



MUNCHING THROUGH MENTAL STRAIN: A CROSS-SECTIONAL STUDY ON PSYCHOSOCIAL STRESS AND EMOTIONAL EATING AMONG MEDICAL STUDENTS

Community Medicine

Jeevan Krishna*	Postgraduate, Department of Community Medicine, GIMS, Kalaburagi*Corresponding Author
Kuldeep J D	Assistant Professor, Department of Community Medicine, GIMS, Kalaburagi
Meenakshi M Dhadave	Associate Professor and In-Charge Head, Department of Community Medicine, GIMS, Kalaburagi
G Ajay Kumar	Principal & Professor, Department of Community Medicine, GIMS, Kalaburagi

ABSTRACT

Background: Persistent stress has been linked to a range of physical conditions such as hypertension, cardiovascular disease, and weakened immunity, as well as mental health problems including anxiety, depression, and burnout. When stress exceeds an individual's adaptive capacity, maladaptive coping behaviours may develop, including emotional eating. The problem is not merely behavioural but also psychosocial, as it undermines students' emotional resilience and sets a poor precedent for future health-promoting behaviours in their professional practice. Given the dual role of medical students as both learners and future health advocates, addressing these interrelated issues is essential. **Objectives:** To assess the prevalence of stress and psychosocial correlates with emotional eating among medical undergraduate students. **Materials and Methods:** This cross-sectional study was conducted among 340 MBBS undergraduate students at a tertiary care medical college hospital, in Kalaburagi, Karnataka, India, for a period of 1 month after obtaining approvals from the Institutional Ethics Committee. Among the total strength of students in four batches (600), using random number table, students are selected until sample size is achieved. Data were analyzed using IBM SPSS software and presented as frequencies and percentages. Chi-square tests were applied, with $p < 0.05$ considered statistically significant. **Results:** Among 340 MBBS undergraduates (50.3% male; 52.1% ≥ 20 years), unhealthy eating practices were common: only 44.1% ate meals regularly, 48.5% took breakfast daily, 23.2% consumed vegetables daily, and 16.5% ate fruit daily; 26.7% consumed fried food daily. Emotional eating prevalence was 80.3% (low: 46.2%, emotional: 48.7%, very emotional: 5.1%). Most students reported moderate stress (89.4%); emotional eating was significantly associated with stress level (91% of emotional eaters were in the moderate-stress group; $\chi^2 = 11.0$, $p = 0.004$). Emotional eating did not differ significantly by age or gender, but varied by year of study, being highest in the exam-attending batch II (28.2%, $p < 0.05$).

KEYWORDS

Emotional Eating, Psychosocial Stress, Medical Students, Mental Health

INTRODUCTION

Stress is a natural psychological and physiological response that arises when individuals perceive that the demands of a situation exceed their personal or environmental resources to cope. Persistent stress has been linked to a range of physical conditions such as hypertension, cardiovascular disease, and weakened immunity, as well as mental health problems including anxiety, depression, and burnout. Psychosocial stressor is defined as a life situation that creates an unusual or intense level of stress that may contribute to the development or aggravation of mental disorder, illness, or maladaptive behaviour as per the American Psychological Association¹

Medical education is characterized by an intense academic workload, high expectations, and frequent exposure to emotionally challenging situations. These stressors collectively contribute to significant psychological distress among medical undergraduates, often manifesting as high levels of perceived stress. Studies have consistently shown that medical students experience greater stress compared to peers in other disciplines due to the competitive nature of training and constant academic evaluation demands.

Perceived stress refers to the individual's subjective evaluation of stressors and their capacity to cope with them. When stress exceeds an individual's adaptive capacity, maladaptive coping behaviours may develop, including emotional eating. Emotional eating has traditionally been defined as eating in response to negative emotions. Such overeating can impact general health because of excess energy intake and mental health, due to the risks of developing binge eating.² This behaviour has been shown to momentarily relieve negative emotions but may contribute to long-term health issues such as obesity, metabolic imbalance, and poor self-image.

Furthermore, recent studies among college populations show that avoidance coping mediates the link between stress and emotional eating, indicating that individuals who fail to employ adaptive coping strategies may rely more heavily on food for emotional regulation. The problem is not merely behavioural but also psychosocial, as it undermines students' emotional resilience and sets a poor precedent for future health-promoting behaviours in their professional practice.

Given the dual role of medical students as both learners and future health advocates, addressing these interrelated issues is essential. Though many studies are being done on psychosocial stress and its coping mechanisms, only a few studies have been done focusing on medical professionals, particularly undergraduate students, who are a highly vulnerable population to different levels of stress. This study aims to collect evidence on the prevalence of emotional eating and its correlation to psychosocial stress among undergraduate students of Gulbarga Institute of Medical Sciences, Kalaburagi.

MATERIALS AND METHODS

This cross-sectional study was conducted among 340 MBBS undergraduate students at a tertiary care medical college hospital, in Kalaburagi, Karnataka, India, for a period of 1 month after obtaining approvals from the Institutional Ethics committee

Sample size and sampling technique

The sample size was determined to be 326, rounded off to 340, based on the prevalence of emotional eating, which Sakshi N. Pal et al. [9] reported to be 70.4% in 2023 with a 95% confidence level and 5% acceptable error. Among the total strength of MBBS students in four batches (600), using random number table, equal number of undergraduate students are selected until sample size is achieved.

Inclusion and exclusion criteria

Participants who were diagnosed with psychiatric disorders or on any medication for any psychiatric illness and other comorbidities were excluded from the study.

DATA COLLECTION

A pretested, semi structured, self-administered questionnaire was used to collect information from the participants. Informed consent was obtained from the participants before data collection. The questionnaire includes sociodemographic details, a 10 item Perceived stress scale (PSS-10) and 10 item Emotional eating questionnaire and a questionnaire for assessing eating habits of participants. The scores of individual PSS items range from 0 to 4. The summed total PSS-10 score ranges from 0 to 40, with a higher score representing higher perceived stress levels.³ It is further classified into three categories of perceived stress, namely, low (0–13), moderate (14–26), and high

(27–40) stress.⁴ Participants were categorized as non-emotional eaters (0–5) and total emotional eaters (6–30), which comprises low emotional eaters (6–10), emotional eaters (11–20), and highly emotional eaters (21–30), based on their total EEQ scores, which range from 0 to 30.⁵ Data was entered on Microsoft Excel and analyzed

RESULTS

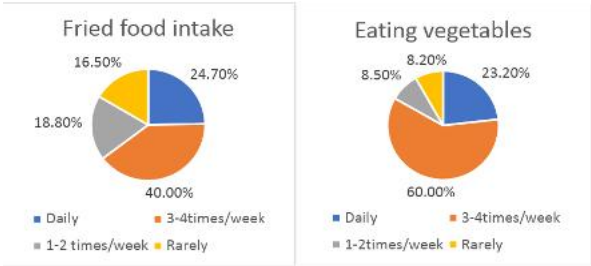
Among 340 study subjects, 171 (50.3%) were males and 169 (49.7%) were females. Total 163 (47.9%) of them were < 20 years of age and 177 (52.1%) were > 20 years. All participants were equally divided among 4 batches, 25% of participants from each batch. Only 3 (0.9%) of the study participants completed their plus two classes in local language instead of English language

Table1. Sociodemographic details of participants

Gender	Counts	% of Total
Female	169	49.7%
Male	171	50.3%
Age Category		
≤20 years	163	47.9%
≥20 years	177	52.1%
Medium of study in PUC		
English	337	99.1%
Local language	3	0.9%

Eating and Lifestyle practices

On the assessment of eating habits of the undergraduate students, only 44.1% reported taking their meals regularly. With regards to breakfast, 48.5% reported taking their breakfast daily. Only 36.1% of participants reported having meals 3 times in a day except snacks and 26.7% of participants took snacks 3-4 times/week apart from regular meals. Among 340 subjects, only 23.2% took green, red or yellow vegetables daily and only 16.5% took fruits daily. 40% of the study subjects ate fried food 3-4 times/week and 26.7% of subjects took fried food daily which indicates unhealthy dietary practices.



Emotional Eating

The total prevalence of emotional eating was observed to be 80.3% with only 19.7% was classified to be non-emotional eaters. Among the total emotional eaters, 46.15%, 48.7%, 5.12% of the participants were classified as low, emotional, and very emotional eaters respectively. Majority of undergraduate students under study reported to be having moderate stress (89.4%) followed by high stress (5.3%).

Table2. Prevalence of Emotional Eating in different batches and gender

Gender	Emotional eating grading	Counts	% of Total
Female	emotional eater	139	40.9%
	non emotional eater	30	8.8%
Male	emotional eater	134	39.4%
	non emotional eater	37	10.9%
Year of study			
2nd year MBBS	emotional eater	66	19.4%
	non emotional eater	19	5.6%
3rd year MBBS (Batch 1)	emotional eater	77	22.6%
	non emotional eater	8	2.4%
3rd year MBBS (Batch 2)	emotional eater	67	19.7%
	non emotional eater	18	5.3%
4th year MBBS	emotional eater	63	18.5%
	non emotional eater	22	6.5%

Factors associated with emotional eating

The prevalence of emotional eating among the two age categories, < 20 years and > 20 years, was found to be almost similar with minimal

increase in > 20 years age group 50.9% (139) and was not statistically significant. EE among males and females also followed a similar pattern with females showing higher prevalence of EE 50.9% (139), but not statistically significant. Among the four undergraduate batches under study, EE was more prevalent in the undergraduate batch II 28.2% (77), which was the exam attending batch at the time of study and was found to be statistically significant (P<0.05).

EE was more prevalent in the moderate stress category of undergraduate students 91% (249), followed by high stress category 5.5% (15) and low stress category 2.19% (6) and this was found to be statistically significant. There was no statistically significant relationship found between eating habits of the study participants and emotional eating.

Table3. Association of Stress levels with Emotional Eating

Level of stress	Emotional eating		X ²	P value
	Present	Absent		
Low stress	9	9	11.0	0.004
Moderate stress	249	55		
High stress	15	3		

DISCUSSION

The present cross-sectional study on 340 MBBS undergraduates at GIMS, Kalaburagi, unveils an 80.3% prevalence of emotional eating, significantly associated with moderate psychosocial stress (89.4%; p=0.004), peaking in exam batches, alongside poor dietary habits like irregular meals and high fried food intake. This echoes Sayana Basheer et al. (2023), who reported 82.8% emotional eating among 320 healthcare professionals at JSS Hospital, Mysore, with significant ties to moderate stress (77.19%) and fried food consumption. Similarly, Shruti Iyer et al. (2021) identified 13% high-risk eating disorders among 332 medical college students, strongly linked to high stress (p<0.001), underscoring stress as a consistent trigger across student and professional cohorts.

In contrast to Rintu Thomas et al. (2018), who found only a weak positive correlation between perceived stress and uncontrolled eating among 400 Udupi undergraduates, our findings demonstrate a robust association, potentially due to the intensified demands of medical training. Geethanjali Murthy et al. (2024) noted 37.3% Night Eating Syndrome in 223 Chengalpattu college students, associated with depression and BMI (p=0.001), aligning with our stress-emotional eating link but highlighting lower prevalence in non-medical groups. These comparisons affirm emotional eating's pervasiveness under stress in Indian academic settings, advocating for tailored interventions like counseling and nutrition education to foster healthier coping in medical students.

CONCLUSION

The study shows that emotional eating is highly prevalent among undergraduate MBBS students, with four out of five exhibiting some degree of emotional eating. Most students reported moderate psychosocial stress, and stress levels showed a significant association with emotional eating, especially among the exam-attending batch. Age, gender, and general eating habits did not demonstrate significant links with emotional eating. The findings indicate that unhealthy dietary practices are common, with irregular meals and low intake of fruits and vegetables.

RECOMMENDATIONS AND LIMITATIONS

1. Implement structured stress-management programs for undergraduate MBBS students, particularly during examination periods.
2. Integrate regular counselling services and peer-support systems to help students recognize and manage emotional triggers related to eating.
3. Promote healthy dietary habits through nutrition education sessions, emphasizing regular meals and increased intake of fruits and vegetables.
4. Establish accessible campus-based healthy food options to reduce reliance on fried and high-calorie snacks.
5. Introduce routine screening for stress and emotional eating patterns to enable early identification and support for at-risk students.

6. Encourage faculty to adopt academic schedules and assessment practices that minimize avoidable stress.

7. Strengthen collaboration between medical education units and student welfare departments to ensure continuous monitoring and wellness promotion initiatives.

8. The study was restricted to a single institution, which may limit the generalizability of findings to other medical colleges. Furthermore, because the data were self-reported, it was susceptible to recall bias and under or overreporting of data by the participants. However, efforts were taken to minimize this limitation by administering reliable validated questionnaires, which are known to reduce measurement errors.

REFERENCES

1. American Psychological Association. (2018, April 19). *APA Dictionary of Psychology*. Dictionary.apa.org. <https://dictionary.apa.org/psychosocial-stressor>
2. Reichenberger, J., Schnepfer, R., Arend, A.-K., & Blechert, J. (2020). Emotional eating in healthy individuals and patients with an eating disorder: evidence from psychometric, experimental and naturalistic studies. *Proceedings of the Nutrition Society*, 79(3), 290–299.
3. Basheer, S., Kulkarni, P., R. Pragadesh, & A Vanmathi. (2024). Psychosocial Correlates of Emotional Eating Among Healthcare Professionals in a Tertiary Care Centre in Mysuru. *APIK Journal of Internal Medicine*.
4. *NovoPsych Client Information*. (n.d.). <https://novopsych.com/wp-content/uploads/2022/02/pss-10-report-PDF-1.pdf>
5. Garaulet, M., Canteras, M., Morales, E., López-Guimera, G., Sánchez-Carracedo, D., & Corbalán-Tutau, M. D. (2012). Validation of a questionnaire on emotional eating for use in cases of obesity: the Emotional Eater Questionnaire (EEQ). *Nutrición Hospitalaria*, 27(2), 645–651
6. Murthy, G., Gollapalli, P. K., Jasmine, M., Surya, B. N., P. M., P. M., N. K. S., Syed, R., S. V., Sundarabopathy, K., & Kumar, A. (2024). Night Eating Syndrome and Its Association With Depression Among College Students: A Cross-Sectional Study. *Cureus*.
7. Iyer, S., & Shriram, V. (2021). Prevalence of Eating Disorders and Its Associated Risk Factors in Students of a Medical College Hospital in South India. *Cureus*.
8. Priyadarshini, S., Thomas, R., & Jeyalakshmi, K. (2019). Perceived stress and eating behavior among professional and nonprofessional undergraduate students in Udupi District, Karnataka. *Indian Journal of Public Health*, 63(4), 353.
9. Jain, M. (2014). Relationship of Perceived Stress and Dental Caries among Pre University Students in Bangalore City. *JOURNAL of CLINICAL and DIAGNOSTIC RESEARCH*.
10. Abdallah, A., & Gabr, H. (2014). Depression, anxiety and stress among first year medical students in an Egyptian public university. *International Research Journal of Medicine and Medical Sciences*, 2(1), 11–19.