Acta Scientific NUTRITIONAL HEALTH (ISSN:2582-1423)

Volume 8 Issue 10 October 2024

Research Article

The Influence of Emotional Eating on Mental Health and Academic Performance of KFU Medical Applied College Students

Rafia Bano*, Noura Alhumud, Mathayil Alsenyin, Rawan Alali, Maylan Alotaibi, Reem Bo Abayd, Munira Aleissa, Maryam Alamiri, Zainab Alhanfush and Hanouf Abdulrahman

Assistant Professor, Department of Clinical Nutrition, King Faisal University, Al Ahsa, Al Hofuf, Saudi Arabia

***Corresponding Author:** Rafia Bano, Assistant Professor, Department of Clinical Nutrition, King Faisal University, Al Ahsa, Al Hofuf, Saudi Arabia.

DOI: 10.31080/ASNH.2024.08.1441

Received: August 22, 2024

Published: September 17, 2024

Abstract

Academic performance among Saudi Arabian students, specifically at King Faisal University (KFU), remains understudied. This cross-sectional study examined the relationship between EE, mental health, and academic performance among 102 participants from KFU's Applied Medical Sciences College. Participants completed an electronic questionnaire including demographic information, the General Health Questionnaire (GHQ), and the Emotional Eater Questionnaire (EEQ). Results revealed high levels of psychological distress and emotional eating behaviors were observed, especially among females. Reliability analysis indicated strong consistency in questions about general health and moderate consistency in questions about emotional eating. However, Pearson correlation coefficients revealed weak and statistically non-significant relationships between emotional eating in both academic performance and mental health. Overall, while psychological distress and emotional eating were prevalent, particularly among females, they did not significantly impact academic performance or mental health in this sample. These results underscore the need for targeted interventions to promote healthier eating habits, improve self-control, and address underlying psychological issues. Recommendations include mindfulness techniques, healthier snack choices, stress-relief activities, and academic support initiatives.

Keywords: Emotional Eating; Mental Health; Academic Performance; College Students

Introduction

Emotional Eating (EE) is a behavior characterized by the propensity to eat in response to emotional stimuli, rather than from a genuine physiological need for food [1]. Emotions play a vital role in regulating fundamental behavioral processes and serving specific motivational purposes in both humans and animals. They significantly impact eating reactions, with emotions such as anger, fear, sadness, and joy known to influence eating behaviors. Additionally, moods that are expected to persist longer and be more diffuse also have an impact on eating habits [2]. In terms of their impact on appetite and food choice, a study has revealed that among all emotions, frequent emotions like anger and joy exert the most significant influence [3]. Research has shown that both positive and negative emotions can influence food consumption. Positive emotions can affect eating habits, but several studies consistently demonstrate that individuals tend to consume more high-energy foods when confronted with negative emotions [4]. Negative emotions often contribute to the excessive intake of foods that are high in fats and sugars, while healthy food choices such as vegetables and fruits are neglected [5]. Significant life events or the everyday challenges of life can induce negative emotions that result in emotional eating and hinder your weight-loss endeavors. These triggers can encompass various factors, such as conflicts in relationships, work-related stressors, fatigue, financial pressures, health problems, and academic responsibilities. Over time, your emotions can become interconnected with your eating habits to the extent that you automatically seek solace in food whenever you experience anger or stress, without consciously considering your actions. Additionally, food can serve as a means of distraction. For instance, if you're preoccupied with an upcoming event or embroiled in a conflict, you may choose to focus on consuming comfort food as a way of avoiding or postponing the discomforting situation [6].

In the immediate term, stress can suppress one's appetite. The nervous system communicates with the adrenal glands, which are located on top of the kidneys, to produce a hormone known

as epinephrine (or adrenaline). Epinephrine plays a role in initiating the body's fight-or-flight response, a heightened physiological state that temporarily suspends the urge to eat. However, if stress persists, the situation changes. The adrenal glands release another hormone called cortisol, which not only stimulates appetite but also increases overall motivation, including the desire to consume food [7].

The main problem with emotional eating is leading to weight gain and continues to cause other problems, such as (anxiety, depression, and stress) which can also affect sleep quality [5,8]. On the other hand, it will affect the person's freedom from diseases, such as (obesity, type 2 diabetes, and cardiovascular disease) [8]. In the context of KFU Medical Applied College students, these health issues could directly affect their academic performance and mental well-being. For students, the consequences of poor mental health and reduced cognitive functioning can be profound. Mental health challenges such as anxiety and depression, which are often exacerbated by or contribute to emotional eating, can diminish students' ability to concentrate, make decisions, and retain information.

Although there are several studies about emotional eating, there are no sufficient studies on the Saudi Arabian population that discuss the influence of emotional eating on mental health and academic performance, especially on the KFU Medical Applied Sciences College students. The literature review explores emotional eating patterns in college students, highlighting the need for further research on their impact on mental health and academic performance. Studies show that emotional eating is less common among students living with their families and more prevalent among first-year students. Emotional eating is associated with poor eating habits and weight gain. Higher education levels are linked to an increased tendency for emotional eating during challenging situations [5].

Targeted interventions are needed to address the connection between stress, depressive symptoms, and emotional eating, particularly among female undergraduates [8]. Emotional eating is related to executive function and academic achievement, with deficiencies in working memory associated with eating out of boredom and higher consumption of calorie-dense meals [9]. Therefore, our aim is to examine whether emotional eating has an influence on academic performance and mental health among KFU medical applied sciences college students.

Materials and Methods

Study design and participants

This cross-sectional study was conducted among students of Applied Medical Sciences at King Faisal University. The study was a descriptive and quantitative approach. The data used was collected from all students who participated in our questionnaire. In this study, we employed convenience sampling to collect data from college students. Convenience sampling enabled rapid gathering of responses from a specific, targeted demographic within the college environment, focusing on students who were easily accessible and willing to participate. The selection criteria were the following: students aged 18 to 26 years, both male and female, studying in Medical Applied Sciences College at KFU. The exclusion criteria were students who are not enrolled in Medical Applied Sciences College at KFU. The students were not forced to participate and volunteer in the study.

Data Collection

The data were collected from the questionnaire that was published among students at Medical Applied College at King Faisal University. The researcher shared the link of the questionnaire with males and females including all four departments of Medical Applied College. Our questionnaire had an answer scale ranging from 'Better Than Usual' to 'Much Less Than Usual'. Each participant was informed of their willingness to participate, so they had the possibility to reject it. They were also informed of the confidentiality of their data.

Questionnaire

Our survey comprises four sections: (1) the survey aims and consent form, (2) demographic information, (3) the General Health Questionnaire, (4) the Emotional Eater Questionnaire (EEQ). The demographic data included age, gender, marital status, affiliated university department, education level, grade point average (GPA), and socioeconomic status.

General health questionnaire

The questionnaire is known as the General Health Questionnaire. This questionnaire measures the general psychological distress of the students involved in the research during the last period. It also contains 11 closed-ended questions. This tool is useful in some cultures because it does not contain many physical elements, and theoretically, it may be better at detecting mental problems in a population that suffers from multiple comorbidities. The questions focus on a patient's recent experiences that could be related to mental health conditions such as depression, anxiety, stress, and other similar issues. Addressing mental health factors plays significant role in managing emotional eating by addressing the underlying emotional triggers. The responses will provide a starting point for further exploration to identify the factors that may be causing and contributing to their distress. The result is between 0.12; high scores indicate more severe symptoms of psychiatric disorder [10].

Emotional eater questionnaire

Emotional Eater Questionnaire (EEQ) was developed to assess the extent to which emotions affect eating behavior. The questionnaire contains 10 questions by a closed-end in which the level of

impact of emotion on eating behavior is determined. All questions contain possible answers: 1) Never 2) Sometimes 3) Generally 4) Always. Each answer was given a score of 1-4, the lower the response result, the healthier the behavior [11].

In clinical practice, the subjects were classified into four groups based on the obtained results. If the result is between 0-5: You mean unemotional eating. In other words, your emotions are irrelevant to your food behavior, and you are a very stable person with regard to your food behavior, eating when you are hungry and not affected by external factors or emotions. If your result is between 6-10, it implies that you eat emotionally low. Solving eating problems can be challenging, but there are times when certain foods have an impact on you. Emotional eating will occur if the result is in the range of 11 to 20. Based on your responses, your emotions may have some impact on your diet. Sometimes your feelings and mood determine how much and how you eat. The result is 21-30: you eat very emotionally. If you are not careful, food will control your life. Your feelings and emotions revolve constantly around your food [3].

Statistical analysis

This study employed descriptive statistics to summarize the categorical variables, including emotional eating patterns, mental health status, and academic performance. The results are presented as frequencies and percentages within each category to provide a clear overview of the data distribution. The Chi-square test was applied to determine if there were statistically significant associations between categorical variables, with significance set at ($p < 0.05$). Additionally, the Pearson correlation coefficient was calculated to examine the strength and direction of linear relationships between continuous variables from the Emotional Eating Questionnaire and measures related to academic and mental health outcomes. Statistical analyses were conducted using SPSS software, which is widely recognized for its comprehensive capabilities in data handling and analysis. This software facilitated the robust examination of the interrelationships between emotional eating patterns, mental health, and academic performance, enabling precise interpretation of the data.

Results and Discussion

In this study, all 102 individuals in the sample agreed to and completed the survey, resulting in a 100% response rate, indicating a high level of responsiveness and cooperation from the sample participants. The gender distribution revealed a significant disparity, with females accounting for 87.3% and males only 12.7%. This may reflect the nature of the targeted study population, where females are often more represented in certain fields like clinical nutrition and nursing. Regarding age distribution, the majority of the sample participants fell within the age range of 21-23 years (77.5%), followed by the 18-20 years age group (17.6%). This is consistent with the typical age range of university students at this level. In terms of marital status, most of the sample participants were single (81.4%), while 18.6% were married, as expected within this age group of university students. When considering academic year distribution, the largest proportion of the sample consisted of fourth-year students (56.9%), followed by third-year (20.6%), second-year (16.7%), and first-year students (5.9%). This distribution could be a result of various factors, such as dropout rates or transfer between majors. Looking at department distribution, the largest percentage of the sample was from the Clinical Nutrition department (70.6%), followed by Public Health (10.8%), Health Informatics (9.8%), and Nursing (8.8%).

Properties	Categories	Number	Percentage
Agreed to the Survey	Agree	102	100%
Gender	Male	13	12.7%
	Female	89	87.3%
Age	18-20	18	17.6%
	21-23	79	77.5%
	24-26	5	4.95%
Marital Status	Single	83	81.4%
	Married	19	18.6%
Academic Year	First	6	5.9%
	Second	17	16.7%
	Third	21	20.6%
	Fourth	58	56.9%
Department	Clinical Nutrition	72	70.6%
	Health Informatics	10	9.8%
	Nursing	9	8.8 %
	Public Health	11	10.8%

Table 1: Distribution of the Study Sample According to Demographic Characteristics.

The reliability of the study instrument was assessed using Cronbach's alpha coefficient. The General Health dimension demonstrated a high level of internal consistency reliability, with a Cronbach's alpha value of 0.847. This indicates that the 11 items in the dimension are highly consistent and reliably measure the underlying construct of general health. For the Emotional Eating dimension, the Cronbach's alpha value was 0.632, indicating moderate reliability. The overall questionnaire had a Cronbach's alpha value of 0.665, suggesting moderate reliability. The internal consistency of the entire questionnaire is considered acceptable.

	GPA catogery			
EE catogery	Poor	Average	Good	Excellent
Low	4	6	12	11
Medium	0	6	22	27
High	0	2	4	4

Table 2: Pearson Correlation Coefficient for EE, academic performance, and mental health.

In analyzing the relationship between emotional eating and both academic performance and mental health, Pearson correlation coefficients were calculated. The results indicated very weak positive correlations with coefficients of 0.103 and 0.109 for academic performance and mental health, respectively. However, the p -values of 0.304 for academic performance and 0.275 for mental health demonstrate that these correlations are not statistically significant. These findings suggest that emotional eating does not have a significant linear impact on either academic performance or mental health in our study sample.

	Correlation Coefficient	P- value
EE and academic performance	0.103	0.304
EE and mental health	0.109	0.275

Table 3: Distribution of EE Scores Across GPA Categories.

This table categorizes the frequency of low, medium, and high Emotional Eating (EE) scores across different GPA categories such as Excellent, Good, Average, and Poor. It shows a detailed breakdown of how emotional eating tendencies vary with academic performance, highlighting any trends or deviations specific to GPA classifications.

	Catogery Mental health		
EE catogery	Low	Medium	High
Low	9	25	5
Medium	2	45	9
High	0	3	2

Table 4: Distribution of EE Scores Across Mental Health Category.

This table displays the distribution of low, medium, and high EE scores across three mental health categories: High, Medium, and Low. It quantifies the occurrence of emotional eating behaviors among participants based on their self-reported mental health status, offering insights into how emotional eating correlates with perceived mental well-being.

Table 5 presents the results of the Chi-square tests for associations between emotional eating categories and both GPA and mental health. It includes the degrees of freedom, p-values, and Chi-square values for each test, providing statistical evidence of the relationship between EE and academic as well as mental health outcomes.

Test	Chi-square value	P-value	Degree of freedom
EE and GPA	$X^2 = 10.18777$	0.116964	6
EE and mental health	$X^2 = 1.595093$	0.809674	4

Table 5: Chi-Square Statistics for EE and GPA, and EE and Mental Health.

In examining the association between Emotional Eating (EE) and both academic performance and mental health, the study aimed to identify potential correlations that could inform interventions. The Chi-square tests, however, indicated no significant association between EE and GPA (Chi-square value = 10.18777, degrees of freedom = 6, \(p\)-value = 0.116964) or between EE and mental health (Chi-square value = 1.595093, degrees of freedom = 4, \(p\)-value = 0.809674). These results suggest that EE does not significantly correlate with the academic or mental health statuses of the participants in this sample. This absence of significant findings contrasts with some previous research suggesting a link between emotional eating behaviors and academic stress and underscores the complexity of emotional eating as a behavioral phenomenon. Future research might explore other demographic or psychological factors that could influence or clarify the relationship between emotional eating and these key life outcomes.

A comparative analysis with another European study that examined the correlations between food intake and emotional eating behaviors induced by emotional states such as stress, depression, loneliness, and the desire to remain alert, unwind, and boost self-esteem. According to their findings, individuals displaying higher levels of emotional motivation and adaptive eating behavior tend to overeat during periods of stress, depression, loneliness, or boredom, particularly when eating to enhance mood or maintain alertness. Our study's findings contradict the assumption that emotional eating is associated with mental health [4].

Similar to the results of our research that there is no correlation between emotional eating and mental health, A thorough investigation of Lebanese university students also indicates that the cross-sectional design makes it impossible to determine a causal link between impulsivity, sadness, or anxiety and eating habits. It will take more prospective longitudinal research to prove a connection between eating behavior and causation [8].

The strengths of our study are the utilization of a validated scale for measuring emotional eating which enhances the reliability of our measurement. We measured the reliability by using Cronbach's alpha coefficient. Also, a high response of 100% minimizes bias related to nonresponse and suggests that the sample is representative of the student population and students were considered to participate in the research. The convenience sampling technique facilitated efficient data collection from readily accessible participants within this group. Also, it can be time-efficient and a low-cost method of data collection. The questionnaire consisted of closed-ended questions, resulting in a high response from participants. Our research included students from Applied Medical Sciences collage representing a group that had not been studied before at King Faisal University.

Limitations of the study were the use of cross-sectional design, which limited the ability to infer causality between Emotional Eating and the outcomes studied. The use of convenience sampling technique may have poor external validity due to the possibility of sampling bias and a lack of diversity. The small sample size and the specific focus on students from the Applied Medical Sciences College may not be representative of the broader population. Additionally, the reliance on self-reported questionnaires introduces the potential for response biases. Furthermore, the study had a higher number of female participants compared to male participants, which could affect the generalizability of the results across genders.

The study ended with no significant correlation between the variables that have been examined. Future studies could use a larger, more diverse sample and a longitudinal design to better understand how EE develops over time and its long-term impact on students. Also, they can improve questionnaires that show moderate reliability.

Conclusion

This study explored the associations between emotional eating (EE) and key aspects of student life which are academic performance and mental health. Despite the prevalence of emotional eating behaviors among the participants, our statistical analyses revealed no significant associations between EE and both academic performance and mental health statuses. These findings suggest that emotional eating, as measured in this study, does not have a direct impact. The absence of significant relationships could be indicative of the complex nature of emotional eating, which may be influenced by a range of psychological, social, and biological factors not fully captured in this study. Moreover, emotional eating may interact with other unmeasured variables that contribute to academic and mental health outcomes, suggesting that future research should consider a broader range of influences including stress levels, dietary habits, and socio-economic factors.

The results stress the need for effective interventions to address issues related to psychological well-being, mental health issues, and challenges with emotional eating behavior and food intake regulation. Additional analysis, such as factor analysis or structural equation modeling, can provide valuable insights into contributing factors. Item revision may enhance the reliability of the Emotional Eating dimension and the entire questionnaire. Interpreting the results requires considering the small sample size and possible lack of representativeness, alongside considering the broader study context, including the theoretical framework and research objectives. While our study did not find significant connections between emotional eating and academic or mental health outcomes, it highlights the need for continued research into the factors that influence emotional eating and its potential impacts on well-being. Understanding these relationships is crucial for developing effective support systems for individuals who engage in emotional eating as a coping mechanism.

Recommendations

Based on our findings, we recommend that future studies adopt longitudinal designs to further explore the dynamics of emotional eating and its impact on mental health over time, helping to establish causality more definitively. Research should also expand to include a more diverse participant pool to enhance the generalizability of the results across different demographic groups.

On a practical level, educational programs should be developed to help individuals identify and manage emotional eating, incorporating strategies for recognizing emotional triggers and promoting healthier eating habits. Mental health professionals and dietitians should collaborate to create integrated treatment plans that address both emotional well-being and nutritional health.

health issues. First, students should practice their mindful eating. For example, they should know that their craving may be a result of stressful situations and ask themselves if they are truly hungry, and then wait a few minutes before eating. Second, students should find healthier choices of snacks. If they still feel the need for a snack, consider a lower calorie and fat option than what they may have previously chosen. Third, students should watch the portion size. Instead of taking the whole box with them, they should put a snack-size amount on a plate. They should also check the package to see what one serving size is and try to stick to that [12].

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