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## Original Research Article

## Evaluation of knowledge, attitude and practice regarding stress management among undergraduate medical students at tertiary care teaching hospital, New Delhi

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## ABSTRACT

**Introduction:** Medical training requires continuous efforts and high level of perseverance, patience and commitment from medical students. Due to this performance pressure, students face high level of stress which affects not only their health negatively but also their thinking and learning abilities gets hampered.

**Aim:** This study aims to evaluate the knowledge, attitude and practice of stress management among undergraduate MBBS students at Hamdard Institute of medical sciences & research, Jamia Hamdard attached to Hakeem Abdul Hameed Centenary hospital, a tertiary care hospital, New Delhi, India.

**Materials and Methods:** A total of 254 undergraduate students of first year, second year and third first year of MBBS were explained the aims and objectives of the study and written informed consents were obtained from those who were willing to participate in the study. The questionnaire consisted of 12 questions regarding knowledge, attitude and practice on stress management [Annexure attached]. The students were asked to fill the questionnaire by themselves within 30 minutes of time. Out of 12 questions, 4 questions were of knowledge, 3 of attitude and 5 of practice regarding stress management among medical undergraduates. The questionnaires were collected and evaluated for their completeness. The data were recorded in Microsoft Excel Worksheet and analyzed.

**Results:** Out of 254 total undergraduates, 32.3%, 35.8% and 31.8% of students were of first, second and third year MBBS, respectively. 46.5% were male and 53.5% were female students. 28.4% students gave a relevant definition of stress. The most common condition related to stress is anxiety (79.6%). Only 37.4% of students could answer the correct clinical features of stress. Most common stressors were large syllabus (124%), less study time (28.7%) followed by apprehension to viva-voce. 72.7% of students marked that they have faced difficulties in adapting to the new environment and feeling home sickness, which was particularly seen in first-year students. Lack of friends (58.6%) was the most common non-academic cause of stress. 64.9% students had confronted stress because of competition related stress. Most commonly used stress relieving activities by the students was listening to music (63.7%) mostly in female students, followed by watching internet videos (24.1%) particularly in male students. Meditation and prayer were practiced by only 0.8% of students. 2.4% of students indulged themselves in their favorite hobbies when felt stress out and 5.1% students became addicted to smoking and alcohol.

**Conclusion:** There were various stressors among medical students which has an adverse effect on the mental health of the medical students. There is an urgent need to establish and implement some strategies in order to adapt with the prevailing stress factors. Therefore, apart from the academic teaching, extracurricular activities such as meditation/yoga classes, sport activities, psychological counselling etc., should be incorporated in the medical curriculum. This will enhance the ability of students to deal with stress more effectively and this will definitely aid in improving their work efficiency.

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## 1. Introduction

The term “stress” was coined by Hans Selye in 1936, who defined it as “the non-specific response of the body to any demand for change”.<sup>1</sup> There are numerous reasons which can lead to stress like work overload, bad health, poor nutrition, inadequate sleep, financial limitations, bad interpersonal relationship, constant negativity seen in news etc.<sup>2,3</sup> Medical education has been reported throughout the world as one of the most stressful academic curricula, which negatively affects the physical and mental health of medical students. The medical college environment is very different and more challenging than general schooling since responsibilities in medical colleges are different and more demanding than that of high school level. Parent involvement is reduced, and students may live away from families in dormitories and may have added responsibilities.<sup>4,5</sup> Fear of examinations, high parental expectation, peer pressure, lack of leisure time, financial problems, relationship disharmony, and aspirations of higher studies are some of the many factors known to contribute to the development of stress in undergraduate medical students.<sup>6,7</sup> There is increased attention to the health and well-being of students at institutions of higher learning as they represent the future of families, communities, and countries. Of the students in institutes of higher education, medical students appear to have more emotional challenges, physical and psychosocial hazards, and mood disorders as they progress and think of their future and professional goals.<sup>8–10</sup> A systematic review of 40 studies concluded that the overall psychological distress and prevalence rates of depression and anxiety in medical students are higher than nonmedical students or age-matched peers from the general population.<sup>11</sup> In India, studies on medical students have reported similar high levels of perceived psychological stress and depression related to internal and external variables, which accord with results reported in the international literature.<sup>12,13</sup> The excessive amount of stress in medical training may lead to negative consequences such as diminished attention and concentration, increased incidence of errors, negligence, absenteeism, self-medication, and cheating during examinations.<sup>14</sup>

Many studies have been conducted globally to study the level of stress among undergraduate medical students during their academic period.<sup>15,16</sup> Academic curriculum for MBBS students is set by the medical council of India. The curriculum is indeed very challenging and demanding at the same time as it includes over 23 subjects to be learned thoroughly for a time period of four and half years. The level and amount of stress varies through different semesters of MBBS. In the first year of MBBS, stress is said to be induced by conditions like vast syllabus,

tutorials, overlapping exams by different departments, language barrier, fear of ragging, tough topics, staying away from home, alien environment, etc. Also among these, difference in social and economical background of the students also add to the stress. In the second and third year of MBBS the triggers for stress include clinical postings, term ending examinations and viva, theory examinations, competitive exams preparations etc. As per the data collected from the studies conducted among the undergraduate medical students, it is shown that academic stress is directly related to presence of psychological symptoms such as anxiety, depression, insomnia, social conflicts and poor performance in the study.<sup>17,18</sup> In most of the medical colleges, main priority is always academic output of the students and this pressure for good performance often creates competitiveness rather than cooperation and compassion among the students.<sup>19</sup> There are few research articles published those give information regarding aetiology, prevalence and stress management among MBBS students in western part of the India, hence, this study aimed at assessing the perceived level of stress in medical students in the Hamdard Institute of Medical Sciences and Research, Jamia Hamdard attached to Hakeem Abdul Hameed Centenary hospital, a tertiary care hospital at New Delhi. The objective of our study was to evaluate the knowledge, attitude and practice of stress management among undergraduate MBBS students at Hamdard Institute of medical sciences & research, Jamia Hamdard attached to Hakeem Abdul Hameed Centenary hospital, a tertiary care hospital, New Delhi.

## 2. Materials and Methods

This is a cross-sectional, questionnaire-based study, which was conducted in the department of pharmacology, at Hamdard Institute of medical sciences & research, Jamia Hamdard, New Delhi, India from April 2018 to August 2018. A total of 254 undergraduate students of first year, second year and third first year of MBBS were explained the aims and objectives of the study and written informed consents were obtained from those who were willing to participate in the study. The questionnaire consisted of age, study semester and gender of the participating students which was followed by 12 questions regarding knowledge, attitude and practice on stress management [Annexure attached]. The students were asked to fill the questionnaire by themselves within 30 minutes of time. Out of 12 questions, 4 questions were of knowledge, 3 of attitude and 5 of practice regarding stress management among medical undergraduates. For evaluation of the knowledge of stress among medical undergraduates, definition of stress, comorbidities, clinical symptoms associated with stress and type of stressors were included in questionnaire. For assessment of attitude, students were asked about difficulties they faced in adapting to new environment or home

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sickness, non-academics reasons making them anxious and confrontation of stress due to competition. To evaluate their practice regarding stress coping methods, students were asked different ways to alleviate stress, most preferred way to maintain sound mental health, indulging in their hobbies when stressed, how did they approach stress and presently, whether or not, they were victim of addiction. The questionnaires were collected and evaluated for their completeness.

### 2.1. Statistical analysis

The data were recorded in Microsoft Excel Worksheet and analysed.

## 3. Results

Out of 300 students 254 students (84.6%) completed the questionnaire. Figure 1 shows the semester wise distribution of the students participated in the study. Table 1 shows the demographic profile of the students who enrolled in the study. Majority of students (35.1%) were among 20-21 years of age group. 46.5% were males and 53.5% were females. The maximum number of students (35.8%) were from 2nd semester. Table 2 denotes the knowledge of the students regarding stress. 28.4% students described the relevant definition of stress. Table 3 represents the attitude of students towards stress. Table 4 represents Practice of students under stress.

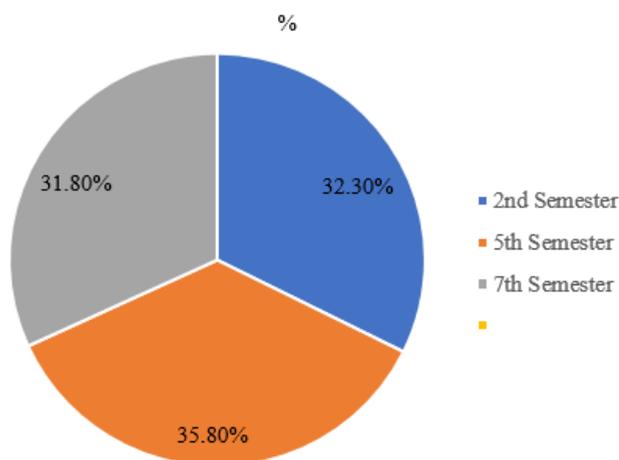


Fig. 1: Semester-wise percentage of students.

## 4. Discussion

We all are living in an extremely competitive world where we are striving to survive and become the best among the rest. Running and rushing is the new normal in order to prove your metal to the world. Medical college is also a reflection of this world only where the students are

**Table 1:** General particulars of the students who enrolled in the study.(n=254)

Variables	n (%)
<b>Study year</b>	
First year	82 (32.3%)
Second year	91 (35.8%)
Third year	81 (31.8%)
Total	254 (100%)
<b>Gender</b>	
Male	118 (46.5%)
Female	136 (53.5%)
<b>Age</b>	
18-19 years	79 (31.1%)
20-21 years	89 (35.1%)
22 and above	86 (33.8%)

(Values are expressed as absolute numbers and percentage in parentheses)

**Table 2:** Knowledge of the students regarding stress (n=254).

Questions	n (%)
<b>1) How do you define stress?</b>	
Relevant definition	72 (28.4%)
Irrelevant definition	183 (72.1%)
<b>2) Which of the following condition is associated with stress?</b>	
a) Schizophrenia	8 (3.2%)
b) Anxiety	201 (79.6%)
c) Hallucinations	45 (17.7%)
<b>3) How do you react to stress? (Clinical features)</b>	
Relevant	95 (37.4%)
Irrelevant	159 (62.6%)

(Values are expressed as absolute numbers and percentage in parentheses)

engaged in this rat race in one way or the other. The cut throat competition and pressure to perform to best of ones capability in medical schools is a source of stress which tends to linger on even after graduation.<sup>19</sup> Students belonging to different socio-economic background, cultures, and practices come together under one roof for medical education.<sup>20</sup> Undergraduate medical curriculum is completed in time period of five and half years with total of 21 extremely demanding subjects which needs to be studied in depth along with their practical implications.<sup>21</sup> The pressure of completing this mammoth syllabus exposes medical students to tremendous stress right from the beginning of their career.

The fight is not only to perform and survive but to top among their colleagues. This never ending thirst to excel subjects them to humongous amount of stress which affects both their physical and mental health. Low self-esteem, anxiety, sleep disorders, bouts of depression etc. are among many disorders which are direct outcome of being under constant stress.<sup>22</sup> In our study we have tried to highlight and evaluate relevant triggers for the stress and prevalence of stress among undergraduates in a medical college. As per

**Table 3:** Attitude of students towards stress (n=254).

Questions	n (%)
<b>1) What are the factors responsible for your stress?</b>	
a) Less self-study time	73 (28.7%)
b) Large syllabus	124 (48.8%)
c) Apprehension to viva-voce	11 (4.3%)
d) All of the above	46 (18.1%)
<b>2) A. Are you a hosteller?</b>	
a) Yes	176 (69.3%)
b) No	78 (30.7%)
<b>2) B. If yes, then Does home sickness contributes to your stress?</b>	
a) Yes	128 (72.7%)
b) No	48 (27.3%)
<b>3) What personal issues add to your stress other than academics?</b>	
a) Financial constraint in the family	25 (9.8%)
b) Self Health issues	69 (27.2%)
c) Bad hostel food	11 (4.3%)
d) Lack of friends	149 (58.6%)
<b>4) Did you feel competition related stress?</b>	
a) Yes	165 (64.9%)
b) No	89 (35.1%)

(Values are expressed as absolute numbers and percentage in parentheses)

**Table 4:** Practice of students under stress (n=254).

Questions	n (%)
<b>1) Which among the following activities help you relieve your stress?</b>	
a) Listening music	162 (63.7%)
b) Going out with friends	11 (4.3%)
c) Social medias like (facebook, instagram etc.)	61 (24.1%)
d) Over eating	9 (3.5%)
e) Exercise/sports	3 (1.2%)
f) Meditation/Yoga	2 (0.8%)
g) Indulging in Favorite hobbies	6 (2.4%)
<b>2) A. Are u addicted to any abusive substance (like tobacco, alcohol etc)?</b>	
a) Yes	13 (5.1%)
b) No	241 (94.8%)
<b>2) B. If Yes, Is it due to stress?</b>	
a) Yes	9 (69.3%)
c) No	4 (30.7%)
<b>3) When do you feel stress is more?</b>	
a) During Early semesters	177 (69.7%)
b) During Clinical Postings	77 (30.3%)

(Values are expressed as absolute numbers and percentage in parentheses)

various studies it is understood that level of stress is highest among medical students in comparison to students of other courses. This makes them more prone for developing depression, stress, anxiety, eating disorders etc. and in some cases can even lead to substance abuse.<sup>23–25</sup> Different medical colleges have different infrastructure, course study pattern, content delivery method, student teacher exposure time and bonding, deadlines, mode of internal assessment etc. and are thus responsible for variation in the prevalence rate of stress.<sup>26,27</sup>

In our study, we observed that in our college, the trigger for stress which commonly impacted the students was large syllabus (48.8%). The other contributing factors included less self-study time (28.7%), apprehension to viva voce (4.3%). 18.1% students mentioned all the above factors were responsible for their stress. Although studies conducted in the medical colleges of Mangalore and Nepal found that lack of time for recreational activities was an important stress factor.<sup>28,29</sup> In another study conducted in medical institution from Tamil Nadu, the triggers for stress were identified as fear of failure, the vastness of academic curriculum and lack of recreation time.<sup>30</sup> It has been seen that performance pressure, frequency of examinations and competition with the counterparts were the top contributors of stress as per numerous studies conducted across the various medical institution across the country.<sup>31</sup>

In addition to the academic stress factors, the other important aspect for developing stress among the undergraduates in our institute as per this study was found to be lack of friends (58.6%) followed by self-health issues reported by 27.2% students. The other non-academic factors were financial constraints in the family (9.8%) and bad hostel food (4.3%). As per our study 72.7% of students experienced homesickness which was contributing to stress particularly in first year. This is in contrast to a study conducted in Pakistan Medical college where home sickness was found to be unrelated to prevalence of stress among students.<sup>32</sup> Dutta JD et al. conducted a study in Tamil Nadu as per which family issues and loneliness was found to be an important non-academic stressor for the undergraduate.<sup>33</sup> Brahmhatt KR et al in their study at an institute from Mangalore found undue parental expectations and loneliness as the prominent stress factors among the students.<sup>28</sup> Past studies have showed academic competition with peers as a crucial source of stress among medical students.<sup>34–36</sup>

In the current study, 63.7% of undergraduates preferred listening to music as a most common method for alleviating stress especially among females. Surfing internet videos was the second most favoured way to cope up with stress by students (24.1%) mostly among the male students in our study. As per a study conducted in Karnataka, the good old method of talking to a friend was still found to be successful and most effective when it came to ways to relieve stress and

also showed a similar pattern with sleeping and eating good healthy food as common ways to relieve stress and maintain good physical and mental health.<sup>28</sup> In the present study, 4.3% students preferred to spend time with their friends to relieve their stress and only 0.8% students indulged themselves in practices like yoga/meditation.

Mostly third year male students (5.1%) were involved in substance abuse or addiction as per our study and the main reason for this abuse in majority of the students was found to be stress (69.3%).

Numerous studies conducted all across medical colleges within the India such as Mangalore, Ranchi, and Tamil Nadu and some outside of the India like at Nepal and Pakistan also suggested similar prevalence and pattern of illicit substance abuse among the undergraduates students.<sup>28–32,37</sup> A Kolkata based study pointed out that as much as 50% of all MBBS students reported facing mild to severe levels of stress during some stage of their college life which had pushed them towards illicit substance abuse.<sup>35</sup> Smart gadgets and digitalization era has predisposed our youth to gadget addiction and uncensored exposure. The level of tolerance and threshold for stress of today's youth is almost on the edge.<sup>33,36</sup> There is a drastic and quick transition of lifestyle when a student enters a professional college from high school. Our young students with low tolerance level often face difficulty to accept and adapt to these sudden changes thus making them prone to developing stress. These changes also come with other stress triggers like home sickness, language barrier, different socio-economical backgrounds etc.

Over exposure of technology as a predominant stress factor is becoming a matter of great concern. There is an urgent need to improve mental health of our youth who are future of our country. Sound mental health is as essential for building a strong foundation for professional career ahead as their physical health. Several Aerobic exercises, yoga and relaxation techniques, substance abuse and medical education training of teaching faculties are being practiced in many institutes in order to create a student friendly environment. The spirit of cooperation imbibed by such activities not only improves academic and work efficiency of students but also makes them emotionally expressive.<sup>28–32,35</sup>

As per this study and various studies conducted in the past, there is prevalence of high levels of stress among medical students which needed to be addressed at the soonest to promote good physical and mental health. Many medical institutes have already successfully implemented intervention strategies and programs to prevent or reduce stress among medical students.<sup>29,34,38,39</sup> These little steps are very effective in reducing stress, depression, and anxiety. These interventions also brings out spirituality, empathy, and positive coping skills among medical students. These stress reducing interventions resulted in decreasing the negative effects of stress on the health and academic

performance of medical students. Though much work is required to make the medical education environment more student friendly to reduce their current levels of stress. There is also a need for encouraging healthier group activities such as case based learning and problem base learning in small groups of 15 to 20 students. This encourages overall holistic growth among students along with the academic benefit. Positive teaching and learning environment without stress is a backbone of any academic institute.

## 5. Conclusion

As per our study, there were different stressors among medical students. But, none were effective in order to adapt with the prevailing stress factors. Therefore, apart from the academic teaching, extracurricular activities such as meditation/yoga classes, sport activities, psychological counselling etc., should be incorporated in the medical curriculum. This will enhance the ability of students to deal with stress more effectively and this will definitely aid in improving their work efficiency.

## 6. Conflict of Interest

The authors declare that there are no conflicts of interest in this paper.

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None.

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