



Faculty of Education
Virtual University of Pakistan



Journal of Distance Education and Research
Vol VI, Issue I, 65-78 , 2026
ISSN: 2521-2397

A Study of Dietary Habits Status Among Elementary Level Female Students in Punjab, Pakistan

Dr. Muhammad Aslam¹

Assistant Education Officer, School Education Department Punjab, Pakistan

dr.aslam.edu.pk@gmail.com (Corresponding Author)

Arfana Shaheen²

M.Sc Public Nutrition, AIOU Islamabad, Pakistan

as.nutritionist.pk@gmail.com

Amna Rasheed³

PhD Scholar, Lahore College for Women University Lahore

amnapecurdu@gmail.com

Abstract

Dietary habits refer to the customary choices made by individuals and societies when selecting their food intake. The objective of this study was to examine the dietary habits of elementary-level female students in the district of Okara, Punjab. This research employed a quantitative approach utilizing a cross-sectional study design. The sample comprised 120 elementary students enrolled in public schools within the district of Okara, selected through a stratified random sampling technique. Data collection was conducted via a survey questionnaire and subsequently analyzed using SPSS software. The findings revealed that the majority of students consumed milk and dairy products, bread and cereal items, meat products, beverages, vegetables, and fruits only 1-3 times per month over the past thirty days. Furthermore, the results showed that most students had low to medium levels of nutritional status regarding milk and dairy foods, bread and cereal foods, meat items, beverages, and vegetables and fruit items. Based on the findings of this study, it is recommended that students incorporate a wider variety of food items into their daily diets.

Keywords: Dietary Habits, Elementary Level, Female Students, Punjab

Citation: Aslam, M., Shaheen, A., & Rasheed, A. (2026). A study of dietary habits status among elementary level female students in Punjab, Pakistan. *Journal of Distance Education and Research*, 6(1), 68-78.



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Introduction

The principal public health challenge of this century is the escalating prevalence of obesity among children. Obesity is a multifaceted condition influenced by significant genetic, medical, environmental, personal, and societal factors. Over the past four decades, the global incidence of childhood obesity has surged by more than 5% (Yanovski, 2018). The average prevalence of obesity stands at 27% among girls and 29% among boys aged 7 to 9 years. In Poland, obesity rates are recorded at 9% for girls and 13% for boys. In other European nations, the incidence of excessive body mass disorders is either on par with or slightly exceeds the average range (World Health Organization, 2021).

According to Moreno et.al (2017), the amount of underweight reduced from 9.2% in 1975 to 8.4% in 2016 among girls and from 15% to 12.4% among boys. During 2016, globally 117 million boys and 75 million girls were somewhat or mostly underweight. Increase or reduce in weight is connected with daily lifelong routine and eating habits.

According to different research studies, increases or decreases in weight are explained by various behavioral, ecological, and societal factors, including insufficient physical exercise, work routines, and eating habits. These factors are significantly connected with the scenario of fatness, positive energy weight balance (Akbar, 2022).

It is acknowledged that all these factors can be effectively managed during the formative years and throughout middle age. Consequently, it is imperative to investigate them to identify and recognize healthy dietary practices that enhance the utilization of nutrient-rich food items, which can be regarded as a strategic approach to impede, manage, and combat obesity, as well as fluctuations in weight among children and adolescents (Kien, 2020).

Many research studies indicated that up to the age of 18 years routine eating habits produced the furthestmost consequence for future health. Therefore, the age group of 6–18 is very crucial for appropriate nutrition and eating habits. Therefore, this study was conducted to explore the dietary habits of 6–18 years elementary school level female students in District Okara, Punjab, Pakistan.

Research Objectives

Following was the main objective of this study:

1. Explore the routine dietary habits among elementary level students in District Okara, Punjab Province.

Research Questions

Following were the research questions of this study:

1. What are the routine dietary habits adopted among elementary level students with regards to milk and dairy foods items?
2. What are the routine dietary habits adopted among elementary level students with regards to bread and cereal foods items?
3. What are the routine dietary habits adopted among elementary level students with regards to meat items?
4. What are the routine dietary habits adopted among elementary level students with regards to vegetables and fruits items?
5. What are the routine dietary habits adopted among elementary level students with regards to beverages and food items?

Literature Review

Routine dietary habits have appeared as a valuable epidemiological design to evaluate on the whole dietary status and its connection with health and illness conditions. Young people's

routine dietary habits have been helpful in evaluating the status of chronic diseases. Routine dietary habits have been significantly helpful in understanding the nutritional status among people (Abizari and Ali, 2019).

A healthy and safe diet promotes health and prevents diseases. Diets are the collection of different food items used over time, and which provide all necessary and good nutrients. A healthy food is that which provides valuable nutrients for health and decreases harmful elements for health (Akbar, 2022).

Routine eating habits are ways people eat which food items when and how much quantity in their daily lives. Any routine eating habit is assumed to be safe or unsafe based on the type of food item, time routine and the quantities. Nutritional intake as a pivotal element contributing to human health and well-being is of great importance and its role in early days and youth is extra important and of bigger concern. Lifestyle and daily routine play an important role in the development of fatness during early age and adulthood. The family food habits routine as role models for healthy and safe eating behaviours (Shanmugapriya et al., 2021).

The natural and organic food items have an important role in improving good health. The natural and organic food type items include fresh vegetables and fruits, dry fruits, nuts and whole-grain cornflakes etc. These food items are rich in magnesium, antioxidants, fiber, zinc and various micronutrients which are essential for physical fitness and healthiness. Meat and milk cheeses and yogurts are protein sources. Gut microbes have significant contribution in physiological aspects of human including neurological functions (Gibiino et al., 2021).

Begdache et al. (2019) found that state of mood and behaviour dependent on the utilization of routine food items that enhance the presence of neurotransmitter precursors and concentrations in the human brain. However, state of mood and behaviour may be more dependent on food item that enhance the presence of antioxidants and abstinence in the sympathetic nervous system (coffee, high glycemic index, and skipping breakfast and concluded the level of brain maturation and age-related changes in human brain and improve mental health.

Pakistani people eat more 'roti' and 'salaan' than rice in their routine lives. Further eat more in their routine daily lives 'samosas', 'kebabs', 'salads', and 'tikkas'. Furthermore, mostly eat sweet dishes like 'halva', 'kheer', 'seviaan', and 'mithai' (Jamal, 1998).

The routine eating habits of people have gotten worse due to a busy lifestyle, unhealthy nutritional habits and imbalance diets. There are many risk factors that will, in long term, negatively affect the health of young people. Such ones are smoking, alcohol use, psychotropic substances, sexual behaviour, and reproductive problems. In this situation National Youth Strategy (2014-2020) has designed and developed frameworks, standards and guidelines for healthy food items and their routine utilization. Furthermore, priorities are set out in the national level policies. Moreover, necessary principles and guidelines are provided by the related institutions and organizations of the EU (Andonova, 2018).

Students of elementary level need more healthy food items. During their learning activities they needed more energy and healthy food as a boy required 2350 kcal and a girl required 1850 kcal per day on average. There is more need for a healthy diet and nutrition during mental workload and tough lifestyle in students has a significant effect on the learning and academic performance of students. Further, balanced and healthy dietary habits and nutrition reduce stress and anxiety level during examinations and different learning tasks, projects and assignments and increase quality of life of students (Freire, Raats, & Fisberg, 2018).

Research Methodology and Procedure

This study was a quantitative study, and cross-sectional design was applied with 120

elementary level students, from age 6 to 18 years old, enrolled in public schools located in district Okara, Punjab province, Pakistan. The population of this study was all elementary level students, from 6 to 18 years old, enrolled in public schools located in district Okara, Punjab province, Pakistan. The sample of this study was 120 elementary level students enrolled in public schools located in district Okara. Stratified random sampling technique was applied for selection of sample of this study. A survey questionnaire was applied for collection of data for this study. The questionnaire was comprised of two parts: first was demographics information and second parts consisted of 58 food items included milk and dairy foods, bread and cereal foods, meat items, beverages items, vegetables and fruits and miscellaneous food items. Cronbach's Alpha test was applied to ensure reliability. Reliability value of the questionnaire was .97. The data was collected by researcher with the help of school administration. The data on survey questionnaire was collected from students with the consent of school head and students.

Data Analysis and Results

The quantitative data was analyzed using SPSS software. Percentage distribution and mean analysis techniques were applied to answer the research questions of the study.

Table 1

Distribution of sample with respect to gender

Variables	Category	Frequency	Percent
Gender	Female	120	100

This table shows the gender distribution of sample. The total sample was 120 elementary level female students

Table 2

Distribution of sample with respect to age

Variables	Category	Frequency	Percent
Age	6-9	8	6.7
	9-12	56	46.7
	12-15	54	45.0
	15-18	2	1.7
	Total	120	100.0

This table provides the age wise distribution. The total sample was 120 elementary level female students. There were 6.7% students aged between 6-9 years, 46.7% students age between 9-12 years, 45% students aged between 12-15 years, and 1.7% students aged between 15-18 years.

Table 3

Distribution of sample with respect to grade

Variables	Category	Frequency	Percent
Grade	4	22	18.3
	5	23	19.2
	6	19	15.8
	7	25	20.8
	8	31	25.8
	Total	120	100.0

This table shows the grade wise distribution. There were 18.3% respondents were of grade 4, 19.2% respondents were of grade 5, 15.8% respondents were of grade 6, 20.8% respondents were of grade 7 and 25.8% respondents were of grade 8.

Table 4*Distribution of sample with respect to height*

Variables	Category	Frequency	Percent
Height (cm)	100-115	18	15.0
	115-130	34	28.3
	130-145	52	43.3
	145-160	16	13.3
	Total	120	100.0

This table shows the grade wise distribution. There were 15% respondents having height 100-115 cm, 28.3% of respondents of height 115-130 cm, 43.3% respondents having height 130-145 cm, and 13.3% respondents having height 145-160 cm.

Table 5*Distribution of sample with respect to weight*

Variables	Category	Frequency	Percent
Weight (kg)	30-35	24	20.0
	35-40	63	52.5
	40-45	19	15.8
	45-50	14	11.7
	Total	120	100.0

This table provides the weight wise distribution of sample. There were 20% respondents having weight 30-35 kg, 52.5% respondents having weight 35-40 kg, 15.8% respondents having weight 40-45 kg, and 11.7% respondents having weight 45-50 kg.

Table 6*Distribution of sample with respect to location*

Variables	Category	Frequency	Percent
Location	Rural	72	60.0
	Urban	48	40.0
	Total	120	100.0

This table represents the location wise distribution of participants. There were 60% respondents were belong to rural areas, and 40% respondents were belong to urban areas.

Table 7*Percentage distribution of dietary habits regarding milk and dairy foods*

Food types		Never %	1-3 times a month %	Once a week %	2-4 times a week %	Once a day %	2-3 times a day %	4-5 times a day %
1	Plain milk	34.2	35.8	7.5	5.0	10.8	3.3	3.3
2	Adolescence formula milk	69.2	20.8	6.7	1.7	.8	.8	
3	Flavoured milk drinks (e.g. milkshakes, smoothies, hot chocolate)	52.5	30.0	10.8	2.5	3.3	.8	
4	Soy milk (soybeans)	69.2	22.5	5.8	2.5			
5	Yoghurt - plain or	17.5	53.3	5.8	6.7	13.3	2.5	.8

	flavoured						
6	Cheese - all types	64.2	20.8	10.8	1.7	2.5	
7	Ice cream or custard	43.3	39.2	10.0	3.3	3.3	.8
8	Cream or sour cream	61.7	26.7	6.7	2.5	2.5	

This table depicts the percentage distribution of dietary habits regarding milk and dairy foods among the elementary level female students. The maximum students' response was *never* in regard to taking milk and dairy foods in last thirty days and minimum was *4-5 times a day* in this regard. It shows that most of the students never used milk and dairy foods above mentioned food items.

Table 8

Percentage distribution of dietary habits regarding bread and cereal foods

	Food types	Never %	1-3 times a month %	Once a week %	2-4 times a week %	Once a day %	2-3 times a day %	4-5 times a day %
9	Bread and bread rolls, English muffin, bagel or crumpet	65.0	25.8	5.8	2.5	.8		
10	Breakfast cereal such as Nutrigrain, Rice Bubbles, Corn Flakes, Coco pops	51.7	33.3	12.5	2.5			
11	Breakfast cereal such as Weetbix, Vitabrits, Sultana bran	55.0	32.5	9.2	1.7	1.7		
12	Rice – white or brown	65.0	25.8	5.8	2.5	.8		
13	Pasta or noodles – white or wholemeal	10.8	60.0	19.2	6.7	3.3		

This table depicts the percentage distribution of dietary habits regarding bread and cereal foods among the elementary level female students. The maximum students' response was *never* in regard to taking bread and cereal foods in last thirty days and minimum was *once a day* in this regard. It shows that most of the students never used bread and cereal foods above mentioned food items.

Table 9

Percentage distribution of dietary habits regarding meat, fish and eggs

	Food types	Never %	1-3 times a month %	Once a week %	2-4 times a week %	Once a day %	2-3 times a day %	4-5 times a day %
14	Beef or lamb (goat)	55.0	27.5	11.7	5.0	.8		
15	Dishes with beef or lamb	57.5	26.7	10.0	3.3	.8	1.7	
16	Chicken	59.2	26.7	11.7	2.5			
17	Dishes with chicken	15.0	60.0	17.5	6.7	.8		
18	Fish	39.2	35.0	17.5	6.7	.8	.8	
19	Dishes with fish or	45.8	39.2	12.5	1.7	.8		

20	seafood Eggs	60.0	27.5	10.8	1.7
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This table depicts the percentage distribution of dietary habits regarding meat, fish and eggs foods among the elementary level female students. The maximum students' response was *never* in regard of taking meat, fish and eggs in last thirty days and minimum was *2-3 times a day* in this regard. It shows that most of the students never used meat, fish and eggs mentioned above food items.

Table 10

Percentage distribution of dietary habits regarding beverages

Food types	Never %	1-3 times a month %	Once a week %	2-4 times a week %	Once a day %	2-3 times a day %	4-5 times a day %
21 Plain water (e.g. tap water, bottled water, filtered water, unflavoured mineral water)			9.2	38.3	30.0	5.8	16.7
22 Fruit juice (100% juice)	16.7	31.7	3.3	2.5	4.2	1.7	40.0
23 Soft drink, cordial, sports drinks or fruit juice drinks	45.8	38.3	4.2	4.2	6.7	.8	
24 Diet soft drinks or cordial	45.0	35.0	12.5	4.2	1.7	.8	.8

This table depicts the percentage distribution of dietary habits regarding beverages among the elementary level female students. The maximum students' response was *never and 1-3 times a month* in regard of taking beverages in last thirty days and minimum was *4-5 times a day* in this regard. It shows that most of the students never or 1-3 times a month used beverages above mentioned food items.

Table 11

Percentage distribution of dietary habits regarding miscellaneous foods

Food types	Never %	1-3 times a month %	Once a week %	2-4 times a week %	Once a day %	2-3 times a day %	4-5 times a day %
25 Cakes, muffins, scones, muesli bars	63.3	23.3	8.3	1.7	2.5	.8	
26 Sweet biscuits - all types	50.8	35.0	6.7	3.3	4.2		
27 Chocolate and sweets/lollies	20.0	51.7	5.8	8.3	12.5	1.7	
28 Crisps, corn chips, twisties	15.8	50.8	12.5	9.2	10.8	.8	
29 Savoury pies and pastries (e.g. sausage roll, meat pies, pastie)	33.3	36.7	4.2	10.8	13.3	1.7	

30	Pizza	52.5	30.0	10.0	3.3	4.2	
31	Peanuts, peanut butter, other nuts seeds or tahini	60.8	28.3	5.8	3.3	1.7	
32	Sugar, jam, honey, syrups	60.8	30.0	5.8	1.7	.8	.8
33	Butter or dairy spreads on bread or cooked vegetables	50.8	35.8	5.8	5.0	2.5	

This table depicts the percentage distribution of dietary habits regarding above mentioned miscellaneous foods among the elementary level female students. The maximum students' response was *never and 1-3 times a month* in regard miscellaneous foods in last thirty days and minimum was *2-3 times a day* in this regard. It shows that most of the students never and 1-3 times a month used above mentioned miscellaneous food items.

Table 12

Percentage distribution of dietary habits regarding vegetables

Food types	Never %	1-3 times a month %	Once a week %	2-4 times a week %	Once a day %	2-3 times a day %	4-5 times a day %
34 Hot chips, potato wedges	45.8	25.8	9.2	5.0	12.5	1.7	
35 Potato - Boiled, baked	49.2	25.0	9.2	2.5	6.7	7.5	
36 Carrot	32.5	47.5	15.8	3.3	.8		
37 Tomato	12.5	65.8	14.2	5.0	2.5		
38 Peas	13.3	63.3	16.7	4.2	1.7	.8	
39 Cauliflower	4.2	44.2	18.3	8.3	23.3	1.7	
40 Cucumber	12.5	55.0	15.8	10.0	5.8	.8	
41 Capsicum	15.0	65.0	11.7	5.0	3.3		
42 Onion	8.3	54.2	13.3	15.8	6.7	1.7	
43 Corn	39.2	41.7	10.8	6.7	1.7		
44 Pumpkin	2.5	47.5	9.2	10.8	27.5	1.7	.8
45 Zucchini	21.7	54.2	15.0	3.3	5.8		
46 Mushroom	59.2	25.8	8.3	5.0	.8	.8	

This table depicts the percentage distribution of dietary habits regarding above mentioned vegetables among the elementary level female students. The maximum students' response was *never and 1-3 times a month* in regard vegetables in last thirty days and minimum was *2-3 times a day* in this regard. It shows that most of the students were never and 1-3 times a month used above mentioned vegetables items.

Table 13

Percentage distribution of dietary habits regarding fruits

Food types	Never %	1-3 times a month %	Once a week %	2-4 times a week %	Once a day %	2-3 times a day %	4-5 times a day %
47 Apple and pear	42.5	41.7	7.5	7.5	.8		
48 Orange, mandarin and	70.8	20.8	.8	6.7	.8		

	other citrus fruit						
49	Banana	19.2	55.8	12.5	10.0	2.5	
50	Grapes	37.5	34.2	12.5	13.3	2.5	
51	Strawberries	14.2	53.3	19.2	9.2	4.2	
52	Watermelon	15.8	64.2	8.3	8.3	3.3	
53	Kiwi fruit	38.3	45.8	6.7	6.7	2.5	
54	Peach, apricot, nectarine, plum	28.3	55.8	6.7	6.7	1.7	.8
55	Pineapple	70.8	20.0	5.0	2.5	1.7	
56	Rockmelon	37.5	50.0	4.2	5.8	2.5	
57	Dried fruits	45.0	44.2	6.7	2.5	1.7	
58	Fruit - canned in syrup or cooked with sugar	56.7	32.5	4.2	5.0	.8	.8

This table depicts the percentage distribution of dietary habits regarding above mentioned fruits among the elementary level female students. The maximum students' response was *never and 1-3 times a month* in regard fruits in last thirty days and minimum was *2-3 times a day* in this regard. It shows that most of the students never and 1-3 times a month used above mentioned fruits items.

Discussion

Dietary habits are the habitual decisions an individual or culture makes when choosing what foods to eat. The purpose this study was to explore dietary habits of elementary level female students of district Okara, Punjab. This study was a quantitative in nature and cross-sectional survey design was applied. The participants of this study were 120 elementary level students enrolled in public schools located in district Okara. Stratified random sampling technique was applied for selection of sample of this study. The data was collected by using survey questionnaire and analysed using SPSS software.

About dietary habits of elementary level female student the result indicated that most of the students were never used milk and dairy foods items. Further, the results indicated that most of the students never used bread and cereal foods items. Further, the results indicated that most of the students never used meat, fish and eggs, foods items. Moreover, the result indicated that most of the students never and 1-3 times a month used beverages food and drink items. Moreover, the result indicated that most of the students were never and 1-3 times a month used vegetables items. Furthermore, the result indicated that most of the students were never and 1-3 times a month used fruits items.

Conclusion

It was concluded on the basis results of the study that most of the students were never used or 1-3 times a month used milk and dairy foods, bread and cereal foods, meat items, beverages items, vegetables and fruits items in last thirty days. Furthermore, result showed that mostly students having low and medium level of nutritional status in regards of milk and dairy foods, bread and cereal foods, meat items, beverages items, vegetables and fruits items. The participants of this study only public sector school female students from district Okara. The data for this study was collected through survey questionnaire.

The identified low dietary habits among elementary level female students offer an opportunity to provide culture-specific interventions to support and foster healthy lifestyle behaviours while serving as a model to other districts of Punjab province. Our findings are also likely to help parents and school leadership address issues concerning students' dietary habits and nutritional status. By targeting students at risk, parents and school leadership can recommend changes to improve their health.

Recommendations

It was recommended on the basis of results of this study that students need to use verity of food items in their daily routines. Further, recommended for parents of students use all types of food items in their daily routines according to need of students for their healthy lives. Furthermore, recommended for political and school leadership initiate different programs for providing balanced diet to students during school hours for balanced dietary habits and nutritional status.

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