



## COMPARATIVE STUDY BETWEEN THE BMI OF GOVERNMENT GIRLS SCHOOL AND PRIVATE GIRLS SCHOOL (10-12 YRS OLD) IN AJMER CITY

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### ABSTRACT

Malnutrition is a severe and a dangerous problem among children in India. This is a cross sectional study of the nutritional status among school children of ages 10 to 12 years. The objectives of this study were to study about the height, weight and BMI of the girls from government and private school and to make a comparison of the same in government versus private schools. In this study children of a private school and a government school were taken. The weight and height of each child were taken and the BMI was calculated. BMI can be increased by giving them good food. Nutrition Education will also help them to enhance their BMI. This study reveals that the percentage of normal BMI students were higher in government school than in private school.

**KEYWORDS :** Nutrition; Nutrition Education; Children; Schools

### INTRODUCTION

One of the major problems for India is malnutrition among children due to lack of awareness, our country is still struggling with this problem. Malnutrition, reasons of this condition are faulty nutrition and it weakens the immune system and causes growth and cognitive delay. Growth assessment is a kind of measurement that defines the health and nutritional status of children, it also provides an indirect measurement of well-being for the whole population. Malnutrition is a condition where, there is an imbalanced diet in which some nutrients are in excessive amount, lacking or in wrong proportion. we can classify it to as under-nutrition and over-nutrition.

After 75 years of Independence, India has brought about an improvement in the economic status of the country. This has also brought about a change in the perception of the society. An increase in awareness of importance of , Nutrition, education and the Government's efforts to provide free education and the introduction of Mid-Day meal scheme has increased the enrolment of children from lower economic group in schools. This is also known as "School Lunch Programme" Its major objective to attract more children for admission to Schools and retain them so that literacy improvement of children could be brought about.

### OBJECTIVES

1. To study about the height, weight and BMI of the girls from government and private school
2. To make a comparison of the same in government versus private schools.

### MATERIALS AND METHODS

Anthropometric examination is an essential tool in any research to know and assess health and nutritional condition in childhood. Physical measurements like body weight, height, circumference of arm and calf, triceps skin fold of children have been extensively used to define health and nutritional status of communities .This is a cross sectional study on children of Government and Private Schools in Ajmer. The study is conducted on a total population of 100 children. It includes of ages 10 to 12 years. Of the total 100 children, 50 are from Government Girls School, Ramganj, Ajmer and 50 are from Gurukul Private School, Ajmer .Height and weight of all children was measured by a stadiometer and simple weighing machine respectively. BMI was calculated by the formula  $BMI = wt \text{ in kgs}/(ht \text{ in mts})^2$ . BMI is relatively quick and easy to calculate. It is used for the survey of population and health status when assessing individual patients. BMI is a good indicator for the levels of body fat and it is known that

having a BMI that is too low or too high is associated with an increased risk of bad health in childhood as well as in later life. The nutritional status is assessed by taking the BMI into consideration.

**Table 1-Height, Weight and BMI of Private School**

Sr.No.	Age (yrs.)	Height (Cm.)	Weight (Kg.)	Height in Meters	BMI
1	10	145	43	1.45	20.45184304
2	10	150	40	1.5	17.77777778
3	10	150	41	1.5	18.22222222
4	10	148	34	1.48	15.52227904
5	10	148	30	1.48	13.69612856
6	10	142	28	1.42	13.8861337
7	10	139	25	1.39	12.93928886
8	10	138	31	1.38	16.27809284
9	10	125	23	1.25	14.72
10	10	143	43	1.43	21.02792313
11	10	150	41	1.5	18.22222222
12	10	150	41	1.5	18.22222222
13	10	147	37	1.47	17.12249526
14	10	148	33	1.48	15.06574142
15	10	140	30	1.4	15.30612245
16	10	143	35	1.43	17.11575138
17	10	138	31	1.38	16.27809284
18	10	125	24	1.25	15.36
19	10	145	39	1.45	18.54934602
20	10	142	29	1.42	14.38206705
21	10	141	35	1.41	17.60474825
22	10	138	31	1.38	16.27809284
23	10	125	23	1.25	14.72
24	10	143	43	1.43	21.02792313
25	10	150	41	1.5	18.22222222
26	11	150	42	1.5	18.66666667
27	11	148	36	1.48	16.43535427
28	11	145	33	1.45	15.69560048
29	11	151	49	1.51	21.49028551
30	11	157	38	1.57	15.41644691
31	11	160	38	1.6	14.84375
32	11	146	31	1.46	14.54306624
33	11	151	43	1.51	18.85882198
34	11	148	39	1.48	17.80496713
35	11	150	36	1.5	16
36	11	158	51	1.58	20.42941836
37	11	153	38	1.53	16.23307275
38	11	161	38	1.61	14.65992824
39	11	152	46	1.52	19.9099723

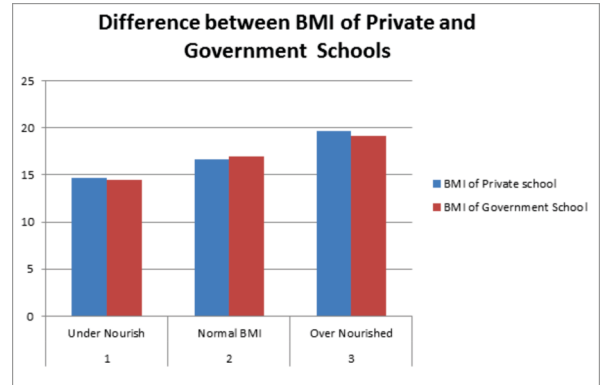
40	11	157	49	1.57	19.8791026
41	11	146	31	1.46	14.54306624
42	11	151	43	1.51	18.85882198
43	11	143	40	1.43	19.56085872
44	11	150	36	1.5	16
45	11	158	51	1.58	20.42941836
46	11	153	38	1.53	16.23307275
47	11	161	38	1.61	14.65992824
48	11	152	46	1.52	19.9099723
49	11	150	36	1.5	16
50	11	158	51	1.58	20.42941836
					Mean-17.10979494

**Table 2-Height , Weight and BMI of Government School**

Sr.No.	Age(yrs .)	Height(C m.)	Weight(Kg .)	Height in Meters	BMI
1	10	145	30.5	1.45	14.5
2	10	138	32	1.38	16.8
3	10	133	29	1.33	16.39
4	10	130	30	1.3	17.75
5	10	129	28	1.29	16.82
6	10	130	22	1.3	13.01
7	10	123	19	1.23	12.55
8	10	138	31.8	1.38	16.69
9	10	135	29	1.35	15.91
10	10	129	25	1.29	15.02
11	10	133	28	1.33	15.82
12	10	131	29	1.31	16.89
13	10	122	28	1.22	18.81
14	10	140	35	1.4	17.85
15	10	139	32	1.39	16.56
16	10	140	38	1.4	19.38
17	10	136	32	1.36	17.3
18	10	137	32	1.37	17.04
19	10	138	32	1.38	16.8
20	10	125	30	1.25	19.2
21	10	140	32	1.4	16.32
22	10	125	25	1.25	16
23	10	130	27	1.3	15.97
24	10	136	28	1.36	15.13
25	10	128	25	1.28	15.25
26	11	125	22	1.25	14.08
27	11	130	29	1.3	17.15
28	11	127	29	1.27	17.98
29	11	121	18	1.21	12.29
30	11	145	30.5	1.45	14.5
31	11	138	32	1.38	16.8
32	11	133	29	1.33	16.39
33	11	130	30	1.3	17.75
34	11	129	28	1.29	16.82
35	11	130	22	1.3	13.01
36	11	123	19	1.23	12.55
37	11	138	31.8	1.38	16.69
38	11	135	29	1.35	15.91
39	11	129	25	1.29	15.02
40	11	133	28	1.33	15.82
41	11	131	29	1.31	16.89
42	11	122	28	1.22	18.81
43	11	140	35	1.4	17.85
44	11	139	32	1.39	16.56
45	11	140	38	1.4	19.38
46	11	136	32	1.36	17.3
47	11	137	32	1.37	17.04
48	11	138	31	1.38	16.27
49	11	125	30	1.25	19.2
50	11	140	32	1.4h	16.32
					16.3628

**Table 3: Difference between BMI of Private and Government Schools**

S.no.	Parameters	BMI of Private school	BMI of Government School	Difference
1	Under Nourish	14.7035	14.49059	0.2135
2	Normal BMI	16.65439415	16.92667	0.27
3	Over Nourished	19.59835165	19.13	0.46



**RESULTS**

BMI was done on Hundred girls students in the age group of 10 to 12 years. 50 were from Government school and the same numbers are from Private school. The prevalence of overweight is more in private school girls. 34 %(17) is under weight ,54%(27) are from Normal BMI and 12%(6) are overweight in Government Schools and 34 % are underweight, 28% are from Normal BMI and 38% are overweight in private school. According to this study percentage of normal BMI is more in Government school than in Private school.

**CONCLUSION**

According to our study, prevalence of obesity is more in Private school when it compare with government school. Under nutrition percentage is common in both government as well as in private school. Major finding of this study is that normal BMI students percentage is high in Government school than in private school may be because of Mid Day Meal Programme and this is a good sign for government schools also and because of low economic status most of the government students can't consume street and junk food.

In our study, there is a higher incidence of overweight of 38% in Private School due to wrong food habits and relatively sedentary life in upper socio economic class. There is a normal BMI students of 54% in the Government schools. As our study is a limited type of study, a broader area of study involving a larger cross sectional population may give a better evaluation of the nutritional status of school going children. Worm infestation and other associated causes of malnutrition have to be assessed. The other parameters of health status should also be taken into consideration.

**Suggestions**

1. Encouraging easily available inexpensive energy giving foods like leafy vegetables and millets among children in India can improve the nutritional status of school children to an extent.
2. A little prevalence of obesity in Private School children recommends an increased physical activity. Physical activity is very good for health, It should be encouraged in both groups of school children with healthy and enough food intakes.

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