

# Herlina J. EL- Matury- Depression, Anxiety, and Stress among Undergraduate Students in Jakarta: Examining Scores of the Depression Anxiety and Stress Scale According to Origin and Residency

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# Depression, Anxiety, and Stress among Undergraduate Students in Jakarta: Examining Scores of the Depression Anxiety and Stress Scale According to Origin and Residency

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**ABSTRACT**— *This study aims to determine the prevalence of depression anxiety and stress and risk of college students who live in college with friends/relatives and students who come from outside Java and Sumatra to experience depression anxiety and stress. Methods: Measurement of anxiety and stress depression using DASS21. Multivariate analysis of logistic regression was used to find out the risk of students residency and origin to experience anxiety and stress depression. Results: A total of 499 students completed all the questionnaires from 560 participating students. Prevalence of DASS with 'extremely severe' of depression anxiety and stress were 48.5%, 71.5%, and 23.4% respectively. 8% of students during college stay with friends / relatives, 11.2% of students came from outside Java and Sumatra. Students who lived in college with friends / relatives more who experience depression, anxiety and stress than those living with parents. Students who came from Jabodetabek (Jakarta, Bogor, Depok, Tangerang, Bekasi) were more depressed and stressed, but more anxiety experienced by students from Sumatera. Multivariate Logistic Regression analysis shows that students living with friends / relatives are at risk of depression 3 times larger, anxiety 4 times greater and stress 1.6 times greater than students living with parents. Students from Jabodetabek, Sumatera and Java are at risk of depression and anxiety 2 times greater than students from other regions in Indonesia.*

**Keywords**— depression, anxiety, stress, undergraduate, origin, residency

## 1. INTRODUCTION

More than half of students in the UK have mental health problems (1). 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 more than half of their clients have severe psychological problems, more than 40% experienced severe distress (2). The survey report by the American College Health Association (ACHA) 2016 National College Health Assessment survey that more than 30% was diagnosed with anxiety, more than 20% depression, more than 40% stress (3).

Almost 200 studies of medical students in 47 countries, about one-third experienced depression symptoms. The range of prevalence of depression were from 9% to 56% (4). A research on medical students compared with students from other disciplines (Psychology, Law and Mechanical Engineering) at the University of Adelaide, Australia presented nearly 50% of students are psychologically depressed, students in non-health disciplines were significantly more depressed than students in health disciplines (5), 30% of Australian public university students have mental health disorders (depression, anxiety, eating disorders, hazardous drinks) (6). Research in North America and Europe that students experienced stress from moderate to severe levels nearly 90% of students (7), and more than half of student experienced stress (8).

There has been slightly research examining the mental health of undergraduate in Indonesia and their residency and origin. A research on 2014 found 21.6% students experiencing depression (9), nursing students experienced stress on variety level more than 60% (10), more than 70% experienced stress (11). Psychological problems occurred in students from universities and higher education in Indonesia with stress levels ranging between 30% -80% and stress levels ranging from 10% -45% (Legiran, Azis, & Bellinawati, 2015; Maulana, Soleha, Saftarina, & Siagian, 2014;

Pathmanathan, Husada, & Kj, 2013; Rahmi, 2013; Rakhma\wati, Farida, & Nurhalimah, 2014; Raudah, Budiarti & Lestari, 2015; Sari, Nurdin , & Defrin, 2015; Subramaniam, 2015; Sutjiato & Tucunan, 2015; Suwartika, Nurdin, & Ruhmadi, 2014).

The objective of study was to determine the prevalence of depression, anxiety and stress and associations with residential and origin among undergraduate students in Higher Education at Jakarta Indonesia.

## 2. METODE

**2.1. Study Design** This study was conducted at the Public University in Jakarta. This study was carried out in October 2016 until November 2016. The students were recruited from public university in Jakarta. Participants were elected using random sampling and agreed to participate in the study after explaining purpose of study, and confidentiality was ensured. 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 80.9%.

### 2.2. Instrument

Questionnaire was developed in Bahasa. Data on characteristic demographic such as gender, age, residency, and origin were attained. 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 Bahasa version of the DASS-21 have demonstrated good convergent and discriminant validity and also high internal consistencies for all three scales of the DASS-21 in Bahasa, the validity 0.77 — 0.605 and reliability of 0.895 ( $df = 499$ ;  $r_{59b} = 0.88$ ). 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. Summarizing the data was used mean and standard deviation values, Spearman correlation for depression anxiety and stress scores and percentage. Association between independent and dependent variables was analyzed using chi-square and Fisher's exact test. Logistic regression was analyzed to test for risk factors of stress, anxiety, and depression. Statistically significant considered to *P-value* less than or equal to 0.05.

### 2.4. Ethical Consideration

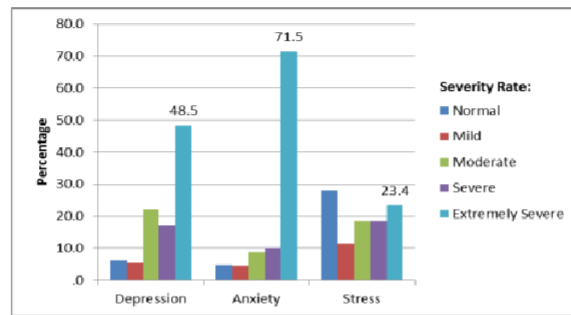
This study was approved by the Ethical Committee of Public Health Faculty of Universitas Indonesia number: 482/UN2 F10/PPM/FX1.02/2017. An informed consent was obtained from all participants before filling the questionnaire.

## 3. RESULTS

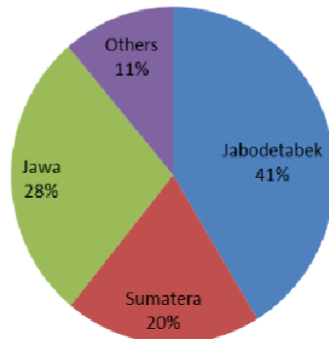
The sample consisted of 499 students, among whom 55.7% were female and 44.3% male with SD was 0.491, 56.9% were <20 years old and 43.1% were 21-30 years old with SD was 0.496, and .

The measurement of internal consistency for DASS-21 was  $\alpha = 0.895$ . According to the DASS-21 instrument the mean depression, anxiety, and stress scores (Mean  $\pm$  SD) were 2.96  $\pm$  1.23; 3.39  $\pm$  1.13; and 1.98  $\pm$  1.54, respectively.

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, origin, and residency.

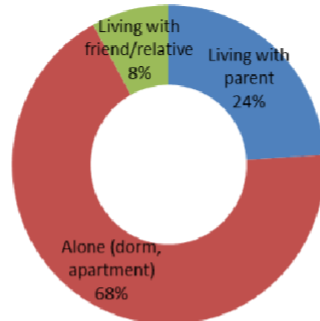


**Figure 1:** Severity Rate of depression anxiety and stress



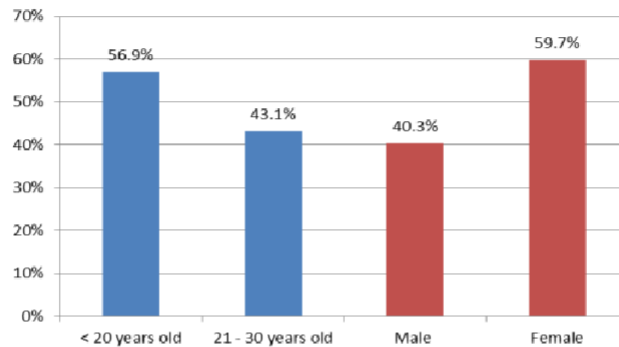
**Figure 1:** Frequency of student origin

Figure 2 shows that more than 40% students came from Jabodetabek (Jakarta, Bogor, Depok, Tangerang, Bekasi), more than a quarter students came from Jawa (East Jawa, West Jawa, Central Jawa, and Yogyakarta), a fifth of students came from various provinces in Sumatera Island, slightly more than 10% of students came from other province in other island such as Papua, Maluku, Nusa Tenggara, Bali, Kalimantan, and Sulawesi.



**Figure 3:** Frequency of student's residency

Figure 3 present that more than half of students live alone such as in student dormitory, and apartment. Only less than a quarter of students were live with parents.



**Figure 4:** Frequency of gender and age of students

Figure 4 describe that more than one half of participants were female and less than 20 years old.

**Table 2:** Students characteristic risk factors of depression

	Depression		OR (CI-95%) Crude	OR (CI-95%) Adjusted	p-value
	Normal N (%)	Depressive N (%)			
Age					
< 20 year old	18 (6.3)	266 (93.7)	1	1.106	0.788
20 – 30 years old	14 (6.5)	201 (93.5)	(0.472 – 2.0)	0.529 – 2.314)	
Gender					
Male	15 (7.5)	186 (92.5)	0.460	1.298	0.484
Female	17 (5.7)	281 (94.3)	(0.650 – 2.735)	(0.626 – 2.693)	
Residency					
With parents	10 (8.3)	110 (91.7)	0.391	4.238	0.042*
Alone (not with parents)	22 (5.8)	357 (94.2)	(0.678 - 3.210)	(1.052 – 17.076)	
Origin					
Jabodetabek (Jakarta, Bogor, Depok, Tangerang, Bekasi)	11 (5.3)	195 (94.7)	-	6.786	0.012*
Sumatera	7 (7.1)	91 (92.9)		(1.513 – 30.438)	
Jawa	7 (5.0)	132 (95.0)			
Others	7 (12.5)	49 (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 90% of students presented various level of depression, the proportion of female was higher than male, no significant difference between age group, students who living alone higher than students who living with parents. The logistic regression analysis shows the p-value scores of depressive were significantly of residency and origin variables. Students who live alone were at risk of depression 4.2 times than students who living with parents. Students who come from Jabodetabek (Jakarta, Bogor, Depok, Tangerang, and Bekasi) were at risk of depression 6.8 times than students from other province in Indonesia.

**Table 3:** Students characteristic risk factors of anxiety

	Anxiety		OR (CI-95%) Crude	OR (CI-95%) Adjusted	p-value
	Normal N (%)	Anxious N (%)			
Age					
< 20 year old	14 (4.9)	270 (95.1)	1	1.007	0.988
20 – 30 years old	10 (4.7)	205 (95.3)	(0.463 – 2.442)	(0.434 – 2.336)	
Gender					
Male	9 (4.5)	192 (95.5)	0.834	1.141	0.762
Female	15 (5.0)	283 (95.0)	(0.379 – 2.062)	(0.486 – 2.675)	
Residency					
With parents	7 (5.8)	113 (94.2)	0.624	2.247	0.258
Alone (not with parents)	17 (4.5)	362 (95.2)	(0.534 – 3.261)	(0.553 – 9.136)	
Origin					
Jabodetabek (Jakarta, Bogor, Depok, Tangerang, Bekasi)	9 (4.4)	197 (95.6)	-	2.075	0.392
Sumatera	7 (7.1)	91 (92.9)		(0.390 – 11.037)	

between age group, students who lived alone more anxious than students who lived with parents, and students who came from Jawa were experiencing anxious. The multivariate analysis shows the p-value scores of anxiety were no significantly different of all variables. Students living alone were at risk of anxiety 2.2 times than students living at home. Students from Jabodetabek were at risk of anxiety 2 times than students from other region in Indonesia.

**Table 4:** Students characteristic risk factors of stress

	<b>Stress</b>		OR (CI-95%) Crude	OR (CI-95%) Adjusted	p-value
	Normal	Stress			
<b>Age</b>					
< 20 year old	87 (30.6)	197 (69.4)	0.159	1.308	0.194
20 – 30 years old	53 (24.7)	162 (75.3)	(0.905 – 2.013)	(0.872 – 1.961)	
<b>Gender</b>					
Male	53 (26.4)	148 (73.6)	0.542	1.139	0.529
Female	87 (29.2)	211 (70.8)	(0.582 – 1.297)	(0.760 – 1.706)	
<b>Residency</b>					
With parents	37 (30.8)	83 (69.2)	0.484	1.481	0.209
Alone (dorm, apartment)	103 (27.2)	276 (72.8)	(0.763 – 1.871)	(0.802 – 2.736)	
<b>Origin</b>					
Jabodetabek (Jakarta, Bogor, Depok, Tangerang, Bekasi)	56 (27.2)	150 (72.8)	-	1.669	0.173
Sumatera	25 (25.5)	73 (74.5)		(0.799 – 3.487)	
Jawa	40 (28.8)	99 (71.2)			
Others	19 (33.9)	37 (66.1)			

The measurement of stress revealed that the mean score was 12.47, the median was 11.0, and the SD was 7.498. More than half of students presented various level of stress, the proportion of male was higher than female, student living alone higher than living with parents, and students from Sumatera higher than others. The logistic regression analysis shows the p-value scores of stress were no significantly different of all variables.

**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
<b>Age</b>						
< 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)
<b>Gender</b>						
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)
<b>GPA</b>						
≤ 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)
<b>Academic Cluster</b>						
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.

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#### 4. DISCUSSION

The present study purposed at identifying different psychological disorders and associated factors among students living alone and living with family. The data were collected between October to December on 2016. The participants were 499 students from public university in Jakarta Indonesia.

1 The result of this study shows that the students who live alone were at risk of depression 4.2 times than students who living with parents. Students who came from Jabodetabek (Jakarta, Bogor, Depok, Tangerang, and Bekasi) were at risk of depression 6.8 times than students from other province in Indonesia. 1 Students living alone were at risk of anxiety 2.2 times than students living at home. Students from Jabodetabek were at risk of anxiety 2 times than students from other region in Indonesia.

A higher likelihood of MDD was seen among those who were older and those living in hostels (compared to home) (12). Students living at the local town, away from their families, realized high levels of stress (13), and more than 80% students living in dormitory were depressed compared with student living with parents. On the other study in India, students staying at home were more stressful than those staying in hostel (14). There was a different levels of depression between students who lives with parents and living alone in Nursing Science Program (15).

#### 5. CONCLUSION

A great proportion of undergraduate students were enduring from Psychological disorders. The prevalence was not significantly difference between females and males, greater among students living away from home than living at home, and larger among students who came from Jabodetabek than who came from other place in Indonesia. Promote, preventive, and counseling of psychological services should be a great part of the regular investigation of students. Plan and action should be taken to drive the students to seek help when they on exposure to distress. Furthermore, another study should be taken to identify the sources and causes of distress related to academic and other factors.

#### 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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