

Cognitive, Emotive and Behavioural Aspects of Eating Habits in University Students of Lahore, Pakistan

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ABSTRACT

Background: The prevalence of poor dietary habits and unhealthy food consumption has increased tremendously in recent years, particularly among university students.

Aim: To look at the cognitive, emotive, and behavioural aspects of eating habits in undergraduate students of Lahore Pakistan.

Methods: Cross Sectional study. The sample consisted of 278 undergraduate university students aged from 18 to 25 years ($M=20.75$, $SD=1.61$) from various institutes of Lahore using a non-probability convenient sampling technique. The Three Factor Eating Questionnaire (R18) along with a demographic sheet was used as the measure of assessment in this study. Data was evaluated by using SPSS version 26. Pearson's correlation was applied.

Results: The results showed that there are different reasons for the eating habits of university students like uncontrollable eating, cognitive restraint, and emotional eating. There was a significant difference in scores for men ($M=21.95$, $SD=4.60$) and women ($M=23.46$, $SD=4.24$): $t(276) = -2.74$, $p = .007$ in the uncontrolled eating domain. However, no significant gender differences were found in the cognitive restraint and emotional eating domains. Moreover, the findings also revealed that the students' eating habits were unaffected by their fast-food consumption or by them being day scholars or hostelites/boarders.

Practical Implication: This research study will contribute to the development of innovative research on eating habits in Pakistani culture and society. This study will also assist to fill a gap in the existing literature by combining these two factors, and it may also inspire other new studies with various concepts and diverse demographic samples.

Conclusion: It was concluded that unhealthy eating practices by students are on the rise all around the world, including Pakistan.

Keywords: Eating Habits, Gender Difference, Fast Food Consumption, Emotional Eating, Cognitive Restraint

INTRODUCTION

In order to survive, people generally indulge in eating behaviours every day. In other words, one must decide what to eat, when to consume it, and how much to eat. The prevalence of poor dietary habits and unhealthy food consumption has increased tremendously in recent years, particularly among university students; nevertheless, minimal study has been initiated to uncover the basic reasons behind this and gender differences associated with eating habits. Many teenagers see university as an important journey toward maturity, yet there are concerns about their well-being and lifestyle. A common factor is food, and this time of life can lead to poor dietary habits that can last into adulthood.

While most university students believe that consuming healthily is a crucial aspect to living an active life, they often fail to do so. Pupils' dietary patterns may vary from one another because every person is unique and everyone has different eating preferences, likes, and dislikes. Individual encounters like encouragement to consume food, subjection to a meal, family traditions and practices, branding, and personal opinions all impact these patterns with time. Cultural and societal conventions and influences at the institution can also impact students' behavior and beliefs². Similarly, emotions may have a significant impact on eating patterns³. Different emotional states may result in a diversity of eating patterns among university students. A joyful mood may result in overeating, whilst a sad mood may result in not eating at all. Some students may overeat when they are unhappy, nervous, or furious, due to academic stress or other reasons, whilst others may entirely neglect food and lose their appetites until they are less stressed out.

Students' poor food habits lead to several concerns for this demographic including long-term implications on body weight and health. Poor nutrition can lead to stress, fatigue, and an increased chance of acquiring health issues such as being overweight or obese, having high blood pressure and cholesterol, diabetes and having a high risk of stroke⁴. It can also cause intense headaches,

skin breakouts, and bloating⁵. Unhealthy eating can also lead to depression, impaired brain function, mood swings, and the development of eating disorders⁶. According to all psychodynamic theories, disordered eating signs are the outward representations of the problematic inner feelings that express and communicate underlying concerns through dysfunctional eating patterns and weight-control practices. The individual is thought to benefit from the symptoms, therefore attempts to actively treat them are ignored. According to a rigorous psychodynamic approach, disordered eating patterns will be unnecessary if the underlying concerns can be articulated, processed, and healed⁷.

According to cognitive theorists, excessive preoccupation with one's physical appearance can lead to a bodily self-schema that is easily triggered by both internal and external inputs. Cognition refers to mental awareness and perception. This self-schema is theorized to direct an individual's interest to food- or body-related stimuli and to slant how self-relevant events are interpreted in favor of fatness interpretations. For instance, feeling full might be mistaken for "feeling obese." Like how innocent remarks made by others might be misconstrued as a criticism of one's physique. Common erroneous perceptions and distortions include disturbed or dysmorphic body image, fear that eating is indeed fattening, and attributing binges to the fact that having one cookie wrecked a perfect diet. A set of beliefs, attitudes, and presumptions about what it means to eat and what constitutes a healthy body weight underlie eating disorders or weight-related behaviors like compulsive weighing, laxative use, limiting all sugar, and binge eating after indulging in one forbidden food item⁸.

A lot of scientific study has been done to understand eating disorders since they are so complicated, but the precise biological, behavioral, and social causes of the problem are still unknown. In the area, it is generally accepted that eating disorders have a complex origin. As a result, while seeking to integrate and comprehend the different aspects that contribute to unhealthy eating, researchers typically operate within a "biopsychosocial" framework. According to research, striving for thinness and being exposed to the slim ideal may not always result in bad things and people tend to be active and purposeful in their involvement with idealized representations, rather than passive consumers of social

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forces⁹. Therefore, it is probable that social-cognitive pathways are how sociocultural influences affect disordered eating.

A correlational study at Florida Gulf Coast University recruited 577 undergraduates to examine the association between their food patterns and academic achievement. The findings revealed a positive correlation between healthy eating practices and the participants' self-reported grade point average (GPA)¹⁰.

Another similar study enlisted 680 Chilean university students to evaluate the connection between dietary habits and academic prowess. The findings revealed a strong association between consuming habits and scholarly success among women, while no significant relationships were found in the male participants¹¹. Qualitative research was carried out to assess the influencers of eating patterns and dietary intake among Bangladeshi university students. Individual variables such as culinary skills and food taste, social standards, university culture and assessments, and environmental factors such as supplies and food costs were discovered to influence behavior¹². Cross-sectional research was carried out to examine social and psychological aspects linked with eating habits among Malaysian medical students. The findings revealed that most respondents had healthy eating habits and that social and psychological variables were substantially associated with eating patterns¹³⁻²⁰.

Many comparable studies focus on diverse eating habits and behaviors among university students, but relatively few studies that focus on gender differences for these two variables were discovered. There have also not been many studies that incorporate all kinds of diverse behaviors in one study. Similarly, there are not very many studies on this subject in Asian countries especially, Pakistan. This research study will contribute to the development of innovative research on eating habits in Pakistani culture and society. This study will also assist to fill a gap in the existing literature by combining these two factors, and it may also inspire other new studies with various concepts and diverse demographic samples. Hence, aim of study was to look at the cognitive, emotive, and behavioural aspects of eating habits in undergraduate students of Lahore Pakistan.

METHODOLOGY

Descriptive research followed a cross-sectional research design using quantitative measures to compare eating patterns between two gender categories. A non-probability convenient sampling strategy was used to obtain a sample of undergraduates enrolled in several educational institutes of Lahore. The sample was recruited through various social networking sites. An online Google survey was completed by 278 individuals, 93 men (33.5%) and 185 women (66.5%) between the ages of 18 and 25 years (M =20.75, SD=1.61).

Measures for Data Collection

Demographic Sheet: The demographic sheet consisted of questions regarding the participants' personal characteristics such as age, gender, academic year, semester, major, and whether they were a day scholar or a hostelite. In this section, two more questions were asked, the first of which indicated how frequently the participant consumed junk food, and the second of which inquired about the participants' justifications for taking junk food. Frequency was measured through five options including 'daily', 'weekly', 'once a month', 'once in a few months', and 'rarely' meanwhile the reasons were also determined through five choices which were 'personal preference', 'easily available/ low on cost', 'hectic schedules', 'social norm', and 'peer pressure'.

Three Factor Eating Questionnaire (TFEQ-R18): The TFEQ is an 18-item scale that measures three domains of eating patterns: cognitive restraint (CR), uncontrolled eating (UE), and emotional eating (EE) using a four-point scale with anchors that change between questions (e.g., definitely true to definitely false, or unlikely to very likely or never to at least once a week). It is an update to the original 51-item TFEQ²¹. Cognitive restraint is measured through five items (2,11,12, 15,16), such as " I

consciously hold back at meals in order not to weight gain". Nine items (1,4,5,7,8,9,13,14,17) assess uncontrolled eating including "I am always hungry enough to eat at any time" and lastly, emotional eating is scored by three items (3, 6,10) as " When I feel lonely, I console myself by eating". The last question asks participants to score their eating restraint on a scale from 1 to 8 with 1 being "no restraint in eating" and 8 being "total restraint".

Procedure and Ethical Considerations: The data was gathered online using a Google survey that was administered to the participants over email and social media platforms such as WhatsApp, Facebook and Instagram. Throughout the procedure, all ethical considerations were rigorously adhered to. Participants were informed about the purpose and aims of this research project, as well as their right to withdraw from the study, before any data collection. Confidentiality and anonymity of the participants' data was maintained and their written informed consent was secured. The precautions also ensured that the participants would not suffer any harm as a result of this research.

Statistical Analysis: The data was analyzed using the SPSS version 26. Total scores for each domain (uncontrolled eating, cognitive restraint, and emotional eating) of the TFEQ R-18 were computed. To address the first and third hypotheses, independent samples t- of eating behaviors. Furthermore, a one-way ANOVA was conducted between groups to assess eating domains across the five frequencies of junk/fast food intake (i.e., daily, weekly, rarely, once a month, once in a few months), answering the second hypothesis.

RESULTS

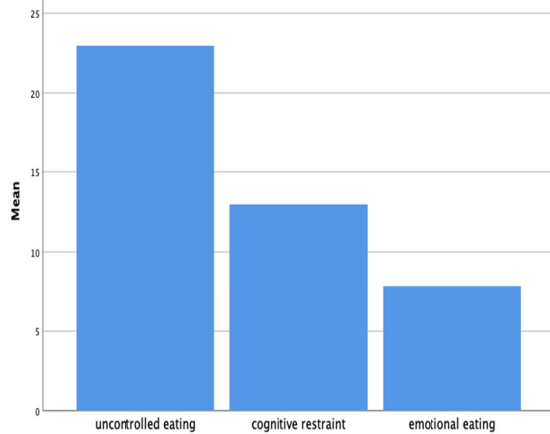
The demographic characteristics of the sample can be seen in Table-1. As mentioned, a total of 278 undergraduate students, with 93 (33.5%) men and 185 (66.5%) women participated in this study. The age group ranged from 16 to 30 years (M=20.75, SD=1.61).

Table-1: Descriptive Statistics of the Demographic Variables of the Sample (n=278)

Variables	M (SD)	f (%)
Age	20.75 (1.61)	
Gender		
Male		93 (33.5%)
Female		185 (66.5%)
Academic Year	2.44 (1.05)	
Freshman		58 (20.9%)
Sophomore		102 (36.7%)
Junior		56 (20.1%)
Senior		62 (22.3%)
Semester	4.34 (2.55)	
Major		
Humanities		28 (10.1%)
Social and Behavioral Sciences		142 (51.1%)
Sciences and Math		52 (18.7%)
Engineering		6 (2.2%)
Interior Designing		4 (1.4%)
Medical Sciences		37 (13.3%)
Culinary Arts		2 (0.7%)
Undecided or other		7 (2.5%)
Day Scholar		239 (86%)
Hostelite		39 (14%)
Frequency of Fast Food		
Daily		115 (41.4%)
Weekly		135 (48.6%)
Once a month		19 (6.8%)
Once in a few months		3 (1.1%)
Rarely		6 (2.2%)
Reasons		
Hectic Schedules		44 (15.9%)
Personal Preference		151 (54.5%)
Easily Available / Low on Cost		67 (24.2%)
Peer Pressure		7 (2.5%)
Social Norm		8 (2.9%)

The results shown in figure-1 indicated that research participants reported more behavioral reasons that is uncontrollable restraint of eating habits both healthy and unhealthy eating.

Figure-1: Cognitive, Emotive and Behavioural Aspects of Eating Habits.



An Independent samples t-test was performed to assess eating behaviors in the three domains with context to gender differences, as shown in Table-2. The assumption of homogeneity of variances was tested via Levene's Test (UE: $F = .019, p = .889$. CG: $F = .365, p = .546$. EE: $F = .142, p = .707$). There was a significant difference in scores for men ($M=21.95, SD=4.60$) and women ($M=23.46, SD= 4.24$: $t(276) = -2.74, p= .007$) in the uncontrolled

eating domain. However, no significant gender differences were found in the cognitive restraint and emotional eating domains. Thus, the null hypothesis was not entirely rejected and homogeneity of variances was assumed.

A one-way between-groups analysis of variance (ANOVA) was performed to investigate the influence of frequency of fast/junk food intake on eating behaviors of university students, as can be seen in Table-3. Subjects were assessed across the three domains of eating behaviors using the Three Factor Eating Questionnaire R-18. The findings demonstrated a statistically significant difference at the $p<.05$ level in fast food frequency for the emotional eating domain [$F(4, 273) = 3.28, p=.012$]. Applying eta squared, the effect size was calculated to be .05. Post-hoc comparisons using the Bonferroni test revealed that the mean score for 'Daily' was significantly different from 'Once a month'. 'Weekly', 'Once in a few months' and 'Rarely' did not vary substantially from either 'Daily' or 'Once a in a few months'. There were no significant differences in the uncontrolled eating and cognitive restraint domains in context to frequently consumed fast/junk food.

Table-4 displays the findings of an independent samples t-test performed to examine the differences in eating behaviors of day scholars and hostelites. The assumption of homogeneity of variances was tested via Levene's Test (UE: $F = .004, p=.947$. CG: $F = .124, p=.724$. EE: $F = .221, p=.639$). The differences in eating habits of day scholars and hostelites (UE: $t(276) = .012, p=.990$. CG: $t(276) = -1.07, p=.284$. EE: $t(276) = -1.71, p=.089$) were found to be statistically insignificant. Thus, the null hypothesis was not rejected and homogeneity of variances was assumed.

Table 2: Gender Differences among University Students Regarding Uncontrolled Eating, Cognitive Restraint and Emotional Eating

Variables	Men (n=93)		Women (n=185)		t	p	95% CI	
	M	SD	M	SD			Lower	Upper
Uncontrolled Eating	21.95	4.60	23.46	4.24	-2.74	.007	-2.61	-.427
Cognitive Restraint	12.68	2.68	13.11	2.62	-1.29	.200	-1.09	.229
Emotional Eating	8.09	2.62	7.74	2.59	1.05	.297	-.305	.996

Table-3: Eating Differences Among University Students Regarding Frequency of Fast/Junk Food Consumption

Variable	M	SD	95% CI		F (4, 273)	p	η ²
			Lower	Upper			
Uncontrolled Eating					2.051	.087	.03
Daily	22.43	4.49	21.61	23.26			
Weekly	23.01	4.32	22.28	23.75			
Once a month	24.37	3.82	22.53	26.21			
Once in a few months	27.67	3.22	19.68	35.65			
Rarely	24.83	5.60	18.96	30.71			
Cognitive Restraint					.310	.871	.005
Daily	12.90	2.62	12.41	13.38			
Weekly	13.10	2.73	12.64	13.57			
Once a month	12.68	1.53	11.95	13.42			
Once in a few months	12.00	2.65	5.43	18.57			
Rarely	12.50	4.23	8.06	16.94			
Emotional Eating					3.276	.012	.05
Daily	7.34	2.64	6.85	7.83			
Weekly	8.01	2.48	7.59	8.44			
Once a month	9.21	2.28	8.11	10.31			
Once in a few months	9.33	2.08	4.16	14.50			
Rarely	9.17	3.66	5.33	13.00			

Table-4: Eating Differences among Day Scholars and Hostelites Attending University

Variables	Day Scholars (n=239)		Hostelites (n=39)		t()	p	95% CI	
	M	SD	M	SD			Lower	Upper
Uncontrolled Eating	22.96	4.41	22.95	4.50	.012	.990	-1.49	1.51
Cognitive Restraint	12.90	2.67	13.38	2.45	-1.07	.284	-1.39	.408
Emotional Eating	7.75	2.59	8.51	2.59	-1.71	.089	-1.65	.117

DISCUSSION

The current study's findings are similar to earlier research done in Pakistan²¹⁻²³ indicating university students had significantly poor eating habits. Many factors can lead to poor dietary habits in

students. Undergraduates' dietary patterns are frequently erratic due to hectic academic schedules. Meals, especially breakfast, are often ignored due to time constraints. In 2014, a cross-sectional survey was done between medical students from all public and private medical institutions in the Peshawar District to investigate

the incidence of overweight and obesity, as well as to determine eating behaviors, exercise habits and their connection with obesity. The study indicated that overweight and obesity among undergraduate medical students were mainly due to their sedentary lifestyle²⁴. Late-night study sessions result in a high intake of caffeine and binge eating unhealthy items such as calorie-dense snacks including chips, candies, or processed food and take out²⁵. Study results found that food intake close to bedtime was found to be negatively linked with weight gain, sleep difficulties, and digestive issues²⁶. Likewise, another study's findings stated that university students chose meals based on convenience and time availability, sensory attractiveness, and food price rather than nutritional content. This could be one of the major reasons because students have easy access to fast food through deliveries via online or phone calls. It is quick, inexpensive, and convenient for busy students to grab and consume while going about their day. Moreover, off-campus fast food outlets provide large quantities of food at reasonable costs, rendering them exciting to hungry students on a budget²⁷.

Consumption of fruits and vegetables being frequently inadequate among university students can be another possible explanation. With so many options, these meals frequently fail to become a regular part of college students' eating patterns. They are less tempting and more difficult to consume than the options in the cafeteria and are more costly in restaurants. A study surveyed the eating habits of 582 Oregon State University students compared to male and female students but found that both were not getting the proper number of fruits and vegetables²⁸.

The findings of the current study revealed significant gender differences in the uncontrolled eating (UE) scores. Several studies show that females are generally more concerned about their eating habits than males. Females are more concerned about their weight, body shape, and physical appearance than males, therefore they avoid uncontrolled eating. This disparity can also be attributed to our society's stereotyped notion of obese women being condemned more than obese men^{29,30,31}. However, no significant gender differences were observed in emotional eating (EE). This result is consistent with previously conducted studies that gender does not affect emotional eating however, the type of emotional eating may vary among male and female students^{32,33}.

Interestingly, the present study showed no differences between eating habits of the day scholars and hostelites which contradicts the findings of a study, where students who lived at home participated in more athletics and ate more raw and cooked vegetables, fish, meat and poultry, fresh fruit, eggs, and bread/cereals. Students who were not living at home, on the other hand, ate more packaged/ready meals, beer, milk, and chips³⁴. Most students who lived alone claimed to change their eating habits after leaving home. One possible reason for the current study's findings could be personal preference. Food preferences are the evaluative attitudes that people have regarding foods. Personal preferences are constituted in eating habits, which are typically linked to culture, education, and psychological and social background³⁵. For example, the experience of eating a particular sort of food enhances the likelihood that one will develop favorable preferences for its flavor, or flavors similar to it. This was backed by another study conducted from March to April 2013, cross-sectional research was conducted among students enrolled at four established private institutions in Bangladesh. The study sought to investigate students' preferences, prevalence, and patterns of fast-food eating. Fast food was consumed by 98.5% of those kids, and 43.3% of their pocket money was spent on its purchase. Even though 98% were aware of the negative consequences of excessive fast-food intake, they still strongly preferred it. Furthermore, both day scholars and hostelites have easy access to quick meals via various food delivery applications, as well as quick conveyance via Uber/Careem, which allows students easy access to eateries nearby. Additionally, hostelites have access to the mess where they are provided with breakfast, lunch, and dinner, as

well as kitchen access where they can cook their food which could explain the insignificant result^{36,37}.

CONCLUSION

Unhealthy eating practices by students are on the rise all around the world, including Pakistan. This is concerning for students' health since they are at a crucial stage in their life, shaping their future. The result of this study states that there is no difference in the eating habits of male and female university students except for uncontrolled eating. However, university students in general have poor dietary habits due to hectic schedules, inappropriate snacking, convenient calorific foods, tension, expensive healthy food, and quick accessibility of fast food. As a result, health programs to encourage a healthy lifestyle among students are required. These findings will further help university cafeterias develop nutritious alternatives to burgers, fries, and pizza, such as pre-packed salads, fruits and greens, hard-boiled eggs, and protein packs that are as easy to grab and go. Likewise, students can manage their erratic eating habits by eating more fruits and vegetables and avoiding late-night snacking.

Limitations: There were a few limitations to this research study. To begin, as self-report measures were employed, it is likely that respondents provided dishonest replies to items or were negligent while answering because they might have been in a hurry or did not feel like completing the survey. They might have also had difficulty comprehending the items. This might alter the results and jeopardize the study's validity. Second, the sample comprised an uneven number of men and women, thus it was not representative of both genders. Furthermore, the sample was convenient and restricted, and it was not representative of the entire undergraduate population of Lahore. As a result, the findings of this study cannot be generalized to any other culture or population.

Implications: This study has significant implications as well. Students in Pakistan engage in a variety of eating behaviors daily, therefore the current study can assist these students in understanding how their eating differs in three eating domains and aid them in adopting healthy eating practices. Students will also benefit from learning the importance of leading a healthy lifestyle and how it influences their academic performance. Furthermore, it can help parents and academic administrators understand different eating patterns so that they can provide students with healthier alternatives and raise awareness. Finally, the current study may serve as an inspiration and lead to future investigations with various demographic samples, eating philosophies, and more extensive variants.

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