



Article

The Differences of Depression Level and Risk of Suicide in Medical Students in Surabaya

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ABSTRACT

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Introduction: Medical students are at risk of depression because of the enormous demands and pressures on their learning systems. Research has documented that the majority of young suicide victims die during the depression. **Objective:** To measure the prevalence of depression and suicide risk in Faculty of Medicine, Airlangga University students based on year of class. **Methods:** This study used an observational analytic cross-sectional study design with a consecutive sampling technique. The population and sample were undergraduate medical students of class 2019, 2018, and 2017 at the Faculty of Medicine, Airlangga University, Surabaya. Depression level was measured using PHQ-9 and suicide risk was measured using BSSI. **Results:** Faculty of Medicine, Airlangga University students class 2019 had the highest average depression score compared to class 2018 and 2017, The suicide risk rate of the subject in class of 2019 is 1 person (1.0%), in 2018 there is 1 person (1.0%) and in 2017 there are 3 people (3.0%). **Conclusion:** There is no significant difference in the level of depression. The incidence of medical faculty students at risk of suicide was total 5 person. Therefore, the low risk of suicidality among these students is good news. Faculty of Medicine, Airlangga University must maintain the management of education and always pay attention to mental health factors in students. However, cases of depression in students need special attention from the university.

INTRODUCTION

WHO data for 2018 states that more than 300 million people worldwide suffer from depression every year. Based on the results from Basic Health Research (2013), shows that the prevalence of mental-emotional disorders indicated by symptoms of depression and anxiety is 6% for the age of 15 years and over, or about 14 million people [1]. The average age of Indonesian students is in the age range of 18-25 years [2]. Medical students are at risk for depression because of the length of study duration and lack of sleep, among other factors. This reducing the quality of life and leading to increased levels of depression which has an impact on students physical, mental and emotional health, jeopardizing their academic performance [3]. A recent study in America states that the results of an analysis of 129 thousand medical students in 47 countries showed that 27% of students experienced depression and its symptoms, while 11% think about committing suicide during college [4]. Medical course material is recognized as one of the most difficult studies worldwide. Medical faculty students are expected to master a wide range of medical knowledge. In addition, students also have a high competitive spirit to get into medical school at the next stage, namely specialists or masters. Medical students get a high psychological burden, causing lower mental quality than their peers [5].

Unipolar depression is more common than bipolar depression: the lifetime prevalence of unipolar depressive disorder is 16.2%, while the lifetime prevalence of bipolar depressive disorder is 4.5% [6]. Research in Nepal found a prevalence of depression in the first year students was 36.74% and in third year students was 22.22%. The prevalence of depression in female students was 32.43%, versus 28.07% in male students. So it can be stat-

ed that the level of depression decreases with increasing years and depression is more commonly experienced by female students than male students [7]. Unipolar depression is closely related to suicidal thoughts and behavior and even exceeds the total number of deaths due to homicide and war [8]. WHO data for 2019 showed approximately 800,000 people in the world die from suicide [9]. While the data Indonesia, the figure national number of deaths due to suicide during the last one year in 2016 was recorded as many as 1,800 cases [10]. Suicidal ideation is a manifestation of thinking, considering, or planning. The percentage of suicide ideas among medical faculty students reached 6.0% to 43.0%. In addition, female medical faculty students were also found to have higher rates of suicidal ideation than male medical faculty students [11]. Suicide can be considered as a 'silent enemy'. Although it is common to find that people not admitting to having suicidal thoughts, some of them have the potential to die by committing suicide [12]. Medical students are prone to have suicidal ideation due to excessive stresses such as the lack of free time, being away from home, and academic burdens. The author was interested in knowing the differences in levels of depression and risk of suicide among students of the Faculty of Medicine, Airlangga University. This research has never been conducted previously so it is expected that it can contribute to the field of psychiatry.

METHOD

This study used a cross sectional approach. This study analyzed the level of depression and suicide risk among medical students based on batch years. The research was conducted at the Faculty of Medicine, Airlangga University. The research design and protocol have been approved by the Ethics Committee of the Faculty of Medi-

cine Airlangga University, Surabaya (Number: 282 / EC / KEPK / FKUA / 2019).

The study population was all students of the Faculty of Medicine at Airlangga University in class 2019, 2018, and 2017. There were two questionnaires used in this study namely, PHQ-9 and BSSI. PHQ-9 (Patient Health Questionnaire) is a 9 item of questions to assist in the diagnosis of depression as well as selecting and monitoring treatment. This questionnaire item describes the condition in the last two weeks. Depending on the frequency (“not at all”, “a few days”, “more than half a day”, and “most days”), they are graded on a 4-point scale ranging from 0 to 3. These ratings are then summed to produce a total score, which ranges from 0 to 27. If the total score reaches a value of 0 to 4 means no depression, 5 to 9 mild depression, 10 to 14 moderate depression, 15 to 19 moderate depression, and 20 to 27 major depression. The advantages of PHQ-9, among others, are based on the diagnostic criteria for depression in the Diagnostic and Statistical Manual Fourth Edition (DSM-IV) [13]. In addition, PHQ-9 has good psychometric properties, namely, sensitivity of 0.80 and specificity of 0.92 using a cut off score >10 or a diagnostic algorithm [14].

BSSI are 21-item waiting questions and measuring the current intensity of patient-specific attitudes, behaviors, and plans for suicide over the past two weeks. 21 BSSI Items consisting of the first 19 items each are has three options that correspond to suicide intensity and a 3-point scale ranging from 0 to 2. These ratings are then summed to produce a total score, which ranges from 0 to 38. If the respondent answers 0 (0 = no desire) to questions number 4 and 5, then he can immediately proceed to questions number 20 and 21. The client does not need to answer questions from numbers 6 to 17. However, if the respondent answers 1 or 2 (1 = weak,

2 = moderate to strong) in questions number 4 and 5, then they must complete all questions. Questions 20 and 21 are not part of the assessment, but only serve to obtain clinical information for the therapist. When the total score reaches a value above 24, then it appears as a truncated interaction that the client is significantly at risk of suicide. The higher the score obtained, the greater the risk of suicide risk [15].

The advantages of BSSI include having a construct validity test value, it is obtained $r_{count} > r_{table} = 0.361$, and in the reliability test, there is a Cronbach's alpha value = 0.913. The reliability test in Iran states that the BSSI has a Cronbach's alpha coefficient = 0.837, which means this instrument is reliable [16].

The inclusion criteria were Medical students aged 18-22 years minimum age 18 years because it is a provision of the PHQ-9 and BSSI questionnaire with proof of student ID and complete filling out the questionnaire. Data collection was carried out in 2 ways: namely by visiting each medical faculty student at the campus A to share a concern information sheet, a socio-demographic sheet, and there questionnaires; and the rest by distributing a google form link. The exclusion criteria was incomplete filling out the questionnaire. This questionnaire was partly filled in directly using paper and due to pandemic condition that caused some were to be filled in by using google form due to the pandemic condition. Before filling out the questionnaire, students were given information for consent first.

The variables in the level of depression and suicide risk of Airlangga University medical students, class of 2019, 2018, 2017. Analyzes were performed done using statistical software SPSS version 21.0. Two tailed test is defined as a two-way tester. Two tailed is used for hypotheses whose direction is not clear [whether posi-

tive or negative] with $p < 0.05$, statistically significant.

RESULT

In accordance with the calculation of the sample size, the respondents needed in this study were 306 respondents. The researchers managed to get 318 respondents who were willing to fill out the questionnaire, of which 9 people from the 2019 class did not meet the inclusion criteria because they were 17 years old, so the final number was 309 respondents. Data collection was carried out in 2 ways, namely by visiting each medical faculty student at campus A to share a concern information sheet, a socio-demographic sheet, a questionnaire and the rest by distributing a gform link.

Some of the questionnaires were sent in the form of google form because a pandemic error caused difficulties in the data collection process. From the socio-demographic characteristics data, it was known that the proportion of female students were more than male students with a ratio of 2:1 in each batch. There was no significant difference in the sex of the respondents per batch.

The socio-demographic characteristics found that the Javanese are the most prevalent ethnicity groups in each generation and Islam as the largest religion. The distribution of the socio-demographic characteristics criteria of the research subjects is presented in table 1.

Table 1. Socio-Demographic Characteristics

Socio-demographic Characteristics	Class of 2019 n=103 (%)	Class of 2018 n=103 (%)	Class of 2017 n=103 (%)	N (%) N=309	P
Sex					
Male	37 (35,9%)	32 (31,1%)	33 (32,0%)	102(33,0%)	0,735
Female	66 (64,1%)	71 (68,9%)	70 (68,0%)	207(67,0%)	
Age (yrs)					
18-20	101(98,1%)	97 (94,2%)	71 (68,9%)	269 (,1%)	<0,001*
21-25	2 (1,9%)	6 (5,8%)	32 (31,1%)	40 (12,9%)	
Age (Mean±SD)	19,06±0,81	19,25±0,89	19,82±1,22	19,38±1,04	-
Race					
Javanese	82 (79,6%)	76 (73,8%)	74 (71,8%)	232(75,1%)	0,561
Madurese	1 (1,0%)	4 (3,9%)	3 (2,9%)	8 (2,6%)	
Others	20 (19,4%)	23 (22,3%)	26 (25,2%)	69 (22,3%)	
Religion					
Islam	93 (90,3%)	83 (80,6%)	82 (79,6%)	258(83,5%)	0,585
Catholic	5 (4,9%)	7 (6,8%)	8 (7,8%)	20 (6,5%)	
Christianity	4 (3,9%)	8 (7,8%)	8 (7,8%)	20 (6,5%)	
Buddhism	1 (1,0%)	2 (1,9%)	2 (1,9%)	5 (1,6%)	
Hinduism	0 (0,0%)	3 (2,9%)	3 (2,9%)	6 (1,9%)	

* $p < 0,05$ significant difference

Table 2. Depression Level Among Medical Students of Universitas Airlangga

	Depression Level					N (%) N=309	P
	No Depression	Mild Depression	Moderate Depression	Moderate to Severe	Severe Depression		
	(0-4)	(5-9)	(10-14)	(15-19)	(20-24)		
Class of 2019	34 (33,0%)	35 (34,0%)	21 (20,4%)	10 (9,7%)	3 (2,9%)	103 (100,0%)	0,717
Class of 2018	35 (34,0%)	40 (38,8%)	16 (15,5%)	7 (6,8%)	5 (4,9%)	103 (100,0%)	
Class of 2017	41 (39,8%)	37 (35,9%)	14 (13,6%)	5 (4,9%)	6 (5,8%)	103 (100,0%)	

Medical student class of 2019 had the highest average depression score compared to the class 2018 and 2017, with an average score of $7.73; \pm 5.30$ followed by $7.59; \pm 5.50$ and $7.08; \pm 5.48$. The results of the normality test for the depression score data are presented in table 3.

Table 3. Score Data Normality Test Results

	Statistic	Df	Sig
Class of 2019	0,108	103	0,005
Class of 2018	0,131		0,000
Class of 2017	0,166		0,000

Comparative test of the student depression scores using Kruskal Wallis found no significant difference in depression scores for each batch ($p = 0.465$). The results of the comparison test for the depression score data are presented in Table 4.

Class of		N=309	Median	P
2019		103	7,00 (0-21)	0,465
2018		103	7,00 (0-23)	
2017		103	6,00 (0-24)	

Risk of Suicide for Students of the Faculty of Medicine, Airlangga University. This study also evaluated the risk of suicide that occurs in among students of the Faculty of Medicine, Airlangga University in each batch. In the 2019 class, there was 1 student who had suicidal ideation (1.0%). In the 2018 class, there was 1 student who had suicidal ideation (1.0%). In the 2017 class, There were 3 students who had suicidal ideas (3.0%).

5 students who were at risk of committing suicide, it is found that they also have a fairly high depression score. Starting from no depression to severe depression. The depression score for 1 person in class 2019 were 15 (moderate severe depression). The depression score for 1 person in class 2018 were 19 (moderate severe depression). The depression scores for 3 people in class 2017 were 16 (moderate severe depression), 10 (moderate depression), and 18 (moderate depression) then an interview was conducted between the researchers and the 5 students.

3 students had problems regarding education, 1 student had problems regarding friendship, and 1 student had problems regarding family matters. Of the several

questions on the questionnaire, complaints were often felt that it was difficult to start sleeping or sleep too long. Thus, the researcher suggested that the 5 students consulted with a psychologist or psychiatrist.

Psychosocial problems that accompany the emergence of suicidal thoughts can stem from external and internal demands or oneself. External factors such as economic / financial (financial management, pocket money), interaction with friends, and the environment. Internal factors, for example, the target of achieving grades and academic achievement.

DISCUSSION

In this study, it was found that the number of female medical students was more than male medical students with a ratio of 2:1 in each batch. This is in line with research conducted at all universities in the UK which states that there are more female students than male, with the proportion exceeding 65% [17]. Based on statistical data released by the AAMC (Association of American Medical College), the female medical population reaches 50.5% and will continue to increase in the following year [18].

The average age of Indonesian students is in the age range of 18-25 years [2]. This is in accordance with the results of the study which stated that the average age of medical students was the ages of 18-20 years. However, the number of students above S1 Medicine the age of 20 is very small and the oldest age is 22 years. So, the research is only aimed at medical students with ages between 18-22 years.

Based on the data the distribution of Indonesian population, the Central Statistics Agency (BPS) in 2010, the Javanese took the first place in the distribution of the most prevalent ethnicity groups. Namely, reaching 95.2 million people or about 40.2 percent of the total population of Indonesia. So, it is only natural that medical students at Universitas Airlangga (UNAIR) are dominated by students who are Javanese and Muslim, this can happen because UNAIR is located in Java Island and is one of the best universities in Indonesia

Levels of Depression in Students of the Faculty of Medicine, Airlangga University. In this study, it was found that students of class 2019 had the highest average depression score compared to class 2018 and 2017. This is in line with research conducted by Silva et al in 2017 which stated that the level of depression during education showed a decrease from the first year to the second year of education [19]. In another study, it was stated that the first generation had the highest level of depression due to the need adaptation to a new learning system that had never been obtained before, while for the second generation or above, it had passed the adaptation time [20].

Suicide Risk for Students of the Faculty of Medicine, Airlangga University. In this study, medical students from classes of 2019, 2018, and 2017 with a very low risk of suicide, namely, 1 to 3%. This contradicts the percentage of previous studies which stated that the prevalence of suicidal ideation among medical students ranged

from 9 to 48% [8]. Medical students are prone to suicidal ideation due to excessive stresses such as the lack of free time, being away from home, and academic burdens [11].

The obstacle found in the implementation of the research was that some of the questionnaires were distributed in the form of a google form because the emergence of the pandemic caused difficulties in the data collection process. Suggestions for further research required the same method in distributing questionnaires.

CONCLUSION

Levels of Depression in Students of the Faculty of Medicine, Airlangga University. In this study, it was found that students of class 2019 had the highest average depression score compared to class 2018 and 2017 but there is no significant difference in the level of depression. The incidence of medical faculty students at risk of suicide was totally 5 person. Therefore, the low risk of suicidality among the Faculty of Medicine, Airlangga University students is good news. Faculty of Medicine, Airlangga University must maintain the management of education and always pay attention to mental health factors in students. However, cases of depression in students need special attention from the university.

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