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Mood, mind, and meals: Evaluating emotional eating prevalence and nutritional choices among university students

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Abstract
Background: Emotional eating is an increasingly recognized behavioural response among university students, often triggered by academic stress, psychological distress, and lifestyle transitions. It is characterized by eating in response to emotions rather than physiological hunger and has been associated with unhealthy dietary patterns, obesity, and poor mental health. Understanding the prevalence of emotional eating and its influence on food choices is essential for developing effective health promotion strategies in university settings.
Objective: This study aimed to evaluate the prevalence of emotional eating and examine its association with nutritional choices among university students.
Methodology: A cross-sectional descriptive study was conducted among 200 undergraduate and postgraduate students aged 18–25 years using simple random sampling. Data were collected using a structured socio-demographic questionnaire, the Emotional Eating Scale (EES), Food Frequency Questionnaire (FFQ), 24-hour dietary recall, and anthropometric measurements. Statistical analyses were performed using SPSS version 26.0. Descriptive statistics, independent *t*-test, Chi-square test, Pearson's correlation, and binary logistic regression were applied, with statistical significance set at $p < 0.05$.
Results: Of the 200 participants, 42.5% exhibited moderate emotional eating, while 25.0% demonstrated high emotional eating, indicating an overall prevalence of 67.5% for moderate-to-high emotional eating. Female students had significantly higher emotional eating scores than males (27.62 ± 7.14 vs. 23.84 ± 6.52; $p = 0.002$). Emotional eating was significantly associated with higher consumption of fast foods, fried snacks, and sugar-sweetened beverages, and lower intake of fruits and vegetables ($p < 0.001$). Emotional eating showed a significant negative correlation with the Healthy Eating Index ($r = –0.49$, $p < 0.001$) and positive correlations with body mass index ($r = 0.36$) and perceived stress ($r = 0.58$). Logistic regression identified academic stress (AOR = 3.21, 95% CI: 1.92–5.38), poor sleep quality (AOR = 2.18, 95% CI: 1.29–3.69), female gender (AOR = 1.86, 95% CI: 1.05–3.28), and breakfast skipping (AOR = 1.92, 95% CI: 1.12–3.31) as significant predictors of emotional eating.
Conclusion: Emotional eating is highly prevalent among university students and is strongly associated with poor dietary quality, unhealthy food choices, academic stress, inadequate sleep, and breakfast skipping. These findings highlight the need for integrated university-based nutrition education, mental health support, stress management programs, and healthy lifestyle interventions to improve students' dietary behaviours and overall well-being.

Keywords: Emotional eating, university students, dietary habits, nutritional choices, food frequency questionnaire, academic stress, healthy eating, mental health, obesity, young adults

Introduction

The transition from adolescence to university life is accompanied by considerable psychological, academic, and social changes that influence eating behaviours and overall health (Maillet and Grouzet, 2023) [14]. University students frequently encounter examination stress, financial challenges, irregular schedules, sleep deprivation, and reduced parental supervision, all of which contribute to unhealthy lifestyle practices (Deasy *et al*., 2014) [9]. Emotional eating refers to the tendency to consume food in response to emotional states such as stress, anxiety, sadness, loneliness, or boredom rather than physiological hunger (Ljubičić *et al*., 2023) [13]. Although eating temporarily relieves negative emotions through activation of the brain's reward pathways, repeated emotional eating often results in excessive consumption of calorie-dense, nutrient-poor foods rich in sugars and saturated fats (Jurek and Maruda, 2024) [12]. Consequently, emotional eating has been associated with weight gain, obesity, metabolic syndrome, poor mental health, and diminished quality of life.

Recent studies indicate that approximately 30–50% of university students exhibit moderate to high emotional eating behaviours (Aguilar-Galarza *et al*., 2026) [1]. Academic stress, anxiety, depressive symptoms, poor sleep quality, and inadequate coping strategies have been identified as major determinants of emotional eating (Alexatou *et al*., 2025) [3]. Furthermore, emotional eaters are more likely to skip breakfast, consume fast foods, snack frequently, and eat during late-night hours, resulting in lower diet quality and increased nutritional deficiencies (Akhlaghi and Kohanmoo, 2025) [2]. Despite growing concern regarding emotional eating among young adults, limited evidence is available regarding its relationship with dietary choices among university students in developing countries.

Therefore, understanding the prevalence of emotional eating and identifying associated nutritional behaviours are essential for designing effective campus-based nutrition education and mental health interventions.

The present study was undertaken to determine the prevalence of emotional eating among university students and to examine how emotional factors influence their dietary habits and nutritional choices. Specifically, the study aimed to assess the eating patterns and food preferences of university students, evaluate the association between emotional eating and the consumption of unhealthy foods such as fast foods, fried snacks, and sugar-sweetened beverages, and identify demographic and lifestyle factors, including gender, academic stress, sleep quality, physical activity, and breakfast skipping, that are associated with emotional eating. The findings are expected to provide evidence for developing targeted nutrition education, mental health support, and healthy lifestyle interventions within university settings to promote better eating behaviours and overall well-being among students.

Methodology

1. Study Design

A cross-sectional study was conducted among university students to assess emotional eating and its association with dietary behaviours This design was selected because it enables the assessment of behavioural, dietary, and psychosocial characteristics of participants at a single point in time without manipulating any variables. The cross-sectional approach is appropriate for estimating prevalence and identifying associations between emotional eating and potential influencing factors.

2. Study Area

The study was conducted on the university campus, W.B., India, where undergraduate and postgraduate students from different academic disciplines were recruited. The campus environment provides a diverse student population exposed to common academic, social, and lifestyle challenges, making it an appropriate setting for investigating emotional eating behaviours and dietary practices among young adults.

3. Study Population

The study population comprised undergraduate and postgraduate students aged 18–25 years enrolled at the university. This age group represents late adolescence and early adulthood, a developmental stage characterized by increased independence, academic responsibilities, lifestyle transitions, and heightened susceptibility to emotional stress, all of which may influence eating behaviours and food choices.

4. Sample Size

A total of 200 university students participated in the study. The sample size was considered adequate to estimate the prevalence of emotional eating and to examine its association with dietary habits and related lifestyle factors with acceptable statistical power. Participation was voluntary, and all respondents completed the study questionnaire after providing informed consent.

5. Sampling Technique

A simple random sampling technique was employed to select study participants. Eligible students were randomly chosen from the university student population to ensure that each individual had an equal probability of being included in the study. This sampling method minimized selection bias and enhanced the representativeness of the sample.

6. Inclusion Criteria

Students were eligible to participate if they were 18–25 years of age, enrolled in undergraduate or postgraduate academic programs, and willing to provide written informed consent. Only students who voluntarily agreed to participate and completed all components of the questionnaire were included in the final analysis.

7. Exclusion Criteria

Students with a previously diagnosed eating disorder, pregnant or lactating women, and individuals following medically prescribed therapeutic diets for chronic illnesses were excluded from the study. These exclusion criteria were adopted to minimize potential confounding factors that could independently influence eating behaviour and dietary intake.

8. Data Collection Tools

Data were collected using a pre-tested structured questionnaire consisting of socio-demographic information, lifestyle characteristics, and dietary behaviour. Emotional eating was assessed using the Emotional Eating Scale (EES; Arnow *et al*., 1995) [4], while habitual food intake was evaluated through a Food Frequency Questionnaire (FFQ) and a 24-hour dietary recall (Cade *et al*., 2002) [6]. Anthropometric measurements, including height, weight, and body mass index (BMI), were recorded using standardized procedures to assess the nutritional status of the participants (Casadei & Kiel, 2020) [7].

9. Study Variables

The study included both independent and dependent variables. Independent variables comprised participants' age, gender, academic stress, sleep duration, physical activity level, and breakfast or meal-skipping habits, as these factors have been reported to influence eating behaviour. The dependent variable was emotional eating status, measured using the Emotional Eating Scale and categorized according to the participants' emotional eating scores. The relationship between the independent variables and emotional eating status was subsequently evaluated using appropriate statistical analyses.

10. Statistical Analysis

Data were analyzed using SPSS Version 26. Continuous variables were expressed as Mean ± SD, while categorical variables were expressed as frequencies and percentages. Chi-square test, independent t-test, Pearson correlation, and binary logistic regression were performed. Statistical significance was considered at $p < 0.05$.

11. Ethical Considerations

The present study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki for research involving human participants. Formal ethical clearance was not obtained, as the study involved a non-invasive questionnaire-based survey conducted among university students and did not include any clinical intervention or collection of biological samples. Prior to participation, all respondents were informed about the purpose and objectives of the study, and voluntary written informed consent was obtained from each participant. Participants were assured of the confidentiality and anonymity of their responses, and no personally identifiable information was collected. Participation was entirely voluntary, and respondents were free to withdraw from the study at any stage without any consequences.

Results and Discussion

Table 1: Socio-demographic Characteristics of the Participants (n = 200)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	18–20	82	41.0
	21–23	89	44.5
	24–25	29	14.5
Gender	Male	94	47.0
	Female	106	53.0
Academic Program	Undergraduate	138	69.0
	Postgraduate	62	31.0
Residence	Hostel	97	48.5
	Day Scholar	103	51.5

Among the 200 participants, females (53.0%) slightly outnumbered males (47.0%). Most students belonged to the 21–23-year age group (44.5%), followed by 18–20 years (41.0%). Nearly two-thirds were undergraduate students, indicating that emotional eating behaviours are common during the early years of university education when students experience greater academic transition and psychological stress.

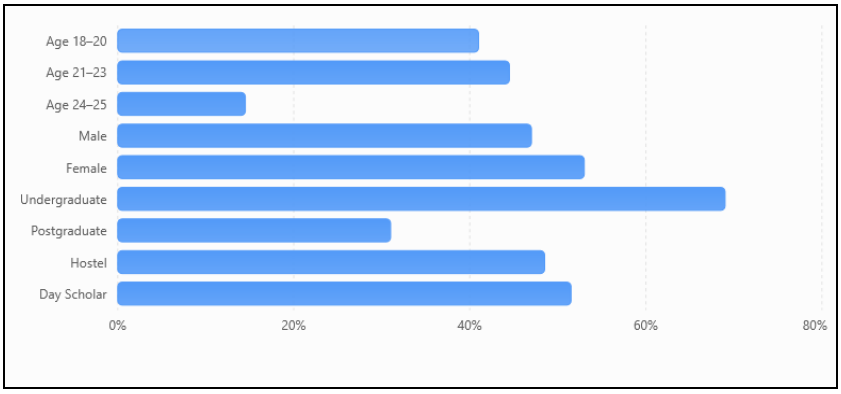

Fig 1: Percentage distribution of participants according to socio-demographic characteristics

The majority of participants belonged to the 21–23 years age group (44.5%), were female (53.0%), enrolled in undergraduate programs (69.0%), and were day scholars (51.5%).

Table 2: Prevalence of Emotional Eating among University Students

Emotional Eating Status	Frequency (n)	Percentage (%)
Low	65	32.5
Moderate	85	42.5
High	50	25.0

The findings demonstrated that 42.5% of students exhibited moderate emotional eating, while 25.0% showed high emotional eating behaviour. Overall, approximately 67.5% of students reported moderate-to-high emotional eating, indicating that emotional regulation through food consumption is a widespread concern among university populations.

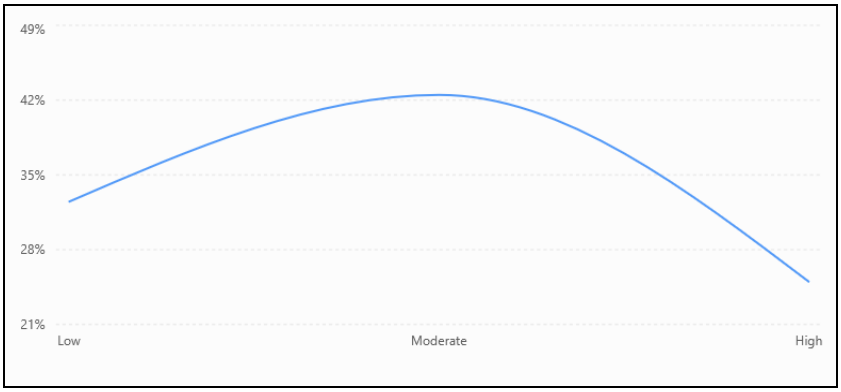

Fig 2: Linear representation of emotional eating status among university students

The highest proportion of students exhibited moderate emotional eating (42.5%), followed by low emotional eating (32.5%), while 25.0% of participants demonstrated high emotional eating behavior. This indicates that emotional eating is prevalent among a substantial proportion of university students, with moderate levels being the most common.

Table 3: Comparison of Emotional Eating Scores According to Gender

Gender	Mean ± SD	t-value	p-value
Male (n=94)	23.84 ± 6.52		
Female (n=106)	27.62 ± 7.14	3.18	0.002

Female students reported significantly higher emotional eating scores than male students (p=0.002). Emotional factors such as anxiety, examination stress, hormonal influences, and body image concerns may contribute to increased emotional eating among female students.

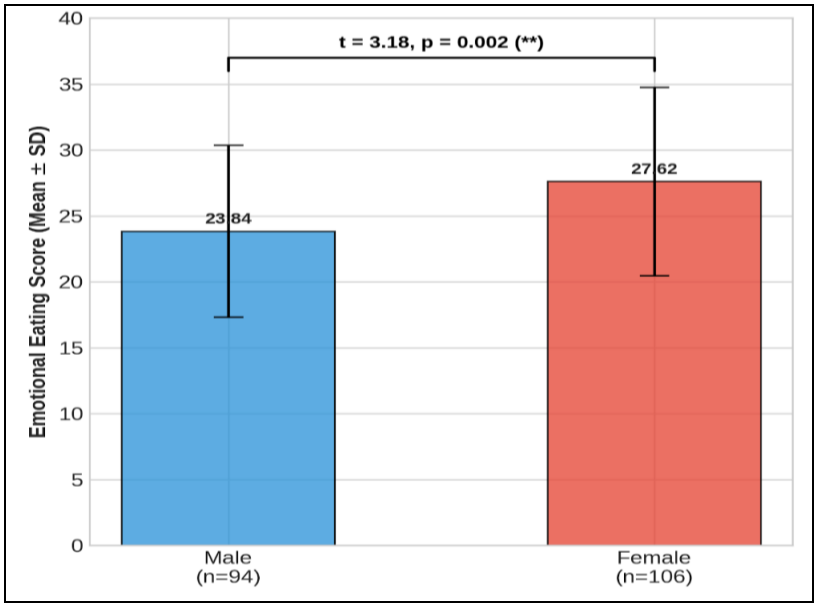

Fig 3: Comparison of Emotional Eating Scores Between Male and Female Participants

Bars represent the mean emotional eating scores of male and female participants, while error bars indicate the standard deviation (Mean ± SD). Female participants exhibited significantly higher emotional eating scores (27.62 ± 7.14) compared with male participants (23.84 ± 6.52). The bracket denotes a statistically highly significant difference between the two groups as determined by an independent samples t-test (t = 3.18, p = 0.002), indicating greater emotional eating tendencies among female students.

Table 4: Frequency of Consumption of Selected Foods According to Emotional Eating Status

Food Item	Low Emotional Eating (%)	Moderate/High Emotional Eating (%)	χ^2	p-value
Fast food (>3/week)	21.5	58.5	28.61	<0.001*
Sugar-sweetened beverages	24.6	61.5	30.12	<0.001*
Fried snacks	27.7	65.9	32.87	<0.001*
Fruits (Daily)	63.1	31.8	18.73	<0.001*
Vegetables (Daily)	58.5	35.6	14.25	0.001*

Students with moderate-to-high emotional eating consumed significantly more fast foods, sugary beverages, and fried snacks, whereas daily fruit and vegetable consumption was significantly lower (p<0.001). These findings suggest that emotional eating promotes preference for energy-dense and nutrient-poor foods.

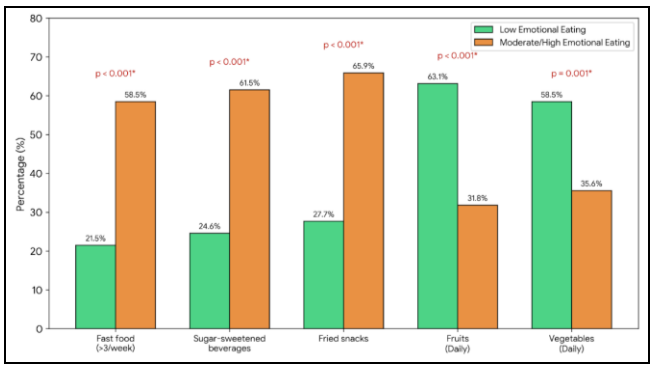

Fig 4: Frequency of Selected Food Consumption Based on Emotional Eating Status

The bars represent the percentage distribution of participants consuming selected food categories within each emotional eating group (low, moderate, and high emotional eating). Comparative analysis using the Chi-square (χ^2) test demonstrated statistically highly significant differences in dietary consumption patterns across all food categories according to emotional eating status ($p \leq 0.001$). Participants with higher emotional eating scores showed a greater tendency toward frequent consumption of energy-dense and highly palatable foods, indicating a significant association between emotional eating behavior and food choice patterns.

Table 5: Association Between Breakfast Skipping and Emotional Eating

Breakfast Habit	Emotional Eaters n (%)	Non-emotional Eaters n (%)	χ^2	p-value
Regular	38 (28.1)	59 (90.8)		
Skip Breakfast	97 (71.9)	6 (9.2)	79.43	<0.001*

Breakfast skipping was significantly associated with emotional eating (χ^2=79.43, p<0.001). Students who skipped breakfast were more likely to report uncontrolled snacking and overeating later in the day.

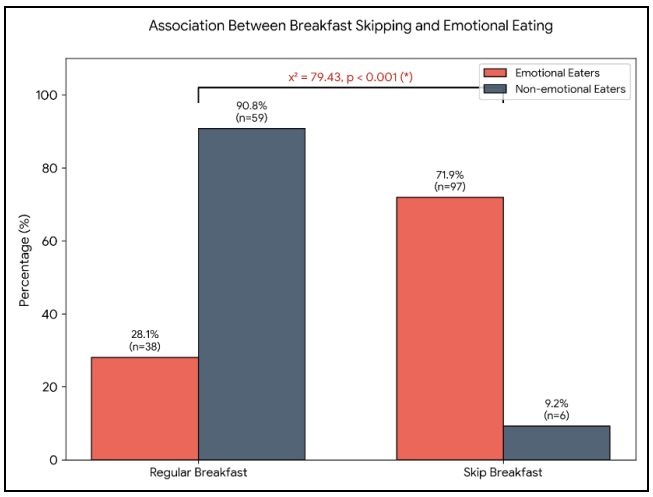

Fig 5: Interaction Between Breakfast Habits and Emotional Eating Status

Bars represent the percentage distribution of participants within each breakfast consumption behaviour category, with corresponding sample sizes indicated in parentheses (n). Analysis using the Chi-square (χ^2) test revealed a highly significant association between breakfast habits and emotional eating status (χ^2 = 79.43, p < 0.001). Participants who frequently skipped breakfast demonstrated a greater prevalence of moderate to high emotional eating behaviours compared with regular breakfast consumers, suggesting that breakfast omission may be an important behavioural factor associated with emotional eating patterns among university students.

Table 6: Correlation Between Emotional Eating Score and Healthy Eating Index

Variable	Pearson's r	p-value
Healthy Eating Index	-0.49	<0.001*
BMI	0.36	<0.001*
Stress Score	0.58	<0.001*
Sleep Duration	-0.41	<0.001*

Pearson's correlation analysis revealed a significant negative relationship between emotional eating and healthy eating index (r = –0.49, p<0.001), indicating that higher emotional eating scores were associated with poorer diet quality. Emotional eating was positively correlated with BMI and stress levels while negatively correlated with sleep duration.

Table 7: Logistic Regression Analysis of Factors Associated with Emotional Eating

Variable	Adjusted OR	95% CI	p-value
Female Gender	1.86	1.05–3.28	0.031*
Academic Stress	3.21	1.92–5.38	<0.001*
Poor Sleep Quality	2.18	1.29–3.69	0.004*
Breakfast Skipping	1.92	1.12–3.31	0.018*
Physical Inactivity	1.69	0.98–2.94	0.061

Logistic regression analysis identified academic stress as the strongest predictor of emotional eating (AOR=3.21, p<0.001). Students with poor sleep quality had more than twice the likelihood of emotional eating compared with those reporting adequate sleep. Female gender and breakfast skipping were also significant independent predictors, whereas physical inactivity did not remain statistically significant after adjustment.

Discussion

The present study demonstrated that emotional eating is highly prevalent among university students, with nearly two-thirds exhibiting moderate to high levels of emotional eating. Female students showed significantly greater emotional eating scores than males, which is consistent with previous findings suggesting that women are more likely to use food as a coping mechanism for emotional distress (Du *et al*., 2022) [10]. A strong association was observed between emotional eating and unhealthy dietary practices. Students with higher emotional eating scores consumed fast foods, sugar-sweetened beverages, fried snacks, and late-night meals more frequently, while consuming significantly fewer fruits and vegetables (Alexatou, 2026) [1]. These dietary patterns increase the risk of obesity, insulin resistance, cardiovascular disease, and micronutrient deficiencies (Alexatou, 2026).

Academic stress emerged as the strongest predictor of emotional eating, highlighting the impact of university-related psychological pressures on eating behaviour (Chamberlin *et al*., 2018; Gunasegaram, 2024) [8, 11]. Poor sleep quality and breakfast skipping further contributed to unhealthy eating patterns, emphasizing the interconnected relationship between mental health, lifestyle behaviours, and nutritional choices (Du *et al*., 2022) [10].

The significant negative correlation between emotional eating and the Healthy Eating Index indicates that increasing emotional eating is accompanied by deterioration in overall diet quality (Bell *et al*., 2021) [5]. Similarly, positive correlations with BMI and perceived stress suggest that emotional eating may contribute to excessive weight gain and psychological burden among young adults (Du *et al*., 2022) [10]. These findings underscore the importance of integrating nutrition education, stress management strategies, mental health counselling, and healthy lifestyle promotion into university wellness programs to reduce emotional eating and improve long-term health outcomes.

Conclusion

The present study concludes that emotional eating is highly prevalent among university students and is significantly associated with unhealthy dietary behaviours, including increased consumption of fast foods, fried snacks, and sugar-sweetened beverages, along with reduced intake of fruits and vegetables. Female students, individuals experiencing higher academic stress, poor sleep quality, and those who frequently skipped breakfast were found to be more susceptible to emotional eating. The observed negative association between emotional eating and overall diet quality highlights the adverse impact of emotional distress on nutritional choices and health outcomes. These findings emphasize the need for comprehensive university-based interventions that integrate nutrition education, stress management, psychological counselling, and healthy lifestyle promotion to foster positive eating behaviours and improve both mental and physical well-being among

students. Future longitudinal and intervention-based studies involving larger and more diverse populations are recommended to further explore causal relationships and evaluate the effectiveness of targeted preventive strategies.

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