

## Assessment Of Macronutrients Intake Of Private And Public School Children: A Comparative Study Of Dietary Patterns And Malnutrition Risk

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**Abstract:** The purpose of this study was to compare the intake of macronutrients (carbohydrates, proteins, and fats) among children from private and public schools in Lahore and to evaluate the risk of malnutrition in both groups. This research aims to identify dietary disparities and assess how educational sector affiliation may influence children's nutritional status.

**Material and Methods:** The study sample included 80 children aged 7-13 years, 40 students from public school and 40 students from private school in Johar Town Lahore. The children were divided into two groups according to type of education sector and recorded their dietary intake by using FFQ and Questionnaire. The data were analyzed using Minitab 19 statistical software. Comparisons were analyzed for the intake of macronutrient using paired sample t-test and independent sample t-test.

**Results:** The public school children had a lower intake of weekly consumption of Meat, butter, grains, milk and yogurt and the mean score of meat, grain, milk and yogurt was (0.825), (0.900), (2.08), (1.250) respectively and In private school student had a higher intake of weekly consumption of Meat, grains, milk and yogurt and the mean score of meat, butter, grain, milk and yogurt was (1.40), (2.40), (2.85), (1.725) respectively. The statistical analysis showed that these variables are highly significant and have strong relation with macronutrient deficiencies in children as level of significance was (Total consumption of meat ( $P=0.007$ ), Total consumption of Grains ( $P=0.040$ ), Dairy consumption ( $P=0.005$ ), Total consumption of butter ( $P=0.005$ ), Knowledge about healthy foods ( $P=0.017$ ) and Daily eating lunch ( $P=0.033$ )).

**Conclusion:** Interpretation of the statistical analysis indicates that differences for consumption of macronutrients sources exist between the group the result of this study indicate that the public school children consume less fats, protein and carbohydrates as compared to private school children.

**Keywords:** Public school, Private school, Macronutrients intake, sample t-test.

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### Introduction

Macronutrients are essential dietary components required in larger quantities, such as fats, carbohydrates, and proteins. These compounds serve as vital sources of energy in

human body(1). Macronutrients contain those parts of food that are vital to carry out physiological role in human body. Macronutrients are fundamental components of food that the human body requires to maintain its systems and structures. A healthy diet necessitates the inclusion of all three macronutrients(2). Malnutrition occurs when the intake of macronutrients fails to meet the requirements for normal bodily functions, leading to disruptions in growth and development, particularly

in children. Malnourishment among children is a significant contributor to poor health and mortality rates, especially in developing nations. Malnutrition in youngsters seriously influences their actual development and scholastic accomplishments(3). The energy needs during the transition from childhood to adolescence witness an elevation, reaching 2500 Kcal/day for girls and 3000 Kcal/day for boys(4). It is advisable to obtain the extra energy intake primarily from nutrient-rich foods such as grains, vegetables, fruits, and other wholesome sources, rather than relying on fats and free sugars. During the pubertal phase, it is crucial for teenagers, to particularly avoid low-calorie diets(5) as they have the potential to impede sexual development and overall growth. This is especially important to keep in mind as teenagers undergo significant physiological changes during this period. Similarly, overconsumption of food should be avoided as it contributes to the risk of overweight and obesity. Striking a balance and maintaining a healthy and nutritious diet is crucial for optimal development and well-being. Corpulence in youth can cause serious persistent illnesses later on, like 2 diabetes, cardiovascular sickness, hypertension and osteoporosis(6). It likewise has mental results and can add to defer in scholar and social capability as well as unfortunate confidence and wretchedness. Consequently, the anticipation of young life corpulence is of essential significance(7). To prevent and manage obesity, interventions primarily concentrate on decreasing the intake of sugary and

fatty snacks, while advocating for a diet abundant in vegetables and fruits. Emphasizing the importance of daily nutritious breakfasts and home-cooked family meals, controlling portion sizes, and reducing reliance on eating-out are essential. Additionally, it is beneficial to limit excessive "screen time" and encourage increased physical activity levels as part of efforts to combat childhood obesity(8). Carbohydrates serve as a fuel source for the human body during intense and focused exercise. They permit human body to utilize sugars rather than protein during exercise, which assists save your muscle with massing. Furthermore, sugars give energy to focal sensory system, which incorporates cerebrum(8, 9) can be tracked down in solid and undesirable food varieties. The best wellsprings of carbs can give fiber, nutrients, minerals, and phytochemicals. Phytochemicals are intensifies found in plants that can assist with battling sickness(2). These incorporate natural entire grains, beans, vegetables, and organic products (8). From preschool to puberty, the reference stretch for starch admission is somewhere In subjects participating in extreme sports activities, the recommended range for carbohydrates in their total dietary energy intake is typically between 45% and 65%. These carbohydrates play a crucial role in providing the necessary energy for endurance and high-intensity physical exertion associated with extreme sports, commitments of up to 65%. Among starches, basic sugars ought to be presented with some restraint since they increment the gamble of being

overweight, weight, diabetes, hypertension and tooth decay. In the event that kids take low carbs, they become malnourished in light of the fact that they take a low carb counts calories which is definitely not a healthfully adjusted, which can be impact on stomach, colon malignant growth, osteoporosis and different sicknesses. An extremely low carbs diet implies that food and bites involve no evident dull carb feasts no bread, potatoes, rice, pasta, cereals, grains, heartbeats or flour. Foods grown from the ground dairy are obliged because of their fructose and lactose content material. A large number of those fixings offer cherished power, supplements, minerals, fiber and cell reinforcements, which may be related with proper wellness. The weight-decrease plan is basically sans gluten with the guide of default. Little amounts of sugar come from vegetables, nuts, berries (low-carb organic products), mixed greens, seeds and sometimes, little amounts of unreasonable protein yogurt. (10). Because of the low admissions of foods grown from the ground of whole grains, oats and heartbeats in youngsters, it could be trying to acquire supported fiber admissions thusly, exceptionally low-starch consumes less calories can possibly be low-fiber. There's a lengthy gamble of supplement lacks if extremely low-starch eats less aren't adequately arranged, adjusted and resourced. Enough calcium can be absent during a colossal increment period, and inadequate vitamin D may moreover unfortunate retention of what is eaten, which may furthermore have ominous(11). It is also

important to monitor the pubertal stage as an essential parameter. Other significant indicators include height, weight, and the calculation of body mass index (BMI). These assessments provide valuable information about a child's growth and development, helping to identify any potential concerns or deviations from the normal. BMI depicts the connection somewhere in the range of weight and level. Customary nourishing appraisals permit early location of overweight, heftiness and ways of life which, in the event that not revised in adolescence, increment the gamble of ongoing degenerative sicknesses like diabetes and hypertension(9). The motivation behind this review is to look at the macronutrients admission of public and non-public school youngsters in Lahore. Macronutrients on maturing and wellbeing stay a crucial test, with significant ramifications for human wellbeing. This study is significant because it addresses growing concerns about nutritional imbalances and malnutrition among school-aged children in Pakistan. Understanding differences in dietary intake across socio-educational settings can help inform targeted nutritional interventions and health policies.

### **Material and Methods**

The primary objective of this research was to compare macronutrient intake—specifically carbohydrates, proteins, and fats—between children attending public and private schools, and to explore any potential deficiencies or excessive consumption of these macronutrients within both groups. A cross-sectional study was conducted over a period of four months in Johar Town, Lahore, Pakistan. The

selected schools included four campuses of the Unique School System (private sector) and the Government Boys Elementary School (public sector). The study population comprised 80 children aged 7 to 13 years, with an equal number of participants (40 each) drawn from public and private schools. Children enrolled in grades 2 to 7 who regularly attended school and whose parents provided consent were included in the study. Exclusion criteria applied to children with diagnosed metabolic disorders, those on special medical diets, or those suffering from chronic illnesses that could affect dietary intake.

Data collection involved the use of a Food Frequency Questionnaire (FFQ) and a 20-item structured questionnaire to assess dietary habits and macronutrient consumption. The children were divided into two groups based on the type of school they attended, and their dietary intake was recorded accordingly. The analysis focused on the intake of various food groups such as meat, dairy, butter, and grains, which are primary sources of macronutrients. Statistical analysis was performed using Minitab 19 software. Paired and independent sample t-tests were employed to compare macronutrient intake between the two groups, with the level of significance assessed using p-values. This methodology facilitated a detailed comparison of nutritional patterns among children from different educational sectors.

## Results

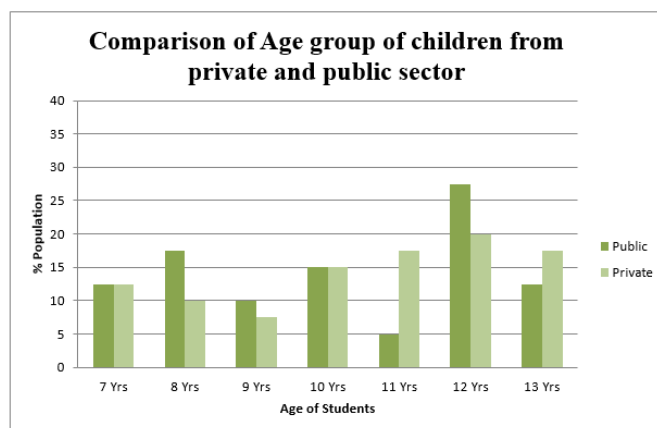
The cross-sectional descriptive study was conducted in order to assess the macronutrients intake of school children from public and private schools of Johar town Lahore. There were total of 80 students participated in this study. They were divided into two groups. In first group 40 children were included from public school (25 males, 15 females) making up 50% of the study population and same was in the second group from private school making up other

50% of the study population. Sample was selected from simple random sampling technique. Two approaches were administered i.e. anthropometry to obtain data regarding anthropometric measurements and household survey to collect information regarding various socioeconomic variables. Thus, collected data were analyzed using Minitab 19. The results and findings of the study are expressed into several following headings. The cross tabulation between different food groups used by children' of public and private school.

In Public schools, total 40 children participated in this study and aged between 7 to 13 years old. 12.5% was 7 year old, 17.5% was 8 year old, 10% was 9 year old, 15% was 10 year old, 5% was 11 year old, 27.5% was 12 year old and 12.5% was 13 year old.

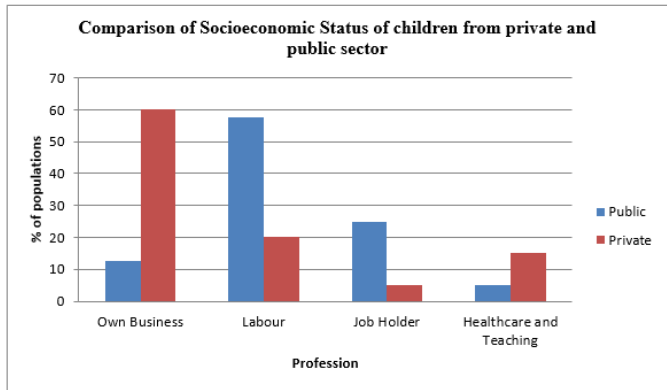
In Private schools, 12.5% was 7 year old, 10% was 8 year old, 7.5% was 9 year old, 15% was 10 year old, 17.5% was 11 year old, 20% was 12 year old and 17.5% was 13 year old.

**Figure 1: Comparison of Age group of children from private and public sector**



The families of the school children were categorized into different socioeconomic groups to determine their economic status. In public school children's 12.5% had own business, 57.5% worked as labour, 25% were Job holder and 5% were teacher and healthcare professional. In private school children 60% had own business, 20% worked as labour, 5% were Job holder and 15% were teacher and healthcare professional.

**Figure 2: Comparison of Socioeconomic Status of children from private and public sector**



In public school 72.5% children was underweight, 27.5% was normal weight, 0% was overweight. In Private schools, 50% children were underweight, 45% was normal, and 5% was overweight. The statistical analysis showing that major differences of mean between Public and Private School Children's. Average mean of BMI that was (16.34) from public school and (17.70) was from Private School. We got significant results as shown in the table (P-0.049\*).

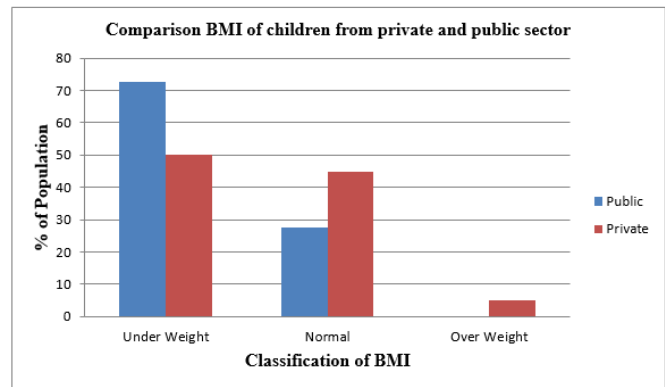
**Descriptive Statistics, Sample T test and Graph for classification of BMI of both sectors:**

| Sector  | N  | Mean  | StDev | SE Mean |
|---------|----|-------|-------|---------|
| Govt.   | 40 | 16.34 | 2.28  | 0.36    |
| Private | 40 | 17.70 | 3.62  | 0.57    |

**Test:**

| Null hypothesis        | $H_0: \mu_1 - \mu_2 = 0$    |         |  |
|------------------------|-----------------------------|---------|--|
| Alternative hypothesis | $H_1: \mu_1 - \mu_2 \neq 0$ |         |  |
| T-Value                | DF                          | P-Value |  |
| -2.00                  | 65                          | 0.049   |  |

**Figure 3: Comparison BMI of children from private and public sector**



In Public schools 25% children were taken one time meat in a week, 32.5% were taken 2 time meat in a week and 0% were taken three time meat in a week and 42.5% were not taken meat in a week. In Private schools, 32.5% children were taken one time meat in a week, 27.5% children were taken 2 time meat in a week, 17.5% were taken three time meat in a week and 22.5% were not taken meat in a week. The statistical analysis showing that major differences of mean between Public and Private School Children's. Average mean of meat was (0.825) from public school and (1.40) was from Private school. We got significant results as shown in the table (P-0.007\*\*).

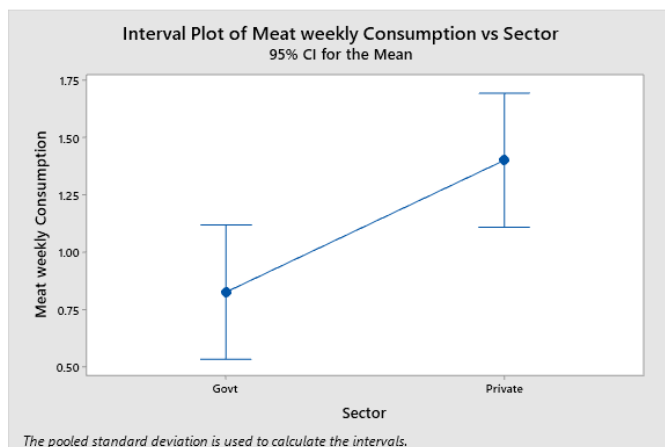
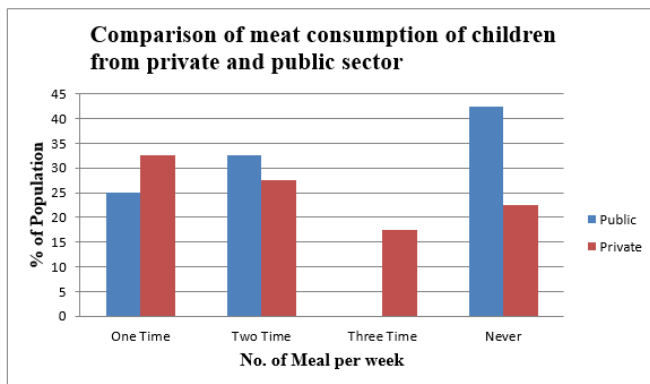
**Descriptive Statistics, Sample T test and Graph for weekly consumption of meat:**

| Sector  | N  | Mean  | StDev | SE Mean |
|---------|----|-------|-------|---------|
| Govt.   | 40 | 0.825 | 0.813 | 0.13    |
| Private | 40 | 1.40  | 1.03  | 0.16    |

### Test:

| Null hypothesis        | $H_0: \mu_1 - \mu_2 = 0$    |         |
|------------------------|-----------------------------|---------|
| Alternative hypothesis | $H_1: \mu_1 - \mu_2 \neq 0$ |         |
| T-Value                | DF                          | P-Value |
| -2.77                  | 73                          | 0.007   |

**Figure 4: Comparison of meat consumption of children from private and public sector**



In Public schools 15% children were taken one time grains in a week, 52% were taken 2 time grains in a week, 17.5% were taken three time grains in a week and 5% were taken grains three or more time in a week. In Private schools, 12.5% children were taken one time grains in a week, 50% children were taken

2 time grains in a week, 22.5% were taken 3 times in a week and 15% were taken grains three or more time In a week. The statistical analysis showing that major differences of mean between Public and Private School Children's. Average mean of grains that was (2.08) from public school and (2.85) was from Private school. We got significant results as shown in the table (P-0.040\*).

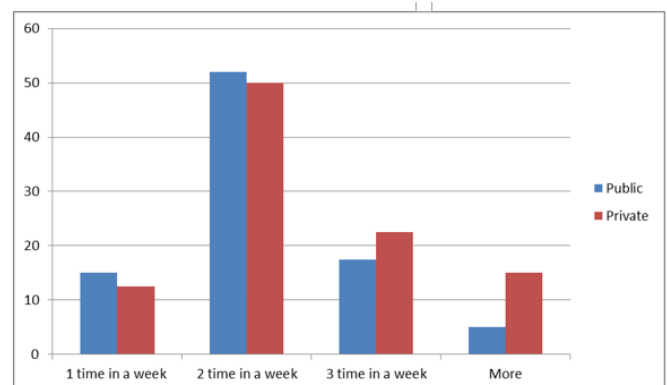
### Descriptive Statistics, Sample T test and Graph for weekly consumption of Grains (Pasta, Rice and Bread):

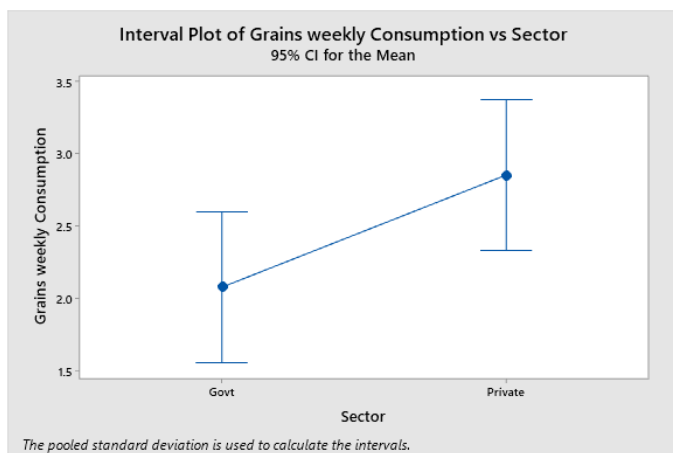
| Sector  | N  | Mean | StDev | SE Mean |
|---------|----|------|-------|---------|
| Govt.   | 40 | 2.08 | 1.42  | 0.22    |
| Private | 40 | 2.85 | 1.86  | 0.29    |

|                        |                             |  |
|------------------------|-----------------------------|--|
| Null hypothesis        | $H_0: \mu_1 - \mu_2 = 0$    |  |
| Alternative hypothesis | $H_1: \mu_1 - \mu_2 \neq 0$ |  |

| T-Value | DF | P-Value |
|---------|----|---------|
| -2.09   | 72 | 0.040   |

**Figure 5: Comparison of grains consumption of children from private and public sector**





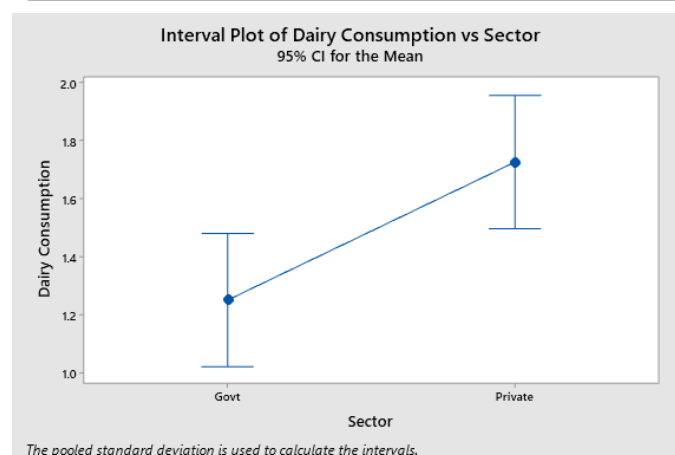
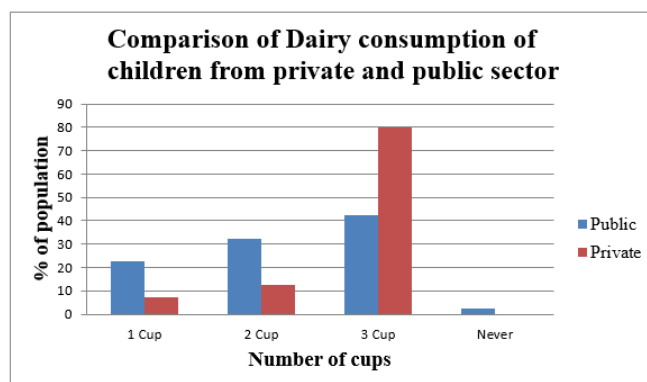
In Public schools 22.5% children were taken 1 cup milk and yogurt in a day, 32.5% were taken 2 cup in a day, 43.5% were taken 3 times in a day and 2.5% did not taken milk and yogurt. In Private schools, 7.5% children were taken one time in a day, 12.5% children were taken 2 time in a day, 80% were taken three time in a day and 0% whose never taken milk or yogurt. The statistical analysis showing that major differences of mean between Public and Private School Children's. Average mean of milk and yogurt that was (1.250) from public school and (1.725) was from Private school. We got significant results as shown in the table (P-0.005\*\*).

### Descriptive Statistics, Sample T test and Graph for weekly consumption of milk and yogurt:

| Sector  | N  | Mean  | StDev | SE Mean |
|---------|----|-------|-------|---------|
| Govt.   | 40 | 1.250 | 0.840 | 0.13    |
| Private | 40 | 1.725 | 0.599 | 0.095   |

|                        |                            |                |
|------------------------|----------------------------|----------------|
| Null hypothesis        | Ho: $\mu_1 - \mu_2 = 0$    |                |
| Alternative hypothesis | H1: $\mu_1 - \mu_2 \neq 0$ |                |
| <b>T-Value</b>         | <b>DF</b>                  | <b>P-Value</b> |
| -2.91                  | 70                         | 0.005          |

**Figure 6: Comparison of Dairy consumption of children from private and public sector**



In Public schools 35% children were taken oil and fat 1 time in a week, 27.5% were taken 2 time in a week, 0% were taken three time in a week, 0% were taken three or more time in a week, 37.5% were no taken in a week. In Private schools, 5% children were taken one time in a week, 5% were taken 2 time in a week, 5% were taken three time in a week, 30% were taken three or more time in a week and 57.5% whose never taken oil and fat in a week. The

statistical analysis showing that major differences of mean between Public and Private School Children's. Average mean of weekly consumption of oil and fat that was (0.900) from public school and (0.240) was from Private school. We got significant results as shown in the table (P-0.005\*\*).

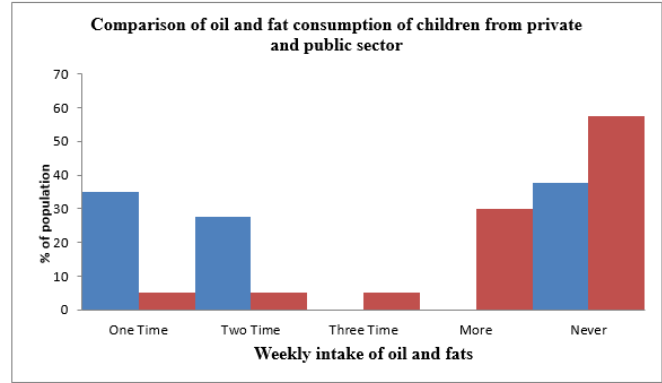
**Descriptive Statistics, Sample T test and Graph for weekly consumption of oil and fat:**

| Sector  | N  | Mean  | StDev | SE Mean |
|---------|----|-------|-------|---------|
| Govt    | 40 | 0.900 | 0.810 | 0.13    |
| Private | 40 | 2.40  | 3.14  | 0.50    |

**Test**

| Null hypothesis        | $H_0: \mu_1 - \mu_2 = 0$    |         |
|------------------------|-----------------------------|---------|
| Alternative hypothesis | $H_1: \mu_1 - \mu_2 \neq 0$ |         |
| T-Value                | DF                          | P-Value |
| -2.92                  | 44                          | 0.005   |

**Figure 7: Comparison of oil and fat consumption of children from private and public sector**



In Public school 40% children were liked spicy food and 60% did not liked spicy food. In Private schools, 30% children did not like spicy food and 70%

children were liked spicy food. The statistical analysis showing that major differences of mean between Public and Private School Children's. Average mean of like or dislike of spicy food that was (0.400) from public school and (0.700) was from Private school. We got significant results as shown in the table (P-0.007\*\*).

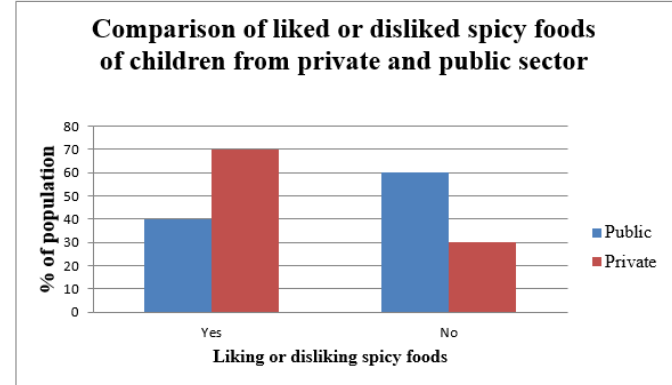
**Descriptive Statistics, Sample T test and Graph for likeness or dislike Spicy Food:**

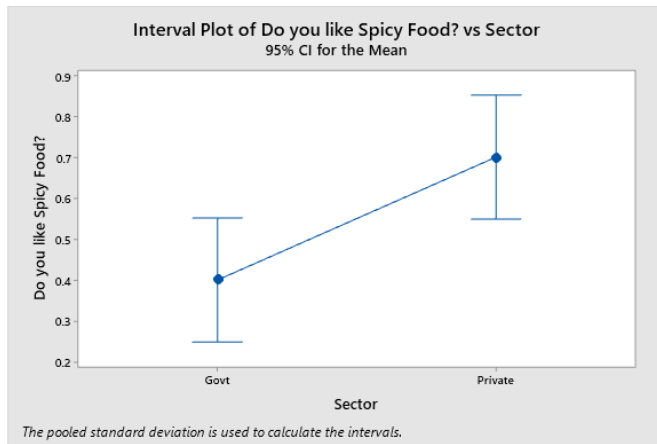
| Sector  | N  | Mean  | StDev | SE Mean |
|---------|----|-------|-------|---------|
| Govt.   | 40 | 0.400 | 0.496 | 0.078   |
| Private | 40 | 0.700 | 0.464 | 0.073   |

**Test:**

| Null hypothesis        | $H_0: \mu_1 - \mu_2 = 0$    |         |
|------------------------|-----------------------------|---------|
| Alternative hypothesis | $H_1: \mu_1 - \mu_2 \neq 0$ |         |
| T-Value                | DF                          | P-Value |
| -2.79                  | 77                          | 0.007   |

**Figure 8: Comparison of liked or disliked spicy foods of children from private and public sector**





In Public school there were 67.5% children eat lunch daily and 32.5% did not eaten lunch daily. In Private schools, there were 87.7% children eating lunch daily and 2.5% children did not eat lunch daily. The statistical analysis showing that major differences of mean between Public and Private School Children's. Average mean of daily eating lunch that was (0.675) from public school and (0.875) was from Private school. We got significant results as shown in the table (P-0.033\*).

### Descriptive Statistics, Sample T test and Graph for eating lunch daily:

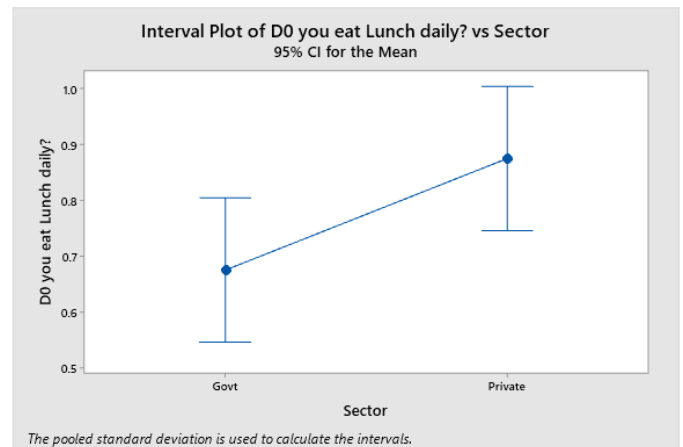
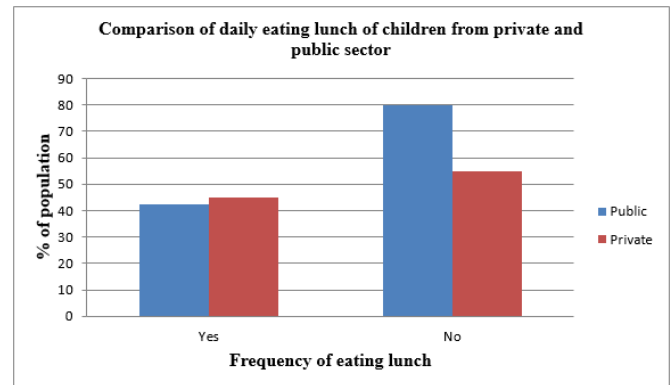
| Sector  | N  | Mean  | StDev | SE Mean |
|---------|----|-------|-------|---------|
| Govt.   | 40 | 0.675 | 0.474 | 0.075   |
| Private | 40 | 0.875 | 0.335 | 0.053   |

Null hypothesis  $H_0: \mu_1 - \mu_2 = 0$

Alternative hypothesis  $H_1: \mu_1 - \mu_2 \neq 0$

| T-Value | DF | P-Value |
|---------|----|---------|
| -2.18   | 70 | 0.033   |

**Table 9: Comparison of daily eating lunch of children from private and public sector**



In public schools, the children who had knowledge about their healthy foods for human body those were 20% children who had knowledge about healthy foods and 80% who did not knowledge about healthy food. In Private schools, 45% children who had knowledge about healthy foods and 55% children who did not knowledge about healthy food. The statistical analysis showing that major differences of mean between Public and Private School Children's. Average mean of knowing about healthy food for human body that was (0.200) from public school and (0.450) was from Private school. We got significant results as shown in the table (P-0.017\*\*).

# Descriptive Statistics, Sample T test and Graph for knowing about healthy food for human body:

| Sector  | N  | Mean  | StDev | SE Mean |
|---------|----|-------|-------|---------|
| Govt.   | 40 | 0.200 | 0.405 | 0.064   |
| Private | 40 | 0.450 | 0.504 | 0.080   |

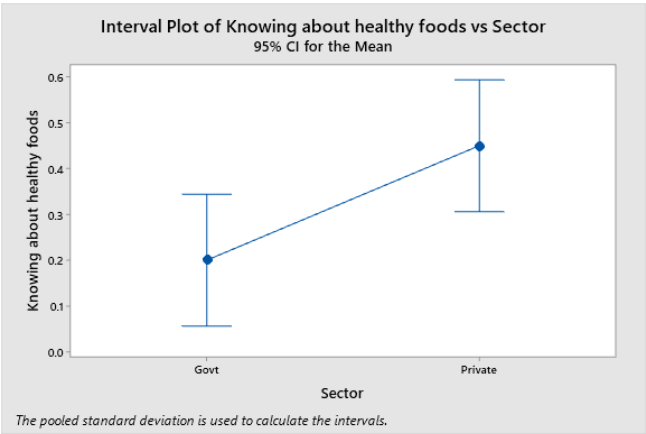
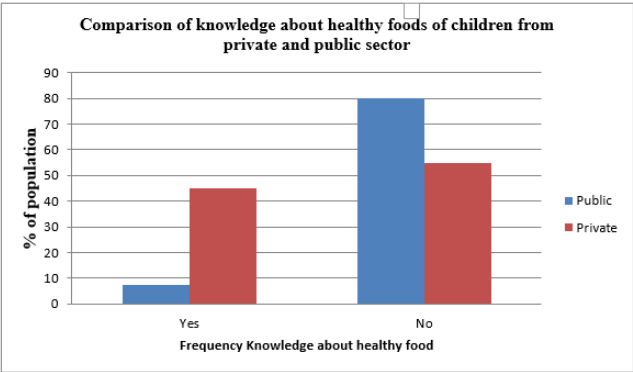
## Test

Null hypothesis  $H_0: \mu_1 - \mu_2 = 0$

Alternative hypothesis  $H_1: \mu_1 - \mu_2 \neq 0$

| T-Value | DF | P-Value |
|---------|----|---------|
| -2.45   | 74 | 0.017   |

**Table 10: Comparison of knowledge about healthy foods of children from private and public sector**



## Test:

Null hypothesis  $H_0: \mu_1 - \mu_2 = 0$

Alternative hypothesis  $H_1: \mu_1 - \mu_2 \neq 0$

| T-Value | DF | P-Value |
|---------|----|---------|
| -2.18   | 70 | 0.033   |

After Statistical analysis we got significant results as we mentioned above. Some results that were non-significant and no major difference of means between Public and Private School Children as shown in table but that results support to our study

| Questions                                | Sector  | N  | Mean  | St. Dev. | SE Mean | P-Value |
|------------------------------------------|---------|----|-------|----------|---------|---------|
| Daily consumption of Meal                | Govt.   | 40 | 2.875 | 0.335    | 0.053   | 0.463   |
|                                          | Private | 40 | 2.925 | 0.267    | 0.042   |         |
| Weekly consumption of fast Food          | Govt.   | 40 | 1.15  | 1.21     | 0.19    | 0.414   |
|                                          | Private | 40 | 1.40  | 1.50     | 0.24    |         |
| Daily consumption of fresh juices        | Govt.   | 40 | 0.775 | 0.530    | 0.084   | 0.420   |
|                                          | Private | 40 | 0.675 | 0.572    | 0.090   |         |
| weekly consumption of Fish               | Govt.   | 40 | 0.325 | 0.616    | 0.097   | 0.566   |
|                                          | Private | 40 | 0.400 | 0.545    | 0.086   |         |
| Weekly consumption of Fruits             | Govt.   | 40 | 3.45  | 2.63     | 0.42    | 0.088   |
|                                          | Private | 40 | 4.45  | 2.55     | 0.40    |         |
| Weekly consumption of Vegetable          | Govt.   | 40 | 4.53  | 2.23     | 0.35    | 0.293   |
|                                          | Private | 40 | 3.98  | 2.41     | 0.38    |         |
| Weekly consumption of Eggs               | Govt.   | 40 | 3.73  | 2.74     | 0.43    | 0.843   |
|                                          | Private | 40 | 3.85  | 2.90     | 0.46    |         |
| Weekly consumption of Bean               | Govt.   | 40 | 1.075 | 0.997    | 0.16    | 0.349   |
|                                          | Private | 40 | 1.32  | 1.35     | 0.21    |         |
| Daily activity by watching TV and Phones | Govt.   | 40 | 1.575 | 0.903    | 0.14    | 0.222   |
|                                          | Private | 40 | 1.800 | 0.723    | 0.11    |         |

## Discussion

The result of this study provides comparison of macronutrients intake between public school children and Private school children. As part of this study, that were evaluated the differences in macronutrients intake between children from the public school to those from private school. There were we found differences in consumption of foods

of both sectors. In each case with the exception of total macronutrient intake the Private school children's consumes macronutrient in greater amounts than did the public school children.(12) The results of this study which stated that families whose children in private school can be expected to consume a healthier diet than that families whose children in public school. Previous research indicated families that from private school their children had better access to information concerned diet and health. As such the macronutrient intake of these families can be expected to be more healthful than that of the general population(13). There were two approaches administered i.e. anthropometry to obtain data regarding anthropometric measurements and household survey to collect information regarding various socioeconomic variables. The families of the school children were categorized into different socioeconomic groups to determine their economic status. We observed the result for economic status from public school children's families that was 12.5% had own business, 57.5% was labour, 25% were Job holder and 5% were teacher and healthcare professional. In private school children's families 60% had own business, 20% was labour, 5% were Job holder and 15% were teacher and healthcare professional. The previous study also had same result as we observe in this study and most of the families i.e. 77.4% from private school children were medium economic status families and similarly, 67.9% families from public school children had low economic status(12).

The previous study reported that lunch consumption varied with socioeconomic status as children from public school were more likely to skip Lunch, However, children from Private school did not skip their Lunch(11) and same result were observed in this study most of the children from private school eat lunch daily as compare to public school children, the average mean score of daily eating lunch that was (0.675) from public school and (0.875) was from Private school and result were significant ( $P=0.033^*$ ). The cross tabulation between different food groups used by children' of public and private school. We observe the result after statistical analysis shown major differences of mean between Public and Private School Children's. In this study, the Private school had BMIs within the normal weight and the public school children had BMIs within the underweight. As per result average mean of BMI that was (16.34) from public school and (17.70) was from Private School and result was significant ( $P=0.049$ ) and as per previous study they were stated that in private school children had BMI within the normal range and in public school BMI below to normal range(40). There were some results we observed in this study showed major difference between public and private school children. The average mean score of meat was (0.825) from public school and (1.40) was from Private school and result were highly significant ( $P=0.007^{**}$ ), In grains average mean score that was (2.08) from public school and (2.85) was from Private school and result were highly significant ( $P=0.040^*$ ), In milk and

yogurt average mean score that was (1.250) from public school and (1.725) was from Private school and result were significant ( $P=0.005^{**}$ ), the average mean score of weekly consumption of butter that was (0.900) from public school and (0.240) was from Private school and result were highly significant ( $P=0.005^{**}$ ), the average mean score of liked or disliked of spicy food that was (0.400) from public school and (0.700) was from Private school. And result were highly significant ( $P=0.007^{**}$ ), most of the children from private had knowledge about healthy foods for human body as compare to public school children the average mean score of knowledge about healthy food for human body that was (0.200) from public school and (0.450) was from Private school and result were highly significant ( $P=0.017^{**}$ ). Some of results that were non-significant and no major difference of mean score between Public and Private School Children which included daily consumption of meal, weekly consumption of fast food, daily consumption of fresh juices, weekly consumption of Chicken, weekly consumption of Fish, weekly consumption of Fruits, weekly consumption of Vegetable, weekly consumption of eggs, weekly consumption of bean and daily activity by watching TV and Phones that were also supported to this study and previous studies also supported to this research done by the researcher (12). The previous studies shown that according to different food group consumption in public school children were low intake level and in private school were high intake level(14) and same

we observed in this study. Overall the results stated that macronutrients intake were low in public school children and high in private school children and previous research paper also had same result as we observed in this study.

## Conclusion

The purpose of this study was to compare if differences exist for macronutrients intake between public school children and Private school children. After statistical analysis the data showed Private school children consumed more fats, carbohydrate and protein than public school children. In BMI, Meat consumption, Grains consumption, and dairy consumption showed major difference between public and private school children. According to BMI the result showed that children from public school had underweight and result showed that in private school children had normal weight. Now we can say that the results showed that due to consumption of different food groups were low in public school children and high in private school children and this is the main reason for macronutrients deficiency in public school children more compare to private school children.

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