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Comparative analysis of total body water in female students of government and private secondary schools

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Abstract
The present study was designed to analyze the total body water in female students of secondary schools. The purpose of the study was to evaluate the difference among government and private secondary school girls.
To achieve this aim 1000 subjects, 500 from government schools and 500 from private schools were randomly selected as sample. The study was delimited to 10 to 12 year age group of female students. The data was collected with the IOI 353 Body Composition Analyzer. This device measured impedance by bioelectrical impedance analysis method and provided information using measured impedance and inputted personal data (weight, height, age, gender). The data was tabulated and analyzed through T-Test. The level of significant was set at 0.05. A significant difference was observed between government and private female students of secondary schools. That is why hypothesis that, "There will be no significant difference in Total Body Water (TBW) between government and private secondary school female students" which was formulated earlier was not accepted.

Keywords: total body water, intra-extra cellular fluid

Introduction
Total Body Water (TBW) is the water content in a body that is contained in the tissues, the blood, the bones and elsewhere. The percentage of body water contained in various fluid compartments add up to total body water. TBW is an amount of sodium-free water in the whole body, commonly divided into the extracellular fluid (ECF) space [Pharmacology and Physiology for Anesthesia (Second Edition), 2019]. The actual average percentage of water in the human body vary by gender, age and weight. One thing that is consistent: starting at birth, more than half of body weight of an individual is composed of water. The average percentage of body water that is water will remain above 50 percent for most or all of one's life, though it does decline over time.

- Water as percentage of body weight in infants and children

Table 1

	Birth to 6 months	**6 month to 1 year**	**1 to 12 years**
Infants and children	Average:74%	Average:60%	Average:60%
	Range: 64-84%	Range: 57-64%	Range: 49-75%

***Source*:** Healthline.com

In addition, plasma (the liquid portion of blood) is about 90% water. Plasma carry blood cells, nutrients and hormones throughout the body.
Water storage at cellular level;
- Intracellular fluid- the fluid within cells
- Extracellular fluid- the fluid outside the cells

About two-thirds of the body water is within the cells, while the remaining third is in extracellular fluid (Healthline.com).
- Storage of water in the body

Table 2

Body Part	**Water Percentage**
Brain and heart	73%
Lungs	83%
Skin	64%
Muscles and kidneys	79%
Bones	31%

Objectives of the Study
The main objective of the study is to find out the quantity of total body water in female students of government and private secondary schools.

Hypothesis of the Study
There will be no significant difference in Total Body Water (TBW) between government and private secondary school female students.

Methodology
The present study consisted of 500 government school girls and 500 private school girls. It was a survey study. The study was delimited 10 to 12 years old girls only. All the subjects were randomly selected from the secondary schools of Kurukshetra district, Haryana. Health status, nutritional intake, proper diet, timings of food, life style, habits, heredity, physical activities, other psychological and physiological factors were away from control of the investigator.
The data was collected with the IOI 353 Body Composition Analyzer**.** This device measured impedance by bioelectrical impedance analysis method and provided information using measured impedance and inputted personal data (weight, height, age, gender).
Procedure: All the subjects were asked to remove the shoes and socks. Then investigator gave brief instructions about the equipment and demonstrate the subjects how to stood

erectly barefooted in the manner that the feet covered the sensor completely and how to hold the sensor handle. Once the subject stood on the sensor and hold the sensor bar at 30º and press the start button with thumbs at the same time, he was asked not to move for 10 seconds. After 10 seconds a beep came with the message "Measurement completed". The subject was told to get down from the instrument.

Table 3: Comparison of Total Body Water (TBW) between Govt. and Private School Female Respondents

Variable	School	N	Mean	SD	(df)	(t-value)	Sig.
TBW*	Govt.	500	19.82	4.09	998	-12.304*	.000
	Private	500	23.18	4.52			

(TBW = Total Body Water) Level of Alpha = 0.05 with DF 998

Table-1 depicts the comparative statistics in terms of independent sample t-test as well as descriptive statistics such as mean and standard deviation. It was observed that mean and standard deviation of govt. school female respondents was 19.82±4.09 and mean and standard deviation of private school female respondents was 23.18±4.52 as per the obtained outcomes. The calculated t-value was -12.304 which shows highly significant difference between the selected respondents in their total body water. Therefore the null hypothesis which was formulated earlier was not accepted.

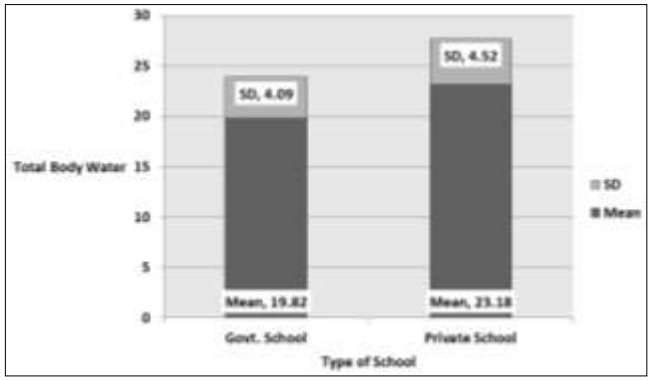

Fig 1: Comparison of Total Body Water (TBW) between Govt. and Private School Female Respondents

Results of the Study

A significant difference was found for the variable total body water between the female students of government and private secondary schools. That is why the hypothesis" Three will be no significant difference in Total Body Water (TBW) between government and private secondary school female students" which was formulated earlier was not accepted.

References

1. Debnath S, Mandal N, Sen J. Percent of body fat, fat-mass, fat free mass and assessment of body composition among rural school going children at Eastern- India. July3. 2018; 81(2):158-73.
2. Masiac N, Alemar MH, Esparza RJ, Valencia ME. Body composition measurement by electrical impedance in Mexico adults. Nutr J., August 15, 2007, 6:18.
3. www.healthcare.com