

**Exploring Dietary Behaviors and Obesity Prevalence
in Multan, Pakistan**

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ABSTRACT

Obesity is a major dangerous factor for mortality. It is reported that around 2.8 million people die each year from health problems. It is alarming to see the risk of health effects that obesity can impose on people, including heart disease, diabetes, hypertension, and many others. The World Health Organization (WHO) reports showed that adults have a higher obesity rate than ever before. This research aims to investigate the dietary behaviors of individuals, especially the fast-food consumption behaviour and the health hazard factors linked with it. The dietary behaviours are changing, and fast-food consumption is getting more popular in Pakistan. We aim to capture the dietary behaviors of youth and their effects on their health, especially on females. A quantitative research design was adopted, and a simple random sampling technique was used to select a sample of 200 female students from the universities of Multan. A well-structured questionnaire was used to collect data on fast food consumption patterns, demographic characteristics, and health outcomes. 80% of the female respondents reported that access to fast food is easy for them. Moreover, 40.5% of the respondents eat fast food 1-2 times a week, 60.0% of the respondents preferred fast food as an alternative food because of taste, 48.05% of the respondents are agree that their weight is increasing and obesity effects their overall health well-being, 34.5% of the respondents were neutral about to have received nutritional education. It is concluded that fast food dietary behavior is affecting the health of the respondents.

Keywords: Dietary Behaviors, Obesity Prevalence, Fast Food Consumption, Public Health Concerns, Multan

INTRODUCTION

According to the World Health Organization (WHO), an adult is considered overweight if they have a BMI of > 25 . In contrast, obesity is considered to have a BMI of > 30 . Obesity is a metabolic disorder all over the world. It is one of the leading causes of death as it is known to be a threat to the increased incidence of various non-communicable illnesses, specifically type 2 diabetes. Obesity is a primary risk factor for dyslipidemia development, as the more significant part of people with diabetes are overweight or obese (Nawaz et al.2020).

Overweight and obese individuals have high levels of fast-food consumption, and vice versa. A study on Pakistani students identifies that 75% of the adults fall in the category of overweight or obese, and they experience several issues in trying to get rid of the excess weight. It also indicates that the students' rate of fast-food consumption is associated with their diet behavior related to fat, and more significantly, it suggests that fast food may cause food discrimination due to health. Food discrimination can cause fatigue, weight gain, maybe catching a cough, chronic stress, or chronic disease, and so on due to irregularity in the taking of breakfasts. Furthermore, tightness and burning are likely to accompany the use of fast food as an aftermath (Rahman *et al.*, 2018).

Obesity is a major dangerous factor for mortality. They calculate that around 2.8 million people die each year from health problems. It is worrying to see the risk of health effects that obesity can have on people, including heart diseases, diabetes, hypertension, etc. The World Health Organization (WHO) reports that adults have obesity which is a highly increased rate compared to the obesity rates in the past. The World Health Organization (WHO) finds that the obesity rate in men is lower compared to Women. It is also highlighted that childhood is a vital period to avoid obesity, as a considerable proportion of adult obesity originated from an early age (Jia *et al.* 2021).

Adolescent obesity has become a dangerous health problem expanding to epidemic levels Worldwide. The COVID-19 pandemic further exacerbates this situation. Adolescent obesity is a complex disease with serious immediate, intermediate, and long-term effects on both physical and mental health of youth. If left unresolved, it can transform into a major, serious health problem. Thus, it builds economic challenges for future generations. It is important to know the risk factors that are associated with it. There is little research relating to danger factors like vitamin D status and the impact of COVID-19, so the aim is to address the danger factors of health that will be faced by people in the future (Shaik *et al.*, 2022).

In recent years, the upward push of fast food has contributed to an environment that encourages dangerous eating and weight benefits. Young females specifically are susceptible to unhealthy consuming behavior due to busy schedules and convenience. The short food industry has grown appreciably, making it a primary part of many human beings' diets. As a result, weight problems have extended not only within the US but also in other international locations where fast food has grown to be famous. In Saudi Arabia, many women college students are overweight, and fast-food consumption is mainly high among young people and people with better earnings (Malik *et al.*, 2025).

Pakistan is ranked as the 6th maximum populous country with a total population of 184.34 million. Currently, the epidemic of obesity is a major problem within the Pakistani society, constituting a most important chunk of the economic assets of the United States because of extended health issues related to this disease (Pakistan Economic Survey, 2012-13). As a result, it's posing a monetary burden on the common financial system of Pakistan. Listed elements constituting this disorder are dangerous heating behavior, lifestyle changes, an electricity-dense food plan, peer-pressures and other environmental adjustments. Pakistan is ranked as 165/194 on the subject of the fattest country in the global. This study pursuits to examine the Body Mass Index developments over time to research the traits and reasons for weight problems within this time frame. World health employer reviews of BMI of adults from 1980-2012 in the US suggest an enormous ascent that is ($>30.0 \text{ kg/m}^2$) within this timeframe, which signifies that it has doubled (Mahmood *et al.*, 2019).

Impact of fast food on the health of young females

Fast food consumption has several impacts on the health of young females.

Obesity

The high consumption of fast food has been diagnosed as an extensive contributor to the growing rates of weight problems internationally. Fast food merchandise is generally high in dangerous calories, sugar, fats and carbs and coffee in crucial minerals and nutrients. This ends in weight advantage and weight problems, which increases the danger of numerous long-term health situations together including diabetes, coronary heart disease, stroke, and certain types of cancers. Research in Bangladesh and different international and national locations has observed that fast food consumption has the ability to increase obesity and create weight problems among adults and especially in females. Moreover, research has shown that a large proportion of mothers and fathers and young human beings are blind to the fitness risks related to formative years obesity and fast food intake. Therefore, it's miles vital to elevate focus on the risks of fast food and promote wholesome ingesting behavior, especially among kids and teenagers, to mitigate the growing weight problems epidemic (Nasirllah, *et al.* 2019; Al-Ghamdi, *et al.*, 2018, Mohiuddin, *et al.*, 2019).

Cardiovascular and digestive health issues

Fast food may be convenient, but it can have a bad impact on individuals' health. The high levels of saturated fats in these foods can lead to increased cholesterol and blood pressure, and put us at risk for heart disease, heart attacks, and many other diseases. Even young females should take care of their health and make choices that nourish their bodies, not harm them.

Fast food may taste good at the moment, but it can have long-term consequences for your health. The high sugar content can puzzle your body's ability to regulate blood sugar, leading to insulin resistance and a high risk of type 2 diabetes, and if you're regularly eating fast food, you are also more likely to develop metabolic syndrome, a cluster of conditions that can increase your risk of heart diseases and other serious health problems. It's important that you put it into your body and make choices that support your health rather than harm it.

When you regularly eat fast food, you're depriving your body of the fiber it needs to keep your digestive system in top shape. It's like neglecting to oil a machine; it'll eventually start to creak and groan and might even break down entirely. But by incorporating high fiber foods into your diet, you can keep your digestive system humming along smoothly, avoiding the discomfort and distress of constipation, IBS and other gastrointestinal issues (Subho et al.2018).

LITERATURE REVIEW

Munir et al. (2023) stated that weight troubles have become a developing epidemic, affecting human beings of all ages, and have become a number one hazard factor for several diseases. The basic purpose of weight problems becomes an energy imbalance between calorie consumption and expenditure, which turned into frequently caused with the aid of the intake of excessive energy, high-calorie foods, and drinks. The widespread availability of reasonably priced, electricity-dense foods and the marketing procedures of food companies contributed to the trouble. moreover, modifications in ingesting behavior, consisting of the adoption of Westernized diets and increased consumption of fast food, had also performed a function. studies have proven that university students, mainly men, have been susceptible to weight problems because of their consumption habits.

Sajjad et al. (2023) stated that the increasing recognition of fast food, especially among children and youngsters, contributed to a growing occurrence of obesity and related illnesses globally. The normalization of fast-food diets, convenience, competitive pricing, and cultural influences drove this

trend, mainly in low- and middle-income countries like Pakistan. The consequences were alarming, with a significant percentage of Pakistan's population, including youngsters and children, facing obesity and associated health risks. Urgent action was needed to address the cultural and environmental factors promoting fast food intake and to promote healthier dietary behavior among young people.

Theoretical Framework

Planned Behavior Theory

The theory of planned behavior (TPB) is a broadly identified socio-psychological theory that seeks to explain human behavior via the information of attitudes, subjective norms, and perceived behavioral manipulation. Evolved using Icek Ajzen in 1985, the TPB is and stretching the principle of logical motion (TRA), which Icek Ajzen co-developed with Martin Fishbein in 1980. The theory stated that a man's or a woman's goal to carry out a behavior is determined by means of their behavior. This goal, in turn, predicts the actual conduct. "The theory of deliberate conduct proposes that a man or woman's behavior is directly stimulated by their intentions". These are formed by way of three factors that are attitude towards the behavior, subjective norms, and perceived behavioral control.

Objectives

- To identify the different food consumption patterns among female students
- To examine the association between having different food consumption patterns and the odds of having excess weight or obesity among students.
- To examine the relationship between fast food intake and nutrition education.
- To suggest recommendations based on research.

METHODOLOGY

The researcher used a quantitative research design to investigate the nexus between dietary patterns and obesity and other health issues of the young female students. The district Multan was selected randomly, and the only women's university of Multan (The Women University Multan) was selected purposively as the focus of the study was women. This study also investigates the problems that facing females due to obesity or weight gain. All the students currently enrolled in enrolled in several program BS, BBA, M.Phil. and Ph.D at the Women University Multan was the participants of the research. A sample of 200 respondents were part of the study randomly. Keeping in view the objective and nature of research, a self-administered questionnaire was used for data collection. Researchers distribute the questionnaire among respondents randomly and collect after filling out the questionnaire. The analysis was made by putting it into SPSS (Statistical Package for Social Sciences) software. The tables were received through SPSS and were elaborated by the researcher.

RESULTS AND DISCUSSION

Part of the article discusses the results of the present study. The first subsection discusses the demographic information of the respondents.

Table 1: Demographic Characteristics of the Respondents (N=200)

Table 1 outlines the demographic traits of the two hundred respondents who participated in the survey. The demographic characteristics of the respondents indicate that the majority were young women, with 45% aged between 18–20 years and 34% between 21–23 years, suggesting a populace in early adulthood, a level frequently connected with lifestyle experimentation and elevated fast-food consumption. Most participants were enrolled in the BS program 60%, whereas smaller proportions were from the M.Phil. 26%, and Ph.D. 10% and BBA 4% of the respondents. Weight distribution records discovered that 62.5% of respondents had a wholesome weight range (40–60 kg), but 32.5% had been within the obese category (61–80 kg), and 5% were obese (81–100 kg), signaling emerging health dangers doubtlessly linked to dietary conduct.

Sr.	Demographic Determinants	Indicators	Frequency	Percentage
1.	Age	18-20	90	45.0
		21-23	68	34.0
		24-26	33	16.5
		27-29	9	4.5
2.	Degree Program	BS	120	60.0
		BBA	8	4.0
		M.Phil.	52	26.0
		Ph.D.	20	10.0
3.	Weight	40-60	125	62.5
		61-80	65	32.5
		81-100	10	5.0
4.	Accessibility of fast food	Easily accessible	180	90.0
		Not accessible	20	10.0
5.	Father occupation	Landlord	57	28.5
		Businessman	43	21.5
		Holding a job	100	50.0
6.	Mother occupation	Housewife	170	85.0
		Business women	18	9.0
		Holding a job	12	6.0

An outstanding 90% mentioned that the accessibility to fast food is not difficult or in other words, it is convenient for them to access fast food. It is a indicator that accelerated the consumption of fast food. Occupational statistics showed that 50% of respondents' fathers were doing jobs, whilst 85% of their mothers were housewives, reflecting a conventional circle of relatives' structure wherein maternal influence nutritional choices may be huge. Interestingly, the respondents from the family background where the mothers are housewives are also attracting to the fast food. These findings align with Chowdhury et al. (2018), who found that younger individuals with clean get right of entry to fast food were more likely to develop bad ingesting patterns. Similarly, Mohiuddin et al. (2019) emphasized the role of environmental accessibility in shaping rapid meals preferences amongst Pakistani adolescents. However, at the same time as Younis et al. (2019) highlighted socioeconomic disparities as a major issue, this has a look at indicates that no matter income heritage, fast food meals remain a dominant characteristic of younger women's existence because of their convenience and availability.

Table 2: Effects of Fast-Food Consumption on the Health of Young Females

Table 2 gives insight into younger females' perceptions of fast-food intake and its fitness-related consequences. A moderate sample of respondents (39.5%) agreed and 13 % strongly agreed that fast food is less costly for college students, indicating its monetary accessibility, which aligns with findings by

Chowdhury et al. (2018), who stated that low price contributes to accelerated fast food intake among children. Regarding obesity, 39.5% agreed and 10% strongly agreed that it's miles a not unusual issue, and 72.5% (agree, strongly agree) believed weight problems negatively influence fitness reflecting consciousness about weight problems-associated risks as emphasized by Mahendra Prabu and Ramesh (2024).

Sr.	Indicators	S.D.A*	D.A	N	A	S.A
		%	%	%	%	%
1.	Do you think fast food is affordable for students?	12 (6)	17 (8.5)	79 (39.5)	66 (33)	26 (13)
2.	Do you think obesity is common?	9 (4.5)	21 (10.5)	71 (35.5)	79 (39.5)	20 (10)
3.	Can obesity affect our health?	13 (6.5)	13 (6.5)	29 (14.5)	96 (48)	49 (24.5)
4.	Do you believe your eating habits are the reason for your obesity condition?	25 (12.5)	32 (16)	56 (28)	62 (31)	25 (12.5)
5.	Do you believe fast food affects your social life?	10 (5)	43 (21.5)	69 (34.5)	63 (31.5)	15 (7.5)
6.	Do you think fast food is a good option for students who are busy?	9 (4.5)	17 (8.5)	59 (29.5)	88 (44)	27 (13.5)
7.	Have you ever faced any nutritional deficiencies?	10 (5)	30 (15)	66 (33)	79 (39.5)	15 (7.5)
8.	Do you have a family history of chronic diseases?	23 (11.5)	54 (27)	60 (30)	44 (22)	19 (9.5)
9.	Have you received nutrition education?	9 (4.5)	37 (18.5)	69 (34.5)	68 (34)	17 (8.5)
10.	Do you face bloating or gas after eating fast food?	8 (4)	37 (18.5)	65 (32.5)	68 (34)	22 (11)

*S.D.A = Strongly Disagree, D.A. = Disagree, N = Neutral, A = Agree, S.A. = Strongly Agree

When asked if their eating behavior had been the reason for her obesity, 43.5% either agreed or strongly agreed, while 28% remained neutral, suggesting moderate personal responsibility. Interestingly, 39% (agree, strongly agree) believed that fast-food impacts their social life, which helps Subho et al.'s (2018) findings that unhealthy consuming behavior affects not most effective physical health but also to show the nicely social behavior. Additionally, a combined 57.5% of respondents agreed that fast meals are a suitable alternative for busy students, reflecting convenience as a motivating issue, much like the conclusions of Purba et al. (2024).

Nutritional concerns have also been obtrusive 47% reported dealing with nutritional deficiencies, and 45% had received some form of vitamins education. However, 30% reported a circle of relatives records of chronic diseases, raising long-term health concerns, while 45% skilled digestive problems like bloating or gas after ingesting fast food. These bodily signs echo findings by Mohiuddin et al. (2019), who emphasized digestive distress and poor nutrient absorption as not unusual effects of normal, fast-food meal consumption. Overall, the responses advocate a high level of focus amongst younger girls regarding the health influences of speedy food, although its affordability and comfort continue to force intake.

Table 3: Correlation between fast food consumption and nutritional deficiencies

Consumption of fast food	Frequency of nutritional deficiencies				Total
	Strongly disagree	Disagree	Neutral	Agree	
				Strongly agree	

Rarely	10 (5.0)	6 (3.0)	0 (0.0)	0 (0.0)	0 (0.0)	16 (8.0)
1-2 times in a week	0 (0.0)	24 (12.0)	57 (28.0)	0 (0.0)	0 (0.0)	81 (40.5)
3-4 times a week	0 (0.0)	0 (0.0)	9 (4.5)	35 (17.5)	0 (0.0)	44 (22.0)
Daily	0 (0.0)	0 (0.0)	0 (0.0)	44 (22.0)	15 (7.5)	59 (29.5)
Total	10 (5.0)	30 (15.0)	66 (33.0)	79 (39.5)	15 (7.5)	200 (100.0)
Gamma= 1.000	Level of significance =<.001					

The table illustrates the correlation between eating fast food about whether they consumed it and their nutritional deficits. The results illustrate that individuals consuming fast food more frequently are more likely to have nutrition-related issues; in contrast, individuals consuming fast food less frequently seem to have less nutrition-related issues.

The significance value (<.001) illustrates with a strong positive correlation which indicates this was a definite trend whereby the frequency of a fast-food purchase was associated with reported nutritional problems. The Gamma value (1.000) presents a perfect correlation, indicating that the association is confirmed to this degree and framework.

Over-viewing the data, it can be stated that those more inclined to consumption of fast foods are likely to acknowledge having more nutrition-related issues, while those with less fast-food consumption claim to experience fewer of these issues. These may include differences in the variety of food eaten as well as the diet or lifestyle and several other unidentified determinants of nutrition.

Table 4: Correlation between fast food consumption and weight

Weight	Frequency of consume fast food				
	Rarely	1-2 times in week	3-4 times in week	Daily	Total
40-60	16 (8.0)	81 (40.5)	28 (14.0)	0 (0.0)	125 (62.5)
61-80	0 (0.0)	0 (0.0)	16 (8.0)	49 (24.5)	65 (32.5)
81-100	0 (0.0)	0 (0.0)	0 (0.0)	10 (5.0)	10 (5.0)
Total	16 (8.0)	81 (40.5)	44 (22.0)	59 (29.5)	200 (100.0)
Gamma = 1.000	Level of significance = <.001				

The information displayed in this table shows the relevant relationship of the body weight and the frequency of fast-food consumption. The information suggests that individuals with lower body weight tend to consume fast food less often than individuals with higher body weight.

The significance of value (<.001) demonstrates a strong positive correlation, which correlates with lower body weight linked to less fast-food consumption and a higher body weight linked to more consumption. The Gamma value (1.000) proves there is a perfect association, confirming this relationship is almost always true.

In short, the table hints that fast food consumption is more prevalent among higher weight individuals, while those who are on the lower end of the weight scale consume fast food less frequently. This probably exposes lifestyle differences, eating habits or metabolism rate.

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