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Print-ISSN: 0976-0245; Electronic-ISSN: 0976-6506. Frequency: Quarterly (Four issues per volume)

Indian Journal of Public Health Research & Development is a double-blind peer-reviewed international journal. It deals with all aspects of Public Health including Community Medicine, Public Health, Epidemiology, Occupational Health, Environmental Hazards, Clinical Research, and Public Health Laws and covers all medical specialties concerned with research and development for the masses. The journal strongly encourages reports of research carried out within Indian continent and South East Asia.

The journal has been assigned International Standards Serial Number (ISSN) and is indexed with Index Copernicus (Poland). It is also brought to notice that the journal is being covered by many international databases. The journal is covered by EBSCO (USA), Embase, EMCare & Scopus database. The journal is now part of DST, CSIR, and UGC consortia.

Website: www.ijphrd.com

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Institute of Medico-legal Publications
501, Manisha Building, 75-76, Nehru, Pbo,
New Delhi-110019

Printed, published and owned by
Dr. R.K. Sharma
Institute of Medico-legal Publications
501, Manisha Building, 75-76, Nehru, Pbo,
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Published at
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An Assessment of The Stress Levels of Students Entering Medical School in Indonesia

Hardisman Dasman¹, Amel Yanis²
¹Department of Public Health and Community Medicine, ²Department of Psychiatry Faculty of Medicine of Andalas University, Indonesia

ABSTRACT

Introduction: Many studies have reported that distress and related psychological health problems are higher among 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 participants 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 difference in level 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 regions reported slightly higher levels of stress, though this difference was not 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 study is 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 programs affect 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. Some of the causes include feeling isolated, lack social support and financial problem. 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.’ 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...
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 disorder appears which is also known distress condition. Adaptation disorders or distress appears with many psychological and physical symptoms, such as sleep and eating disorders, cognitive and emotional imbalance. Someone in distress condition cannot do their daily activities normally. If the condition happens on students, there is possibility effect on their academic performances. On the other hand, learning in university level especially in a medical school also becomes stressor.

**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. The instrument that has been used for this study was Indonesian version of GHQ-12, however the scoring system refer to the original version. 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. 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 are also 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>
<thead>
<tr>
<th>Characteristics</th>
<th>f (%)</th>
<th>n=263</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>63 (24.0)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>200 (76.0)</td>
<td></td>
</tr>
<tr>
<td>Socioeconomic status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor Family</td>
<td>36 (13.7)</td>
<td></td>
</tr>
<tr>
<td>Middle class and rich family</td>
<td>227 (86.3)</td>
<td></td>
</tr>
<tr>
<td>High school location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>District region</td>
<td>22 (8.4)</td>
<td></td>
</tr>
<tr>
<td>Town and big city</td>
<td>241 (91.6)</td>
<td></td>
</tr>
<tr>
<td>Province of origin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Sumatera Province</td>
<td>176 (66.9)</td>
<td></td>
</tr>
<tr>
<td>Outside of the province</td>
<td>87 (33.1)</td>
<td></td>
</tr>
<tr>
<td>Admission Pathway</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school Matching Program</td>
<td>159 (59.3)</td>
<td></td>
</tr>
<tr>
<td>National Entry Written exam</td>
<td>107 (40.7)</td>
<td></td>
</tr>
<tr>
<td>Government Scholarship</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supported</td>
<td>34 (12.9)</td>
<td></td>
</tr>
<tr>
<td>Not supported</td>
<td>229 (87.1)</td>
<td></td>
</tr>
<tr>
<td>GHQ-12 Score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below CoP</td>
<td>125 (47.5)</td>
<td></td>
</tr>
<tr>
<td>Above CoP</td>
<td>138 (52.5)</td>
<td></td>
</tr>
<tr>
<td>Level of stress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>224 (85.2)</td>
<td></td>
</tr>
<tr>
<td>Distress</td>
<td>39 (14.8)</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Factors</th>
<th>Level of Stress</th>
<th>pValue*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Normal</td>
<td>Distress</td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>53 (84.1%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>171 (85.5%)</td>
</tr>
<tr>
<td>Socioeconomic status</td>
<td>Poor family</td>
<td>27 (75.0%)</td>
</tr>
<tr>
<td></td>
<td>Middle class and rich family</td>
<td>197 (86.8%)</td>
</tr>
<tr>
<td>High school location</td>
<td>District region</td>
<td>16 (72.7%)</td>
</tr>
<tr>
<td></td>
<td>Town and big city</td>
<td>208 (86.3%)</td>
</tr>
<tr>
<td>Province of origin</td>
<td>West Sumatera province</td>
<td>150 (85.2%)</td>
</tr>
<tr>
<td></td>
<td>Outside of the province</td>
<td>74 (85.1%)</td>
</tr>
<tr>
<td>Admission pathway</td>
<td>Matching program</td>
<td>132 (84.6%)</td>
</tr>
<tr>
<td></td>
<td>National entry written exam</td>
<td>92 (86.0%)</td>
</tr>
<tr>
<td>Government scholarship</td>
<td>Supported</td>
<td>24 (70.6%)</td>
</tr>
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<td>200 (87.3%)</td>
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*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. 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 or dislike to study of medicine. Other non-academic factors may also have significant impact, such as feeling minority, lack of social support, facing bad social experience and financial problem. 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 schooled 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.

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.

Ethical Clearance: A formal permission taken from dean office of Faculty of Medicine of Andalas University.

Source of Funding: The research partially funded by Faculty of Medicine of Andalas University.

Conflict of Interest: Nil
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