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Evaluation of Depression, Anxiety, and Stress among Undergraduate Students in Jakarta

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ABSTRACT— The present study investigated the prevalence of depressive, anxious, stress and magnitude of risk in undergraduate students of Pribliti University in Jakarta. It was obtained from the application of the Depression Anxiety and Stress Scale (DASS-21) through a sample of 499 undergraduate students from 14 faculties of Public University in Jakarta (40% male, 60% female). More than 40% presented extremely severe level of depressive, more than 70% presented extremely severe level of anxiety and almost a quarter presented extremely severe level of stress. The proportion of male with depressive anxiety and stress was higher than female. The proportion of students with GPA < 2.0 experiencing depressive anxiety and stress was higher than students with GPA ≥ 2.5 and GPA ≥ 3.0. Social sciences and Humanities students were at risk of depressive, anxiety and stress. Most of students experienced severe and extremely severe level of depressive anxiety and stress simultaneously. In this matter, the Student Counseling Board (Beef) of the Student Center for the prevention early detection and timely treatment of mental disorders in students, providing course and education to the university community.

Keywords depression, anxiety, stress, undergraduate

1. INTRODUCTION

Over 300 million people equivalent to 4.4% of the world's population were estimated to suffer from depression and over 260 million people equivalent to 3.6% were anxiety, nearly half live in the South-East Asia Region and Western Pacific Region (1). People living with depression and anxiety were increased, estimated 18.4% and 14.9% respectively between 2005 to 2015 (1). The prevalence of mental disorders of Indonesia's population is 1.7 per mil, while the prevalence of mental emotional disorder is 6.0%, the prevalence of women's emotional mental disorders is higher than men, residing in urban areas higher than rural (2).

Psychological problems in college students are a trend on campus in America, in the National Survey of Counseling Center Directors (NSCCD) reported by the American College Counseling Association in 2014 at campus counseling centers that about 52% of their clients have severe psychological problems, 44% experienced severe distress (depression, anxiety, panic attacks, suicidal ideation, etc) (61% due to depression, 21% relationship problems, 11% Academic problems) (3). The academic impact report survey by the American College Health Association (ACHA) 2016 National College Health Assessment survey that 32.5% was diagnosed with anxiety, 20.9% depression, 42.2% stress, 28.4% difficulty of sleep, 13% consider serious suicide, 2.1% committed suicide, 8.7% self-injury (4).

Nearly 200 studies of 129,000 medical students in 47 countries, 27% about one-third experienced depression following symptoms, which is I I & thought of suicide during college. Medical students can be 2-5 times more often depressed than other majors' students. The prevalence of depression ranges from 9% to 56% (5). Research on medical students compared with students from Psychology, Law and Mechanical Engineering at the University of Adelaide, Australia showed the result that 48% of students are psychologically depressed, students in non-health disciplines are

significantly more depressed than students in health disciplines (6), 30% of Australian public university students have mental health disorders (depression, anxiety, eating disorders, hazardous drinks) (7). Research in North America and Europe that students experience stress from moderate to severe levels and associated with poor health conditions in nearly 90% of students (8). 50.9% (9).

The objective of study was to determine the prevalence of depression, anxiety and stress and associations between demographic characteristic among undergraduate students in public university at Jakarta Indonesia.

2. METODEDES

2.1. Study Design

A cross-sectional study was conducted at the Public University in Jakarta which has more than 45,000 students. This study was held in the middle of semester between October 2016 and November 2016. The analysis units were students from the second and third years of program at 14 faculties. All participants were selected using random sampling and agreed to participate in the study after explaining purpose of study, and confidentiality was ensured. The self-administered questionnaires were distributed at the end of their classes. Filling questionnaire was taking about fifteen minutes of time. From a total of 560 undergraduate students who agreed to participate and 449 students who provided complete data on variables of interest to this research with participation rate 80.2%.

2.2. Materials

Questioner was developed in Bahasa. Data on characteristic demographic such as gender, age were achieved. The student's psychological distress symptoms were measured by the short version of the standardized Depression Anxiety Stress Scale-21 (DASS-21), a 21-item self-report is a set of three self-report scales designed to measure the negative emotional states of depression anxiety and stress with 7 items per scale, the depression scale assesses dysphoria, hopelessness, self-deprecation and lack of interest. The Anxiety scale assesses autonomic arousal, skeletal muscle effect. The stress scale assesses relaxing difficulty, nervous arousal and being easily agitated (10). The Bahasa version of the DASS-21 is similar to the original and previous studies have demonstrated good convergent and discriminant validity and also high internal consistencies for all three scales of the DASS-21 in Bahasa, the validity 0.277 – 0.603 and reliability $\alpha=0.895$ ($df = 499$; $r5\% = 0.088$). Items are scored on 0–3 scale scoring for Depression, Anxiety and Stress, scale are range from 'never' to 'almost always'. The final score showed severity rating of depression, anxiety and stress. (Table 1)

Table 1: DASS-21 Severity Rating

Severity	Depression	Anxiety	Stress
Normal	0 - 4	0 - 3	0 - 7
Mild	5 - 6	4 - 5	8 - 9
Moderate	7 - 10	6 - 7	10 - 12
Severe	11 - 13	8 - 9	13 - 16
Extremely Severe	14 +	10 +	17 +

2.3. Statistical Analysis

Data were analyzed using statistical software. Data were summarized using mean and standard deviation values, median for stress, anxiety and depression scores, number and percentage. Association between independent and dependent variables was done using chi-square and Fisher's exact test. Logistic regression analysis was done to test for risk factors of stress, anxiety, and depression. A p value less than or equal to 0.05 was considered statistically significant.

2.4. Ethical Consideration

This study was approved by the Ethical Committee of Public Health Faculty of Universitas Indonesia number: 482/UN2.F10/PPM.00.02/2017. An informed consent was obtained from all participants before filling the questioner.

3. RESULTS

The sample consisted of 499 students, among whom 59.7% were female and 40.3% male with SD was 0.491, 56.9% were <20 years old and 43.1% were 21-30 years old with SD was 0.496, and 6.0% were GPA <3.0, 66.7% were GPA 3.0-3.5, and 27.3% were GPA 3.6-4.0, with SD was 0.537. The measurement of internal consistency for DASS-21 was $\alpha = 0.895$. Figure 1 shows students severity rating of depression anxiety and stress. Table 2 presents the characteristic of students, table 3, 4, and 5 show the evaluation of depressive, anxiety and stress of students according to their gender, age, GPA, and academic cluster.

Table 2: Students characteristic (total number = 499)

Characteristic	N (W)
Age	
< 20 years old	284 (56.9)
21 - 30 years old	215 (43.1)
Gender	
Male	201 (40.3)
Female	298 (59.7)
GPA	
3.0 - 3.5	363 (72.7)
3.6 - 4.0	136 (27.3)
Academic cluster	
Health sciences	82 (16.4)
Social science and humanities	304 (60.9)
Science and engineering	113 (22.6)
Depression	
Normal	32 (6.40)
Mild	
Moderate	111 (22.2)
Severe	66 (13.2)
Extremely Severe	222 (44.4)
Anxiety	
Normal	24 (4.80)
Mild	
Moderate	44 (8.80)
Severe	51 (10.2)
Extremely Severe	357 (71.5)
Normal	140 (28.1)
Mild	57 (11.4)
Moderate	92 (18.4)
Severe	93 (18.6)
Extremely Severe	117 (23.4)

Table 2: Students characteristic risk factors of depression

	Depression				
	Normal-mild-moderate	Severe-extremely severe	OR (CI-95%) Crude	OR (CI-95%) Adjusted	p-value
Age					
< 20 year old	18 (8.7)	189 (91.3)	0.946	1.123	0.740
20-30 years old	14 (9.2)	139 (90.8)	(0.455—1.966)	(0.435-2.356)	
Gender					
Male	15 (10.0)	135 (90.0)	1.261	1.255	0.516
Female	17 (8.1)	193 (91.9)	(0.609—2.613)	(0.490-2.670)	
GPA					
3.0 - 3.5	24 (9.2)	238 (90.8)	1.134	1.069	0.876
3.6 - 4.0	8 (8.1)	90 (91.8)	(0.492—2.618)	(0.459-2.492)	
Academic Cluster					
Health Science	7 (11.5)	54 (88.5)			0.206
Social sciences and Humanities	15 (6.8)	204 (93.2)		1.861 (0.79-4.867)	
Science and Technology	10 (12.5)	70 (87.5)			

The measurement of depressive revealed that the mean score was 14.47, the median was 13.0 and the SD was 7.365. More than half of students (65.79%) presented severe-extremely severe level of depression, the proportion of female was higher than male, age <20 years higher than 20-30 years, GPA 3.6-4.0 higher than 3.0-3.5, and students of Social and Humanities Sciences higher than students of Health Sciences and Science and Technology were experiencing with severe-extremely severe level of depression. The analysis shows the p-value scores of depressive were no significantly different of all variables. Social and Humanities Sciences students were at risk of depression 1.86 times than Health Sciences students. Female students were at risk of depression 1.3 times than male students.

Table 3: Students characteristic risk factors of piety

Anxiety					
	NormW	Severe-extremely severe	OR (CI-95&) Cnide	OR(CI-9596) Adjusted	p-value
Age					
< 20 year old	14 (5.8)	227 (942)	1.116	1.026	0.953
20 — 30 years old	10 (5.2)	181 (94.8)	(0.484—2.172)	(0.440-2.389)	
Gender					
Male	9 (5.2)	164 (94.8)	0.893	1.061	0.880
Female	15 (5.5)	244 (94.2)	(0.382—2.088)	(0.443-2.184)	
GPA					
3.0 — 3.5	16 (5.1)	299 (94.9)	0.729	1.418	0.440
3.6 — 4.0	8 (6.8)	109 (932)	(0.303—1.752)	(0.185-3.439)	
Academic Clutter					
Health Science	6 (8.6)	64 (91.4)			0.01
Social sciences and Humanities	12 (4.5)	253 (95.5)		1.966	
Science and Technology	6 (6.2)	91 (93.8)		(0.97-5.145)	

The measurement of anxiety revealed that the mean score was 14.63, the median was 13.0, and the SD was 7.982. More than half of students (81.8%) presented severe-extremely severe level of anxiety, no significant difference between female and male and between age <20 years and age 20-30 years, GPA 3.0-3.5 higher than GPA 3.6-4.0, and students of Social and Humanities Sciences higher than students of Health Sciences and Science and Technology were experiencing with severe-extremely severe level of anxiety. The analysis shows the p-value scores of anxiety were no significantly different of all variables. Social and Humanities Sciences students were at risk of anxiety 1.966 times than Health Sciences students. Students with GPA 3.0-3.5 were at risk of anxiety 1.4 times than GPA 3.6-4.0.

Table 4: Students characteristic risk factors of stress

Stress					
	Nonnd	Severe-extremely severe	OR (CI-95&) Cnide	OR(CI-9596) Adjusted	p-value
Age					
< 20 year old	87 (42.4)	118 (57.6)	1.180	1.246	0.329
20 — 30 years old	53 (36.6)	92 (63.4)	(0.827—1.981)	(0.801-1.938)	
Gender					
Male	53 (35.8)	95 (64.1)	0.737	1.187	0.276
Female	87 (43.1)	115 (56.9)	(0.477—1.141)	(0.817-2.025)	
GPA					
3.0 — 3.5	98 (38.9)	154 (61.1)	0.848	1.212	0.436
3.6 — 4.0	42 (42.9)	57 (57.1)	(0.528—1.362)	(0.748-1.964)	
Academic Clutter					
Health Science	29 (50.9)	28 (49.1)			0.108
Social Sciences and Humanities	80 (37.6)	133 (62.4)		1.634	
Science and Technology	31 (38.8)	49 (61.3)		(0.699-2.970)	

The measurement of stress revealed that the mean score was 12.47, the median was 11.0, and the SD was 7.498. Nearly half of students (42.1%) presented severe-extremely severe level of stress, the proportion of male was higher than female, age 20-30 years higher than <20 years, GPA 3.0-3.5 higher than 3.6-4.0, and students of Social and Humanities Sciences higher than students of Health Sciences and Science and Technology were experiencing with severe-extremely severe level of stress. The analysis shows the p-value scores of stress were no significantly different of all variables. Students who studied Social and Humanities Sciences were at risk of stress 1.6 times than studied Health Sciences. Male students were at risk of stress 1.3 times than female students.

Table 5: Student experienced severe and extremely severe level of depression anxiety and stress simultaneously

	Frequency	Percent
Depression & anxiety & stress	204	40.9

Depression & anxiety	122	24.4
Anxiety & stress	6	1.2
Depression	2	.4
Anxiety	76	15.2
Not at all	89	17.8

Table 3 shows the frequency of students screened with severe and extremely severe level more than one symptom at the same time. Almost half of students experienced severe and extremely severe level of depressive anxiety and stress simultaneously. Nearly quarter of the students experienced with severe and extremely severe level of depressive and anxiety at the same time. None of the students experienced with depressive and stress in unison.

Table 6: Student experienced severe and extremely severe level of depression anxiety and stress simultaneously according to gender, age, GPA, and academic cluster

	Depression & anxiety & stress	Depression & anxiety	Anxiety & stress	Depression	Anxiety	Not at all
Age						
< 20 year old	116 (40.8)	72 (25.4)	2 (0.7)	1 (0.4)	37 (13.0)	56 (19.7)
20 – 30 years old	88 (40.9)	50 (23.3)	4 (1.9)	1 (0.5)	39 (18.1)	33 (15.3)
Gender						
Male	91 (45.3)	43 (21.4)	4 (2.0)	1 (0.5)	26 (12.9)	36 (17.9)
Female	113 (37.9)	79 (26.5)	2 (0.7)	1 (0.3)	50 (16.8)	53 (17.8)
GPA						
≤ 3.0 – 3.5	151 (14.6)	87 (24.0)	3 (0.8)	0	58 (16.0)	64 (17.6)
3.6 – 4.0	53 (39.0)	35 (25.7)	3 (2.2)	2 (1.5)	18 (13.2)	25 (18.4)
Academic Cluster						
Health Science	28 (34.1)	25 (30.5)	0	1 (1.2)	11 (13.4)	17 (20.7)
Social sciences and Humanities	129 (42.4)	75 (24.7)	4 (1.4)	0	45 (14.8)	51 (16.8)
Science and Technology	47 (41.6)	22 (19.5)	2 (1.8)	1 (0.9)	20 (17.7)	21 (18.6)

Table 6 shows the proportion of male student experienced depression anxiety and stress simultaneously higher than female, the proportion of students who have GPA 3.6-4.0 experienced depression anxiety and stress in unison almost three times greater than other group.

4. DISCUSSION

The present study aimed at identifying different psychological disorders and associated factors among Public University students at Jakarta. The data were collected from 498 students aged from 18 year to 24 years old from first to fourth academic years from 14 faculties in 3 academic clusters (Table 2).

The result of this study showed that the overall prevalence of depression was 87.9% among students. Similar studies from other countries showed a wide variety of rates; two studies in Egypt reported prevalence depression rates of 60% (11) and 65% (12). In Chile, it was 50% (13), in the northeast United States, it was 54.4% (14), in Hong Kong stands at 35.8% (15), in Malaysia was 30.7% (16) and 37.2% (17), in America was 20.9% (4), and in Queensland was 26.9% (18).

The present study showed the prevalence of anxiety was 91.5%, anxiety. In study conducted in Egypt was detected 73% (12), in Hong Kong stands at 37.3% (15), in Malaysia was 55.5% (16) and 63% (17), in America was 32.5% (4), in Queensland was 26.1% (18) of students experienced anxiety.

These study findings are showing the prevalence of stress was 71.8%. These findings are in accordance with some findings of other studies; in Egypt 59.9% (12), in Saudi Arabia 53% (19), in Hong Kong stands at 41.1% (15), in Malaysia was 16.6% (16) and 23.7% (17), in America was 42.2% (4), in Queensland was 34.4% (18).

This study results shows no significant difference in anxiety between male and female and stress was higher among boys than girls. Wahed et.al., in Egypt reported an opposite finding that significantly higher anxiety and stress among females than males (11), another study in Chile noticed that women show higher severity symptoms of anxiety more often.(13).

The present study shows the prevalence of depression was higher among women than men, this result was similar with another study that conducted in Chile was found that proportion of women with depressive was higher than men (13),

These study findings are proportion of depression higher among younger student (<20) than older student (20-30), older student experienced stress more often than younger student, and no significant different on anxiety between two groups. Another study conducted in Malaysia was found depression anxiety and stress scores were significantly higher among older students (20 and above) (17).

5. CONCLUSION

A substantial proportion of undergraduate students are suffering from Psychological disorders. The prevalence is more among females than males, with increasing age, with decreasing GPA and with study in social science and humanities sciences. Promote, preventive, and counseling mental health services should be an important part of the regular investigation of students. Actions should be taken to encourage the students to seek help on exposure to distress. Further studies should be done to identify different sources and causes of stress especially related to academic and educational factors, and the effect of different cope to avoid with the psychological effect of the life tension.

6. LIMITATION

In this study, some limitation should be considered. Some factors are not studied as academic and personal factors, and life style factors are not included in this study. Further studies should take these limitations into consideration.

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8. CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest.

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