

## EMOTIONAL DISORDERS AMONG TURKISH UNDERGRADUATE MEDICAL STUDENTS

Naim Nur<sup>1</sup>, Selma Cetinkaya<sup>2</sup>, Vedat Sabanciogullari<sup>3</sup>,  
Sefa Levent Ozsahin<sup>4</sup>, Onder Kavakci<sup>5</sup>

### ABSTRACT

**Objective:** Large numbers of medical student are reported to be suffering from emotional health problems in recent years. Its severity has also increased throughout the world. The aim of the current study was to determine the prevalence of emotional disorders (ED) and to assess risk factors among medical students.

**Methodology:** A total of 493 students were included in the current cross sectional study. The Twelve Item General Health Questionnaire (GHQ-12) was voluntarily answered by medical students in the first to the fifth year class.

**Results :** A total of 27.8% of medical students were found to have emotional disorders (ED) in the presented study. Factors found to have a significant association with ED were relationship of the respondents with their parents, siblings, lecturers, course mates, boy/girlfriend as well as pressure prior to examinations and periods of training in medical school. No difference was found between gender and age groups.

**Conclusion:** Current results showed the prevalence of emotional disorders (ED) in crucial levels among the medical students. It is suggested that medical schools authorities should be aware of these problems and take effective measures to address them.

**KEY WORDS:** Emotional disorders, Medical student, Medical education.

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1. Naim Nur,  
Department of Public Health,
  2. Selma Cetinkaya,  
Medical Education,
  3. Vedat Sabanciogullari,  
Anatomy,
  4. Sefa Levent Ozsahin,  
Chest Diseases,
  5. Onder Kavakci  
Psychiatry
- 1-5: Faculty of Medicine Cumhuriyet University 58140,  
Sivas, TURKEY

Correspondence

Naim NUR, MD  
Dept. of Public Health, Faculty of Medicine,  
Cumhuriyet University, 58140-Sivas / Turkey.  
E-mail: naimnur@yahoo.com

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## INTRODUCTION

The aim of medical education is to graduate professional, skillful, and knowledgeable physicians. The medical school curriculum has been developed to accomplish these objectives. However, at the same time, life in medical schools has always been regarded as highly stressful. Some aspects of training may have unintended negative effects on the psychological and physical well being of the medical students that can undermine these values. This stressful environment will eventually result in poor academic performance, psychological or emotional impairment during professional life and therefore affect the quality of patient care.<sup>1-3</sup>

High rates of emotional disorders (ED) among students, have been reported in several studies from different western countries<sup>3-6</sup> as well as from other parts of the world.<sup>7,8</sup> A wide range of different measures has been used to address these phenomena. Two studies among medical students reported that in the Malaysian University 41.9% and in Singapore University 57% had ED based on the General Health Questionnaire (GHQ).<sup>7,8</sup> Another study from USA among medical students reported that 23% had depression and 57% had high levels of emotional distress.<sup>5</sup> Undergraduate medical students have been the most distressed group of students compared to any other undergraduate courses.<sup>8</sup> The causes of ED among medical students were fear of failure, uncertainty regarding supervisors' expectations and uncertainties regarding performance and students studying for examinations.<sup>9</sup> Although there are effective psychological and pharmacological treatments for such a patient they can not be successfully treated due to their symptoms which are neither frequently diagnosed nor receive proper treatment. Unfortunately, studies suggest that failure to detect these disorders will lead to increase in mental health disorder with unwanted effects throughout their training, careers and lives.<sup>7,9</sup> Finlay et al have reported that the diagnosis of ED not only shortens the duration of the episode of this disease but also prevents medical students from social impairment in long term.<sup>10</sup> They also suggested that such a disorders must be detected and treated at an early stage for a better quality of life among medical students.

The GHQ method developed by Goldberg is a widely used instrument for screening of the current ED.<sup>11</sup> This questionnaire which is available in many versions as short as 12 items (GHQ-12) and as long as 60 items (GHQ-60) has a high validity, sensitivity and specificity.<sup>12</sup> It has also been shown to be a valid and reliable method across the cultures.<sup>11,13</sup> This self-administered questionnaire focuses on two major areas – the inability to carry out normal functions and the appearance of new and distressing psychological phenomena. Since the

GHQ-12 is a brief and simple scale to complete, it is easier to use by busy medical students. This method has also been validated by K yl c in Turkish population.<sup>14</sup> So far no such studies highlighting emotional disorders among medical students has been published in Turkey. As such the current study was aimed to determine the prevalence of ED and risk factors for ED among medical students of Faculty of Medicine of Cumhuriyet University, Sivas-Turkey.

## METHODOLOGY

The Faculty of Medicine of Cumhuriyet University has integrated curriculum which was structured on the basis of subject committees involving lectures and basic sciences laboratory practice and limited health care practice. This cross sectional study was carried out in medical students of Cumhuriyet University, during May-July 2006. A total of 493 students were evaluated.

After verbal consent, all medical students (from the first to the fifth year) were included as respondents in the current study. Data was collected by self-administered questionnaire which consisted of two parts. The first part was based on factors such as gender, period of study in medical school, relationship of respondents with their parents, siblings, lecturers, course mates, boy/girlfriend and pressure prior to examinations. The second part consisted of the standardized structured and validated GHQ-12 questionnaire.<sup>14</sup> Each item is rated on a four-point scale (less than usual, no more than usual, rather more than usual, or much more than usual). The answers of participants were scored according to Goldberg's original scoring method.

In this method response categories score 0, 1 and 1 respectively. This gives scores ranging from 0 to 12. The total score was determined by adding the score obtained for each answer in the questionnaire. Scores of four and above based on the GHQ-12 guidelines, were considered as positive for emotional disorders. Statistical analysis was performed using SPSS 12.0 software. Results were expressed as mean  $\pm$ SD. Data was compared using Chi-square test and

Student's t-test as appropriate. P values less than 0.05 were considered as statistically significant.

## RESULTS

A total of 493 (80.3%) medical students returned completed questionnaires which included 54.4% (n=268) and 45.6% female (n=225). Distribution of age groups by gender is given in Table-I. The ages for both genders ranged from 17 to 25 years. Most of the respondents (52.1%) in both genders were aged between 20 and 22 years. The mean age for the men ( $21.5 \pm 1.9$  years) was higher than the mean age for women ( $21.0 \pm 2.0$  years) and this difference was statistically significant ( $p = 0.003$ ).

The prevalence of emotional disorders (ED) among the respondents, based on the GHQ-12 scores was determined as 27.8%. Meantime, all the students who were considered as positive for ED were referred to the psychiatry clinic for confirmation and appropriate interventions. The prevalence of ED and its associated factors among the respondents are presented in Table-II.

In the present study, ED among medical students was found significantly associated with the period of training in medical school, the level of pressure because of examinations and relationship of the students with their parents, siblings, lecturers, course mates and boy/girlfriend. The prevalence of ED was significantly higher in students who were in pre-clinical period of training in medical school,

who complained of pressure because of examinations and in students who did not have a good relationship with their parents, siblings, lecturers, course mates and boy/girlfriend ( $\chi^2 = 18.4$  and  $P = 0.000$ ,  $\chi^2 = 12.4$  and  $P = 0.000$ ,  $\chi^2 = 4.5$  and  $P = 0.034$ ,  $\chi^2 = 4.6$  and  $P = 0.032$ ,  $\chi^2 = 62.5$  and  $P = 0.000$ ,  $\chi^2 = 77.3$  and  $P = 0.000$ ,  $\chi^2 = 40.7$  and  $P = 0.000$  respectively). There was no significant difference between the age groups with respect to ED ( $p > 0.05$ ). ED was only slightly higher among the girls (28.4%) compared to boys (27.2%). However, this difference was not statistically significant ( $p > 0.05$ ). No difference was found between gender and age groups in the current results.

## DISCUSSION

Medical education is perceived as being stressful phenomenon all over the world. Stress caused by the high levels of both intellectual and emotional demands imposed to medical students, renders them especially susceptible to the development of ED.<sup>12</sup> A report from UK indicates that mental health or psychological problems within student populations are as high as 40%, with most students suffering from depression or anxiety, or both. In the current study increased number of students were detected who were suffering from emotional health problems and the problem was severe in some of them. There is also widespread agreement that the levels of stress were very high in the student population.<sup>15</sup> Bostanci et al., has reported that depression as most common mental health problem among undergraduate students as high as 26.2%.<sup>16</sup> Sarikaya et al., has reported anxiety which was found in 25.6% among undergraduate medical students.<sup>17</sup> Ranges are nearly the same for two different university populations. Our results were also similar. Longitudinal studies have likewise examined at which stages in the course of medical education stress and morbidity is seen at its peak. Among UK medical students it was found to have the highest levels of mental distress, a finding that also predicted problems later during studies.<sup>18</sup>

Table-I: Distribution of age groups by gender among medical students in Cumhuriyet University from May to July 2006

Age groups (Years)	Gender		Total (%)
	Girls (%)	Boys (%)	
17-19	60 (60.0)	40 (40.0)	100 (20.3)
20-22	110 (42.8)	147 (57.2)	257 (52.1)
23-25	55 (40.4)	81 (59.6)	136 (27.6)
Total	225 (45.6)	268 (54.4)	493 (100.0)

Table-II: Emotional disorders and its associated factors among medical students in Cumhuriyet University

<i>Associated factors</i>	<i>Emotional disorders (n = 137) (%)</i>	<i>No emotional disorders (n = 356) (%)</i>	<i>Chi-Square</i>
<i>Gender</i>			
Women	64 (28.4)	161 (71.6)	c2 =0.09, P>0.05
Men	73 (27.2)	195 (72.8)	
<i>Age groups</i>			
17-19	27 (27.0)	73 (73.0)	c2 =0.06, P>0.05
20-22	82 (31.9)	175 (68.1)	
23-25	28 (20.6)	108 (79.4)	
<i>Periods of training in medical school</i>			
Preclinical years <sup>x</sup>	100 (35.2)	184 (64.8)	c2 =18.4, P= 0.00
Clinical years <sup>x</sup>	37 (17.7)	172 (82.3)	
<i>Pressure due to exams</i>			
Yes	130 (30.7)	294 (69.3)	c2 =12.4, P=0.00
No	7 (10.1)	62 (89.9)	
<i>Good relationship with parents</i>			
Yes	130 (27.1)	350 (72.9)	c2 =4.5, P=0.03
No	7 (53.8)	6 (46.2)	
<i>Good relationship with siblings</i>			
Yes	125 (26.8)	342 (73.2)	c2 =4.6, P= 0.03
No	12 (46.2)	14 (53.8)	
<i>Good relationship with lecturers</i>			
Yes	63 (17.8)	291 (82.2)	c2 = 62.5, P= 0.00
No	74 (53.2)	65 (46.8)	
<i>Good relationship with course mates</i>			
Yes	102 (22.5)	351 (77.5)	c2 =77.3, P= 0.00
No	35 (87.5)	5 (12.5)	
<i>Love relationship with boy/girlfriend</i>			
Yes	80 (20.9)	303 (79.1)	c2 = 40.7, P= 0.00
No	57 (51.8)	53 (48.2)	

<sup>x</sup>Preclinical years, years of 1-3 and clinical years, years of 4,5 in medical education

This study showed that a quarter of the medical students had emotional disorders (ED). This is much lower as compared to studies conducted among medical student (using the GHQ) from Malaysia, USA and Chile.<sup>7,5,19</sup> In different studies of Sýdýk et al., and Mosley et al., the prevalence of emotional disorders were found to be 57% and another study by Benitez et al., reported 41.0% prevalence among medical students.<sup>7,5,19</sup> These differences might be due to different curricula, population or sampling errors. Factors such as periods of

training in medical school, pressure because of examinations, relationship with parents, siblings, lecturers, course mates and boy/girlfriend were found to be significantly associated with ED among medical students in the current study. We found that students who were under pressure because of examinations had higher ratio of ED compared to students who perceived no pressure because of examinations. This finding is in consistent with the studies by Sýdýk and Firth-Cozens who reported that among medical students who were studying

for examinations the emotional distress were found on clinically significant levels.<sup>7,9</sup> Distress caused by fear of failing in their examinations, uncertainties regarding their supervisors' expectations and their own performances in examinations were more prone to developing emotional distress.<sup>9</sup>

In the present study, the prevalence of ED were found significantly higher among students who did not have good relationship with their parents, siblings, lecturers, course mates and boy/girlfriend. Consistent with our finding, in a previous study from Singapore by Ko. et al, reported that students who had good relationships with their parents and siblings were able to cope with their problems. These medical students reported that their families were an important source of support to them; the parents as a source of financial support, while siblings serve as confidantes for emotional problems. In addition, these students are also able to cope with their problems by sharing with their course mates.<sup>8</sup> Similar to our results another study from UK found that many students place a great value on social and familial support.<sup>8</sup> This explains why prevalence of ED is found lower among medical student who had good relationships with their parents, siblings, lecturers, course mates and boy/girlfriend in the current study.

In previous studies it has been reported that ED are higher in females than in males.<sup>7,9</sup> Consistent with these findings, the prevalence of ED was found higher in female than in males in our study as well but, this difference was not statistically significant.

Our study results compare favourably with results from the UK study by Guthrie et al, which found that emotional disorders are significantly associated with first periods of training in medical school among medical students (especially among Year one students, data not shown). They seemed to be more heavily burdened by the curriculum, and the perceived stress might also be a feature of the process of adjusting to the educational setting, as proposed by a recent qualitative studies carried out in the UK and Sweden.<sup>20,21</sup>

## CONCLUSIONS

Our study has shown that the prevalence of emotional disorders (ED) is very high among medical students who complained of pressure because of examinations. It was also high among students who did not have a good relationship with their parents, siblings, lecturers, course mates and boy/girlfriend. It is important to detect medical student who suffer from ED at an early stage so that treatment in the form of counseling could be initiated. It is suggested that medical schools authorities should be aware of these problems and make interventions aiming at treating and caring for the medical students' distress. It may help to decrease levels of ED in tomorrow's doctors.

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