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A study to evaluate prevalence of mental stress among the medical students of a medical college in western India

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Abstract
Background: Mental health issues impact people's quality of life worldwide, and educational pressure, sadness, and depression have caused unprecedented risks to mental health among medical college students. The present study aims at finding the factors responsible for mental stress and suicide among medical students.
Methodology: A cross-sectional research approach was used to assess the effect of stress on mental health among students. A total of 60 completed questionnaries were collected from random students and were used for the analysis. The survey included 17 close-ended questions targeting demographics, potential stressors, coping mechanisms, and patient health questionnaire-9 (PHQ-9) for screening, diagnosing, monitoring, and measuring depression, anxiety, and stress. The study's findings were analysed in Microsoft Excel, and descriptive statistics were calculated.
Results: Frequency distribution showed that 22-23 year age group showed maximum stress (37.2%) amongst other age groups. The main factor responsible for anxiety and suicide in students includes academic pressure (40%), followed by relationship issues (8.3%). Around 45% of the population feel depressive for several days. Approximately 3.3% of the population has suicidal tendencies nearly every day and should be evaluated for suicide ideation by an expert and should be guided for counselling.
Conclusion: The study exhibited 45% of the individuals to have at least one symptom of depression, anxiety, or stress. Overall, our results pointed out students' mental health problems and suggestions that may help build better mental health monitoring programs and treatment methods for the future.

Keywords: Anxiety, depression, Indian medical graduates, patient health questionnaire-9 (PHQ-9)

Introduction
Mental illnesses are on the rise all around the world [1]. The main aspects of our mental health include spiritual, psychological, and sociological well-being [2]. There have been a 13% increase in mental illness and drug use disorders in the recent decade, owing primarily to demographic shifts. Around 20% of the world's children and teenagers have a mental illness, with suicide being the second largest cause of mortality among those aged 15 to 29. About one out of every five people have mental illness in the present chaotic world [1]. Mental health issues can significantly impact life, including college or office productivity, social connections, and public participation. The two most common mental health illnesses-depression and anxiety cost $1 trillion annually to the world economy. Considering these statistics, the worldwide average governmental health spending on mental health is less than 2% [1]. World Health Organization (WHO), with other partners, takes initiatives to promote mental health, reduce mental disorders, and provide access to high-quality mental health care to society. For this, WHO established a special initiative for mental health program- 'Universal Health Coverage for Mental Health' (2019-2023), which aims to provide 100 million people in 12 priority nations access to high-quality and reasonable mental health care [3]. Many wellness workshops, mentoring programs, curriculum restructuring, and mental health courses have been developed to increase the mental well-being of students [4, 5]. The programs help eliminate the taboos connected with mental illness, enhance self-care habits, and boost confidence in offering assistance to peers in need.[4] The multipronged strategy causes significant reductions in sadness and suicidal thoughts linked to mental health problems [4, 5].
There are various factors which could lead to mental stress in various age groups. Mental health issues impact students' quality of life worldwide [6] and educational pressure, sadness,

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and depression have caused unprecedented risks to mental health among college students [7]. Studies revealed that the COVID-19 outbreak created negative feelings, emotional distress, and academic, societal, and domestic challenges amongst the students [7, 8]. Academics (47.5%), economics (31.8%), romantic relationships (30.9%), and insomnia (30%) were the most prevalent stressors assessed as 'upsetting or extremely difficult to handle' by students [9]. Numerous mental and behavioural health issues, such as mood disorders, nervousness, shock, post-traumatic stress disease (PTSD), insomnia, and other psychological conditions, are of rising concern due to the COVID-19 pandemic [10]. This is especially true for medical students studying in MBBS who have a huge academic workload in addition to various other challenges. The findings published in a meta-analysis reported a 28% prevalence of depression among medical students all over the world [11]. Various studies in India have reported the prevalence of suicidal ideation among medical students to be from 8-15% [12, 13]. A recently published study reported the prevalence of depression and suicidal ideation in medical students of Gujarat to be 14% and 9% respectively [14]. It is well known that medical students face a significant amount of pressure during their university education. Based on findings from other research, it was calculated that emotional distress among medical students was higher than in the general public [15, 16]. However, the data on the causes of anxiety and risk factors related to anxiety development in medical students is inadequate. Thus, the present study aims at finding the factors responsible for mental stress and suicide among students, the influence of different genders and age groups on the tension and how students cope with the mental stress.

Materials and methods
Study Design and Participants
A cross-sectional research approach was used to assess the effect of stress on mental health among students. A total of 60 completed questionnaires were collected from random students and were used for the analysis. The age group of the whole population was between 18 to 27 years. The questionnaire took an average of 8 minutes to complete.

Study procedure
A non-probability sampling approach was used to distribute an online questionnaire. The survey links were sent via social media channels. Each link offered a brief description of the study that participants could read before deciding whether or not to participate. Privacy and confidentiality were guaranteed. The survey questions were inspired by prior studies on stress and suicide prevalent in students and were approved by the authors' parent institutional review board. The survey included 17 close-ended questions targeting demographics, potential stressors, coping mechanisms, and patient health questionnaire-9 (PHQ-9) for screening, diagnosing, monitoring, and measuring depression, anxiety, and stress [17-19]. The survey was in the form of a multiple-choice question. The study's findings were analysed in Microsoft Excel, and descriptive statistics were calculated [20].

Results
The current study examined the occurrence of mental health problems and suicidal behaviour among students and the factors that contribute to these symptoms. A total of 60 forms were collected and were used for analysis. The response rate was 100%. Of this, 43.3% were female and 56.7% male. The demographic details of the study participants are presented in Table 1.

Table 1: Demographic Information of the study participants

Age	Number (N)	Percentage (%)
18-20	28	47.5
20-25	30	50.8
>25	1	1.7
Gender	Number (N)	Percentage (%)
Male	34	56.7
Female	26	43.3

Frequency distribution showed that 22-23 years showed maximum stress (37.2%) amongst other age groups. The main factor responsible for anxiety and suicide in students includes academic pressure (40%) to get good grades, followed by relationship issues (8.3%). Around 25% of participants reported all the reasons mentioned in Table 2 as the source of stress, depression and anxiety. When asked about things that make someone feel stressed, around 90% of the students mentioned exam pressure, vast syllabus, and performance pressure during internship and degree days as the primary source of tension among the youth. The other minor factors mentioned during the survey were unrealistic beauty standards, identity issues, bad days, health concerns, early marriage and wrong career choices.

Table 2: Potential Stressors for the study participants

Factors	Number (N)	Percentage (%)
Academic stress	24	40
Love relationship/Break up	5	8.3
Financial stress	3	5
Professional stress	2	3.3
Parent pressure	2	3.3
Social pressure	4	6.7
Mental illness	3	5
Maintaining a balance between things	1	1.7
All of the above	15	25
None of the above	1	1.7

In addition to this information, a PHQ-9 survey was also conducted to assess the students' severity of depression, anxiety, and stress. The details of responses is given in Table 3. Around 45% of the population faced little interest in doing things or feeling depressive for several days. The participants (47.1%) doesn't feel any tiredness or trouble with sleep over the two weeks of study. Nearly 36% of the students faced appetite issues on many days. Around 51.7% of the respondents don't feel any trouble concentrating on reading, writing or watching or have self-pity issues. Only 6.7% of the population showed unusual behaviour when depressed for more than half of the day. The majority of the participants (81.7%) don't think of suicide or hurting themselves. But a shocking revelation occurs during the survey. Approximately 3.3% of the population has suicidal tendencies nearly every day. The importance of mental health education can be seen through question 10 of the survey, as 60% of the participants answered yes to mental awareness programs.

Table 3: Responses obtained for the survey questions

Questions	Number (N)	Percentage (%)
1. Lack of motivation or enjoyment in doing things?		
a) Not at all	18	30
b) Several days	27	45
c) More than half of the day	6	10
d) Nearly every day	9	15
e) Other	0	0
2. Feeling down, depressed, or hopeless		
a) Not at all	19	31.7
b) Several days	27	45
c) More than half of the day	6	10
d) Nearly every day	7	11.7
e) Other	1	1.7
3. Trouble falling or staying asleep, or sleeping too much		
a) Not at all	25	41.7
b) Several days	15	25
c) More than half of the day	7	11.7
d) Nearly every day	12	20
e) Other	1	1.7
4. Feeling tired or having little energy		
a) Not at all	25	41.7
b) Several days	23	38.3
c) More than half of the day	3	5
d) Nearly every day	9	15
e) Other	0	0
5. Poor appetite or overeating?		
a) Not at all	30	50
b) Several days	22	36.7
c) More than half of the day	3	5
d) Nearly every day	5	8.3
e) Other	0	0
6. Feeling down on yourself, as if you've failed or let yourself or your family down?		
a) Not at all	31	51.7
b) Several days	15	25
c) More than half of the day	6	10
d) Nearly every day	7	11.7
e) Other	1	1.7
7. Trouble focusing on tasks like reading the newspaper or watching television?		
a) Not at all	31	51.7
b) Several days	18	30
c) More than half of the day	3	5
d) Nearly every day	8	13.3
e) Other	0	0
8. Walking or speaking slowly enough for others to notice? Or, on the other hand, being hyperactive or agitated a lot more than usual?		
a) Not at all	38	63.3
b) Several days	14	23.3
c) More than half of the day	4	6.7
d) Nearly every day	4	6.7
e) Other	0	0
9. Feeling that you'd be better dead or harming yourself somehow?		
a) Not at all	49	81.7
b) Several days	7	11.7
c) More than half of the day	1	1.7
d) Nearly every day	2	3.3
e) Other	1	1.7
10. Do you think mental awareness programs will help students?		
a) No	3	5
b) Yes	36	60
c) Maybe	20	33.3
d) Other	1	1.7
Score- Not at all=0; Several days= 01; More than half the days=02; Nearly every day=03, Other=01		

Discussion

Mental health awareness is a rising concern all over the world. With the increasing urbanization, technological development and competition, the stress among individuals start from a very young age. One of the most vulnerable among them is young students who are entering adulthood and starting colleges. They go through a lot of changes during this transition period which puts a burden on their young minds. This is especially true for medical students, who face a higher competitive and academic stress and the need to be a top ranker in addition to the regular stressors of students from other fields. The objective of this study was to examine stress levels, factors, and coping mechanisms among medical students. Academic stress was prevalent in 40% of the participants in this study. According to earlier studies, a significant amount of pressure is due to academia, and this degree of stress is substantial.[16] Generally, moderate stress encourages students to put effort into learning. On the other hand, acute stress might suffocate a child's growth and hinder the entire educational process [21]. Our sample population's heightened stress levels, particularly academic stress, could lead to an increased risk of illness and unsatisfactory performance [22, 23]. Furthermore, if an individual answers yes to question 9 of the survey, they should be evaluated for suicide ideation by an expert and should be guided for counselling. Furthermore, provisional diagnosis and proposed treatment actions based on survey scores are mentioned in Table 3 [17-19].

Table 4: Interpretation of the survey score

Provisional diagnosis and proposed treatment actions		
Survey score	Depression severity	Proposed treatment actions
0-4	None/minimal	None, generalized awareness regarding mental health by conducting mental health seminars and camps
5-9	Mild	Watchful waiting; student counselling cell, mentorship program, repeat the survey questions at follow up
10-14	Moderate	A treatment plan, counselling, reducing stress of assignments, extending deadlines, special faculty for free communication with students, mental health programs, follow up and/or pharmacotherapy
15-19	Moderate severe	Active treatment with pharmacotherapy and/or psychotherapy with active measures implemented by college for better mental health of students
20-27	Severe	Immediate medication should be started, and if there is substantial impairment or poor treatment response, a referral to a mental health expert for counselling and/or collaborative management. Regular efforts by college for stress management among students, reducing their study and financial burdens, special lectures by motivational speakers and all of the above mentioned measures to create a positive environment for students.

Counselling and/or antidepressant medicines are generally always effective in treating depression. The participants also suggested coping mechanisms like regular exercise, sound sleep, taking a break from a hectic schedule, a problem-solving attitude and eating your favourite meal. The individuals also suggested some advice to colleges/universities to support mental health among students. The major suggestions include an appreciation of talent, reducing peer pressure, proper career counselling, and conducting seminars, programs and workshops for awareness of mental health issues. Encouragement to minimise workload and incorporate recreational activities, change in curriculum and timetable, normalising asking for help, non-toxic work environment, supporting students financially through scholarships or funds are also other recommendations that should be incorporated by colleges to lessen the burden on student's life. There should be less academic burden and more interactive learning interspersed with various means of extracurricular activities in medical colleges for the healthier mental health of medical students. The medical students should be encouraged to take care of their mental well-being without creating too much pressure on them.

Moreover, every study comes with its limitations. Larger sample size with more resources and factors can better represent the problem. Second, self-rating scales and questions were used to assess psychological symptoms and suicidal behaviour rather than clinical diagnoses. Furthermore, recent data and findings are subject to fluctuation in the fast-changing world.

Conclusion

The study exhibited 45% of the individuals to have at least one symptom of depression, anxiety, sleeplessness, PTSD, or suicidal conduct. Overall, our results pointed out medical students' mental health problems and suggestions that may help build better medical policies, mental health monitoring programs and treatment methods for future health emergencies. In the future, a more extended longitudinal investigation at multiple study sites is required.

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