Yemen Journal of Medicine

https://yemenjmed.com

Article information

DOI: 10.63475/yjm.v5i1.0300

Article history:
Received: 01 March 2026
Accepted: 24 April 2026
Published: 29 April 2026

Correspondence to:
Mohammed Alsebaeai
Email: malsobaee22@gmail.com
ORCID: 0000-0003-2120-4865

How to cite this article
Alsebaeai M, Al-kubati A, Alshahthi M, Alazazi A, Al-Mojahed A, Al-Sabri B, et al. Prevalence of emotional eating and its association with perceived stress and body mass index among medical sciences students in Sana'a, Yemen. Yemen J Med. 2026;1(1):144-152.

Original Article

Prevalence of Emotional Eating and Its Association With Perceived Stress and Body Mass Index Among Medical Sciences Students in Sana'a, Yemen

Mohammed Alsebaeai[1], Adnan Al-kubati[2], Mohammed Alshahthi[3], Asmaa Alazazi[4], Ayat Al-Mojahed[4], Boshra Al-Sabri[4], Jehad Al-Ahnomi[4], Noorhan Al Sharabi[4], Raghad Al SuBear[4], Rawan Alward[4], Shahd Al-Ariqi[4], Shaimaa Al-Hakami[4], Walaa Al-Jumaai[4]

1 Assistant Professor, Department of Food Science and Technology, Faculty of Agriculture and Food Science, Ibb University, Ibb, Yemen
2 Professor, Department of Food and Nutrition Sciences, Faculty of Agriculture, Food and Environment, Sana'a University, Sana'a, Yemen
3 Master of Science (MSc), Community Health Department, Faculty of Medical Sciences, Al-Nasser University, Sana'a, Yemen
4 Nutrition Specialists, Therapeutic Nutrition Department, Faculty of Medical Sciences, Al-Nasser University, Sana'a, Yemen

ABSTRACT

Background: Emotional eating is a stress-related behavior among university students, yet evidence from low-resource settings remains limited. To assess the prevalence of emotional eating and its association with perceived stress and body mass index (BMI) among undergraduate medical sciences students.

Methods: A cross-sectional descriptive study was conducted among 371 students at Al-Nasser University, Sana'a, Yemen, during 2025 to 2026. Participants were selected using a convenience sampling technique. Data were collected using a structured self-administered questionnaire including socio-demographic characteristics, BMI, the Emotional Eating Scale (EES), and the Perceived Stress Scale (PSS-10). Data were analyzed using descriptive statistics and Chi-square tests to examine associations between variables.

Results: Emotional eating was prevalent in 53.1% of students (48.5% emotional, 4.6% very emotional). Moderate and high stress were reported by 62.8% and 25.1%, respectively. Emotional eating was significantly associated with perceived stress ($P < 0.05$), but not with BMI ($P > 0.05$).

Conclusions: Emotional eating is common and mainly linked to psychological stress rather than BMI among medical sciences undergraduates.

Key words: Emotional eating, perceived stress, body mass index, medical sciences students, undergraduate students, Yemen

INTRODUCTION

Emotional eating is defined as the tendency to eat in response to emotional states rather than physiological hunger and is commonly used as a coping mechanism for negative emotions such as stress, anxiety, boredom, and depression. [1, 2] This eating behavior has gained increasing research attention due to its association with dysregulated eating patterns and adverse health outcomes. [1]

The biopsychosocial model offers a holistic perspective on eating disorders (EDs), emphasizing the interplay between biological, psychological, and social factors. It highlights that EDs cannot be attributed to a single cause but arise from complex interactions among multiple influences. Biologically, factors such as genetic predisposition, female gender, [3] and a family history of EDs [4] can increase vulnerability. Psychological influences include traits like perfectionism, [5] neuroticism, and low self-esteem, [6] impulsivity, and compulsivity, [7] which can contribute to maladaptive coping mechanisms and sustain disordered eating behaviors. EDs frequently co-occur with mental health conditions, such as anxiety, depression, and risky alcohol use. [7] Social factors—including gender, socioeconomic status, ethnicity, body image concerns, societal pressures, and involvement in competitive sports [8]—also play a critical role in shaping eating behaviors and body perception. [8] While EDs were once viewed as predominantly Western issues, [9, 10] research confirms their presence in non-Western populations, with prevalence gradually increasing. [11, 12] Globalization and exposure to Western media ideals further contribute to their rising rates worldwide. [13] Understanding these interconnected factors is essential for developing culturally sensitive and tailored prevention and treatment strategies.

Emotional eating is particularly prevalent among adolescents and young adults, including university students, who experience multiple emotional and psychological challenges during this life stage. [14] Cross-sectional studies have demonstrated that a substantial proportion of university students are classified as emotional eaters, with moderate to high levels commonly reported across different populations. [15] Evidence suggests that emotional eating is strongly associated with psychological stress, with higher perceived stress levels linked to increased emotional eating scores. [16] During periods of heightened stress, such as the COVID-19 pandemic, emotional eating behaviors were observed to increase significantly among students and young adults. [17]

Emotional eating has been associated with unhealthy dietary behaviors, including increased consumption of energy-dense, high-fat, and high-sugar foods. [1] Such eating patterns may contribute to excess energy intake and recurrent weight gain, thereby increasing the risk of overweight and obesity. [15] Several factors have been identified as predictors of emotional eating, including female gender, higher body mass index (BMI), depression, anxiety, and dysregulated eating behaviors. [14, 16] Theoretical models suggest that stress may impair responsiveness to internal hunger and satiety cues, leading to eating dysregulation and increased reliance on emotional eating. [2] Although extensive international research exists, emotional eating remains underexplored in low- and middle-income countries, where cultural, economic, and psychosocial factors may influence eating behaviors differently. [1] Therefore, this study was conducted to assess emotional eating patterns in diverse populations, including university students in Yemen.

RESEARCH METHODOLOGY

Study Design

A cross-sectional descriptive study was conducted to examine the relationship between emotional eating and psychological stress among undergraduate medical students at Al-Nasser University, Sana'a, Yemen. This design allowed assessment of associations at a single point in time without manipulation of variables.

Study Area and Population

The study was carried out on campus across multiple faculties, including classrooms, cafeterias, and common areas, to capture a representative sample. Participants included male and female undergraduate students enrolled during the 2025 to 2026 academic year.

Inclusion and Exclusion Criteria

Students aged 18 years or older, officially enrolled, and providing informed consent were included. Those with psychiatric or EDs, chronic illnesses affecting appetite or metabolism, pregnant or lactating women, or those who declined participation were excluded.

Sample Size

Sample size was calculated using Cochran's formula with a 95% confidence level, 50% estimated prevalence of emotional eating, and a 5% margin of error. [17] The study employed a convenience sampling technique to recruit participants who were readily accessible and willing to participate. A total of 385 students agreed to take part and completed the structured self-administered questionnaire. After data cleaning, 371 students were included in the final analysis, while 14 were excluded due to incomplete or inconsistent responses.

Data Collection

A structured, self-administered questionnaire translated into Arabic was used for data collection, which included sections on demographic characteristics, the nutritional status by BMI, Emotional Eating Scale (EES), and Perceived Stress Scale (PSS-10). The demographic section gathered information on age, gender, year of study, and place of residence. Nutritional status by BMI was calculated using the formula: BMI (kg/m^2) = body weight (kg)/height $(m)^2$. The results were then interpreted according to World Health Organization (WHO) guidelines: ≥30.00 kg/m^2 as obesity; 25.00 to 29.99 kg/m^2 as overweight; 18.50 to 24.99 kg/m^2 as normal body weight; and <18.50 kg/m^2 as underweight. [18]

The EES by Arnow et al. [19] was employed to evaluate eating behaviors in response to different emotional states. The scale was administered in Arabic, following standardized scoring procedures and cutoff points. Reliability was acceptable (Cronbach's $\alpha = 0.79$).

The PSS-10 was used to measure participants' levels of psychological stress. [20] The scale was administered in Arabic. The Arabic version was validated for use in the Yemeni population. Scoring followed standard procedures, with higher scores indicating greater perceived stress. The scale demonstrated acceptable internal consistency, with a Cronbach's alpha of 0.74 (typically ≥ 0.70). All questionnaires were completed anonymously by the participants.

Data Analysis

Data entry and analysis of the variables were done using Statistical Package for Social Sciences (SPSS), version 16 (IBM Corporation, Somers, New York) software. Descriptive

statistics summarized participant characteristics. Chi-square tests assessed associations between categorical variables, with $P < 0.05$ considered statistically significant.

Ethical Considerations

The study received ethical approval from the Ethical Committee of Al-Nasser University; however, the ethical approval reference number was not provided. Participants gave informed consent before participation, and confidentiality was ensured by collecting data anonymously and reporting all findings in aggregate form.

RESULTS

The Distribution of Demographic Factors Among the Selected Sample

The socio-demographic analysis of 371 students at Al-Nasser University, Sana'a, revealed that the majority of participants were young adults aged 20 to 22 years (42.6%), followed by those aged 23 to 25 years (35.6%), with only a small proportion aged 26 years and above (6.7%; **Table 1**).

Males constituted a higher proportion of the sample (59.3%) compared with females (40.7%). Most students were single (85.7%), reflecting the typical demographic of undergraduate populations in Yemen. Academic distribution showed that students in the fourth year or above represented nearly half of the sample (45.0%), and the majority were enrolled in the Pharmacy Department (57.4%), while smaller proportions were from Clinical Nutrition (16.7%), Nursing (8.9%), Dentistry (7.8%), Laboratories (8.9%), and Community Health (0.3%).

Regarding academic performance, over half of the students reported performing better than previously (55.5%). Parental educational status was predominantly higher education (60.9%), indicating that most students came from families with strong educational backgrounds, and

Table 1: Socio-demographic characteristics among the selected sample (n = 371).

Variable	Categories	Frequency	Percentage
Age, years	17–19	56	15.1%
	20–22	158	42.6%
	23–25	132	35.6%
	≥26 years	25	6.7%
Gender	Male	220	59.3%
	Female	151	40.7%
Marital status	Single	318	85.7%
	Married	49	13.2%
	Divorced	4	1.1%
Year of study	First year	63	17.0%
	Second year	71	19.1%
	Third year	70	18.9%
	≥Fourth year	167	45.0%
Department	Pharmacy Department	213	57.4%
	Clinical Nutrition	62	16.7%
	Nursing Department	33	8.9%
	Dentistry Department	29	7.8%
	Laboratories Department	33	8.9%
	Community Health	1	0.3%
Academic performance	Better than the previous	206	55.5%
	Worse than the previous	100	27.0%
	Equal	65	17.5%
Educational status of parents	No formal education	39	10.5%
	Primary education	106	28.6%
	Higher education	226	60.9%
Grew up with	Both parents	341	91.9%
	Mother only	21	5.7%
	Father only	4	1.1%
	Siblings	1	0.3%
	Sisters only	1	0.3%
	Others	3	0.8%
Cigarette smoking	Yes	50	13.5%
	No	321	86.5%
Qat chewing	Yes	182	49.1%
	No	189	50.9%

a majority grew up with both parents (91.9%). Lifestyle behaviors showed that cigarette smoking was relatively low (13.5%), whereas qat chewing was reported by nearly half of the students (49.1%), highlighting a culturally relevant habit that may influence stress and eating behaviors. These socio-demographic and lifestyle factors provide a context for understanding the prevalence of emotional eating and its potential relationship with psychological stress among this student population.

Prevalence of BMI Categories Among University Students

Figure 1 illustrates the distribution of BMI categories among the study participants. The majority of students were classified within the healthy BMI range (62.8%), indicating an overall normal nutritional status in most of the sample. However, a considerable proportion of participants were underweight (23.2%), highlighting a notable presence of low body weight within the population. In contrast, overweight and obesity together represented a smaller fraction of the sample (14%), suggesting a relatively low prevalence of excess body weight among the students.

Prevalence of Perceived Stress Levels Among Students

In the present study, the distribution of perceived stress levels among participants showed that the majority experienced a moderate level of stress (62.8%). In addition, a notable proportion of students reported high perceived stress (25.1%), indicating that approximately one-quarter of the study population is exposed to elevated psychological stress. Only a smaller fraction of participants fell within the low-stress category, suggesting that minimal stress levels were less common among university students at Al-Nasser University. These findings highlight that a considerable proportion of students are living under sustained psychological pressure, which may have implications for their academic performance, emotional well-being, and health-related behaviors (**Figure 2**).

Emotional Eating

Emotional eating was highly prevalent among the study participants. Nearly half of the students were classified as emotional eaters (48.5%), while an additional 4.6% fell into the category of very emotional eaters. In contrast, only a small proportion of participants were identified as non-emotional eaters (11.3%). These findings indicate that emotional eating behaviors are common among university students, suggesting that a substantial segment of the population may rely on food consumption as a coping mechanism for emotional stress or psychological distress (**Figure 3**).

The Relationship Between Emotional Eating and Different Factors

Table 2 demonstrates that emotional eating was widely prevalent across most sociodemographic, academic, and behavioral subgroups among students at Al-Nasser University, indicating that this behavior is not limited to a specific demographic category. Nevertheless, among all examined variables, only the year of study showed a statistically significant association with emotional eating ($P = 0.002$).

A clear gradient was observed across academic levels, where students in senior years exhibited a higher prevalence of both emotional and very emotional eating compared to those in earlier academic stages. This pattern may reflect the progressive accumulation of academic demands, prolonged exposure to stressors, and increased psychological burden as students advance through their studies. Over time, these factors may contribute to reduced coping capacity and a greater tendency toward maladaptive eating behaviors as a response to emotional and academic stress.

Relationship Between Emotional Eating, BMI, and Stress Level

As presented in **Table 3**, emotional eating showed a statistically significant association with perceived stress levels ($P = 0.009$),

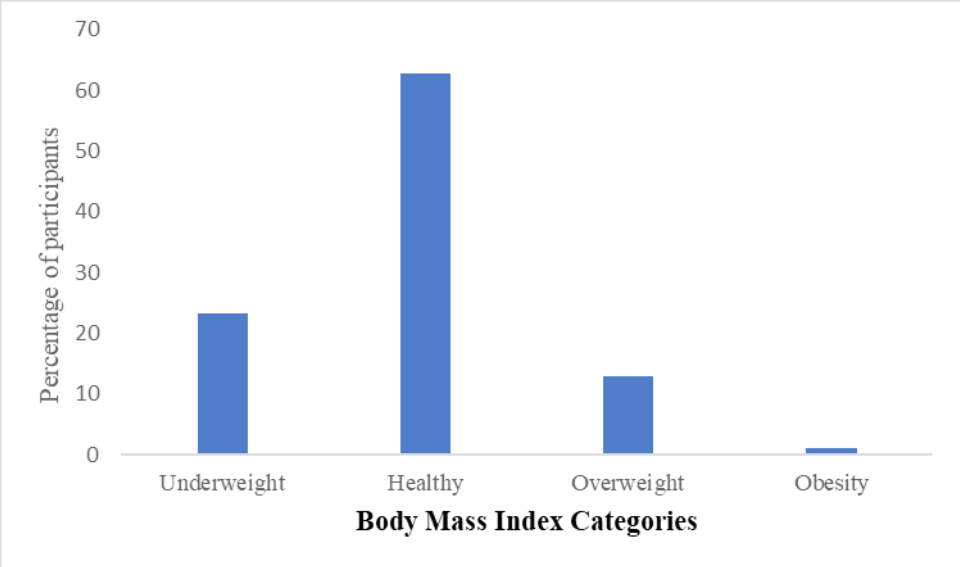

Figure 1: Body mass index (BMI) distribution among the population (n = 371).

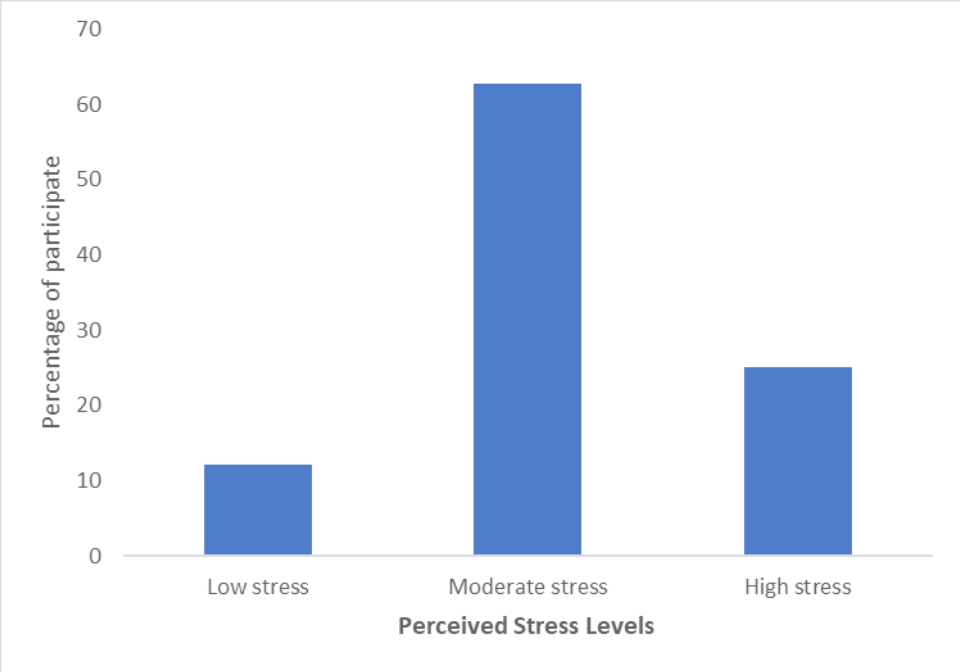

Figure 2: Perceived Stress Scale distribution among population (n = 371).

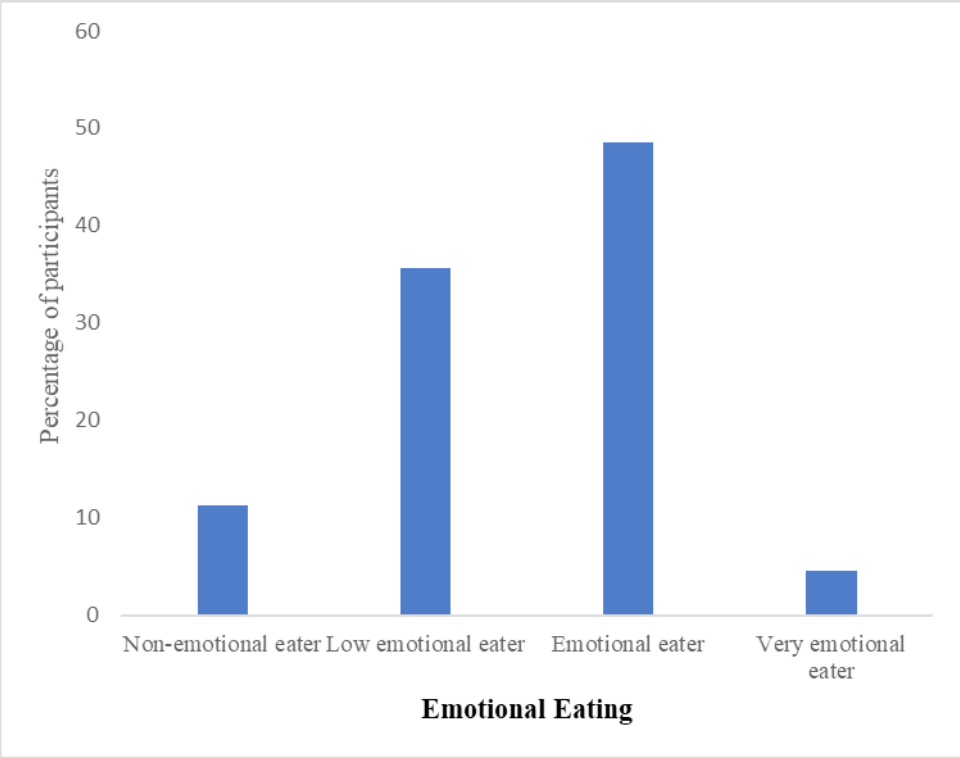

Figure 3: Prevalence of emotional eating among students (n = 371).

whereas no significant association was observed between emotional eating and BMI (P = 0.167) among students at Al-Nasser University. The prevalence of emotional and very emotional eating increased progressively with higher stress levels. Most emotional eaters reported moderate perceived stress, while a considerable proportion of individuals with very emotional eating behavior experienced high stress. These findings suggest that psychological stress, rather than body weight status, plays a more prominent role in influencing emotional eating behaviors within the study population.

Table 2: The relationship between emotional eating and sociodemographic factors (n = 371).

Variable	Non-emotional eater (n, %)	Low emotional eater (n, %)	Emotional eater (n, %)	Very emotional eater (n, %)	*P* value
Age, years					
17–19	4 (9.5)	14 (10.6)	33 (18.3)	5 (29.4)	0.192
20–22	17 (40.5)	67 (50.8)	69 (38.3)	5 (29.4)	
23–25	18 (42.9)	43 (32.6)	64 (35.6)	7 (41.2)	
26+	3 (7.1)	8 (6.1)	14 (7.8)	0 (0.0)	
Gender					
Male	28 (66.7)	73 (55.3)	110 (61.1)	9 (52.9)	0.503
Female	14 (33.3)	59 (44.7)	70 (38.9)	8 (47.1)	
Marital status					
Single	38 (90.5)	105 (79.5)	159 (88.3)	16 (94.1)	0.237
Married	4 (9.5)	24 (18.2)	20 (11.1)	1 (5.9)	
Divorced	0 (0.0)	3 (2.3)	1 (0.6)	0 (0.0)	
Year of study					
First year	4 (9.5)	20 (15.2)	37 (20.6)	2 (11.8)	0.002
Second year	7 (16.7)	27 (20.5)	29 (16.1)	8 (47.1)	
Third year	2 (4.8)	30 (22.7)	38 (21.1)	0 (0.0)	
Fourth year+	29 (69.0)	55 (41.7)	76 (42.2)	7 (41.2)	
Department					
Pharmacy	29 (69.0)	76 (57.6)	99 (55.0)	9 (52.9)	0.927
Clinical Nutrition	7 (16.7)	24 (18.2)	29 (16.1)	2 (11.8)	
Nursing	3 (7.1)	11 (8.3)	17 (9.4)	2 (11.8)	
Dentistry	1 (2.4)	11 (8.3)	16 (8.9)	1 (5.9)	
Laboratories	2 (4.8)	10 (7.6)	18 (10.0)	3 (17.6)	
Community Health	0 (0.0)	0 (0.0)	1 (0.6)	0 (0.0)	
Academic performance					
Yes	15 (35.7)	73 (55.3)	106 (58.9)	12 (70.6)	0.135
No	17 (40.5)	35 (26.5)	44 (24.4)	4 (23.5)	
Equal	10 (23.8)	24 (18.2)	30 (16.7)	1 (5.9)	
Parental education					
No education	2 (4.8)	18 (13.6)	18 (10.0)	1 (5.9)	0.110
Primary education	11 (26.2)	30 (22.7)	56 (31.1)	9 (52.9)	
Higher education	29 (69.0)	84 (63.6)	106 (58.9)	7 (41.2)	
Grew up with					
Both parents	41 (97.6)	118 (89.4)	165 (91.7)	17 (100)	0.945
Mother only	1 (2.4)	10 (7.6)	10 (5.6)	0 (0)	
Father only	0 (0)	2 (1.5)	2 (1.1)	0 (0)	
Siblings	0 (0)	0 (0)	1 (0.6)	0 (0)	
Sisters only	0 (0)	1 (0.8)	0 (0)	0 (0)	
Others	0 (0)	1 (0.8)	2 (1.1)	0 (0)	
Smoking					
Yes	6 (14.3)	16 (12.1)	26 (14.4)	2 (11.8)	0.936
No	36 (85.7)	116 (87.9)	154 (85.6)	15 (88.2)	
Qat chewing					
Yes	23 (54.8)	57 (43.2)	95 (52.8)	7 (41.2)	0.285
No	19 (45.2)	75 (56.8)	85 (47.2)	10 (58.8)	

DISCUSSION

In the present study, the majority of students were within the healthy BMI category (62.8%), while 23.2% were underweight and only 14% were overweight or obese. This distribution differs from findings in adult and healthcare populations, where overweight and obesity are more prevalent. For instance, Adeojo et al. [21] reported that nearly half of healthcare professionals in Nigeria were overweight or obese, likely reflecting differences in occupational demands, age, and lifestyle factors. Although overweight and obesity were relatively low in this sample, the notable proportion of

Table 3: Association of body mass index and perceived stress with emotional eating (n = 371).

Variable	Non-emotional eater (n, %)	Low emotional eater (n, %)	Emotional eater (n, %)	Very emotional eater (n, %)	*P* value
BMI					
Underweight	8 (19.0)	28 (21.2)	44 (24.4)	6 (35.3)	0.167
Healthy	31 (73.8)	91 (68.9)	103 (57.2)	8 (47.1)	
Overweight	3 (7.1)	13 (9.8)	29 (16.1)	3 (17.6)	
Obesity	0 (0)	0 (0)	4 (2.2)	0 (0)	
Stress level					
Low stress	9 (21.4)	23 (17.4)	13 (7.2)	0 (0)	0.009
Moderate stress	20 (47.6)	82 (62.1)	117 (65.0)	14 (82.4)	
High stress	13 (31.0)	27 (20.5)	50 (27.8)	3 (17.6)	

emotional eaters among students with normal BMI suggests that emotional eating may serve as an early behavioral risk factor preceding weight gain. This aligns with Dakanalis et al., [1] who emphasized that emotional eating contributes to long-term unhealthy dietary patterns and weight gain rather than immediate BMI changes. Similarly, Carpio-Arias et al. [22] demonstrated a progressive association between emotional eating and BMI. The relatively high proportion of underweight students may be linked to appetite suppression, irregular meal patterns, and academic stress, which are commonly observed among university students in resource-limited settings.

Regarding perceived stress, most participants reported moderate stress (62.8%), while 25.1% experienced high stress. These findings are consistent with studies among university and healthcare-related populations, including those conducted during the COVID-19 pandemic [15] and among Saudi University students, [14] where moderate to high stress levels were similarly common. University students are frequently exposed to stressors such as academic workload, examinations, and future uncertainty. [22, 23] Although the proportion of high stress in this study was lower than that reported among healthcare professionals in Nigeria, [21] this may reflect differences in age and occupational responsibilities. Stress is particularly important in relation to eating behavior, as it has been consistently associated with emotional eating and unhealthy dietary patterns. [1, 24] Mechanistically, stress disrupts appetite regulation and promotes consumption of energy-dense foods as a coping strategy, [23] highlighting the importance of stress management interventions for students.

Emotional eating was highly prevalent, with 48.5% classified as emotional eaters and 4.6% as very emotional eaters, while only 11.3% were non-emotional eaters. These findings indicate that emotional eating is a common coping behavior among university students. Similar results have been reported among medical students and university populations in Saudi Arabia and Ecuador [14, 15, 22] as well as among adolescents, [25] suggesting that emotional eating is a widespread response to psychological stress. Variations across studies may be due to cultural differences, coping styles, and food availability.

Emotional eating was distributed across most sociodemographic and behavioral subgroups, with no significant associations observed for most variables. However, the year of study showed a statistically significant association (P = 0.002) with higher emotional eating among senior students. This suggests that prolonged academic exposure and cumulative stress may increase vulnerability to emotional eating. This finding is consistent with previous research identifying academic progression as a predictor of emotional eating [14] and supports evidence that chronic stress impairs eating regulation. [23] In contrast, no significant associations were found with age, gender, marital status, academic factors, smoking, or qat chewing, suggesting that emotional eating functions primarily as a generalized stress-related coping mechanism rather than being strongly influenced by sociodemographic factors. Although some studies have reported higher emotional eating in females, [22] the lack of gender difference in this study may reflect shared academic stressors.

Finally, emotional eating was significantly associated with perceived stress (P = 0.009) but not with BMI (P = 0.167). Emotionally and very emotionally eating increased with higher stress levels, indicating that psychological stress is a stronger determinant of emotional eating than body weight status. This finding is consistent with previous studies linking stress to emotional eating behaviors. [14, 15, 22] Tan and Chow [23] further explained that stress impairs self-regulation, increasing reliance on food as an emotional coping strategy. The absence of a significant BMI association may reflect the cross-sectional design and the low prevalence of obesity in this population. It also supports evidence that emotional eating may precede measurable weight gain, particularly in young adults. [1] Longitudinal studies are recommended to further explore this relationship.

Limitations

Several limitations should be noted. First, the cross-sectional design prevents causal inferences between emotional eating, perceived stress, and BMI. Second, data were self-reported, which may introduce recall or social desirability bias, particularly regarding sensitive behaviors such as qat chewing, smoking, or eating habits. Third, although the study focused on medical sciences undergraduate students, it was conducted at a single university, which may limit the generalizability of the findings to other undergraduate populations in Yemen. Fourth, the relatively low prevalence of obesity may have reduced the ability to detect associations between BMI and emotional eating. Finally, other potential

influencing factors, such as physical activity, sleep quality, and overall dietary intake, were not assessed, which may confound the observed relationships. Future studies should consider multicenter or longitudinal designs to provide broader and more robust insights.

CONCLUSIONS

This study demonstrates that emotional eating is a common behavioral pattern among medical sciences undergraduate students in Sana'a, Yemen, affecting more than half of the study population. The findings reveal a strong association between emotional eating and perceived stress, while no significant relationship was observed with BMI, suggesting that emotional eating may emerge as an early stress-related behavior before measurable changes in body weight occur. The significant association with year of study further indicates that cumulative academic demands may increase vulnerability to emotionally driven eating behaviors. Given the high prevalence of moderate to high stress and emotional eating among students, integrating stress management programs, mental health support, and nutrition education within university settings is essential. Such interventions may help promote adaptive coping strategies, improve students' well-being, and reduce the risk of future nutrition-related and psychological disorders.

AUTHORS' CONTRIBUTION

Each author has made a substantial contribution to the present work in one or more areas, including conception, study design, conduct, data collection, analysis, and interpretation. All authors have given final approval of the version to be published, agreed on the journal to which the article has been submitted, and agree to be accountable for all aspects of the work.

SOURCE OF FUNDING

None.

CONFLICT OF INTEREST

None.

REFERENCES

1. Dakanalis A, Mentzelou M, Papadopoulou SK, Papandreou D, Spanoudaki M, Vasios GK, et al. The association of emotional eating with overweight/obesity, depression, anxiety/stress, and dietary patterns: A review of the current clinical evidence. Nutrients. 2023;15(5):1173. https://doi.org/10.3390/nu15051173
2. Piccoli V, Cobey KD, Carnaghi A. Hormonal contraceptive use and the objectification of women and men. Pers Individ Dif. 2014;66:44-47. https://doi.org/10.1016/j.paid.2014.03.004
3. Culbert KM, Sisk CL, Klump KL. A narrative review of sex differences in eating disorders: Is there a biological basis? Clin Ther. 2021;43(1):95-111. https://doi.org/10.1016/j.clinthera.2020.12.003
4. Chapman L, Cartwright-Hatton S, Thomson A, Lester KJ. Parental eating disorders: A systematic review of parenting attitudes, behaviours, and parent-child interactions. Clin Psychol Rev. 2021;88:102031. https://doi.org/10.1016/j.cpr.2021.102031
5. Stackpole R, Greene D, Bills E, Egan SJ. The association between eating disorders and perfectionism in adults: A systematic review and meta-analysis. Eat Behav. 2023;50:101769. https://doi.org/10.1016/j.eatbeh.2023.101769
6. Cervera S, Lahortiga F, Martínez-González MA, Gual P, de Irala-Estévez J, Alonso Y. Neuroticism and low self-esteem as risk factors for incident eating disorders in a prospective cohort study. Int J Eat Disord. 2003;33(3):271-280. https://doi.org/10.1002/eat.10147
7. Solly JE, Chamberlain SR, Lust K, Grant JE. Binge-eating disorder in university students: High prevalence and strong link to impulsive and compulsive traits. CNS Spectr. 2023;28(1):61-69. https://doi.org/10.1017/S1092852921000882
8. Cepeda-Benito A, Moreno-Domínguez S. Beyond eating and body image disturbances: Cultural, transcultural and accultural perspectives. Front Psychol. 2019;10:2601. https://doi.org/10.3389/fpsyg.2019.02601
9. Baker JH, Maes HH, Lissner L, Aggen SH, Lichtenstein P, Kendler KS. Genetic risk factors for disordered eating in adolescent males and females. J Abnorm Psychol. 2009;118(3):576-585. https://doi.org/10.1037/a0016314
10. Bould H, Sovio U, Koupil I, Dalman C, Micali N, Lewis G, et al. Do eating disorders in parents predict eating disorders in children? Evidence from a Swedish cohort. Acta Psychiatr Scand. 2015;132(1):51-59. https://doi.org/10.1111/acps.12389
11. Azzouzi N, Ahid S, Bragazzi NL, Berhili N, Aarab C, Aalouane R, et al. Eating disorders among Moroccan medical students: Cognition and behavior. Psychol Res Behav Manag. 2019;12:129-135. https://doi.org/10.2147/PRBM.S165114
12. Cena H, Vandoni M, Magenes VC, Di Napoli I, Marin L, Baldassarre P, et al. Benefits of exercise in multidisciplinary treatment of binge eating disorder in adolescents with obesity. Int J Environ Res Public Health. 2022;19(14):8300. https://doi.org/10.3390/ijerph19148300
13. Jahrami H, Saif Z, Faris MAI, Levine MP. The relationship between risk of eating disorders, age, gender and body mass index in medical students: A meta-regression. Eat Weight Disord. 2019;24(2):169-177. https://doi.org/10.1007/s40519-018-0618-7
14. El-Zayat A, Sultan S, Alharthi S, Jamal D, Abdullah A, Albusati N. The relationship between perceived stress and emotional eating among university students in Saudi Arabia. Discov Ment Health. 2025;5(1):107. https://doi.org/10.1007/s44192-025-00215-4
15. Shehata WM, Abdeldaim DE. Emotional eating in relation to psychological stress during COVID-19 pandemic: A cross-sectional study in Faculty of Medicine, Tanta University, Egypt. BMC Public Health. 2023;23(1):277. https://doi.org/10.1186/s12889-023-15177-x
16. Miller M, Ayoub D. Metabolic bone disease of infancy in the offspring of mothers with bariatric surgery: A series of 5 infants in contested cases of child abuse. Clin Nutr ESPEN. 2022;48:227-233. https://doi.org/10.1016/j.clnesp.2022.02.009
17. Muyembe Asenahabi B, Anselemo Ikoha P. Scientific research sample size determination. Int J Sci Technol. 2023; 11(7): 8-12. https://doi.org/10.24940/theijst/2023/v11/i7/ST2307-008

18. Weir CB, Jan A. BMI classification percentile and cut-off points. 2019.
19. Arnow B, Kenardy J, Agras WS. The Emotional Eating Scale: The development of a measure to assess coping with negative affect by eating. Int J Eat Disord. 1995;18(1):79-90. https://doi.org/10.1002/1098-108x(199507)18:1<79::aid-eat2260180109>3.0.co;2-v
20. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. J Health Soc Behav. 1983;24(4): 385-396.
21. Adeojo OM, Dada IO, Ajayi K. Nutritional status and perceived stress of healthcare professionals in Ekiti State, Nigeria. J Multidiscip Res Healthc. 2023;10(1):1-12. http://doi.org/10.15415/jmrh.2023.101001
22. Carpio-Arias TV, Manzano AMS, Sandoval V, Vinueza-Veloz AF, Betancourt AR, Ortíz SLB, et al. Relationship between perceived stress and emotional eating. A cross sectional study. Clin Nutr ESPEN. 2022;49:314-318. https://doi.org/10.1016/j.clnesp.2022.03.030
23. Tan CC, Chow CM. Stress and emotional eating: The mediating role of eating dysregulation. Pers Individ Dif. 2014;66:1-4. https://doi.org/10.1016/j.paid.2014.02.033
24. Wardani HS, Anatayu SS, Febrinasari RP. Stress level and emotional eating in obese and non-obese adolescents. AcTion: Aceh Nutr J. 2024;9(1):57-64. https://doi.org/10.30867/action.v9i1.1311
25. Hidayat AT, Sinaga T, Nurdiani R. Correlation of stress level, nutrient intake, and emotional eating behavior with nutritional status among high school students. J Gizi Pangan. 2023;18(Suppl 1):19-21. https://doi.org/10.25182/jgp.2023.18.Supp.1.19-21