An Assessment of The Stress Levels of Students Entering Medical School in Indonesia

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ABSTRACT

Introduction: Many studies have reported that distress and related psychological health problemsare higheramong medical students compare to the general population. There have been no studies in Indonesia that have assess the stress level of medical students entering medical schools and longitudinally. This study assesses baseline stress levels of students entering medical schools.

Method: A cross sectional survey was conducted on 2013 intake of new medical students.We recruited 263 participant between September and October 2013 during the first two months of their university life. Level of distress was measured using an Indonesian version of the WHO General Health Questionnaire-12 (GHQ-12).

Result: Of 263 students, 52.2% were classified as being at risk of stress and 14.8% were classified as "stressed". There were no significant differenceinlevel of stress between male and female students and those students with different socioeconomic status and geographic category($p > 0.05$). However, students from lower socioeconomic background and those from rural regionsreported slightly higher levels of stress, though this difference wasnot significant ($p > 0.05$).Students who obtained specific government scholarship due to low socioeconomic status were significantly higher of stress level ($p < 0.05$).

Conclusion: The study shows that new medical students had high levels of stress compare to the general public as measured by GHQ-12. Follow up study is planned to assess the effect of stress longitudinally in relation to academic performance.

Keywords: New Medical Student, GHQ-12, Stress, Indonesia

INTRODUCTION

The objective of the studyis to examine the level of stress of new medical students as a baseline for future follow up longitudinally. The study was done in a medical school in Indonesia because newly implemented admission system entering university in the country since 2013. The new admission system is through school matching program with the admission criteria based on high school performance as an addition to the existing admission examination test. The government imposes that universities have to allocate at least 50% proportion of new students from the school matching program. In supporting the program, the government also give scholarship to all students form low socioeconomic status. The programsaffect on demographic characteristic of new students with substantial proportion of students from rural and low socioeconomic status. The students from rural and low socioeconomic status may feel isolated and lead to stress.As many studies reported that students the prevalence of psychological disorders is relatively higher in medical students, which includes distress, anxiety and depression.[5,7-12] Some of the causes include feeling isolated, lack social support and financial problem.[11,23,24,26]

Stress is automatic and unspecific body response to stressor or threat as mechanism of adaptation. The response has been known as 'fight or flight responses, which means struggle or run to avoid the threats.[1] The responses of stress initially begin with alarm stage, when someone starts to aware the psychological burden or threat. If the stressor or threat occurs persistently, the

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response will continue to resistance stage. The resistance toward stressor involves psychological defence and adaptation. When someone cannot adapt to the stressor, he/ she will fall into exhaustion or decompensation stage that adaptation disorderppearswhich is also knowna distress condition.[2,3]Adaptation disorders or distress appears with many psychological and physical symptoms, such as sleep and eating disorders, cognitive and emotional imbalance.[1,2,4]Someone in distress condition cannot do their daily activities normally. If the condition happens on students, there is possibilityeffect on their academic performances. On the other hand, learning in university level especially in a medical school also becomes stressor.[5-7]

METHOD

Cross sectional study has been conducted in FMAU on new medical student intake 2013. Participants were selected randomly, which 263 out of 360 students participate in the study. The data was collected between September and October 2013 in the first two months of their university life and before taking any summative exam.

Level of distress was measured by using Indonesian version of General Health Questionnaire-12 (GHQ-12).

The GHQ-12 is a valid and reliable tool to assess general psychological and adaptation disorders, which has been used widely in various population.[12-17]The instrument that has been used for this study was Indonesian version of GHQ-12,[18] however the scoring system refer to the original version.[19] The Likert scale scoring system 0-3 used in this study, with possibility of the score between 0 and 36. Cut of point of general population is 11/12, and someone is identified in distress condition with the score more than 15.[15,20]The data was analysed descriptively, and later statistical analysis was employed to see relationship between demographic factors and level of stress.

RESULT

A total of 263 participants were included in the analysis of the study, which most of them were female (76%) and from middle and rich socioeconomic family background (86.3%). Majority of them arealso coming from West Sumatera Province (66.9%) and high school location in town or big city (91.6%) (Table 1). The admission pathway was comparable between high school matching programs or based on high school mark and national university entry written examination. The study also found 52.2% students had GHQ-12 scores above cut off point (CoP) of general public GHQ-12.and 14.8% were distress (table-1).

Table 1. Characteristic of participant's and GHQ-12 Score

	Characteristics	f (%) n=263
Sex	Male	63 (24.0)
	Female	200 (76.0)
Socioeconomic status	Poor Family	36 (13.7)
	Middle class and rich family	227 (86.3)
High school location	District region	22 (8.4)
	Town and big city	241 (91.6)
Province of origin	West Sumatera Province	176 (66.9)
	Outside of the province	87 (33.1)
Admission Pathway	High school Matching Program	159 (59.3)
	National Entry Written exam	107 (40.7)
Government Scholarship	Supported	34 (12.9)
	Not supported	229 (87.1)
GHQ-12 Score	Below CoP	125 (47.5)
	Above CoP	138 (52.5)
Level of stress	Normal	224 (85.2)
	Distress	39 (14.8)

By comparing level of distress, there were no differences among participants in the different sex, province of origin and admission pathway(p>0.05). Participants from lower socioeconomic status were slightly more in distress level (25.0%) than participants from middle class and rich family (13.2%). The participants who schooled previously in district region were also slightly more in distress level (27.3%) than

the participants from town or big city (13.7%). However, these are not significant (P>0.05). The participants who obtained specific government scholarship for the student from low socioeconomic status were significantly more in distress level (p<0.05) (table-2).

Table 2. Relationship between demographic factors and level of stress

	Factors	Level of Stress		*p*Value#
		Normal	Distress	
Sex	Male	53 (84.1%)	10 (15.9%)	0.789
	Female	171 (85.5%)	29 (14.5%)	
Socioeconomic status	Poor family	27 (75.0%)	9 (25.0%)	0.065
	Middle class and rich family	197 (86.8%)	30 (13.2%)	
High school location	District region	16 (72.7%)	6 (27.3%)	0.086
	Town and big city	208 (86.3%)	33 (13.7%)	
Province of origin	West Sumatera province	150 (85.2%)	26 (14.8%)	0.971
	Outside of the province	74 (85.1%)	13 (14.9%)	
Admission pathway	Matching program	132 (84.6%)	24 (15.4%)	0.759
	National entry written exam	92 (86.0%)	15 (14.0%)	
Government scholarship	Supported	24 (70.6%)	10 (29.4%)	0.010
	Not supported	200 (87.3%)	29 (12.7%)	

#calculated by chi-square

DISCUSSION

Based on the GHQ-12 level of stress indicator, the study found 14.8% participants were distress. Moreover, the study revealed that 52.2% participants had GHQ-12 scores above cut off point (CoP) of general public GHQ-12. This study in Indonesian context confirms various previous study about high prevalence of distress in medical students.[5,8,10,11] The study also confirm that learning in medical school become a big stressor for the students.

Various literatures mentioned that the level of stress in medical students is relatively higher because many factors, such as academic burden[8,21,22] or dislike to study of medicine.[23] Other non-academic factors may also have significant impact, such as feeling minority,[24] lack of social support,[11] facing bad social experience[25] and financial problem.[26] All these factors may also contributed to distress condition of new medical students in FMAU. In this study we did not explore deeper the cause but we only analysed few demographic factors that possibly related to level of stress.

By comparing level of distress, there were no differences among participants in the different sex, province of origin and admission pathway(p>0.05). Participants from lower socioeconomic status were slightly more in distress level (25.0%) than participants from middle class and rich family (13.2%). The

participants who scholed previously in district region were also slightly more in distress level (27.3%) than the participants from town or big city (13.7%). The participants who obtained specific government scholarship for the student from low socioeconomic status were significantly more in distress level (p<0.05).Despite we did not explore deeply, this result confirm briefly that feeling isolated, socioeconomic and financial factors also affect on level of stress.[11,24,26]

CONCLUSION

This study showed that new medical students had higher average GHQ012 score or stress level than general public and few students tend to fall into distress level. Academic and non-academic factors may contribute to the condition. Furthermore, psychological test in admission and preparation for medical students need to be considered. Further study need to be conducted to explore specific factors that cause distress in medical student in Indonesian context, and to oversee the relation to academic performance.

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