

Original Research Article

Screening for overall mental health status using mental health inventory amongst medical students of a government medical college in North Karnataka, India

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ABSTRACT

Background: In developing countries like India, seeking mental health care is still a taboo, and a lot of stigma is attached to consulting a psychiatric specialist or a counselor. This problem magnifies when budding doctors have a mental health issue. Objective of the study was to assess the overall mental health status of undergraduate medical students studying in a Government Medical College of North Karnataka by using the mental health inventory (MHI) questionnaire.

Methods: A cross-sectional study was carried out during the period of July to September 2016 amongst 210 undergraduate medical students at Government Medical College, Koppal, Karnataka by administer a standard 18 items MHI questionnaire. The raw MHI scores (0-6) and computed MHI scores (0-100) were calculated for overall and four subscales (i.e. anxiety, depression, behavioural control, and positive affect) were also calculated.

Results: Out of total 210 study participants, 119 (56.67%) were male and 91 (43.33%) female students. The overall computed MHI scores (0-100) total score ranges from 58-74, mean score 63.5, median 64.43 and a standard deviation of 4.01. However, computed MHI (0-100) scores for subgroups like anxiety ranged from 8 to 60, mean score 47.36, depression ranged from 8 to 84, mean score 50.29, behavior control ranged from 30 to 85, mean score 67.76, and positive affect ranged from 25 to 100, mean score 42.7.

Conclusions: Poor mental health and presence of some emotional health problems among medical students is substantially high. Early screening, diagnosis, care and support should be made available to all the medical students.

Keywords: Mental health inventory, Mental health status, Medical students

INTRODUCTION

Health is a state of complete physical, mental, social wellbeing and not merely an absence of disease or infirmity to enable an individual live a socially and economically productive life. Most of the studies focused on physical health as its one of the components that can be easily assess. However, recognizing a mental health conditions early and providing people with mental

disorders with care and support is still a long way to go in developing countries like ours. Also the changing global demographic, political, economic, cultural, educational scenarios have created a lot of mental stress thus making assessment of mental health status and providing care and support a need of the hour for a better and healthy society. Hence, World Health Organisation dedicated the 2016 mental health day theme to Psychological first aid and support.¹⁻⁴

In developing countries like India, seeking mental health care is still a taboo, and a lot of stigma is attached to consulting a psychiatric specialist or a counsellor. This problem magnifies when budding doctors have a mental health issue. The general believe that doctors are the cream of the society, intelligent people and healthy people not needing any counseling service. However, as we all accept medical profession is one of the stressful professions and medical school is a very competitive and demanding environment. The very reason that students in their late adolescence are introduced to profession course like medicine with very minimal or no mental preparation is bound to cause a lot of adjustment, personality, behaviour, anxiety and depression among students. Medical students are also undergoing a lot of physical and hormonal changes given their age as a teenager. Social changes like being away from home, stressful and demanding work schedule, excessive competition, psychological stress due to everyday exposure to patients suffering, chronic diseases, death etc.⁵⁻⁸

Ability to cope with these changes and adjust to them as an individual and as a social being is most important in order to become a good professional. Hence, this study was taken up with the intension to assess the overall

mental health, including emotional health of medical students by using the mental health inventory (MHI) questionnaire during their initial years at medical school.

METHODS

A cross-sectional study was carried out during the period of July to September 2016 amongst 210 undergraduate medical students at Govt. Medical College, Koppal, Karnataka, India. All the 1st and 2nd year medical students admitted to Government Medical College, Koppal for the year 2015 and 2016 were taken for the study. A total of 300 students were admitted in two years (i.e. 150 students admission per year)

Sample size was all the consenting students who volunteer to participate in the study were enrolled. A total of 210 medical students consented and volunteered to participate in the study. For study tool a standard 18 items Mental Health Inventory (MHI) developed by Veit and Ware to assess the overall mental health status were used. All the 210 medical students who consented for the study were self-administered MHI questionnaire. The MHI questionnaire has 18 items all are scored on a likert scale.

Table 1: Subdivision of questionnaire according to the standard 18 items.

Sub scale	Item number on MHI	Total no. of items in MHI	Cronbachs alfa value
Anxiety	4,6,11, 18 & m10*	5	0.80
Depression	2, 9,12,14 & m3*	5	0.87
Behaviour control	16,17, m5*, m8*	4	0.78
Positive affect	m1*, m7*, m13*, m15*	4	0.83

*modified raw scored used reverse coded; Reverse code includes assigning the each item responses scores as below- All of the time = 6, Most of the time = 5, A good bit of the time = 4, Some of the time = 3, A little of the time = 2, None of the time = 1; The cronbachs alfa scores as calculated for the sub group are as follows- for 5 items anxiety 0.80, for 5 items depression scale was 0.87, for 4 items behavioral and emotional control is 0.78 and 4 item positive affect is 0.83.

For each item there are six responses scored as follows - all of the time = 1, most of the time = 2, a good bit of the time = 3, some of the time = 4, a little of the time = 5, none of the time = 6. The overall reliability of the 18 item MHI scale is 0.93. The MHI has 18 items and can assess 4 subscales of emotional status like Anxiety, Depression, Behavioral control, and Positive affect. MHI generates one total score. The subscale and total scores range from 0 - 100, with higher scores indicate better mental health.

Data analysis

The data was entered in Microsoft excel and results were analysed using excel and epi info softwares as per the Multiple Sclerosis Quality of Life Inventory: A User's Manual, which is developed by The Consortium of Multiple Sclerosis Centers Health Services Research. In present study we have calculated the Raw MHI scores which sum of all the scores of 18 items divided by 18

hence ranges from 1-6. The mean, median and standard deviation of the raw scores is also presented to help understand the distribution. However, over all MHI is computed by the formula (Raw MHI -1*100) / 5, which ranges from 0 - 100. Higher the score better is the mental health status.

For our study purpose, after consultation with the experts like psychiatrists and counselors, it was decided that participants with an overall computed MHI score of less than or equal to 61 will be considered to be in poor mental health requiring immediate counseling and assistance by psychiatrist for care and support. However, those with an overall computed MHI score of 62, 63,64, 65, and 66 were considered to be in better mental health but with some mental health problems and could benefit from counseling services, participants with a score of 67 or more were considered to be in good mental health. The raw and computed MHI scores were calculated for the

subgroups of anxiety, depression, behaviour control, and positive affect using the same method.

RESULTS

The socio-demographic characteristics of the study population were depicted in Table 2.

Table 2: Socio-demographic profile of the study population.

Socio-demographic profile	No. of participants (n=210)	Percentage
Age (in years)		
17-18	99	47.14
19-20	103	49.05
21-22	8	3.81
Gender		
Male	119	56.67
Female	91	43.33
Type of family		
Nuclear	137	65.24
Joint	54	25.71
Three generation	19	9.05
Religion		
Hindu	180	85.71
Muslim	20	9.52
Christian	6	2.85
Other	4	1.92

Of the 210 study participants, 119 (56.67%) were males and 91 (43.33%) female students. Mean age of the study participants was 18.55 years and standard deviation of 0.89. Minimum age was 17 years and maximum age

reported was 22 years. 132 (62.85%) were from rural areas and 78 (37.15%) were from urban areas. Majority participants were Hindu by religion 180 (85.71%) followed by 20 (9.52%) were Muslims, 6 (2.85%) Christians and 4 (1.92%) reported to belong to other religion. Most of the participants hailed from nuclear family 137 (65.24%) followed 54 (25.71%) reported to be hailing from joint families and only 19 (9.05%) were from three generation families.

Raw MHI scores of the study population with mean, median and standard deviation with various subgroups like anxiety, depression, behaviour control, positive affect were shown in Table 3. The mean MHI raw scores (1-6) in this study for overall mental health ranged from 3.22 to 4.11, mean was 3.58, median 3.56 and standard deviation 0.22.

However, computed MHI scores of the study population with mean, median and standard deviation with various subgroups like anxiety, depression, behaviour control, positive affect were shown in Table 4.

The computed MHI (0-100) total score ranges from 58-74, mean score 51.56, median 51.2 and a standard deviation of 4.48. About 53 (25.24%) participants had an overall computed MHI score of 67 or more and hence were classified as having good mental health. 99 (47.14%) participants with scores 62 - 66 were with some mental health problem and were referred for counseling services. However, 58 (27.62%) were classified to be having poor mental health requiring further referral and detailed evaluation.

The mean and computed MHI score of Sub-scale was shown in Table 3 and 4.

Table 3: Raw MHI scores of the study population with mean, median and standard deviation.

Overall MHI	Range	Mean	Median	Standard Deviation
1-6	3.22 - 4.11	3.58	3.56	0.22
Sub-scale				
Anxiety	1.4 - 5.0	3.37	3.4	1.02
Depression	1.2 - 5.2	3.51	3.4	0.93
Behaviour control	2.5 - 5.2	4.37	4.5	0.45
Positive affect	1.75 - 6.0	3.13	3.5	0.96

Table 4: Computed MHI scores of the study population with mean, median and standard deviation.

Overall MHI	Range	Mean	Median	Standard Deviation
0-100	58 - 74	63.5	64.43	4.01
Sub-scale				
Anxiety	8 - 60	47.36	48	20.27
Depression	8 - 84	50.29	48	18.69
Behaviour control	30 - 85	67.76	70	8.84
Positive affect	25 - 100	42.7	40	19.18

Anxiety

The mean MHI Raw scores (1-6) in present study was ranged from 1.4 to 5.0. The mean for raw scores was 3.37, median 3.4 and standard deviation 01.02. However, computed MHI (0-100) total score ranges from 8 to 60, mean score 47.36, median 48 and a standard deviation of 20.27.

Depression

The mean MHI Raw scores (1-6) in present study was ranged from 1.2 to 5.2. The mean for raw scores was 3.51, median 3.4 and standard deviation 0.93. However, computed MHI (0-100) total score ranges from 8 to 84, Sub group analysis for behavior control mean score 50.29, median 48 and a standard deviation of 18.69.

Behavioral control

The mean MHI Raw scores (1-6) in present study was ranged from 2.5-5.2. The mean for raw scores was 4.37, median 4.5 and standard deviation 0.45. However, computed MHI (0-100) total score ranges from 30 to 85, mean score 67.76, median 70 and a standard deviation of 8.84.

Positive affect

The mean MHI Raw scores (0-6) in present study was ranged from 1.75 to 6.0. The mean for raw scores was 3.13, median 3.5 and standard deviation 0.96. However, computed MHI (0-100) total score ranges from 25 to 100, mean score 42.7, median 40 and a standard deviation of 19.18.

DISCUSSION

Medicine is a demanding, competitive profession and the process of medical education is recognized as a stressful. Given the factors that medical students shift to medical schools, with a different environment, away from the comfort of the homely environment, vast syllabus, hectic schedule, pressure of tests, exams, difference in food, culture, less time for relaxation and entertainment, often exerts a negative effect on the academic performance, physical health, mental, psychological and emotional health and wellbeing of the student. These external along with the internal motivation present as a wide spectrum of psychological disorders like depression, anxiety, in appropriate behaviour and negative frame of mind.^{1,2}

The findings of the present study about poor mental health status of the participants was similar to that found by Manjunath R et al using Goldberg's General Health Questionnaire (GHQ-28) and center for epidemiological studies depression scale (CES-D) as tools among medical students of Mysore city and Liselotte N et al at Iran using SCL-90-R questionnaire.^{2,3} The poor mental health was found to be 96 (40.8%) and 25% among students in the

Mysore study and Iran study respectively. Another study by Nojomi M et al also found that 19.4% of medical students were having poor mental health status.⁴ In a study done by Shaheena P et al among the youth of Kashmir majority by 38 item MHI questionnaire, 71% of the participants were found to be having some mental health problem, 7% had poor mental health and only 22% were in good mental health.⁵

A study by Ganesh K et al reported the prevalence of depression using Beck depression inventory among medical students in Southern India, to be as high as 71.25%.⁶ Various international studies conducted in different parts of world like Pakistan and United States of America reported the prevalence of depression to be 15-65% among medical students.⁷⁻⁹ A study done by Sherina MS et al from Malaysia, the prevalence of depression was 33.6% using the CES-D scale.¹⁰ A study done by Rael D Strous et al using DSM-IV criteria found 55.5% of students had reported poor mental health status.¹¹ In a study conducted by Shah Navas P and Dahlin M et al among the medical students revealed that the prevalence was as low as 23% and 12% respectively.^{12,13}

This wide range in the magnitude of prevalence of depression can be attributed to variations in the types of scales used in the screening and different ethnic, socio-demographic, socio-environmental, cultural, academic and geographic backgrounds of students under study.

CONCLUSION

Presence of poor mental health and emotional health problems among medical students was substantially high. Early screening and diagnosis should be made available to all the medical students. Accesses to a care and support should be provided to all medical students round the clock through trained counsellors. Increasing awareness on various mental health issues, providing supportive mentoring and encouraging the medical students to seek health when needed is crucial in promoting better mental and emotional health of medical students.

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