

## Factors Associated with Stress and Stress Management Behaviours among Undergraduate Medical Students: A Cross-sectional Study from Eastern India

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Received: 01-06-2026 / Revised: 15-07-2026 / Accepted: 21-08-2026

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Conflict of interest: Nil

### Abstract

**Background:** Stress is common among undergraduate medical students and may adversely affect their academic performance, psychological well-being, and future professional competence.

**Objectives:** This study aimed to determine the prevalence of stress, identify its associated factors, and explore coping strategies among MBBS students of Medical College, Kolkata.

**Material and Methods:** An institution-based cross-sectional study was conducted among 424 MBBS students selected by simple random sampling from all four academic phases. Data were collected using a pretested, self-administered structured questionnaire incorporating items from the Depression, Anxiety and Stress Scale-42 (DASS-42). Descriptive statistics and Chi-square test were used for data analysis, with  $P \leq 0.05$  considered statistically significant.

**Results:** Overall, 41.98% of participants experienced stress, including 14.39% with mild, 12.74% moderate, 8.02% severe, and 6.84% extremely severe stress. Stress was significantly associated with female gender, rural residence, having at least one doctor parent, socioeconomic status, overeating, alcohol and cannabinoid use, perceived smartphone addiction, and attending late-night parties. Academic burden, lack of relaxation or recreational time, competitive college environment, postgraduate entrance examination concerns, and apprehension about future professional life were significant stressors. Common coping strategies included meditation, listening to motivational speeches, pursuing hobbies, spending time with friends or partners, taking short trips, entrepreneurship, long drives, and spending time amidst nature.

**Conclusion:** Nearly two-fifths of undergraduate medical students experienced stress, with academic and behavioural factors showing significant associations. Institution-based mental health promotion programmes, adequate recreational opportunities, and supportive educational environments may help reduce stress and improve students' psychological well-being.

**Keywords:** Stress, Medical student, coping strategies, Undergraduate, India.

**DOI:** 10.25258/ijcpr.18.9.54

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### Introduction

Medical education aims at gaining knowledge and inculcating moral values besides preparing skilful and professional physicians. However, various environmental, social and individual factors can exert mental stress on the MBBS students, thereby posing potential threat to the meaningful acquisition of all the above mentioned attributes. This will not only influence the mental well-being of the student, but also affect the culture of medical profession. [1] University students are reported to have higher level of stress when compared to the mental status of general population. [2] Stress of medical students is significantly higher than others and India, unfortunately, is not an exception.

[3,4,5] Several studies in the country and abroad reported higher prevalence of stress among medical students. [6,7,8] The adaptative and learning capabilities of the so-called modern and advanced education systems are perhaps being hampered by the insanely extensive curriculum and exhaustive training schedules throughout the MBBS course. [9] This can result in burn out or psychological impairment of the person, including suicidal tendencies and maladaptive substance abuse. [10] Often students find themselves in the midst of highly competitive environment and get demoralised by rivalry, self-doubt and peer performances. [11] Female Gender, change of

medium of instruction, staying away from family were found important factors for stress among college students. [12,13] However, holistic approach is needed to figure out specific solutions by incorporating related determinants of the problem through exploration of associated factors and the popular ways of management.

Despite numerous studies evaluating stress among medical students, limited evidence exists from Eastern India exploring not only determinants but also coping strategies simultaneously. Therefore, the present study was framed with the objective of describing the level of stress among the MBBS students, determining the factors behind the development of stress and finding out the ways they had been trying to cope with the stress.

### Material and Methods

This descriptive, observational and institute based cross-sectional study was conducted between August to November 2024 among the undergraduate students of all four academic phases at a Medical College in Kolkata. Sample size was calculated using Cochran's formula with prevalence of stress as 52.56% among undergraduate medical students according to study of Nandi M et. al., considering 5% absolute error and additional 10% to account for non-response. [14] After rounding off, estimated sample size was 424. 106 students from each of 4 academic phases were selected by simple random sampling without replacement. Line-lists of all the students from all professional years were acquired from the student's section and 106 students were selected from each academic phases using lottery method. Students who were diagnosed with any psychological disorder before joining MBBS were excluded from the study. Data collection was done using a predesigned, pretested and self-administered structured Questionnaire.

The Questionnaire consisted of 4 sections. The first section inquired about socio-demographic details of the participant. Two suspected stressor domains - a) Academic related factors- which included Curriculum, examination & performance, b) Personal factors, including social factors which were identified through few focus group discussion among students of all the professional years. Those factors consisted the second part of the Questionnaire. [14]

Questions pertaining to stress were adopted from Depression, Anxiety and Stress Scale -42(DASS-42). [15] The final section consisted of questions regarding probable coping mechanisms of stress among the students. The study tool was face validated and content validated by the subject experts from Department of Community Medicine and Department of Psychiatry of Medical College,

Kolkata. The internal consistency of the study tool was calculated using Cronbach's alpha method (0.76). Written Informed Consent was taken from each of the participants. The studies commenced after the approval from Institutional Ethics Committee of Medical College, Kolkata. Anonymity of the participants was ensured. The collected data was tabulated using MS Excel and statistical analysis was done on SPSS Software version 18 (IBM Corp., Armonk, NY, USA). Appropriate measures of central tendency (mean $\pm$  S.D. and median  $\pm$  IQR) were calculated for continuous variables and frequency and percentage were calculated for nominal variables. Chi-square test was done at  $p \leq 0.05$  significance level.

### Results

The study population comprised of 424 undergraduate medical students from all phases of MBBS with 106 students from each phase. Mean age of the participants was  $20.54 \pm 2.47$  years, median 20.00 years and range being 18 to 26 years. Male students were 279(65.08%); 393(92.69%) study participants belong to urban origin. 270(63.68%) of them stayed with family. 341(80.42%) students belonged to upper socio-economic class (as per modified B.G. Prasad Scale, January 2024). 158(75.47%) participants studied in an English medium school at Higher Secondary or equivalent level. At least one of their parents were doctor for 38(8.96%) of the participants. 194(45.75%) students had someone to share their feelings and/or daily activities. Out of them, 181(42.86%) spent maximum hours alone at their abode. Using the study tool adopted and modified from DASS-42, 178(41.98%) of the undergraduate medical students were found stressed.

Among 178 stressed students 61(14.39%) had mild stress (Score 15 – 18), 54(12.74%) had moderate (Score 19-25), 34(8.02%) had severe (Score 26-33) and 29(6.84%) had found with extremely severe stress(Score >33) as per DASS-42 Scoring System . (From fig. 1)

Relationship between different socio-demographic factors and stress status among participant MBBS students were examined. The stress level found significantly higher in female, students from rural origin and with at least one parent as doctor. Statistically significant association exists between socio-economic status of the student and stress. No statistically significant relationship found between stress and age, MBBS Phase, living status, medium of instruction at school, presence of a person to share the feelings or daily routine and residing alone at the residence. (Table No.1)

Among participants, 297(70.05%) told that they had overeating practices and it is found to be significantly related to stress. Regarding substance

abuse, 98(23.11%) were smoker ( $p \leq 0.05$ ), 119(28.07%) consume alcohol and 52(12.26%) had taken cannabinoids ever. Consumption of alcohol and cannabinoids use found associated with stress significantly. 363(85.61%) students perceived that they are addicted to smart phone and it is found to be significantly associated with stress status.

92(21.70%) had stated having random brief relationship, 142(33.49%) had habit of attending late night parties and both these habits are found to be significantly associated with stress status. (Table No. 2) Out of the stressed students, 70(39.33%) didn't have time for relaxation or recreational activities. 104(58.43%) participants were upset about huge syllabus of the medical curriculum, 108(58.43%) were worried about entrance examinations for PG courses and 110(61.80%) were tensed about their future professional life. Regarding the college environment, 154(36.32%) participants were unable to cope with the competitive environment and a higher percentage (68.18%) was stressed.

Additionally, 31(17.42%) students show discomfort in English as a medium of instruction. 97(54.49%) students were believed to have huge expectations from them. 178 (66.29%) students blame

themselves in most of the situations. 89(50%) students hesitated to express feelings to close friends. Statistically significant relation has been identified between stress and the above parameters. (Table No. 3)

Among the students having stress, for managing it, 95(53.37%) listened to motivational speeches, 107(60.11%) visited friend's place or called him/her to share feelings, 71(39.89%) went on a small exploring trip nearby, 111(62.36%) devoted time to their hobbies like reading books, playing guitar etc., 66(37.08%) started to learn some new sports / exercise, 104(58.43%) learnt to do some new household chores, 67(37.64%) spent time with their partners, 58(32.58%) spent time on shopping, 37(20.79%) started entrepreneurship or other means of earning money like YouTube etc., 142(79.78%) spent time on meditation, 47(26.40%) went on a long drive and 92(51.69%) spent time amidst nature.

Out of these, statistically significant relation was detected between stress and meditation, listening to motivational speeches, going on a small exploring trip, spending time with partner, starting entrepreneurship, going on a long drive and spending time amidst the nature. (Fig. No. 2)

**Table 1: Relationship between the socio-demographic variables and stress among the participants. (n=424)**

| Socio-demographic variables                                                       | Normal No. (%) | Stressed No. (%) | Statistical test result             |
|-----------------------------------------------------------------------------------|----------------|------------------|-------------------------------------|
| <b>Sex:</b>                                                                       |                |                  |                                     |
| Male                                                                              | 184(65.95)     | 95(34.05)        | $\chi^2$ , df=21.068, 1<br>P<0.001  |
| Female                                                                            | 62(42.76)      | 83(57.24)        |                                     |
| <b>Age:</b>                                                                       |                |                  |                                     |
| ≤ 20years                                                                         | 118(55.40)     | 95(44.60)        | $\chi^2$ , df=1.206, 1<br>P=0.27    |
| > 20 years                                                                        | 128(60.66)     | 83(39.34)        |                                     |
| <b>MBBS Phase:</b>                                                                |                |                  |                                     |
| I                                                                                 | 59(55.66)      | 47(44.34)        | $\chi^2$ , df= 1.665, 3<br>P=0.65   |
| II                                                                                | 59(55.66)      | 47(44.34)        |                                     |
| III                                                                               | 61(57.55)      | 45(42.45)        |                                     |
| IV                                                                                | 67(63.21)      | 39(36.79)        |                                     |
| <b>Living status:</b>                                                             |                |                  |                                     |
| Stays with family                                                                 | 160(59.26)     | 110(40.74)       | $\chi^2$ , df= 0.470, 1<br>P=0.49   |
| Stays without family                                                              | 86(55.84)      | 68(44.16)        |                                     |
| <b>Parents doctor or not:</b>                                                     |                |                  |                                     |
| At least 1 doctor                                                                 | 12(31.58)      | 26(68.42)        | $\chi^2$ , df= 11.980, 1<br>P<0.001 |
| None are doctor                                                                   | 234(60.62)     | 152(39.38)       |                                     |
| <b>Have a person to share all the feelings and daily routine:</b>                 |                |                  |                                     |
| Yes                                                                               | 109(56.19)     | 85(43.81)        | $\chi^2$ , df= 0.493, 1<br>P=0.48   |
| No                                                                                | 137(59.57)     | 93(40.43)        |                                     |
| <b>Per capita monthly family income (as per B G Prasad Scale , January 2024):</b> |                |                  |                                     |
| Upper class                                                                       | 195(57.18)     | 146(42.82)       | $\chi^2$ , df= 9.887, 3<br>P=0.02   |
| Upper Middle class                                                                | 35(67.31)      | 17(32.69)        |                                     |
| Middle class                                                                      | 12(75.00)      | 4(25.00)         |                                     |
| Lower Middle class                                                                | 4(26.67)       | 11(73.33)        |                                     |

|                                                |            |            |                                  |
|------------------------------------------------|------------|------------|----------------------------------|
| Lower class                                    | --         | --         |                                  |
| <b>Residential area:</b>                       |            |            |                                  |
| Urban                                          | 223(56.74) | 170(43.26) | $\chi^2$ ,df= 3.592, 1<br>P=0.05 |
| Rural                                          | 23(74.19)  | 8(25.81)   |                                  |
| <b>Medium of instruction at school:</b>        |            |            |                                  |
| Vernacular                                     | 67(64.42)  | 37(35.58)  | $\chi^2$ ,df= 2.320, 1<br>P=0.13 |
| English                                        | 17(55.94)  | 141(44.06) |                                  |
| <b>Whether Staying alone at the residence:</b> |            |            |                                  |
| Yes                                            | 96(53.04)  | 85(46.96)  | $\chi^2$ ,df= 3.216, 1<br>P=0.07 |
| No                                             | 150(61.73) | 93(38.27)  |                                  |

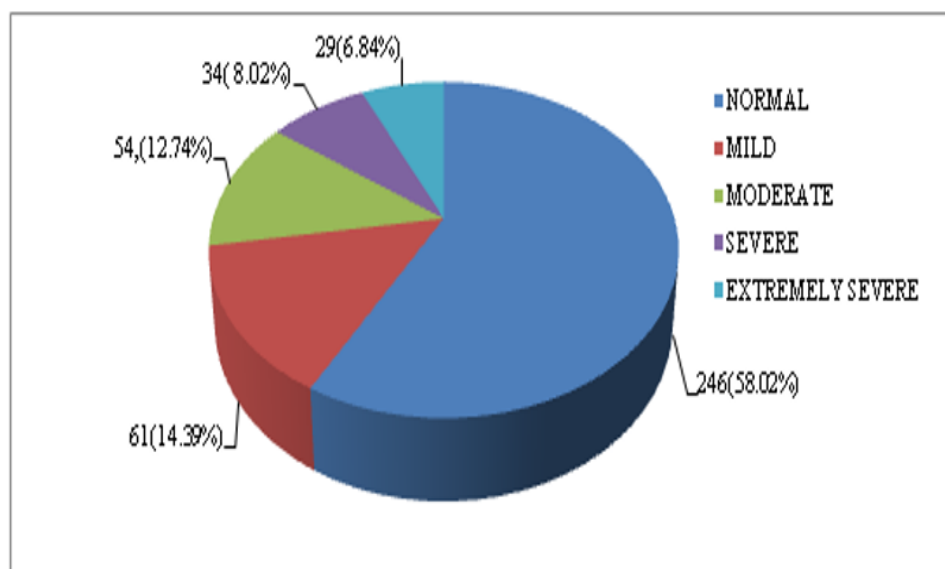
**Table 2: Relationship between behavioural habits and stress among undergraduate medical students under study. (n=424)**

| Behavioural habits                           | Stress Status    |                | Statistical test result           |
|----------------------------------------------|------------------|----------------|-----------------------------------|
|                                              | Stressed No. (%) | Normal No. (%) |                                   |
| <b>Overeating</b>                            |                  |                |                                   |
| Yes                                          | 139(78.09)       | 158(64.23)     | $\chi^2$ ,df= 9.45, 1<br>P<0.001  |
| No                                           | 39(21.91)        | 88(35.77)      |                                   |
| <b>Smoking cigarette</b>                     |                  |                |                                   |
| Yes                                          | 49(27.53)        | 49(19.91)      | $\chi^2$ ,df= 3.37, 1<br>P=0.07   |
| No                                           | 129(72.47)       | 197(80.08)     |                                   |
| <b>Drinking alcohol</b>                      |                  |                |                                   |
| Yes                                          | 66(37.08)        | 53(21.54)      | $\chi^2$ ,df= 12.34, 1<br>P<0.001 |
| No                                           | 112(62.92)       | 193(78.46)     |                                   |
| <b>Using Cannabinoids (Ganja, Marijuana)</b> |                  |                |                                   |
| Yes                                          | 31(17.42)        | 21(8.54)       | $\chi^2$ ,df= 7.57, 1<br>P<0.001  |
| No                                           | 147(82.58)       | 225(91.46)     |                                   |
| <b>Smartphone addiction</b>                  |                  |                |                                   |
| Yes                                          | 167(93.82)       | 196(79.67)     | $\chi^2$ ,df= 16.78, 1<br>P<0.001 |
| No                                           | 11(6.18)         | 50(20.33)      |                                   |
| <b>Doing random brief relationships</b>      |                  |                |                                   |
| Yes                                          | 30(16.85)        | 62(25.20)      | $\chi^2$ ,df= 4.24, 1<br>P=0.04   |
| No                                           | 148(83.15)       | 184(74.80)     |                                   |
| <b>Attending late night parties</b>          |                  |                |                                   |
| Yes                                          | 69(38.76)        | 73(29.67)      | $\chi^2$ ,df= 3.83, 1<br>P=0.05   |
| No                                           | 109(61.24)       | 173(70.33)     |                                   |

**Table 3: Relationship between selected factors and stress status among the participants. (n= 424)**

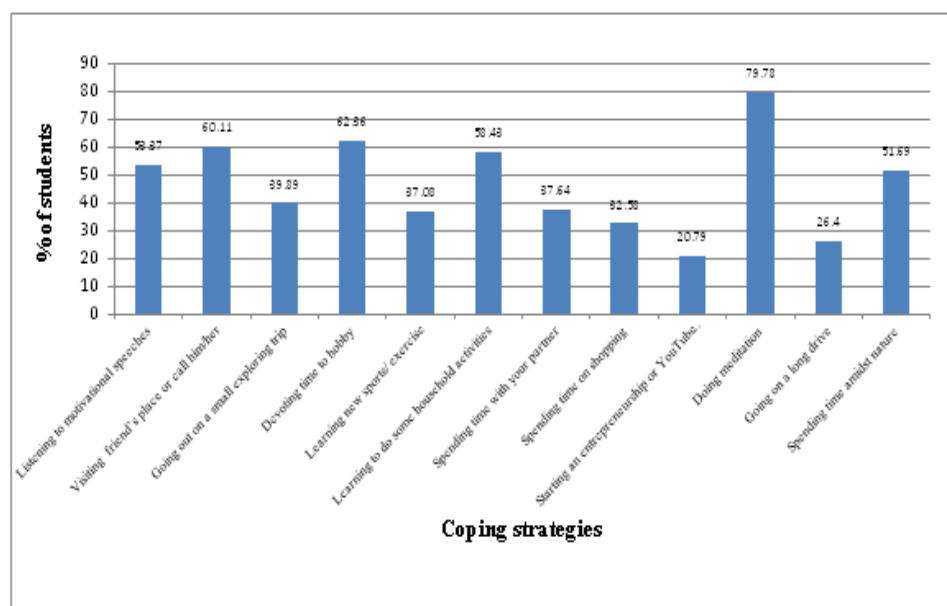
| Stress Status           | Strongly agree No. (%)                                    | Agree No. (%)        | Neutral No. (%)      | Disagree No. (%)     | Strongly Disagree No. (%) | Statistical Test result            |
|-------------------------|-----------------------------------------------------------|----------------------|----------------------|----------------------|---------------------------|------------------------------------|
| <b>Academic factors</b> |                                                           |                      |                      |                      |                           |                                    |
| Normal<br>Stressed      | “I am uncomfortable in English as media of instruction”   |                      |                      |                      |                           |                                    |
|                         | 4(26.7)<br>11(73.3)                                       | 16(44.4)<br>20(55.6) | 39(56.5)<br>30(43.5) | 66(61.1)<br>42(38.9) | 121(61.7)<br>75(38.3)     | $\chi^2$ ,df= 10.375, 4<br>P<0.001 |
| Normal<br>Stressed      | “I am upset about huge syllabus”                          |                      |                      |                      |                           |                                    |
|                         | 45(41.7)<br>63(58.3)                                      | 84(67.2)<br>41(32.8) | 48(46.2)<br>56(53.8) | 44(78.6)<br>12(21.4) | 25(80.6)<br>6(19.4)       | $\chi^2$ ,df= 38.421, 4<br>P<0.001 |
| Normal<br>Stressed      | “I am worried about post-graduate entrance examination”   |                      |                      |                      |                           |                                    |
|                         | 47(43.9)<br>60(56.1)                                      | 83(63.4)<br>48(36.6) | 50(61.0)<br>32(39.0) | 25(59.5)<br>17(40.5) | 41(66.1)<br>21(33.9)      | $\chi^2$ ,df= 12.267, 4<br>P=0.015 |
| Normal<br>Stressed      | “There is huge academic expectations from me”             |                      |                      |                      |                           |                                    |
|                         | 28(43.8)<br>36(56.3)                                      | 44(41.9)<br>61(58.1) | 73(64.6)<br>40(35.4) | 51(63.7)<br>29(36.3) | 50(80.6)<br>12(19.4)      | $\chi^2$ ,df= 32.664, 4<br>P<0.001 |
| Normal<br>Stressed      | “I am unable to cope up with the competitive environment” |                      |                      |                      |                           |                                    |
|                         | 29(37.7)<br>48(62.3)                                      | 20(26.0)<br>57(74.0) | 74(69.8)<br>32(30.2) | 56(62.9)<br>33(37.1) | 67(89.3)<br>8(10.7)       | $\chi^2$ ,df= 82.687, 4<br>P<0.001 |

| Personal factors |                                                          |          |          |          |          |                         |
|------------------|----------------------------------------------------------|----------|----------|----------|----------|-------------------------|
| Normal           | I have no time for relaxation or recreational activities |          |          |          |          |                         |
|                  | 7(28.0)                                                  | 29(35.8) | 69(68.3) | 80(57.1) | 61(79.2) | $\chi^2, df= 44.315, 4$ |
| Stressed         | 18(72.0)                                                 | 52(64.2) | 32(31.7) | 60(42.9) | 16(20.8) | $P<0.001$               |
| Normal           | "I often blame myself"                                   |          |          |          |          |                         |
|                  | 21(28.8)                                                 | 49(42.6) | 71(65.1) | 42(77.8) | 63(86.3) | $\chi^2, df= 71.754, 4$ |
| Stressed         | 52(71.2)                                                 | 66(57.4) | 38(34.9) | 12(22.2) | 10(13.7) | $P<0.001$               |
| Normal           | "I hesitate to express feelings to close friends"        |          |          |          |          |                         |
|                  | 47(52.8)                                                 | 81(63.3) | 52(51.5) | 43(70.5) | 23(51.1) | $\chi^2, df= 8.995, 4$  |
| Stressed         | 42(47.2)                                                 | 47(36.7) | 49(48.5) | 18(29.5) | 22(48.9) | $P=0.06$                |
| Normal           | "I am worried about my future professional life"         |          |          |          |          |                         |
|                  | 30(39.0)                                                 | 63(50.0) | 70(67.3) | 38(64.4) | 45(77.6) | $\chi^2, df= 28.598, 4$ |
| Stressed         | 47(61.0)                                                 | 63(50.0) | 34(32.7) | 21(35.6) | 13(22.4) | $P<0.001$               |



**Figure 1: Distribution of stress severity among undergraduate medical students according to the modified DASS-42 stress scale (n = 424).**

Legend: The figure depicts the proportion of students classified as normal, mild, moderate, severe, and extremely severe stress based on the modified DASS-42 scoring system.



**Figure 2: Coping strategies adopted by undergraduate medical students with stress (n = 178).**

Legend: The figure illustrates the percentage of stressed students reporting different coping strategies, including meditation, hobbies, social interaction, recreational activities, entrepreneurship, long drives, and spending time in nature

## Discussion

The current study comprised 424 undergraduate medical students from Medical College Kolkata with 106 students from each 4 phases. Mean age of the participants was  $20.54 \pm 2.47$  years; 65.08% male, 92.69% from urban origin. 63.68% students stayed with family, 80.42% belonged to upper socio-economic class, 75.47% studied in an English medium school at Higher Secondary level, 8.96% had at least one of their parents as doctor and 42.86% spent maximum hours alone.

41.98% students were found stressed in the present study; 14.39%, 12.74%, 8.02% and 6.84% had mild, moderate, severe and extremely severe stress respectively, which is consistent with several studies in the Indian context. [8,14] However, it is lower when compared to those of few contemporary literature from India. [3,12] These findings were also similar to studies from other developing countries like Bangladesh, Pakistan and Northwest Ethiopia. [2,6,16] This may be explained by the differences in stress defining scales and the socio demographic variables of the population under other studies.

The stress level was found significantly higher in females in the present study, similar to other studies conducted in India. [14,17] However, the study of Panja S et. al. has shown that male students demonstrate greater academic and interpersonal stress, which contradicts the current findings. The study of B Sue Graves et. al. also found that females reported higher stress levels. [13] This is possibly due to emotion-focused coping dimension in females including self-distraction, emotional support, instrumental support, and venting, which provides temporary escape without resolving the stress factor. [13]

In the present study, the stress level was found significantly higher in students from rural origin and with at least one parent as doctor. Statistically significant association exists between socio-economic status of the student and stress. This can be probably attributed to the change in lifestyle, environment and teaching medium experienced by students of rural origin. [12] The present study also shows that enormous academic expectations from one can result in stress, which can explain higher stress in the students with at least one parent as doctor. The current study found no statistically significant relationship between stress and age, MBBS Phase, living accommodation, medium of instruction at school and residing alone at the

residence. Although the stress was found to be significantly more in Second and Third MBBS students and not found significantly related with stay at hostel and medium of instruction at school in the study of A N Supe et.al. [3] The study of Soma Gupta et. al. showed that academic stress was higher among students those who experienced a change in teaching medium and hostel residents. [12] Higher age, academic year, loneliness and living away from home were key determinants of stress in study of R Anuradha et. al. [18] Young age and living away from family were risk factors for higher perceived stress in the study of Omnya S Ebrahim et. al. [19] Thus, the present study findings are in contrast to previous existing literature.

In the present study 70.05% participants had overeating practices, 21.70% stated having random brief relationship, 33.49% attended night parties and these habits were found significantly related with stress status. No other previous studies have been found to explore these variables. Due to cross sectional design, no causal relationship could be established between these behaviours and stress.

Consumption of alcohol and cannabinoids use and perceived Smart phone addiction were found related to stress significantly in the present study. Similar studies from India support positive correlation between smartphone addiction and Stress. [20] The study of Ramachandran Niranjjan et. also reported statistically significant association between substance abuse and psychological distress. [7] 4.2% were dependent on alcohol and had significant association with stress, while 14.1% had 'low-risk use' for other substances in Nigerian study. [4] Alcohol abuse is a popular inappropriate coping mechanism to relieve the symptoms of stress but the cross sectional design limits the establishment of causality between alcohol abuse and stress.

In the present study, among the stressed students(41.98%), insufficient time for relaxation or recreational activities( 39.33%), huge medical syllabus(58.43%), post-graduate entrance examination(58.43%), thought of future professional life(61.80%), competitive college environment (58.99%) were found statistically significant relationship with stress. Several studies in India reported that academic factors were key determinant of perceived stress. [3,12] Uncertain future, academic inadequacies and lack of motivation were major stress determinants in study of Bindu Menon et. al. [17] Vast academic curriculum, poor examination performance and lack of recreation were key determinants in study of R Anuradha et. al. [18] Excessive workload and academics were found significant stressors in a Pakistani Medical

School. [16] Lack of interest in study and lower grades in examination were significantly associated with mental distress in study from Northwest Ethiopia. [2] Academic-related variables were the stress causing factors in the study of Maram M Al-Shahrani et. al. [21] Academic problems, examination frequency, and work overload, worrying about the future and lack of entertainment and recreation time were common causes for stress in study of Sarah Salih et. al. [22] Main stressors identified in the study of Omnya S Ebrahim et. al. were academic, social and intrapersonal whereas risk factors for higher perceived stress included lower academic performance. [19] Hence, the enormous academic burden and the extensive curriculum impose a potential risk to the mental status of medical students.

Statistically significant relation was detected between stress and meditation, listening to motivational speeches, going on a small exploring trip, spending time with partner, starting entrepreneurship, going on a long drive and spending time amidst the nature. Coping mechanisms included sports, music, socializing with friends, talking to peers, recreational activities and revised academic/exam schedules in the study at Pakistani Medical School. [16] B Sue Graves et. al. found that females frequently used emotional coping and endorsed self-distraction, emotional and instrumental support, and venting. [13] Fares J et. al. proposed methods like promoting personal engagement, extracurricular activities, expression of emotion, student-led mentorship programs and career counselling to reduce stress. [23] The commonest coping strategy by students in Saudi Arabia were recreational activities, such as going to movies, watching TV, reading or shopping. [22] Although, few variables used in other studies were not included in our study. Therefore, the study suggests that involvement of recreational activities and healthy life practices within the curriculum and providing adequate leisure time to the students can decrease their stress levels.

The present study recommends periodic assessment of mental health status and developing an initiative for mental health care for medical students. It signifies the need of public health intervention in developing a revised curriculum and guideline to combat the developing stress in medical students. Hence, further evaluation is required to address the higher stress levels in medical students and develop amicable solution to the same, employing the popular coping mechanisms. Adequate time for recreational activities can help reduce stress. However, the Cross-sectional design of the study limits causal inference and single-centred study restricts generalisation. Therefore, further analytical studies are required to establish the

causal relationship between the variety of factors and stress.

## Conclusion

Stress affected nearly two-fifths of undergraduate medical students. Academic burden, lifestyle behaviours and perceived smartphone addiction were significantly associated with stress. Institution-based mental health promotion initiatives and curriculum reforms may improve psychological well-being among medical students.

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