

**Original Article**

# MENTAL HEALTH STATUS AND DEPRESSION AMONG MEDICAL STUDENTS IN MYSORE, KARNATAKA - AN UNTOUCHED PUBLIC HEALTH ISSUE

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## ABSTRACT

**Background:** Medical education across the globe is perceived as being inherently stressful. Studies on psychological problems such as stress, depression and anxiety among medical students have found that these disorders are under diagnosed and under treated. In this background the present study was undertaken with the objectives to assess the overall mental health status and magnitude of depression of medical students

**Methods:** This Cross sectional study was undertaken in a private medical college in Mysore city for a period of three months involving all 211 students studying in I (first term) and II year (third term) MBBS. Goldberg's General Health Questionnaire (GHQ-28) and Center for Epidemiological studies- Depression scale (CES-D) were used for assessing general mental health status and depression respectively.

**Results:** Among 211 students included in the study, poor mental health status and depression was found in 25.1% and 40.8% of subjects. There was statistically significant association between poor mental health status and depression with age group of 17-18 years and year of study (1<sup>st</sup> year MBBS).

**Conclusion:** Poor mental health status and depression was found to be high among medical students. This call for in-house counseling services and mentorship programme at medical colleges for early detection and treatment of these problems that will intern help in academic and curricular improvements.

**Keywords:** Mental health status, depression, medical students, GHQ-28, CES-D

## INTRODUCTION

Medical education across the globe is perceived as being inherently stressful.<sup>1-4</sup> Over burden of information provides a reduced opportunity to relax and recreate and leads to serious sleep deprivation, impaired judgment, reduced concentration, loss of self-esteem, along with mental health status like increased anxiety and depression. A medico encounters various stressors in terms of academic pressures and its resultant outcome measured in terms of success

in the evaluation process and long term objective to settle down in the coming future as well as adjustment to the new environ in the medical school. These students face social, emotional and physical and family problems which may affect their learning ability and academic performance.<sup>1</sup> Studies on psychological problems such as stress, depression and anxiety among medical students have found that these disorders are under diagnosed and under treated. Failure to detect these disorders unfortunately leads to

increased psychological morbidity with unwanted effects throughout their careers and lives.<sup>3</sup> Therefore it becomes imperative to study the overall mental health status and particularly prevalence of depression among medical students as these constitute neglected public health problems in India. It is very important to prevent the ill effects of depression on one's academic attainment and carrier through early identification and effective intervention measures.<sup>5</sup> In this background the present study was undertaken with the objectives to assess the overall mental health status and magnitude of depression of medical students and to describe the factors influencing mental status and depression among medical students in a private medical college at Mysore City.

### Materials and Methods

This Cross sectional study was undertaken in a private medical college in Mysore city for a period of three months (January to March 2012) involving all 211 students studying in I (first term) and II year (third term) Bachelor of Medicine and Bachelor of Surgery (MBBS). These two terms were selected purposively for the reason that students in first term are those who had just now entered into new environment of medical college and medical curriculum. The other group consisting of second year MBBS would have already been accustomed for the college as well as curriculum. Thus comparing the mental health status and depression among these two groups would give a better idea regarding influence of academic environment and medical curriculum on mental health. Details regarding Sociodemographic characteristics and factors influencing mental health status were collected in an anonymous pre- tested structured proforma. Overall mental health status was assessed using self reported Goldberg's General Health Questionnaire (GHQ-28)<sup>6</sup> which is developed by David Goldberg at Institute of psychiatry London, as a screening instrument in community. This scale consists of four set of questions (A,B,C,D) each having seven items related to Somatic symptoms, Anxiety/insomnia, Social dysfunction, Severe depression experienced in last 2 weeks. Magnitude of depression was assessed using a self reported Center for Epidemiological studies-Depression scale (CES-D) derived from five validated depression scales including the Beck Depression Inventory (BDI).<sup>7</sup> This is a widely used 20 item scale that measures the current

level of depressive symptomatology in the general population, with an emphasis on depressed mood during the past one week. Confidentiality of data was strictly maintained.

### Statistical analysis

Data obtained was entered in MS excel-07 spread sheet, analyzed and interpreted using descriptive statistical measures like mean, SD and percentages as appropriate. SPSS version 16 was used for Chi-square test to find out the association between mental health status depression and various factors under study.

## RESULTS

### General characteristics:

Among 211 students included in the study, 85 (40.3%) were in I (first term) and 126 (59.7%) were in II year (third term) MBBS. Majority 122 (57.8%) were in the age group of 19 and above. 98 (46.5%) were males and 113 (53.5%) were females. Majority 171 (81%) of the students were localites /staying with parents and 181 (85%) were belonging to nuclear families.

**Table1: Distribution of study subjects based on presence of poor mental health status and depression (n=211)**

Screening tool	Number (%)	95% CI
GHQ-28 (Scores >23)	53 (25.1)	19.2 - 30.9
Poor mental health		
CES-D (Scores >15)	96 (45.5)	38.7 - 52.2
Depression		

### General Mental health status:

General mental health status as per Goldberg 's General Health Status Questionnaire, was found to be poor in 53(25.1%) students. (Table 1) As indicated in (Table 2), there was statistically significant association between poor mental health status and age group 17 - 18 years ( $\chi^2 = 4.66$ ,  $P= 0.003$ ) and year of study (first term MBBS) ( $\chi^2 = 5.6$ ,  $P= 0.017$ ). There was no significant association between general mental health status and sex, father's education, residence, type of family, presence of siblings.

### Depression

Magnitude of depression as assessed by Center for Epidemiological studies- Depression scale (CES-D), was found to be 96 (40.8%) students (Table 1). As indicated in table - 2, the state of depression was significantly associated with age

group of less 17-18 years ( $\chi^2 = 8.16$ ,  $P = 0.004$ ) and year of MBBS (first term MBBS) ( $\chi^2 = 11.04$ ,  $P = 0.001$ ). There was no significant association

between depression and sex, father's education, residence, type of family, presence of siblings.

**Table 2: Distribution of study subjects based on factors influencing poor mental health status and depression (N=211)**

Variable	Total	GHQ-28 (>23)	OR (95% CI)	P*	CES-D (>15)	OR (95% CI)	P*
<b>Age</b>							
17-18	89 (42.2)	30 (33.7)	1.97 (1.05-3.67)	0.030	44 (49.3)	1.79 (1.02-3.13)	0.039
19 and above	122 (57.8)	25 (20.5)			43 (35.2)		
<b>Sex</b>							
Males	98 (46.4)	25 (25.5)	1.20 (0.64-2.26)	0.562	47 (48.0)	1.74 (1.04-3.04)	0.048
Females	113 (53.6)	28 (24.8)			39 (34.5)		
<b>Fathers education</b>							
<degree	122 (57.8)	59 (44.3)	1.93 (1.09-3.41)	0.022	55 (82.0)	1.53 (0.87-2.69)	0.135
PG	89 (42.2)	29 (58.2)			31 (78.8)		
<b>Residence</b>							
Localite	174 (82.5)	42 (24.1)	0.75 (0.34-1.65)	0.477	74 (42.6)	1.99 (0.91-4.38)	0.084
Non localite	37 (17.5)	11 (29.7)			10 (27.0)		
<b>Family type</b>							
Nuclear	180 (85.3)	44(24.4)	0.79 (0.33-1.84)	0.587	71 (39.4)	0.69 (0.32-1.49)	0.351
Joint	31 (14.7)	9 (29.9)			15 (48.4)		
<b>Sibling</b>							
Present	181 (85.8)	47 (26)	1.40 (0.54-3.64)	0.48	75 (41.4)	1.22 (0.54-2.71)	0.622
Absent	30 (14.2)	6 (20)			11 (36.7)		
<b>Year of study</b>							
1st year	126 (59.7)	39 (31)	2.27 (1.14-4.51)	0.019	63 (50)	2.69 (1.49-4.87)	0.001
2nd year	85 (40.3)	14 (16.5)			23 (27.1)		

Note: Figures in parenthesis indicate percentages, NS:  $P > 0.05$

## DISCUSSION

MBBS study is the toughest course among all the study courses including, Bachelor of Computer Administration (BCA), Indian Administrative Services (IAS), Engineering, or any other technical courses as quoted in the Guinness Book of World Records in May 2011.<sup>8</sup> Medical school is recognized as a stressful environment that often exerts a negative effect on the academic performance, physical health and psychological wellbeing of the student. The personal and social sacrifice that the students have to make in order to maintain good academic results in a highly competitive environment puts them under a lot of stress which may end up in wide spectrum of psychological disorders like depression, anxiety, stress etc.<sup>3</sup>

In the present study, general mental health status was found to be poor among 25.1% of the students. This is in line with the findings of M. Nojomi et al and Liselotte N. Dyrbye et al at Iran, using SCL-90-R questionnaire, where 19.4% and 25% of medical students were having poor mental health status respectively.<sup>4,9</sup> This is

almost half of the burden that is reported by Rael D. Strous et al using DSM-IV criteria in Israel, where 55.5% of students had reported poor mental health status.<sup>10</sup> A study on three generations of Iranian medical students and doctors found that 44% of participants scored above the threshold of the GHQ-28 questionnaire, indicating probable psychiatric disorders.<sup>11</sup> There was a significant association between lower age as well as 1<sup>st</sup> year of MBBS with the poor mental health status. This is attributed to the higher academic and intellectual burden that is disproportionate to the age and capability of the student. The mental health status of students in higher age group and studying in third term MBBS was better compared to their juniors as they would have already acclimatised to the academic and social environment of medical school. This implies that the stressors precipitating poor mental health status taper as the student accustoms himself to the environmental influences. These findings were similar to the observations made by Marie Dahlin et al where students in 1<sup>st</sup> year of Medicine had higher burden of stressors

compared to those in later phases of curriculum.<sup>12</sup>

Various studies conducted at different parts of world reported the prevalence of depression among medical students to be 15-65%.<sup>5</sup> In the present study the magnitude of depression among medical students was found to be 40.8%. This is consistent with the findings of M S Sherina et al from Malaysia where the prevalence of depression was 33.6% using the CES-D scale.<sup>3</sup> In a study conducted by Thomas H et al among 3<sup>rd</sup> year medical students of University of Mississippi school of Medicine, United States and Marie Dahlin et al at Sweden, where prevalence was as low as 23% and 12.% respectively.<sup>2,12</sup> On the other hand Ganesh Kumar et al. reported the prevalence of depression using Beck depression inventory among medical students in Southern India, to be as high as 71.25%.<sup>5</sup> This wide range in the magnitude of depression can be attributed to variations in the types of scales used in the screening and different socio-demographic, geographic backgrounds of students under study.

Interestingly, depression was significantly high among students in the lower age group and those studying in the first year of MBBS. Even though this is in consistent with the findings of Inam SNB et al, in Pakistan, reported higher rates of depression among students in earlier phases of medical carrier,<sup>13</sup> most of the available literature gives contrasting picture of increase in the rates of depression as the student moves towards higher level of academics in medicine.<sup>2,3,4</sup> The lower burden of depression among third term students in the present study can be attributed to good academic and student friendly atmosphere in the institution that helps the students to cope with factors precipitating depression.

## CONCLUSION

Poor mental health status and depression was found to be high among medical students. Both poor mental health status and depression were significantly associated with the lower age and year of the study. It has been stated that young doctors should be given the same care and support that we expect them to provide to their patients. The same should be extended to

medical students in order to promote resilience and personal fulfilment, and for enhancement of professionalism and patient care. This call for in-house counseling services and mentorship programme at medical colleges for early detection and treatment of these problems so that for budding doctors can concentrate on their studies resulting in better academic and curricular outcomes.

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