



Emotional eating among college students in Kerala

Deepa Mohan

Assistant Professor, Department of Sociology, Co-operative Arts and Science College, Madayi, Kannur, Kerala, India

Abstract

Several biological, cultural, sociological, and environmental elements drive emotional eating, which is prompted by emotional cues instead of hunger. Frequent during adolescence, it frequently results in obesity and weight increase, particularly in the early stages of adulthood. This study examines the emotional eating behaviours of college students in Kerala, emphasising how stress, loneliness, and depression fuel bad food choices. Convenience sampling with the use of Google Forms was adopted. The results highlight the necessity of focused interventions to encourage better eating habits in this susceptible population. The purpose of this study is to close knowledge gaps and direct future research to help college students adopt healthier eating habits. In the present study, approximately 16.12% of college students in Kerala have noticed changes in their weight due to emotional eating, while 83.87% have not. This suggests that emotional eating affects a minority of students. There is a slight gender variation also identified among the college students in Kerala on emotional eating. The data aligns with broader research indicating that emotional eating is more prevalent among females due to higher emotional expression and stress responses. Stress significantly impacts eating behaviors, leading to unhealthy dietary choices and potential weight changes.

Keywords: Emotional eating, weight gain, college students, stress

Introduction

Eating is one of many strategies to regulate emotions. Emotion regulation can be automatic or controlled (Macht, 2011) [29]. Emotions are debated as biologically determined or influenced by culture, society, and environment (Cassoli *et al.*, 2022) [7]. Consuming food in reaction to emotional cues instead of physiological hunger is known as emotional eating. These emotional cues may include positive and negative (Bongers & Jansen, 2016) [6]. Emotional eating theory posits that negative emotions increase the urge to eat, leading to excess food consumption. This concept aligns with learning theory, where negative emotions trigger craving, followed by eating, which is reinforced by relieving negative emotions (Macht, 2011) [29]. This behavior is often linked to overeating and is associated with obesity and bulimic tendencies (Lindeman & Stark, 2001) [27]. Emotional eating, the tendency to eat in response to emotions rather than hunger, affects our eating habits (Esmannur ORUÇ & Arif PARMAKSIZ, 2022) [14]. Individual differences play a significant role in how stress affects eating habits (Ruf *et al.*, 2022) [34]. Emotional eating and bad eating habits can result from negative feelings such stress, loneliness, or melancholy (Feraco *et al.*, 2024a) [15]. Emotional eating is usually the result of depression, poor parenting, and heredity. It usually begins in puberty. Emotional eaters may acquire weight and become obese as a result of their inability to distinguish hunger from emotional cues (Van Strien *et al.*, 2012) [40]. A sensitive time for weight gain is emerging adulthood, which is the phase between youth and young adulthood, especially for college students. Making bad dietary decisions at this time can have a long-term detrimental effect on health (Ashurst *et al.*, 2018) [3]. In addition to addressing emotional eating among Keralan college students, the study sought to uncover any gaps in the literature by comparing its results with other

research and considering potential directions for further investigation.

Methods

An online poll utilising Google Forms was used to look at emotional eating among Keralan college students. To evaluate college students' emotional eating habits, a standardised questionnaire was created. To make data gathering easier, the poll was hosted on Google Forms. It was straightforward to recruit 248 college students to take part in the survey. Participants with access to electronic devices, enrolled in standard undergraduate or graduate programmes, and between the ages of 18 and 24 were included. Prior to conducting the survey, ethical approval was acquired in order to guarantee participant privacy and data security. The questions focused on emotional eating patterns and covered topics such as the frequency of particular eating behaviours, the kinds of food ingested, the feelings experienced after eating, and other relevant topics. Data analysis was conducted using R software, which allowed for statistical processing and interpretation of survey results. The study utilised descriptive statistics, namely mean, chi-square, and standard deviation, to provide an overview of the participants' emotional eating behaviours.

Results and Discussion

The current research investigated emotional eating and examined the differences in how emotions affect eating behaviors between male and female college students. Negative emotions such as sadness, anger, anxiety, and boredom influence eating behaviors. Boredom, in particular, leads to increased food intake. Positive emotions are less studied but generally do not affect eating behaviors significantly (Ashurst *et al.*, 2018) [3].

Table 1: age of the respondents

Age	No of repondents	Percentage
18	28	11.29
19	92	37.09
20	64	25.80
21	52	20.96
22	8	3.22
23	4	1.61
Total	248	100

In this study majority of the respondents consisting of 37.09% of the respondents belong to the age of 19. The

average mean age of the respondents is approximately 19.73 years.

Table 2: Gender of the respondents

Age	No of repondents	Percentage
Female	156	62.90
Male	92	37.09
Total	248	100

According to the survey, 62.90% of respondents were female, and 37.09% were male, suggesting women might be more interested in emotional eating surveys or reflect group demographics. Men had a slightly higher average emotional eating score (12.70) than women (12.46), indicating men may partake in emotional eating more. Emotional eating scores were based on responses to stress, sadness, boredom,

and guilt. Guerrero-Hreins *et al.*, (2022) [19] found that emotional triggers vary between genders, while Du *et al.*, (2022) [12] showed emotional eating mediates stress and BMI for both genders. Christie, (2010) [9] noted women might eat more under stress than men, highlighting the need to consider gender-specific factors in emotional eating.

Table 3: Students response to questions related to emotional eating and gender comparison

Question	Answer levels	Males	Females	Total
I turn to food when I am feeling stressed	Always	52	88	140 (56.45%)
	Sometimes	32	60	92 (37.09%)
	Never	8	8	16 (6.45%)
I eat more than usual when I am feeling down or sad	Always	64	108	172 (69.35%)
	Sometimes	20	40	60 (24.19%)
	Never	8	8	16 (6.45%)
Food helps me feel better when I am angry or frustrated	Always	48	48	96 (38.70%)
	Sometimes	16	76	92 (37.09%)
	Never	28	32	60 (24.19%)
I find myself craving sugary or unhealthy foods when I am bored	Always	20	16	36 (14.51%)
	Sometimes	28	84	112 (45.16%)
	Never	44	56	100 (40.32%)
I use food as a reward when I am feeling good	Always	32	32	64 (25.80%)
	Sometimes	24	92	116 (46.77%)
	Never	36	32	68 (27.41%)
I often eat without really paying attention to what I am eating	Always	12	4	16 (6.45%)
	Sometimes	28	84	112 (45.16%)
	Never	52	68	120 (48.38%)
I eat quickly and don't stop to savor my food	Always	16	12	28 (11.29%)
	Sometimes	48	76	124 (50%)
	Never	28	68	96 (38.70%)
I have trouble distinguishing between physical hunger and emotional cues	Always	12	16	28 (11.29%)
	Sometimes	16	32	48 (19.35%)
	Never	64	108	172 (69.35%)
Feelings of Guilt or Regret After Eating a Big Meal	Always	8	8	16 (6.45%)
	Sometimes	20	60	80 (32.25%)
	Never	64	88	152 (61.29%)
I tend to eat until Iam uncomfortably full	Always	12	24	36 (14.51%)
	Sometimes	40	48	88 (35.48%)
	Never	40	84	124 (50%)

I turn to food when I am feeling stressed

Stress often leads to emotional eating, with foods high in sugar and fat being preferred (Ashurst *et al.*, 2018) [3]. In this study, 56.45% of respondents reported never turning to food when stressed, 37.09% sometimes, and 6.45% always.

While most don't use food to cope with stress, a significant portion does. Both genders show similar tendencies for always turning to food, but more females sometimes use food to cope, while more males never use food this way. Aneesh & Roy, (2022) [2] noted increased food intake under

stress among college students. Du (2022) ^[12] found that emotional eating mediates the relationship between stress and dietary risk, with 64% of stressed participants being emotional eaters. Peris-Ramos *et al.*, (2024) ^[33] highlighted that 77.91% of females versus 22.09% of males reported perceived stress. Ruf *et al.*, (2022) ^[34] observed men eat less under stress, while women's eating habits remain unchanged.

I eat more than usual when I am feeling down or sad

A majority of respondents (69.35%) reported "never" eating more when feeling sad, while 24.19% "sometimes" and 6.45% "always" eat more during these times. This suggests that most do not engage in emotional eating, but a notable minority does. More females "never" eat more when sad compared to males, but the proportion of those who "always" eat more is the same for both genders. Van Strien *et al.*, (2012) ^[40] found that low-emotional eaters ate less during sadness, while high-emotional eaters ate more. Guerrero-Hreins *et al.*, (2022) ^[19] reported that 20- 30% of participants occasionally engaged in emotional eating, similar to this study's findings. Saccaro *et al.*, (2023) ^[35] found that 5-10% consistently turn to food when emotionally stressed. Ashurst *et al.*, (2018) ^[3] noted that college students may make poorer food choices due to emotional eating, though (Bongers & Janse n, 2016) ^[6] found that high emotional eating scores do not always predict increased intake.

Food helps me feel better when I am angry or frustrated

A significant number of respondents (38.70%) reported that they "never" use food to feel better when angry or frustrated. Similarly, 37.09% "sometimes" find comfort in food, and 24.19% "always" find food helpful in these situations. This indicates a fairly even distribution, with many not relying on food as a coping mechanism, but a significant portion does occasionally or frequently. Females are more likely than males to "sometimes" use food to cope with anger or frustration, though the proportion of those who "always" use food is nearly equal for both genders. Ekim & Ocakci, (2021) ^[13] found that women generally have higher emotional eating scores due to emotions like anger and anxiety, aligning with these findings. Devonport *et al.*, (2019) ^[11] reported that both genders exhibit emotional eating, but triggers and frequencies differ, with women more likely using food for emotional comfort.

I find myself craving sugary or unhealthy foods when I am bored

"Sometimes" is the most common response, with 45.16% of individuals occasionally craving sugary or unhealthy foods when bored. This suggests that boredom can trigger emotional eating, but not consistently. Meanwhile, 40.32% of respondents indicated "Never," implying they have other coping mechanisms or do not tend toward emotional eating. A smaller group (14.51%) selected "Always," indicating boredom is a strong and consistent trigger for them.

I use food as a reward when I am feeling good

According to the survey, 46.77% of individuals occasionally use food as a reward when feeling good, indicating it is not a consistent behavior. 27.41% never use food as a reward, suggesting alternative coping mechanisms. A smaller group (25.80%) always use food as a reward, showing a strong and

consistent trigger. Gender-wise, females are more likely to sometimes use food as a reward, while males have a slightly higher tendency to never use food as a reward. This insight can help develop targeted interventions for managing food as a reward.

Devonport *et al.* (2019) ^[11] found food consumption likely increases with positive emotions. (Barends *et al.*, 2013) ^[4] observed increased food intake in positive moods among emotional eaters. Feraco *et al.*, (2024) ^[15] noted distinct dietary preferences and emotional responses to food between genders. Ljubičić *et al.*, (2023) ^[28] highlighted that both positive and negative emotions significantly influence food consumption.

I often eat without really paying attention to what I am eating

The survey found that 48.38% of individuals never eat without paying attention, indicating common mindful eating practices. 45.16% sometimes eat without paying attention, suggesting occasional distractions, while 6.45% always eat without paying attention, needing mindful eating interventions. Gender-wise, females are more likely to never or sometimes eat without paying attention, showing more mindful eating habits. Males, on the other hand, are more likely to always eat without paying attention. Giannopoulou *et al.*, (2020) ^[17] males had higher mindful eating scores despite more instances of mindless eating. Köse & Çıplak, (2020) ^[24] noted females exhibit more emotional eating and eating discipline, aligning with higher mindful eating consistency among females.

I eat quickly and don't stop to savor my food

In this study 50% of respondents "sometimes" eat quickly without savoring their food, 38.70% "never" do, and 11.29% "always" do. This indicates varied eating behaviors influenced by factors like stress and time constraints. Gender-wise, 17.39% of males "always" eat quickly, compared to 7.69% of females. Conversely, 43.59% of females "never" eat quickly, compared to 30.43% of males. Both genders have similar rates of "sometimes" eating quickly, with males slightly higher (52.17%) than females (48.72%). Köse & Çıplak, 2020) ^[24] found male students more likely to eat fast food and less likely to prepare their food. Masella & Malorni, (2017) ^[30] noted women consume more fruits, vegetables, and legumes, indicating more mindful eating. Warren, (2024) ^[41] observed more females savor their food. These findings align with males eating quickly and females exhibiting more mindful eating behaviors.

I have trouble distinguishing between physical hunger and emotional cues

A small minority of students (11.29%) consistently struggle to distinguish between physical hunger and emotional cues, while 19.35% experience this difficulty sometimes. Most students (69.35%) report no trouble recognizing hunger cues. Gender-wise, slightly more males (13.04%) than females (10.26%) always have trouble, but more females (20.51%) than males (17.39%) sometimes do. Both genders have similar percentages of those who never have trouble (males 69.57%, females 69.23%). Guerrero-Hreins *et al.*, (2022) ^[19] and Houminer Klepar *et al.*, (2024) ^[20] found higher emotional eating and difficulty distinguishing hunger cues in females compared to males. Lin Khor *et al.*, (2002)

[26] also reported gender differences in emotional eating, highlighting the need for targeted support for those at risk.

Feelings of Guilt or Regret after Eating a Big Meal

Among respondents, 6.45% always feel guilty after a big meal, 32.25% sometimes do, and 61.29% never experience such feelings. Females are more likely to feel occasional guilt, with 60 females and 20 males reporting these feelings. Gender distribution for always feeling guilty is equal, with 8 females and 8 males. Steenhuis, (2009) [37] found that guilt about food is common among college women but varies in frequency, with females experiencing occasional guilt more often than males.

I tend to eat until I am uncomfortably full

Out of 248 respondents, 14.51% always eat until uncomfortably full, 35.48% sometimes do, and 50% never do. Females are more likely to avoid eating until uncomfortably full (53.85%) compared to males (43.48%). Males, however, are more likely to sometimes eat until uncomfortably full (43.48% vs. 30.77% for females). These differences suggest that men are more prone to overeating, while women tend to have healthier eating patterns and better portion control. Feraco *et al.*, (2024) [15] and Masella & Malorni, (2017) [30] highlight these gender differences in eating habits, with men consuming more calories and women eating more fruits and vegetables. Aneesh & Roy, (2022) [2] also found that men display more uncontrolled eating behavior.

Table 4: particulars about eating emotionally

Questions	Particulars	Female	Male	Total	Percentage
Types of Food typically consume when eating emotionally	Fast food	12	24	36	14.51
	Fruits and vegetables	24	20	44	17.74
	Other	48	20	68	27.41
	Salty snacks	12	16	28	11.29
	Sweets	60	12	72	29.03
	Total	156	92	248	100
Feel after eating in response to emotions	Ashamed	0	8	8	3.22
	Guilty	4	8	12	4.83
	No different	48	44	92	37.09
	Relieved	32	12	44	17.74
	Satisfied	72	20	92	37.09
	Total	156	92	248	100
feel lost control over how much eat when eating emotionally	Always	0	4	4	1.61
	Often	4	8	12	4.83
	Sometimes	36	16	52	20.96
	Rarely	48	24	72	29.03
	Never	68	40	108	43.54
	Total	156	92	248	100

Feel after eating in response to emotions

Out of 248 respondents, 29.03% consume sweets emotionally, 27.42% choose "other" foods, 17.74% pick fruits and vegetables, 14.52% opt for fast food, and 11.29% prefer salty snacks. Women are more likely to choose sweets (38.46%) and healthier options like fruits and vegetables (15.38%), while men prefer fast food (26.09%) and salty snacks (17.39%). This suggests that women gravitate towards sweets and healthier foods, while men lean towards fast food and savory snacks. Feraco *et al.* (2024) [15] and Kim & Jang, (2017) [22] confirm these gender-based food preferences, with women favoring sweets and men preferring high-calorie options. Legget *et al.*, (2023) [25] also found that women more often choose comfort foods like sweets during emotional eating, while men opt for substantial meals like fast food.

How do you feel after eating in response to emotions?

Out of 248 respondents, 37.09% felt "no different" and 37.09% felt "satisfied" after eating emotionally. About 17.74% felt "relieved," while smaller percentages felt "guilty" (4.83%) or "ashamed" (3.22%). Gender-wise, females often felt "satisfied" (46.15%) and "no different" (30.77%), with 20.51% feeling "relieved." Males predominantly felt "no different" (47.83%) and "satisfied" (21.74%), but showed higher tendencies to feel "ashamed"

and "guilty" (8.70% each) compared to females. This suggests that while emotional eating generally results in neutral or positive feelings, a notable minority experience guilt and shame. Studies by Choi, (2022) [8] and Feraco *et al.* (2024) [15] highlight that guilt is a stronger motivator for behavioral change compared to shame. Bennett *et al.*, (2013) [4] and Devonport *et al.* (2019) [11] observed that women are more likely to eat due to stress and feel guilt, while men tend to eat due to boredom or anxiety and feel less guilt. These findings align with the current data showing gender differences in emotional responses to eating.

How often do you feel that you have lost control over how much you eat when eating emotionally?

The data shows that most individuals (43.55%) report never losing control over their eating during emotional episodes, with fewer reporting rare (29.03%) or occasional (20.97%) loss of control. Only a small percentage feel out of control often (4.84%) or always (1.61%). Notably, females more frequently report never losing control (43.59%), whereas males often report occasional (34.78%) or frequent (17.39%) loss of control. Males also have a higher tendency to feel out of control "always" (4.35%). Studies support these findings, with Guerrero- Hreins *et al.*, (2022) [19] and Saules & Herb, (2019) [36] noting that men are more likely to

lose control of eating due to stress, while Saccaro *et al.*, (2023) ^[35] and Du *et al.* (2022) ^[12] found women engage in emotional eating but maintain better control. Thompson,

(2015) ^[39] also observed that men experience more uncontrolled eating episodes compared to women.

Table 5: emotional eating activities and weight gain

Questions	Particulars	Yes	No	Total
Engage in any activities other than eating to cope with negative emotions	Female	84	72	156
	male	44	48	92
	Total	128	120	248
	Percentage	51.61	48.39	100
noticed any changes in weight due to emotional eating	Female	24	132	156
	Male	16	76	92
	Total	40	208	248
	Percentage	16.12	83.87	100

Do you engage in any activities other than eating to cope with negative emotions?

The data shows that 51.61% of females use activities other than eating to cope with negative emotions, compared to 47.83% of males. This indicates a balanced use of coping strategies between genders, with females slightly more likely to engage in alternative methods. This trend is consistent with findings by Kelly *et al.*, (2008) ^[21], who observed that women often use emotion-focused coping strategies, while men prefer problem-focused approaches. Guerrero-Hreins *et al.* (2022) ^[19] and Nolen-Hoeksema & Aldao, (2011) ^[32] also noted that women are more inclined to use various emotional regulation techniques, aligning with the data. Graves *et al.*, (2021) ^[18] and Tamres *et al.*, (2002) ^[38] similarly found that women more frequently engage in coping strategies beyond eating, which highlights the need for diverse approaches to emotional well-being.

Noticed any changes in weight due to emotional eating

The data shows that 16.13% of respondents have noticed weight changes due to emotional eating, while 83.87% have not. This indicates that emotional eating affects weight for some individuals but not universally. The variability in weight changes highlights the complexity of the relationship between emotional eating and weight, suggesting a need for personalized approaches to managing emotional eating. Frayn *et al.*, (2018) ^[16] and Koenders & Van Strien, (2011) ^[23] found that emotional eating can lead to weight gain, but the impact varies among individuals.

Conclusion

Emotional eating is a significant concern among college students in Kerala, driven primarily by stress and lifestyle factors. The prevalence of emotional eating among this demographic reflects broader global trends observed in similar populations. Emotional eating affects a notable minority of college students in Kerala. Approximately 16.12% of the students have reported changes in their weight due to emotional eating behaviors. There is a slight gender variation, with 15.38% of female students and 17.39% of male students reporting weight changes due to emotional eating. This suggests that while emotional eating is slightly more prevalent among male students, it is a significant issue for both genders. High levels of stress, common among college students due to academic pressures and lifestyle adjustments, significantly contribute to emotional eating. Emotional eating can lead to overeating, unhealthy weight gain, and an increased risk of obesity and related health conditions such as heart disease and diabetes

(Amruth & Kumar, 2019) ^[1]. There is a need for educational programs to promote healthy eating habits and effective stress management strategies among college students to mitigate the risks associated with emotional eating (Aneesh & Roy, 2022b) ^[2]. To manage emotional eating, adopting healthier coping mechanisms is essential. Mindfulness can help individuals become aware of their eating habits and emotions, enabling conscious eating decisions. Physical activities, hobbies, and relaxation techniques like yoga and meditation are effective alternatives to eating when stressed or emotional. A balanced diet with fruits, vegetables, lean proteins, and whole grains can stabilize blood sugar levels and reduce cravings. Keeping a food journal helps track eating patterns and identify emotional eating triggers. Support from friends, family, or professionals can be encouraged. Cognitive-behavioral therapy and support groups can be beneficial in changing thought patterns and behaviors associated with emotional eating. Maintaining a healthy lifestyle with regular exercise, sufficient sleep, and stress management reduces the reliance on food for emotional comfort. Limitations of the study included convenience sampling, lack of causal inference, and online data collection constraints.

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