



ISSN: 2456-4419

Impact Factor: (RJIF): 5.18

Yoga 2024; 9(1): 256-258

© 2024 Yoga

[www.theyogicjournal.com](http://www.theyogicjournal.com)

Received: 25-02-2024

Accepted: 05-04-2024

**Thingnam Nandalal Singh**  
Professor, Department of  
Physical Education, Panjab  
University, Chandigarh, India

**Wangkheimayum Geetarani Devi**  
Research Scholar, Department of  
Physical Education, Panjab  
University, Chandigarh, India

**Rustam Thingnam**  
Research scholar, Department of  
Physical Education, Panjab  
University, Chandigarh, India

## A study of body composition between government and private school students of Chandigarh

**Thingnam Nandalal Singh, Wangkheimayum Geetarani Devi and Rustam Thingnam**

### Abstract

The objective of the study was to evaluate body composition (percentage of body fat) between government school and private school students of Chandigarh. Three site sub cutaneous-fat was measured on purposively selected 3040 students, in which 1520 are from government school (boys 760 and girls 760) and 1520 are from private school (boys 760 and girls 760). The age of the subject is delimited to 13 to 16 years. Skin fold caliper was used to measure skin fold thickness. The recorded data of three site sub-cutaneous fat, percentage body fat was calculated using body density three site formula and Siri equation (American College of Sport Medicine 9<sup>th</sup> Edition, 2013). Statistical application t-test was applied to analyze the data. No Significant difference was found between government and private school boys of Chandigarh on percentage body fat. Significant difference was found on percentage body fat between Government and Private school girls of Chandigarh, at 0.05 level of significant. It was concluded that private school girls is significantly higher than government school girls on the variable of percentage of body fat.

**Keywords:** Nutrition, malnutrition, wasting, stunting, adolescents

### Introduction

Understand and aware of how the environments affect us is very importance to achieve and maintain fitness and wellness. The environment we live today is very toxic and we are so habituated to the environment that we miss the subtle ways it impacts our behaviors, personal lifestyle, and health every day (Edlin, 2004) <sup>[1]</sup>. Begin from early stage, we observe, we perceive, we adapt, we learn, and without realizing it, we integrate into our own lifestyle the behaviors of individuals around us (Samanta *et al.* 2019) <sup>[4]</sup>. A balance diet is very importance factor in fitness and wellness, proper nutrition mean that a person's diet meets all the essential nutrients required to function normal tissues growth, repair, and maintenance. A balance diets is very importance to stay healthy, fit and wellness. Disorder of nutritional intake and imbalance are among the leading causes of death in many developed countries throughout the world (Edlin, 2004) <sup>[1]</sup>. Body composition is comprised of percentage of body fat, bone and muscles originated in your body. Our body is consisting of fat and non-fat components, fat components is called fat mass or percent body fat and the non-fat components are called lean body mass (Sharma *et al.* 2013) <sup>[5]</sup>. Total fat in our human body is found in two forms: essential fat and storage fat. Essential fat is required for normal physiological function, without it, human health and physical performance weaken. Essential form of fat is found within tissues such as muscles, bone marrow, nerve cells, intestines, heart, liver, and lungs. Measuring body composition through skinfold thickness is based on the principle that the amount of subcutaneous fat is proportional to total body fat. There are several methods to measure – three sites to seven sites have been developed. Three sites technique and procedure are most used by the expert (Singh *et al.* 2020) <sup>[6]</sup>.

### Objectives of the study

1. To compare percentage of body fat between Government and Private school students (Boys) of Chandigarh.
2. To compare percentage of body fat between Government and Private school students (Girls) of Chandigarh.

**Corresponding Author:**  
**Thingnam Nandalal Singh**  
Professor, Department of  
Physical Education, Panjab  
University, Chandigarh, India

**Methods and Procedure**

The objective of the study was to evaluate body composition (percentage of body fat) between government school and private school students of Chandigarh. Three site sub cutaneous-fat was measured on purposively selected 3040 students, in which 1520 are from government school (boys 760 and girls 760) and 1520 are from private school (boys 760 and girls 760). The age of the subject is delimited to 13 to 16 years. Skin fold caliper was used to measure skin fold thickness. The recorded data of three site sub-cutaneous fat, percentage body fat was calculated using body density three site formula and Siri equation (American College of Sport Medicine 9<sup>th</sup> Edition, 2013). Statistical application t-test was applied to analyze the data. The skin fold fat measure consists of a double layer of sub cutaneous fat and skin the thickness of which may be measured with a skin folds fat caliper. This estimate is based on principle that the total amount of body fat

is proportional to the amount of subcutaneous fat. To evaluate the purpose of the study three site formula are considered for boys’ chest, triceps and subscapular was measured and for girl’s triceps, suprailia and abdominal was measured.

**Results and Findings**

Statistical technique employed for analyzing the data, findings of the study and discussion of findings have been described. The ‘t’ test was employed for analyzing the data. The collected data was tabulated and computerized to draw out the desired results. The statistical analysis data pertaining to percentage of body fat on 3040 subjects in which 1520 are from government school and 1520 are from private school students has been described in these following tables. For testing the significance, the level of significance was chosen at 0.05.

**Table 1:** Descriptive and Comparison of Scores on Percentage of Body Fat between Government and Private School Boys

Variable	Group	N	Mean	SD	MD	SED	t-value	Sig.
Percentage of Body Fat	Government School	760	12.02	4.960	.2761	.259	1.063	.288
	Private School	760	11.75	5.166				

\*Significant at .05 level  
 ‘t’.05 (1518) = 1.96

The above table 1 revealed that government school boys secured mean 12.02 and standard deviation 4.960 and private school boys secured mean 11.75 and standard deviation 5.166 respectively. No Significant difference was found on

percentage of body fat as the t-value is 1.063 whereas, the tabulated value is 1.96 on 1518 degree of freedom at 0.05 level of significant.

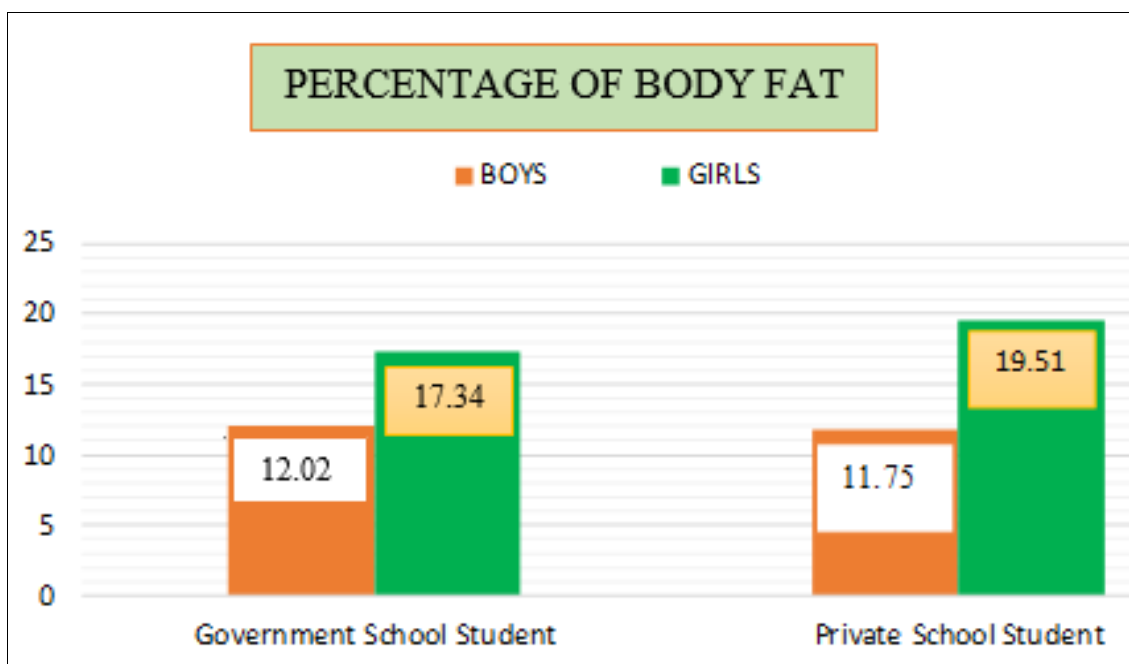
**Table 2:** Descriptive and Comparison of Scores on Percentage of Body Fat between Government and Private School Girls

Variable	Group	N	Mean	SD	MD	SED	t-value	Sig.
Percentage of Body Fat	Government School	760	17.34	4.135	2.166	.192	11.23	.000*
	Private School	760	19.51	3.345				

\*Significant at .05 level  
 ‘t’.05 (1518) = 1.96

The above table 2 revealed that government school girls secured mean 17.34 and standard deviation 4.135 and private school girls secured mean 19.51 and standard deviation 3.345 respectively. Significant difference was found on percentage

of body fat as the t-value is 11.23 whereas, the tabulated value is 1.96 on 1518 degree of freedom at 0.05 level of significant. Mean score of government and private school students on percentage of body fat is depicted graphically in fig. 1.



**Fig. 1:** The Graphical Representation of Mean Scores of Government School and Private School Students on Percentage of Body Fat

### Discussion of Findings

Significant different was found in girls' government and private school student but no significant different was found in boys' government and private school student on percentage body fat. It may be because fat percentage content in body is more in female than male, 12 percent of total body weight in women and only 3 percent in male, the percentage is higher in women because it comprises sex-specific fat, such as that found in the breast tissue, the uterus, and other sex-related fat deposits Edlin 2004 <sup>[1]</sup>. Katun *et al.* 2016 <sup>[3]</sup> concluded that boys did regular exercise, activities so, significantly lower amount of subcutaneous adiposity, fat mass, fat percentage than girls did not do regular exercise. High percentage of body fat and wasting was observed to be significantly higher in physical inactive adolescence girls' population (Singh *et al.* 2020)<sup>[6]</sup>.

### Conclusion

- No Significant difference was found between government and private school boys on percentage of body fat.
- Significant difference was found on percentage of body fat between Government and Private school girls.
- It can conclude that private school girls are higher than government school girls on the variable of percentage of body fat.

### References

1. Edlin G, Golantey E. Health and Wellness. Sudbury, Massachusetts: Jones and Bartlett Publications; c2004.
2. Jackson AS, Pollok MM. Practical assessment of body composition. *The physician and sport medicine.* 1985;13(5):76-90.
3. Katun A, Bhadra M, Mukhopadhyay A, Bos K. Nutritional status and effect of physical activity on anthropometric characteristics of Bengalee Muslim adolescents' boys of North 24 Parganas, West Bengal, India. *International journal of Experimental research and review.* 2016;5(2):8-14.
4. Samanta A, Thakur J, Goswami M. Menstrual characteristics and its association with socio-demographic factors and nutritional status: A study among the urban slum adolescent girls of West Bengal, India. *Anthropological Review.* 2019;82(2):105-124.
5. Sharma VK, Subramanian SK, Arunachalam V. Evaluation of body composition and its association with cardio-respiratory fitness in South Indian adolescents. *Indian J physiolpharmacol.* 2013;57(4):399-405.
6. Singh S, Singh N, Kshatriya GK. Assessment of Nutritional Status and Body Composition in Tibetan Adolescent girls of Kangra district, Himachal Pradesh. *Anthropological Review.* 2020;83(4):395-405.