PREVALENCE OF ACADEMIC STRESS AMONG MEDICAL AND PHARMACEUTICAL STUDENTS

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Abstract:

Prevalence of academic stress among university students has been high across the world. Most studies on such topic have been conducted in limited population, particularly in the students of medical faculty and the publicly secular-based university. The present study was carried out on students at the department of medicine and department of pharmacy, the Universitas Islam Negeri (UIN) Maulana Malik Ibrahim Malang, Indonesia. This study was aimed to describe the level of academic stress prevalence among the students as well as its difference based on demographics, including department, gender, and previous education backgrounds. This study involved 72 students as participants. The results indicated that the prevalence of academic stress reached 61% in the medical students and 48.4% in the pharmaceutical students. Meanwhile, there were no significant differences in the level of prevalence in terms of department, gender, and educational background ($P > .05$). Academic stress was experienced by the students of various departments, from the differing previous education background, i.e., the Public Senior High School (*Sekolah Menengah Atas*), Islamic Senior High School (*Madrasah Aliyah*), and Islamic Boarding School (*Pesantren*), both the males and females. A high prevalence of academic stress among students at the Islamic university should draw more attention and call for special intervention from the unit of guidance and counseling service.

Keywords: prevalence, academic stress, medical, pharmaceutical, students

1. Introduction

Academic stress is a global phenomenon which can be found in many university students throughout the world, including in Indonesia. This condition has been a

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critical issue for universities because academic stress will influence on students psychological wellbeing and leads to a low academic performance (Asani, Farouk & Gambo, 2016). High academic load, less leisure time, and strict academic evaluation can trigger anxiety and academic stress among the first year students (Ibrahim & Abdelreheem, 2015).

Most studies on student's academic stress have been conducted in limited population, i.e., medical students. Several studies in various countries (Yusoff, Rahim & Yaacob, 2009; Habeeb, 2010; Rosiek, Kryszewska, Leksowski & Leksowski, 2012; Sivan & Rangasubhe, 2013; Loubir, et al., 2014; Eva, et al., 2015; Asani, et al., 2016) and in Indonesia (Rakhmawati, Farida & Nurhalimah, 2014; Wahyudi, Bebasari, & Nazriati, 2015; Nurasysyifa, Widayanti, & Hikmawati, 2016) have implied that research on student's academic stress have been limited to population of medical students including, students of department of medicine, pharmacy, and nursing. In addition, these studies only covers samples of publicly secular-based university and have not fully portrayed condition of population of medical students in Indonesia, such as condition of students of the Universitas Islam Negeri (UIN) Maulana Malik Ibrahim Malang.

UIN Maulana Malik Ibrahim Malang is one of Islamic universities in Indonesia whose vision is to develop integrative paradigm of general-secular science and Islamic science (Suprayogo, 2006). This integrative paradigm model is promoted through the department of medicine and pharmacy. Students at these departments are encouraged to master cutting-edge medical science and at the same time have a deep understanding of Islamic knowledge and subsequently try to find linkages between both and integrate them in the framework of modern Islamic science. Unfortunately, this demand becomes a challenge for students since they come from various backgrounds of education and many are not graduated from Islamic schools (Zamroni, Hidayah, Ramli & Hambali, 2016).

Beside the above reason, the UIN Maulana Malik Ibrahim Malang has become a role model for the other Islamic Universities under authority of the Ministry of Religious Affairs of the Republic Indonesia to work on integrative paradigm of science. As a pilot institution, the university has deserved such enormous public attention that many students from various education backgrounds apply for admission and study there. The rapid growth in the number of students may be one of characteristics of globalisation and industrialisation in the world. Arnett (2015) argued that the growing interests to pursue higher education spark evenly in a number of developed and developing countries, including in Indonesia. University graduates promise high level of competence as the absolute requirement in order to be able to compete and be accepted in the job market or industry. This demand has encouraged students to flock to university to develop themselves.

This research was performed in response to the growing interest of students to pursue higher education, especially to be admitted in the department of medicine and department of pharmacy at the UIN Maulana Malik Ibrahim Malang. Furthermore, the level of academic stress prevalence has been increased from year to year, while

guidance and counseling service as an integral part of educational institution to provide ideal, high-quality learning has only gained little attention. The absence of a counselor in a university can lead to ignorance of students' academic stress (Zamroni, et al., 2016). Such condition can result in students' poor competence and personal development and consequently make students vulnerable to stress disorders when they are encountering academic burden and challenge.

Stress has been widely defined by the experts, yet until today no satisfied definition can be found (Lazarus & Folkman, 1984). Generally, researchers address stress as *stress*, *strain* or *stressor*. Mason (in Aldwin, 2007), classified stress into three definitions: 1) stress which refers to the individual internal state, usually called strain, 2) stress which refers to the external events, usually called stressor, and 3) stress which refers to the experience which emerges from the transaction between individuals and their environment. The first definition of stress (strain) and the second (stressor) represent stress as a stimulus and response. These definitions focus on stimulus and response regardless individuals factors such as personality and cognitive appraisal which impact on individual's perception on an event (Lazarus & Folkman, 1984).

Lazarus & Folkman (1984) argued that personal factors is very important and influential on individuals in perceiving a stressful event (stressor). The same event may be perceived differently either in a positive or negative view by two different persons. This evaluation is called an appraisal process which consists of two stages: the primary appraisal which is related to how an individual evaluate him/herself in relation to the stressful situation, and the secondary appraisal which is related to what resources individuals have and can use to cope with such stressful situations. Lazarus & Folkman's (1984) definition of stress is known as psychological stress through transactional theory. Psychological stress is a link between the individual and the environment by which the individual appraises it beyond his/her resources owned and can endanger his wellbeing. Stress experienced by the individual is basically the result of transactions between him/herself and the environment he/she faces. This definition assumes that individuals are actively involved in the ongoing process of stress that occurs within the individual.

The primary sources of stress among students involve academic activities and tasks (Agolla & Ongori, 2009; Christyanti, Mustami'ah & Sulistiani, 2010; Evangelia & Spiridon, 2011). Academic stress can be categorised as daily hassles or daily stressor which is related to academic load of higher education (Lazarus & Folkman, 1984; Aldwin, 2007). Therefore, researchers called stressful condition in the academia as academic stress. Indeed, several instruments to measure academic stress have been previously developed by some researchers such as Sun, Dunne, Hou & Xu (2011) who developed a questionnaire to measure academic stress for population of Asian students which is called Educational Stress Scale (ESS). This scale covers five aspects, namely (1) pressure from study, (2) workload, (3) worry about grade, (4) self-expectation, dan (5) despondency. From the explanation, academic stress can be defined as pressures of which a student experiences and perceives endangering as a result of transaction

between him or herself and his or her academic-university environment measured by these five criteria.

Based on the previous literatures, prevalence of academic stress was found high among the medical and pharmaceutical students. Furthermore, background of education and gender can result in different rate of academic stress. This study was aimed to measure academic stress prevalence of students in the department of medicine and department of pharmacy, and to find whether there is difference in the average score of students' academic stress based on their department, gender, and background of education.

2. Material and Methods

This study used a quantitative approach which is aimed to describe prevalence of students' academic stress, and to compare mean of academic stress score of the students from different departments, gender, and backgrounds of education.

2.1. Participants

72 first-semester students at the UIN Maulana Malik Ibrahim Malang participated in this study. The participants were divided into two groups based on their home departments, i.e., 41 students from department of medicine (8 men and 33 women), and 31 students from department of pharmacy (9 men and 22 women). Their age ranged from 15 to 19 years and their backgrounds of previous education included Public Senior High School (*SMA*) (51%), Islamic Senior High School (*MA*) (31%) and Islamic Boarding School (*Pesantren*) (18%). Socio-demographic of the participants can be seen on table 1 and table 2 as follows:

Table 1: The number of participants based on gender

Gender	Department				Total	Percentage
	Medicine		Pharmacy			
	Total	Percentage	Total	Percentage		
Male	8	20%	9	30%	17	24%
Female	33	80%	22	70%	55	76%
Total	41	100%	31	100%	72	100%

Table 2: The number of participants based on their background of previous education

Previous Education	Department				Total	Percentage
	Medicine		Pharmacy			
	Total	Percentage	Total	Percentage		
Public Senior High School (*SMA*)	28	68%	9	30%	37	51%
Islamic Senior High School (*MA*)	11	27%	11	35%	22	31%
Islamic Boarding School (*Pesantren*)	2	5%	11	35%	13	18%
Total	41	100%	31	100%	72	100%

In general, participants of this study were mostly females and came from Public Senior High School (*SMA*), especially for department of medicine.

2.2. Instruments

Academic Stress Questionnaire (ASQ), developed based on Lazarus & Folkman's (1984) theoretical model, which included stress aspects suggested by Sun, et al. (2011), was used as a measurement instrument in this study. This questionnaire is a Likert-type scale with 5 ranges of responses, from (1) *strongly disagree*, (2) *disagree*, (3) *neutral*, (4) *agree*, to (5) *strongly agree* and consists of 17 favorable-item questions which represent high level of academic stress.

The first dimension of this scale, *pressure from study*, is defined as perceived pressure related to academic daily activity or difficult lecture materials which potentially harm students' psychological wellbeing. This aspect is illustrated by 3 favorable items of number 1, 9, and 14 (e.g., "I feel pressure in my academic daily activity").

The second aspect, *workload*, is perceived-excessive academic tasks and burden which can disturb students' psychological wellbeing. This dimension is described by 4 favorable items of number 2, 7, 11 and 17 (e.g., "I feel there is too much schoolwork"). The next aspect, *worry about grade*, is about feeling stressed on grades and exam results which can negatively influence students' psychological wellbeing. This aspect is indicated by 4 favorable items of number 3, 6, 13 and 16 (e.g., "I feel worry that I will get low grades"). The fourth, *self-expectation* involves disappointment on personal academic achievement which is perceived to be destructive for psychological wellbeing. This aspect is explored through 4 favorable items of number 4, 8, 12, and 15 (e.g., "I feel disappointed when I have not attained my expectations").

Finally, *despondency* refers to feelings of sadness on personal condition in studying which can harm psychological wellbeing. This aspect is described by two favorable items of number 5 and 10 (e.g., "I feel sad to see my condition during my study").

This scale has Cronbach's Alpha = .868 and *Kaiser-Meyer-Olki*n = .793, $p < .05$, with *factor loading Exploratory of Factor Analysis* ranging between .537 − .805, showing that the items of each item have adequate convergent validity. Thus, Academic Stress Questionnaire (ASQ) has been a reliable and valid measurement instrument. Meanwhile, socio-demographic of the participants was explored through open-ended questions.

2.3. Data Analysis

Data analysis technique of this study involved descriptive statistics and Two-Way ANOVA. Descriptive statistics was employed to categorise participants into different level of academic stress, namely (1) *not stressful,* (2) *mildly stressful,* (3) *stressful,* and (4) *very stressful,* according to frequency distribution, mean, standard deviation and normality of distribution. Meanwhile, Two-Way ANOVA was used to compare mean of academic stress level across students' home departments, gender and backgrounds of previous education.

3. Results and Discussion

This study was conducted on 72 first-semester students of the department of medicine and department of pharmacy at the UIN Maulana Malik Ibrahim Malang, Indonesia. All first-year students at this university are obliged to stay in the university boarding school to follow various programs such as Islamic studies learning, language training and lectures. The students are expected to have good understanding of classical Islamic sciences and master modern medical science in order to promote modern Islamic science.

The result of this study showed that prevalence of stress of the medical students was 61%, while for the pharmaceutical students it was 48.4%. Meanwhile, 2% of the medical students and 9.6% of pharmaceutical students did not report experience of academic stress. This percentage can be seen on figure 1.
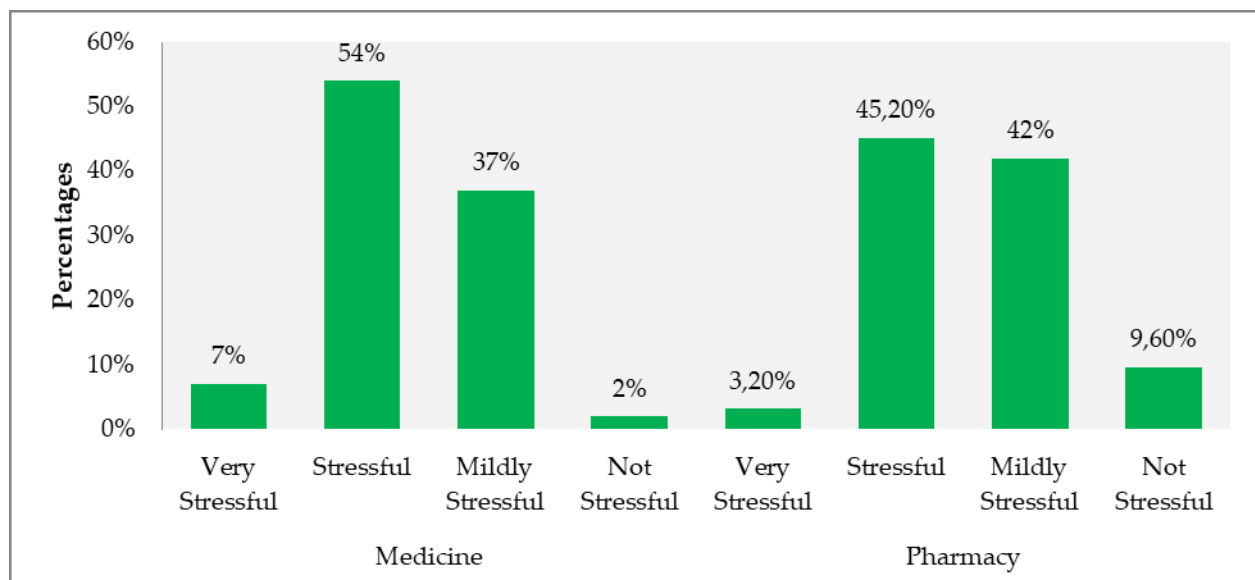

Figure 1: The prevalence of academic stress among the students

This percentage showed that prevalence of academic stress of students of both departments was high. In addition, the level prevalence of academic stress between the medical and pharmaceutical students seems different. The students of department of medicine had higher prevalence of academic stress (61%) than those of department of pharmacy (48.4%). However, this difference did not statistically significant based on the Two-Way ANOVA analysis. This result indicated that there was no significant difference ($p > .05$) in the level of academic stress between the medical and pharmaceutical students, between males and females and between different backgrounds of education Public Senior High School (*SMA*), Islamic Senior High School (*MA*), and Islamic Boarding School (*Pesantren*). This can be seen on table 3:

Table 3: The difference of academic stress score among students

Variable	Mean	Standard Deviation	P	F
Department				
1. Medicine	59.87	7.69	.327	.977
2. Pharmacy	57.06	7.30		
Gender				
1. Male	56.58	6.44	.479	.507
2. Female	59.30	7.87		
Previous Education				
1. Public Senior High School (*SMA*)	59.91	7.70	.948	.054
2. Islamic Senior High School (*MA)*	57.68	7.53		
3. Islamic Boarding School (*Pesantren)*	56.76	7.60		

* statistically significant difference at level $p < .05$

The prevalence of academic stress among the medical and pharmaceutical students is high. Prevalence of academic stress of the medical students was 61% of the total sample (N = 41), while for the pharmaceutical students it was 48.4% (N = 31). The high prevalence of academic stress of the students in both departments is consistent with Ibrahim & Abdelrehem (2015) which suggested that 43.9% of the medical students suffer from anxiety and 57.9% experienced depression. Furthermore, for the pharmaceutical students 29.3% feels anxiety and 51.1% were depressed. Anxiety and depression is stress symptom experienced by students. Oku, Owoaje, Oku & Ikpeme (2015) found that sources of students' stress involved excessive academic workload with 82.3%, inadequate holidays with 76.4% and insufficient time for recreation with 76.2% of the total 451 medical students at the University of Calabar, Nigeria. Hence, academic stress is the major problem of first semester students.

There was no significant difference in the prevalence of academic stress between the medical students and the pharmaceutical students (F = .977 dengan P = .327). The average scores of academic stress were M = 59.87 with SD = 7.69 for the medical students, and M = 57.06 and SD = 7.30 for the pharmaceutical students. The result of this study is not in line with Ibrahim & Abdelrehem (2015), showing that prevalence of anxiety and depression as symptoms of stress among the medical students is higher than the pharmaceutical students. Additionally, Bariyah & Latifah (2015) found significant difference in the level of academic stress between different departments at the faculty of education and teaching of Universitas Kanjuruhan Malang, Indonesia. Such difference indicated that academic stress is experienced by students at the UIN Maulana Malik Ibrahim Malang regardless their majors, while in case of publicly secular-based university, different level of prevalence can be attributed to the students' major.

The prevalence of academic stress between the male students and their female counterparts did not differ significantly (F = .507 with P = .479). The average score of academic stress among medical students was M = 56.58 with SD = 6.44, while for pharmaceutical student it was M = 59.30 with SD = 7.87. This result is consistent with Phang, et al. (2015) and Bariyah & Latifah (2015) who showed no significant difference in the level of academic stress between the male and female students. On the contrary, a

study by Ibrahim & Abdelrehem (2015) indicated that the prevalence of anxiety and depression as stress symptoms were found to be higher in female than male students. The differing result infers that both males and females can suffer from academic stress, although in some cases the female students have higher academic stress score than the males.

The prevalence of academic stress among students from Public Senior High School (*SMA*), Islamic Senior High School (*MA*) and Islamic Boarding School (*Pesantren*) did not differ significantly (F = .054 and P = .948), with mean of students' academic stress for Public Senior High School (*SMA*) M = 59.91 and SD = 7.70, for Islamic Senior High School (*MA*) M = 57.68 and SD = 7.53, and for Islamic Boarding School (*Pesantren*) M = 56.76 and SD = 7.60. The possible impact of backgrounds of previous education, especially with students from Public Senior High School Students (*SMA*) being suspected for academic stress, was not statistically confirmed. Indeed, students who come from Islamic Senior High School (*MA*) and Islamic Boarding School (*Pesantren*) have the same level of academic stress as their fellows from Public Senior High School (*SMA*).

The high prevalence of academic stress among the university students, particularly the medical students and pharmaceutical students is alarming because most first semester students tend to avoid difficult situations and make no effort to solve the problem they are confronting with (Evangelia & Spiridon, 2011), such as sleep and leisure (Eva, et al., 2015). Meanwhile, only 12% of students seek for psychological support to the counseling service unit (Eva, et al., 2015), and indeed Zamroni, et al. (2016) argued that this unit has not attracted attention from university administrations, especially in Indonesia. This shows that effective solution for students' academic stress remains absent. Perhaps, this eventually leads to low level of students' psychological wellbeing and academic performance.

4. Conclusion and Recommendations

The result of this study indicated that prevalence of academic stress among the students is high and this was found in both the medical and pharmaceutical students and both public and Islamic university. Student's departments, gender, and background of previous education did not influence on the difference of students' academic stress score. Furthermore, academic stress was experienced by students in both departments, both males and females, and by the students from Public Senior High School (*SMA*), Islamic Senior High School (*MA*), and Islamic Boarding School (*Pesantren*). From this result, managements of the UIN Maulana Malik Ibrahim Malang should not be concerned by background of education of the medical and pharmaceutical students which is dominated by those from Public Senior High School (*SMA*). Instead, the university administrations ought to find a measure to deal with the high level of students' academic stress which can impact on students' psychological wellbeing and academic performance arguably through optimisation guidance and counseling service.

This effort is expected to support students to achieve optimal academic performance without suffering from serious psychological disorders.

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