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அறிவாற்றங் காக்கும் கருவி செறுவார்க்கு
முள்ளழிக்க லாகா வரண்

True wisdom wards off woes,
A circling fortress high;
Its inner strength man's eager foes
Unshaken will defy.

The Sacred Kural

COMPARATIVE ANALYSIS OF BODY COMPOSITION BETWEEN INDIAN AND SRILANKAN COLLEGE GIRLS

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Abstract

The purpose of the present study was to compare and analyse of body composition between Indian and Srilankan college girls. For this study thirty Indian and thirty Srilankan college girls were randomly selected. The age of the subjects ranged between 18-25 years. In the present study percentage of fat, fat mass and lean body mass were selected as criterion variables. The data were collected from various faculty Indian and srilankan girls at Annamalai University and Madras University. The 't' test was used to analyse the data. The level of significance is set at 0.05. The findings of this study showed that the percentage of fat, fat mass, lean body mass were higher for the Indian college girls than the Srilankan college girls.

Introduction

The science concerned with the measurement of the human body, particularly with respect to the variation that exists between different populations and races. Anthropometry ranges from the measurement of structural characteristics, such as height, cranial capacity, etc, to the analysis of chemical constituents of the body, such as blood groups, by comparing fossil and present-day measurements anthropometry has also helped to reveal the sequence of events that has occurred during the evaluation of man.

Body composition is concerned with obesity of the individual. In measuring this part of the body composition, the total body weight is divided into two components lean body weight and fat body weight. Lean body weight includes muscles, bone and vital organs. The underlying assumption is that total body weight equals lean body weight in relation to lean body weight, the higher the degree of obesity.

Anthropometry is the branch of anthropology is concerned with the taking of measurement on the human body. In others words, "Anthropometry is the

science of measuring the size and proportion of human body". It is the measurement of body symmetry and proportion.

Methods

Selection of subject

The Purpose of the study was to find out the compare and analyse body composition between Indian and Srilankan college girls. To attain the purpose of this study thirty Indian and thirty Srilankan college girls were randomly selected from various faculties of Annamalai University and Madras University. Their age ranged between 18-25 years.

Selection of variables

The following body composition variables such as percentage of fat, fat mass and lean body mass were selected as criterion variables.

Selection of Tests

In this study the criterion variables were tested by administering the following tests/equipment.

TABLE I

S.No	Variables	Test Items	Unit of measurement
1.	Percentage of fat	Anthropometric measurement	Centimetres
2.	Fat mass	Anthropometric measurement	Centimetres/Kg
3.	Lean body mass	Anthropometric measurement	Centimetres/Kg

Statistical Techniques

To compare and analysis the body composition between Indian and Srilankan college girls 't' test was

used to analyse the data.. The level of confidence fixed for significance is set at 0.05.

Variables	Indian		Srilankan		't' test	df	Level of Significance
	Mean	SD	Mean	SD			
Percentage of fat	25.43	2.73	22.87	2.25	3.94**	58	0.05
Fat mass	13.08	5.00	10.49	2.26	4.59**		
Lean body mass	41.52	6.95	36.17	4.75	3.47**		

The table value required of significant at 0.05 level with df 58 is 2.66.

Percentage Of Fat

Percentage of fat was computed by using the formula.

$$\text{Percentage of fat} = \frac{[\text{upper arm girth} + \text{hip width} - \text{fore arm girth}]}{10.2}$$

Table II indicates that the mean values on percentage of fat Indian and Srilankan college girls were 25.43 and

22.87 respectively. The 't' ratio for these values was 3.94. The obtained 't'-ratio for percentage of fat was found significant at 0.05 level of confidence. Since these value was higher than the required table value of 2.66 for degrees of freedom 58.

It may be concluded from the results of the study

that there was a significant difference among Indian and Srilankan college girls on percentage of fat. The obtained mean values are significantly higher for percentage of fat, for Indian college girls than Srilankan college girls.

Fat Mass

Fat mass was computed by using the formula.

$$\text{Fat mass} = \frac{\text{Percentage off at}}{100} \times \text{bodymass}(t)$$

Table II indicates that the mean values on fat mass Indian and Srilankan college girls were 13.08 and 10.49 respectively. The 't' ratio for these values was 4.59. The obtained 't'-ratio for fat mass was found significant at 0.05 level of confidence. Since these value was higher than the required table value of 2.66 for degrees of freedom 58.

It may be concluded from the results of the study that there was a significant difference among Indian and Srilankan college girls on fat mass. The obtained mean values are significantly higher for fat mass, for Indian college girls than Srilankan college girls.

Lean Body Mass

Lean body mass was computed by using the formula.

$$\text{Lean body mass} = \text{Body mass (Wt)} - \text{fat mass.}$$

Table II indicates that the mean values on lean body mass Indian and Srilankan college girls were 41.52 and 36.17 respectively. The 't' ratio for these values was 3.47. The obtained 't'-ratio for lean body mass was found significant at 0.05 level of confidence. Since these value was higher than the required table value of 2.66 for degrees of freedom 58.

It may be concluded from the results of the study that there was a significant difference among Indian and Srilankan college girls on lean body mass. The obtained mean values are significantly higher for lean body mass, for Indian college girls than Srilankan college girls.

Discussion On Findings

The results of the study clearly indicates that, there is significant variation in selected variables of percentage of fat, fat mass and Lean body mass among Indian and Srilankan college girls. The obtained mean values are significantly higher for all the selected variables, for Indian college girls than Srilankan college girls

Conclusions

1. There is significant difference on percentage of fat, fat mass and Lean body mass among Indian and Srilankan college girls.
2. The percentage of fat, fat mass and Lean body mass were higher for Indian college girls than Srilankan college girls.

Recommendations

1. Similar study may be conducted with in National level.
2. Similar study may be conducted between athletes and non athletes of Indian and Srilankan.
3. The studies of similar nature may be conducted by taking other variables and male subjects.
4. The study may be conducted by taking lower age and higher age groups and subject to explore the variance growth pattern.