

ASSESSMENT AND PERCEPTION OF DIETARY HABITS AMONG PRIMARY SCHOOL CHILDREN IN LAHORE

NAVIED U., ISHTIAQ R., ZAMAN I. M., SHARIF A. AND KHUSHNOOD N.

Department of Community Health Sciences, Fatima Memorial College of Medicine and Dentistry, Lahore – Pakistan

ABSTRACT

Background & Objectives: School going children are the important part of our society. Their growth, development and body weight are of utmost significance. These significant aspects associated with children are dependent on a number of factors. For instance, body weight depends on energy balance. In fact, the intake of food depends not only on food availability but also on a number of complex inter-relationships that include stimulus of good food, the role of hunger, metabolic changes, hypoglycemia, pleasure and habit of eating. The objective of this study was to assess and perceive the knowledge, attitude and practices of healthy food consumption among primary school going children in private and public schools.

Methods: This study was conducted comprising a sample of 200 primary school children. A list of all schools of Lahore was prepared, considering each school as a cluster. Total 10 schools were selected from which 5 were private & 5 were government. Simple random sampling was selected for choosing the students that fall in the age group of 5 – 10 year. Twenty students from each school both males and females of class 1 – 5 were selected through simple random sampling and questionnaires were filled by self interviewing method.

Results: Results showed that school children have knowledge of healthy food especially in private schools, as compared to government schools. It was found that, out of 200 children 75% had preference of junk food, 54% had no knowledge that having breakfast is good for health and 55% children preferred eating home cooked food instead of canteen food. Further results showed that children of private schools had more perception of intake of healthy food than the public school (Chi-Square = 5.459-p value 0.019) the consumption of dairy products is more in public school as compared to private schools. (Chi-Square = 4.699-p value = 0.039) and the tendency of consumption of fruits daily was more in females than in males (Chi-Square = 16.564-p value = 0.0).

Conclusion: This research has assessed the perception regarding knowledge, attitudes and practices of healthy food consumption among primary school children. The findings of the study explain that knowledge about healthy food prevails more in children of private schools in comparison to public schools. The dietary habits of children depend upon their preferences of food.

Keywords: Knowledge; Preference; Healthy food; junk food.

INTRODUCTION

Primary school children are at a more crucial stage in intellectual development and optimization of their cognitive performance.¹ A balanced diet is important for all individuals, especially school aged children (5 – 10 years). These children are required to eat a variety of food from each food group to ensure optimal intake of all vitamins & minerals.

Research in Jiangsu Province, China shows that 76% of the students had three meals a day regularly, but 8.1% urban students *versus* 3.4% rural students had breakfast only 1 – 3 times per week or less often.² Another research held in Ohio, USA shows that on average, approximately 30.3% of children between the

ages of 4 – 19 consume fast food on a given day and the children who consumed these fast food items on average consumed an excess of 187 kcal/day.³

There is a variety of food to suite every taste. Despite this variety of food children are not consuming daily food meals containing fruits, pulses & especially vegetables to meet their calcium, protein & iron requirements. As a result of consistency of consuming monotonous diets, children develop nutritional deficiencies. This renders them unable to produce the bio-active molecules needed for proper development.⁴

Poor eating habits leads to malnutrition and this can negatively affect brain development causing delays in motor & cognitive development such as attention

deficit disorder, memory deficiency, learning disabilities, reduced language development, reduced problem solving abilities.⁵ Micronutrient deficiencies reduce working capacity of an individual & hence entire population, bringing serious economic consequences & obstacles to national development. Evidence suggests that breakfast consumption may improve cognitive function related to memory test, grades & school attendances.

Generally, less knowledge about healthy food causes lack of nutritional components which can be prevented by giving health education to parents and teachers about good nutrition and food hygiene. Educate parents to improve family diet, family planning and family environment. It can also be prevented by providing special diet such as fruit, vegetable, milk product, oils, meat and beans etc with sufficient amount. Timely prevention and treatment can restore personal health & raise national productivity levels by as much as 20%.⁶

Rationale

The future of human societies relies on children. Like other developing countries Pakistan also suffers from high rates of malnutrition of the children & it is one of the leading causes of childhood morbidity & mortality. The aim of our research was to promote healthy eating habits among primary school children through health education.

Objective

To assess the knowledge, attitude & practices of healthy food consumption among primary school going children.

OPERATIONAL DEFINITIONS

Healthy Food: It is referred to as the food which is beneficial for health in terms of nutrition.

Food Preference: The selection of one food over another is considered as food preference.

Junk Food: It is referred to as the food that is high in calories but low in nutritional content.

METHODOLOGY

Study Design

Comparative analytical study.

Study Place

The study was conducted in Lahore.

Study Duration

The duration of study was 3 Months.

Sampling Technique

Probability sampling.

Multi stage sampling.

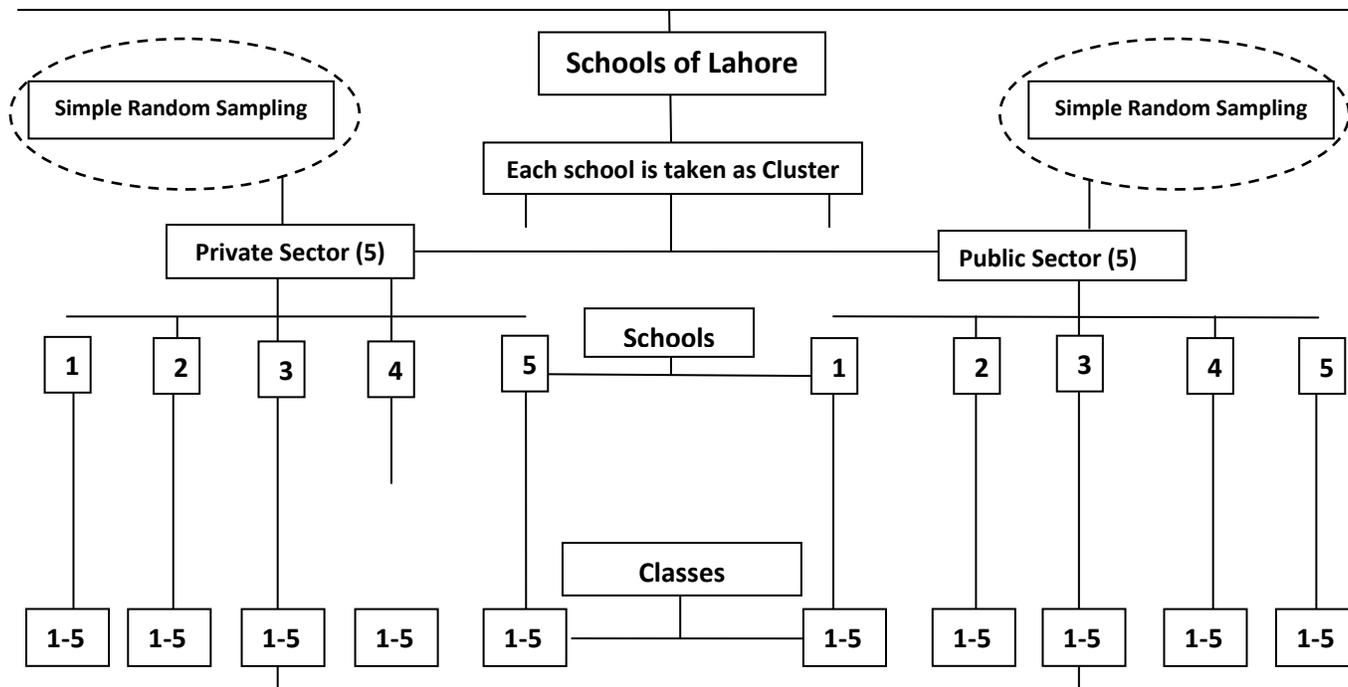
Sample Size

200.

Study Unit

Each student of selected schools.

Sampling Frame: It included all Private and Public Schools of Lahore.



Data Collection

List of all school's of Lahore was prepared. Considering each school as cluster, 5 public and 5 private schools were selected. Then 20 students from each school of class 1 – 5 were selected through random sampling and questionnaires were filled by self interviewing method.

Data Analysis

SPSS 17 version was used to analyze data. As the study included qualitative variables, frequency proportions and frequency percentages were calculated. To determine the association chi square test has been applied.

Ethical Considerations

The study has been approved by the Ethical Review Board of Fatima Memorial College of Medicine & Dentistry.

RESULTS

The study comprised a sample of 200 children selected from government and private schools of Lahore. The distribution of study participants according to their types of school included 52% from government and 48% from private schools. While the gender distribution showed 58.5% males and 41.5% females. Furthermore the study participants according to their classes were 22.5% in class 1, 20.5% in class 2, 19.5% in class 3, 18.5% in class 4 and 19% in class 5.

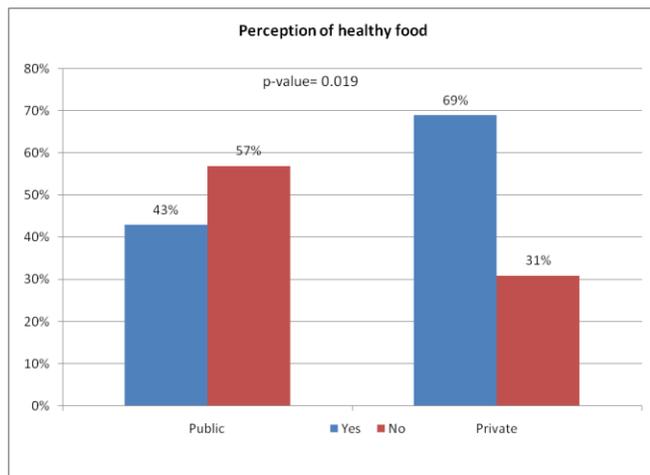


Fig. 1: Perception of Healthy Food.

The figure explains that 69% of private school students had a perception of healthy food in comparison to 43% of public school students.

The above figure displays that the consumption of dairy products by students of public schools comprised of 92%, where as 78% was observed in students belonging to private schools.

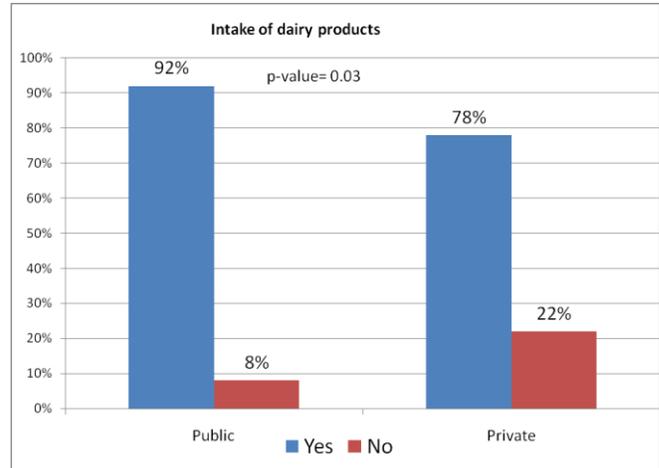


Fig. 2: Intake of Dairy Product.

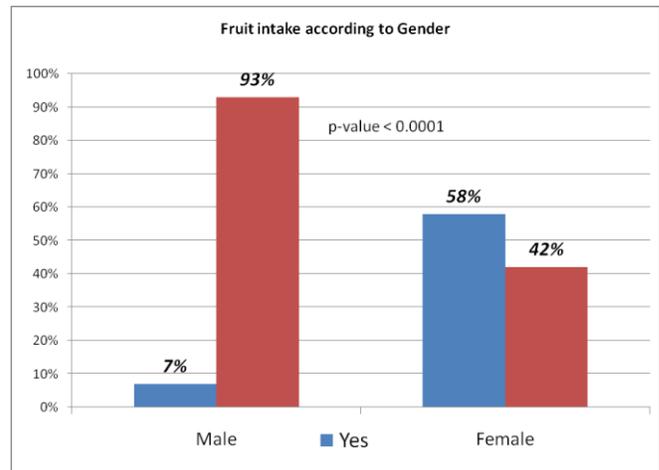


Fig. 3: Fruit Intake according to Gender.

On the basis of gender, it was observed that the intake of fruit in males comprised of only 7% and 58% in females.

Table 1: The distribution of study participants according to their preference towards eating junk food (chips, sweets, chocolates) provided by canteen to school.

Junk Food Eating Behavior	Frequency	Percent
Yes	150	75%
No	50	25%
Total	200	100%

DISCUSSION

The research was conducted with the purpose of assessing the dietary habits and perception of healthy food consumption in primary school children of private and

Table 2: The distribution of study participants showing preference of junk food over home cooked food.

Home cooked / Canteen (Junk food)	Frequency	Percent
Yes	110	55%
No	90	45%
Total	200	100%

Table 3: The distribution of study participants according to their preference of food taste.

Taste	Frequency	Percent
Yes	51	25.5%
No	149	74.5%
Total	200	100%

Table 4: The distribution of study participants according to their assumption about canteen foods.

Good of Health	Frequency	Percent
Yes	46	23%
No	154	77%
Total	200	100%

Table 5: The distribution of study participants according to their knowledge about health benefits of canteen food.

Health Benefits of Canteen Food	Frequency	Percent
Yes	6	3%
No	194	97%
Total	200	100%

public schools. Data was collected by a self interviewing questionnaire.

Results showed that 43% of government school children consumed healthy food than private school counterparts, who consumed about 69%. It was found that, out of 200 children 75% had preference of junk food, 54% had no knowledge that having breakfast is good for health and 55% children preferred eating home cooked food instead of canteen food. It was observed that only 46% children take breakfast daily and 56% children consume dairy products. Regarding con-

sumption of fruits, only 7% public school children consume fruits and 58% private school children. Following studies conducted around the world also show similar trends.

It is wildly held that "children eat what they like." A research on this purpose conducted in British school going children showed that food preferences of children are highly predictable.⁽⁷⁾ The study results observed that perception of intake of healthy food was more in private school going children than the public school (Chi-Square = 5.459, P-Value = 0.030). The tendency of consumption of fruits daily was more in females than in males (Chi-Square = 16.564, P-Value = 0.0). A study conducted in Europe, Africa, Asia showed that 92% children had basic knowledge about health and nutrition, whereas more than 50% students were aware of carbohydrates, proteins, fats consumption and their need.² It was concurrent in a research conducted in Ohio, a decrease in use of healthy food eating habits in children.³

A research on British primary school children showed that the school going children prefer free fatty and sugary foods.⁴ Another study of British school children, the dietary food habits were observed for a week and results showed more consumption of junk food and soda water than that of healthy food and green vegetables.⁵ Similarly more research performed in United Kingdom showed that consumption of junk food and knowledge of children was more influenced by their mothers.⁶ The results of our study revealed that 55% children had a preference of eating junk food over home cooked food. However the preference of food taste was observed in 25.5% of children. So food preferences is related to eating patterns in children.

It was observed in WHO European Childhood Obesity Surveillance Initiative, that overweight and obesity in school children could be minimized by influence of school environment and settings. The school environment may play a pivotal role in promoting healthy eating habits and lifestyles.⁸ Another research conducted in Bangkok has also emphasized the importance and effectiveness of school-based intervention on the nutritional status of children.⁹ A research conducted in Karachi also addressed childhood obesity as an emerging issue.¹⁰ Thus the need of physical activity and healthy eating habits should be given prime importance in school children.

The study showed that the knowledge of health benefits of canteen foods was 3% and the assumption about canteen foods was 23% only in school children. So efforts regarding canteen food choices should be addressed by school administration. A study conducted in primary school children in Nairobi also showed that children have knowledge of nutrition, but they adopt poor dietary practices.¹¹

It was evident in a systematic review conducted in New South Wales, which supported the use of different

teaching strategies in schools enhancing nutritional aspects of healthy food in school going children.¹²

A study in Sweden emphasized on the eating patterns of children being influenced by the parents, which was not observed in our research. This study concluded that eating habits in children are related to parental feeding practices and parental concern. Thus indicating that intervention in regards to nutrition should also target the parents.¹³

Our results concluded that private school children are more aware of their food habits and nutrition than children studying in public schools (Chi-Square = 5.459, P-Value = 0.030). The research proposes that awareness programs should be launched across the country to make students aware about eating healthy food and dietary habits. This study supports the initiation of strategies to improve the nutritional status of school going children.

It is **concluded** that results of the research conducted, showed that private school children had perception of their food habits and nutrition in comparison to children studying in public schools. The study advocates that awareness programs along-with interventions would prove to be fruitful in adopting healthy dietary habits and nutritious foods in school children.

RECOMMENDATIONS

- Discourage availability of junk food in school premises and promote home cooked food.
- Awareness about healthy dietary habits in school students through Health Education.
- Provision of incentives to encourage students opting for healthy food.
- Introduction of variety of food patterns to maintain a balanced diet.
- Promotion of physical activity along-with a healthy diet pattern.

Authors' Contribution

UN: Is responsible for concept designing, methodology and analysis of the study. RI: Contributed in data collection and discussion of the research. IMZ: Contributed in data analysis, formatting and data collection of research. AS: contributed in the write-up of introduction and data collection of research. NK: Contributed in the write-up of introduction, data collection of research and write-up of discussion.

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REFERENCES

1. Low M, Farrell A, Biggs BA, Pasricha SR. Effects of daily iron supplementation in primary-school-aged children: systematic review and meta-analysis of randomized controlled trials. *Canadian Med Assoc. J.* 2013 Oct. 15; cmaj-130628.
2. Shi Z, Lien N, Umar BN, Holmboe-Ottesen G. Socio-demographic differences in food habits and preferences of school adolescents in Jiangsu Province. *China Eur J Clin Nutr.* 2005; 59 (12): 1439-48.
3. Caine-Bish N, Scheule B. Food preferences of school age children and adolescents in an Ohio school district. *J Child Nutr Mgmt.* 2007; 2.
4. Boy E. Prevalence and consequences of mineral and vitamin deficiencies and interventions to reduce them.
5. <http://www.orpahnnutrition.org/understanding-malnutrition/impact-of-malnutrition-on-health-and-development/>
6. <http://www.who.int/nutrition/topics/ida/en/WHO:Nutrition:Nutritionhealthtopic>
7. <https://www.nutrition.org.uk/nutritionscience/life/school-children.html>
8. Wijnhoven T, van Raaij J, Sjöberg A, Eldin N, Yngve A, Kunešová M, Starc G, Rito AI, Duleva V, Hassapidou M, Martos É. WHO European Childhood Obesity Surveillance Initiative: school nutrition environment and body mass index in primary schools. *Int J Env Res Public Health.* 2014 Oct. 30; 11 (11): 11261-85.
9. Chawla N, Panza A, Sirikulchayanonta C, Kumar R, Taneepanichskul S. Effectiveness of a school-based multi-component intervention on children nutritional status among primary school children in Bangkok, Thailand. *J Ayub Med Coll Abbottabad,* 2017 Jan. 25; 29 (1): 13-20.
10. Warraich HJ, Javed F, Faraz-ul-Haq M, Khawaja FB, Saleem S. Prevalence of obesity in school-going children of Karachi. *Plos one,* 2009 Mar. 24; 4 (3): e4816.
11. Kigaru DM, Loechl C, Moleah T, Macharia-Mutie CW, Ndungu ZW. Nutrition knowledge, attitude and practices among urban primary school children in Nairobi City, Kenya: a KAP study. *BMC Nutrition,* 2015 Dec. 29; 1 (1): 44.
12. Dudley DA, Cotton WG, Peralta LR. Teaching approaches and strategies that promote healthy eating in primary school children: a systematic review and meta-analysis. *Int J Behavioral Nutr Physical Acti.* 2015 Feb. 25; 12 (1): 28.
13. Ek A, Sorjonen K, Eli K, Lindberg L, Nyman J, Marcus C, Nowicka P. Associations between parental concerns about preschoolers' weight and eating and parental feeding practices: results from analyses of the Child Eating Behavior Questionnaire, the Child Feeding Questionnaire, and the Lifestyle Behavior Checklist. *PloS one,* 2016 Jan. 22; 11 (1): e0147257.

QUESTIONNAIRE (school health)

BIODATA;

NAME: CLASS: _____

AGE: SCHOOL: _____

SEX: BRANCH: _____

FATHER/GUARDIANS OCCUPATION: _____

ADDRESS: _____

1) Do you take breakfast daily?

YES NO

❖ If YES;

It is healthy Do you like taking breakfast?

Compelled by parents? Any other reason _____

What do you take in the whole week?

<i>DAYS OF THE WEEK</i>	<i>ITEM OF FOOD TAKEN FOR THE BREAKFAST</i>
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
Sunday	

❖

If NO;

It is not healthy You don't like breakfast

Not compelled by parents Mom doesn't cook

2) What do you take for breakfast?

Bread

Egg

Milk

Any other _____

3) Do you take lunch from home or eat canteen food?

YES NO

❖ If YES; why take lunch from home?

It is healthy It is clean

It is tasty It has variety

Compelled by mother

❖ If NO; why do you eat canteen food?

It is healthy It is clean

It is tasty It has variety

Not given by mother

4) Do you eat Junk food? (Chips, sweets, chocolates etc.)

YES NO

❖ If YES; why do you like it?

It is healthy because other kids bring it

It is tasty It has variety

❖ If NO; why don't you like it?

It is not healthy because other kids do not like it

It is not tasty It does not have variety

5) Do you prefer Junk food over home cooked food?

YES NO

6) How many times you eat Junk food in a week?

1 time 2 times
 3 times more _____

7) Do you take milk or dairy products? (Butter, cheese, yogurt, margarine)

YES NO

8) How many meals do you take daily?

2 4
 3 more _____

9) How often do you like to visit fast food restaurants?

Daily Monthly
 Weekly Yearly

10) Do you like to eat vegetables?

YES NO

❖ If YES; how often do you eat?

Daily Twice Weekly
Once Weekly Monthly

11) Do you take fruits daily?

YES NO

❖ If YES; which ones:

12) Do you take lunch to school?

YES NO

❖ If YES; what do you take for lunch?

Nuggets Paratha& Kebab
Fruits Sandwiches
French Fries

13) Do you think you are eating healthy food?

YES NO

14) What does your lunch/dinner consists of?

Rotti Vegetable
Rice Meat/Chicken
Any other: _____

15) Do you have a school canteen?

YES NO

16) Is the canteen clean?

YES NO

❖ If NO; then what is the condition of canteen?

Poorly ventilated Cooking utensils dirty
Flies, cockroaches, Cats, Rats etc in surroundings of canteen

INSPECTION OF THE CANTEEN FOR THE WORKERS & THE ENVIRONMENT OF THE CANTEEN					
<i>SR. NO.</i>	<i>OBSERVATIONS</i>	<i>SATISFACTORY</i>	<i>AVERAGE</i>	<i>ABOVE AVERAGE</i>	<i>EXCELLENT</i>
1.	Location				
2.	Infrastructure				
3.	Garbage disposal				
4.	Insecticide control				
5.	Screening of the windows				
6.	The floors				
7.	Walls				
8.	Hygiene of the food items				
9.	Quality of food available				
10.	Junk food availability				
11.	Healthy food item				
12.	Hygiene of the display cabinets				
13.	Hygiene of the workers <ul style="list-style-type: none"> ▪ Hand wash ▪ Nails ▪ Food handling with Gloves ▪ Clothes ▪ Head caps 				