analyzes population data at a given time, is used to measure the prevalence of health outcomes, to understand the determinants of health, and to describe population characteristics. The sample in this study is non-probability sampling with purposive sampling method, involving subjects who meet certain criteria from the researcher will be used as the research sample. After the data is obtained from the questionnaires that have been filled in by the respondents, the data will be calculated based on the provisions of each questionnaire in order to measure the attitudes, opinions, and perceptions of the respondents towards eating

disorders, depression, anxiety, and stress that may be experienced. And to analyze the relationship between depression, anxiety, and stress with eating disorders, a chi-square test was performed. Meanwhile, to determine the strength of the relationship between depression, anxiety, stress

3. Results

Table 1. Demographic Characteristics of Research Subjects

Demographic Characteristics	Frequency	Percentage (%)
1. Age		
16-20 year	69	53,1%
21-25 year	60	46,2%
26-30 year	1	0,8%
2. Gender		
Man	37	28,5%
Women	93	71,5%
3. Body Mass Index (BMI)		
Very thin	7	5,4%
Thin	11	8,5%
Normal	86	66,2%
Fat	12	9,2%
Obesity	14	10,8%

The demographic characteristics of 2019 class students who are working on their final project are mostly 16-20 years old with a total of 69 (53.1%) students of the Faculty of Medicine, Airlangga University, Surabaya. Based on gender, 37 (28.5%) students were male, while there were 93 (71.5%) female students. In this study it was found that subjects who had the highest BMI in the normal category were 86 (66.2%) students. The lowest BMI in the very thin category were 7 (5.4%) students with a percentage of 5.4%.

Table 2. Distribution of Research Variable Frequency

Variable	Frequency	Percentage (%)
1. Depression		
Normal	109	83,8%
Light	11	8,5%
Currently	10	7,7%
2. Ansietas		
Normal	79	60,8%
Light	17	13,1%
Currently	23	17,7%
Heavy	9	6,9%
Very heavy	2	1,5%
3. Stress		
Normal	118	90,8%
Light	11	8,5%

Currently	1	0,8%
4. Eating Disorders		
Anoreksia Nervosa	13	10%
Bulimia Nervosa	15	11,5%
Binge Eating Disorder	25	19,3%
Tidak Mengalami Eating Disorder	77	59,2%

Data on the frequency distribution of the depression variable fall into 5 categories, namely normal, mild, moderate, severe, and very severe, however in this study the subjects were included in 3 categories of normal, mild and moderate. Medical students class of 2019 who are working on their final project at Airlangga University belong to the normal category with a total of 109 percentages 83.8%, there are 11 (8.5%) mild depression category, while moderate depression is 10 (7.7%). Subjects in this study who experienced anxiety included in the normal category were 79 (60.8%), mild anxiety was obtained 17 (13.1%), moderate anxiety was 23 (17.7%). While there were 9 (6.9%) severe anxiety, the last category of very severe anxiety was 2 students. Stress is classified into 5 categories, namely normal, mild, moderate, severe and very severe. In the normal category there were 118 (90.8%), while the mild stress category was 11 (8.5%), the moderate category was 1 (0.8%). In this study, there were 77 students who did not experience eating disorders who were working on their final project (59.2%), while subjects who experienced eating disorders in the anorexia nervosa category were 13 (10%), 15 bulimia nervosa categories (11.5%), Finally, in the binge eating disorder category, there were 25 students with a percentage of 19.2%.

Table 3. Eating Disorders Based on the Characteristics of Research Subjects

	Eating Disorders			
	Anoreksia Nervosa	Bulimia Nervosa	Binge Eating Disorder	Not Experiencing an Eating Disorder
1. Age				
16-20 year	4 (3,1%)	9 (6,9%)	14 (10,8%)	42 (32,3%)
21-25 year	9 (6,9%)	6 (4,6%)	11 (8,5%)	34 (26,2%)
26-30 year	-	-	-	1 (0,8%)
2. Gender				
Man	3 (2,3%)	1 (0,8%)	3 (2,3%)	30 (23,1%)
Women	10 (7,7%)	14 (10,8%)	22 (16,9%)	47 (36,2%)
3. Body Mass Index (BMI)				
Very thin	2 (1,5%)	-	1 (0,8%)	4 (3,1%)
Thin	-	1 (0,8%)	1 (0,8%)	9 (6,9%)
Normal	6 (4,6%)	12 (9,2%)	18 (13,8%)	50 (38,5%)
Fat	2 (1,5%)	1 (0,8%)	5 (3,8%)	4 (3,1%)

Obesity	3 (2,3%)	1 (0,8%)	-	10 (7,7%)
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Based on the table above, it shows that the age characteristics of subjects who experience eating disorders, the most group of anorexia nervosa is at the age of 21-25 years, amounting to 9 students with a percentage of 69.2%, eating disorders with the highest group of bulimia nervosa at the age of 16-20 years, 9 with a percentage 60%, eating disorders in the binge eating disorder group were the most at the age of 16-20 years amounting to 14 (56%) and subjects who did not experience eating disorders at the age of 16-20 years were 42 (54.5%). In the anorexia nervosa group, the most experienced female sex was 10 (76.9%), the female bulimia nervosa group was 14 (93.3%), the female binge eating disorder group was 22 (88%), and students who did not experience anxiety disorders eating women as much as 47 (61%). In this study there were 7 categories of very thin, 11 thin students, normal students there were 86, while there were 12 obese students, in the obese category there were 14 students. Eating disorders based on the BMI of the research subjects found that on average students who have BMI experience eating disorders from the anorexia nervosa group of 13 students (9.9%), bulimia nervosa of 15 students (11.6%), binge eating disorder of 25 students (19.2%), and students with BMI in the category of not experiencing eating disorders were 77 people (59.3%).

Table 4. Chi-square Test Results for Depression with Eating Disorders

		Eating Disorders				Total	
		Experiencing an Eating Disorder		Not Experiencing Eating Disorders			
		N	%	N	%	N	%
Depression	Normal	47	36,2%	62	47,7%	109	83,8%
	Light	3	2,3%	8	6,2%	11	8,5%
	Currently	4	3,1%	6	4,6%	10	7,7%
Total		54	41,5%	76	58,5%	130	100%
χ^2		1,001					
P		0,632					

From the statistical test results above, it was obtained that the value of $p = 0.632$ ($p > 0.05$) with a χ^2 value of 1.001, the initial hypothesis in this study was rejected, which means there is no relationship between depression and eating disorders in 2019 Faculty of Medicine students who are working on assignments finally at Airlangga University Surabaya. Normal depression who experienced eating disorders were 47 (36.2%) and subjects with mild depression were 3 students (2.3%). Meanwhile, subjects with moderate levels of depression were 4 students (3.1%).

Tabel 5. Results of Anxiety Chi-square Test with Eating Disorders

		Eating Disorders				Total	
		Experiencing an Eating Disorder		Not Experiencing Eating Disorders			
		N	%	N	%	N	%
Anxiety	Normal	31	23,8%	48	36,9%	79	60,8%
	Light	5	3,8%	12	9,2%	17	13,1%
	Currently	15	11,5%	8	6,2%	23	17,7%
	Heavy	2	1,5%	7	5,4%	9	6,9%

	Very heavy	1	0,8%	1	0,8%	2	1,5%
Total		54	41,5%	76	58,5%	130	100%
χ^2					7,862		
P					0,075		

From the statistical test results above, it was obtained that the value of $p = 0.075$ ($p > 0.05$) with a χ^2 value of 7.862, the initial hypothesis in this study was rejected, which means there is no relationship between anxiety and eating disorders in 2019 Faculty of Medicine students who are working on assignments finally at Airlangga University Surabaya. Normal anxiety levels with eating disorders were 31 (23.8%) and mild anxiety were 5 students (3.8%). Meanwhile, moderate anxiety level was 15 (11.5%), and severe anxiety level was 2 students (1.5%), and subjects with very severe anxiety level were 1 student (0.8%).

Tabel 6. Results of the Chi-square Stress Test with Eating Disorders

		Eating Disorders				Total	
		Experiencing an Eating Disorder		Not Experiencing Eating Disorders			
		N	%	N	%	N	%
Stress	Normal	49	37,7%	69	53,1%	118	90,7%
	Light	5	3,8%	6	4,6%	11	8,5%
	Currently	0	0,0%	1	0,8%	1	0,8%
Total		54	41,5%	76	58,5%	130	100%
χ^2				0,787			
P				0,010			

From the statistical test results above, it was obtained that the value of $p = 0.010$ ($p < 0.05$) with a χ^2 value of 0.787, the initial hypothesis in this study was accepted, which means there is a relationship between stress and eating disorders in 2019 Faculty of Medicine students who are working on their final project at Airlangga University, Surabaya. This is 49 students (57.7%) experienced normal stress levels with eating disorders, 5 students (3.8%) had mild stress levels. Meanwhile, subjects with moderate stress levels experienced no disturbances, and subjects with normal stress levels who did not experience eating disorders totaled 69 students (53.1%).

4. Discussion

The subjects in this study were students of the Faculty of Medicine, Airlangga University, Surabaya class of 2019 who were working on their final project. Students who were the subject of the study were aged 16-25 years with the majority of students being in the age range of 16-20 years (53.1%). Meanwhile, in terms of gender, the majority of subjects in this study were female, namely 93 students (73.5%). Medical students who have learning demands and complete their study period according to the block system can be suspected that medical study students experience relatively greater anxiety compared to other studies⁶. In addition, in doing the final thesis assignment, students are required to be more focused because the thesis work is one of the determinants of student graduation. This is a stressful event situation (stressful event) because students need more energy and thoughts than usual. These stressful events have the potential to trigger an increase in mental disorders in students including depression, anxiety and stress⁷. These psychological conditions can be the background for eating disorders⁸, where sufferers often view food as an object of escape from the psychological conditions they are experiencing⁹.

Judging based on the level of student depression which was categorized into three categories, namely normal, mild and moderate, the majority of students totaled 76 studies which revealed that the hypothesis proposed by

the researchers was not proven, meaning that there was no relationship between depression and eating disorders in 2019 Faculty of Medicine students who currently working on his final project at Airlangga University, Surabaya. The absence of a relationship between depression and eating disorders in this study was supported by research data where the majority of students' depression levels were included in the normal category and reviewed based on their level of depression, the majority of students stated that they did not experience eating disorders. Masdar (2016) revealed that various forms of stressors such as academic activities trigger depression, but the emergence of an increase in depression depends on the extent to which the psychosocial stressor experienced by a person affects that person¹⁰. In addition, no significant relationship was found between depression and eating disorders in research subjects, which is thought to have occurred because the effects of stress in the form of psychological disorders may not arise or develop dominantly in individuals due to sources of coping with stressors such as family, friends, and community support. and the environment of the individual concerned¹¹. The chi-square statistical test in this study explains that there is no significant relationship between the level of depression and eating disorders. However, based on the Chi-square statistical test, it can be seen that depression and eating disorders have a linear relationship where the higher the depression level of an individual, the higher the tendency for eating disorders to occur. This is in line with the theory put forward by Davison et al (2006) that individuals with depressive symptoms generally have a change in eating behavior by reducing or increasing eating patterns¹². The results of this study are in line with research conducted by Goutama and Chris in 2021 on students of the Faculty of Medicine, University of Tarumanagara which showed that moderate and severe levels of depression lead to binge eating disorders, so changes in eating behavior depend on the severity of depression¹³.

The results of the study based on the chi-square test revealed that there was no significant relationship between anxiety and eating disorders. Sulastris (2018) revealed that anxiety usually arises because of someone's worry about something that is a priority in question at a certain time¹⁴. In contrast to the opinion of Sulastris (2018), the results of this study show the opposite results where the thesis work which should be the priority of the research subjects does not significantly cause anxiety¹⁵. No association was found between anxiety and eating disorders in the study subjects, it was suspected that this could occur due to the age factor. The majority of subjects in this study were in the productive age category where according to Kozier in (Livana, 2019), age is a factor that influences individual comprehension and mindset, so that the older an individual is, the better the individual's mindset and comprehension will be¹⁶. Mindset and comprehension have a relationship in the opposite direction with the tendency to develop anxiety. The better the mindset and comprehension of an individual, the better the individual is at analyzing the information received so as to minimize anxiety events.

The theory explained by Sullivan and Gorman (2007) explains that anxiety disorders if not handled properly will cause sufferers to experience difficulties and control their feelings, causing suffering and disruption to social and work functions¹⁷. Through the test results in this study, it can be seen that research subjects with high levels of anxiety have a greater tendency to experience eating disorders. In addition, there was no relationship between anxiety and eating disorders in this study because the majority of research subjects were female. Previous research by Rahmayanti et al (2021) revealed that people with eating disorders more specifically, namely anorexia nervosa and bulimia nervosa tend to occur in young adult women¹⁸. However, in the last few decades, with the rapid development of social media, the trend for ideal body shape has become a phenomenon that is of great concern to individuals from their late teens to early adulthood, especially individuals who are female¹⁹. So that the high desire of individuals to fulfill satisfaction with the image of an ideal body shape can be the background for no change in eating behavior in the individual concerned²⁰.

The level of stress experienced by a person can cause anxiety which is closely related to lifestyle, anxiety disorders, including digestive disorders. Based on the Chi-square test, the results of this study state that stress levels have a significant relationship with eating disorders in college students. The relationship between stress levels and eating disorders is a linear relationship where the stress level of students determines the tendency of students to experience eating disorders. The higher the level of stress experienced, the higher the likelihood that the student will experience eating disorders. This research is in line with the General Adaptation Syndrome

theory expressed by Hans Selye (in Gaol, 2016) where when the body tries to resist or overcome an unavoidable stressor, the fatigue phase occurs when the body experiences ongoing stress or the body is no longer able to adapt to the stressor and becomes susceptible to physical problems and eventually give rise to disease²¹. Research conducted by Sequera et al in 2021 on students of the Faculty of Medicine, University of Nusa Cendana stated that there was a significant relationship between stress levels and dyspepsia syndrome²². This shows that the results of the research conducted are in line with the results of the current research. Someone who is experiencing stress will experience a change in appetite. Students who undergo thesis preparation if they do not have a way of managing the stressors they receive will tend to change their eating patterns which can eventually lead to eating disorders. Changes in eating patterns can be defined in two ways, namely no appetite or having the desire to eat excessively. A study by Neo, Kusuma and Rahayu (2019) which aims to determine whether or not there is a relationship between stress levels and eating disorders also shows something similar to the results of this study where students who live in the Tribhuwana Tunggaladewi University (UNITRI) girls' dormitory experience mental disorders. eating and is experiencing stress due to the preparation of the thesis²³.

The relationship between stress levels and eating disorders indicates the need for further review regarding students' self-defense mechanisms against accepted stressors, particularly related to academic stress. Stress coping needs to be carried out regularly by students to avoid academic procrastination due to eating disorders which are associated with negative effects on health, emotions and the ability to carry out activities in daily life. In terms of emotional disturbances in the form of stress, Lazarus and Folkman in Apriliana (2021) revealed that the type of coping in the form of emotional-focused coping is more effective than problem-focused coping²⁴. This is because academic stress is closely related to individual perceptions of stressors and how individuals react to stressors which involve a lot of cognitive work. Research by Maharhani (2020) states that the ability to focus on emotional coping strategies is an adaptive method of reducing stress levels²⁵. Coping with emotional focus can be started by being aware of the emotional process that is being experienced and accepting the feelings that are really being felt or not denying them. After being able to understand the emotional conditions that are felt, individuals need to apply rational thinking to be able to view the emotions that are felt as positive so that individuals can express the stressors received in an adaptive way accompanied by the development of positive thinking schemes. In addition, the factors that determine the effectiveness of the coping strategies applied also depend on the personality of each individual so that there is a need for self-awareness or a good self-knowledge process.

Conclusions And Recommendations

There is no relationship between depression and eating disorders in students of the Faculty of Medicine, Airlangga University class of 2019 who are working on their final thesis assignment. working on their final thesis assignment, there is a relationship between stress and eating disorders in students of the Faculty of Medicine, Airlangga University class of 2019 who are working on their final thesis assignment. For the Faculty of Medicine, Airlangga University, it is hoped that they will continue to pay attention to the psychological condition of Bachelor of Medicine students in their final year in working on their thesis, such as implementing counseling, education, and evaluating stress management so that eating disorders can still be avoided.

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