A SURVEY STUDY ON BODY COMPOSITION OF WOMEN STUDENTS

*S.SUSATHA[1] ** Dr S.T.N RAJESWARAN[2]

* Ph.DResearch Scholar, Dept. of Physical Education, Bharathiar University, Coimbatore, Tamil Nadu, India.

** Professor, Dept. of Physical Education, Bharathiar University, Coimbatore, Tamil Nadu, India.

Abstract

The purpose of the study was to find out the study onbody composition of women students. To achieve the purpose of these study (n=346) women students selected from Bharathiar University. The age ranged between 20-30 years. The selected subjects are divided into two groups are Humanities and Science department women students. The body composition variables are. percent body fat, fat weight, lean body weight, body mass Index. The statistical techniques used this study was Analysis of variance [ANOVA] to compare the post test means of groups. In testing the significance of mean difference on body composition of Humanities and Science department women students, it was observed that 'F' ratio was found to be statically insignificant for percent body fat, fat weight, lean body weight, body mass index variables.

Keywords: Percent body fat, fat weight, Lean body weight, Body Mass Index.

Introduction

Body composition is very essential for health analysis. Recent trends have changed the food habitats of the young generation. Fast foods are gets more attention and attraction than healthy foods. Some are maintain diets without proper information, this leads to imbalance of body nutrients. These factors are affecting the body composition of the human. The present study reveals the body composition of Bharathiar University women students. Health practitioners universally agree that too much body fat is a serious health risk. Problems such as hypertension, elevated blood lipids (fats and cholesterol), diabetes mellitus, cardiovascular disease, respiratory dysfunction, gall bladder disease, and some joint diseases are all related to obesity. Also, some research suggests that excessive accumulation of fat at specific body sites may be an important health risk factor (Wilmore, Buskirk, DiGirolamo, & Lohman, 1986). For instance, it appears that extra fat around

the abdomen and waist is associated with higher risk of diabetes, heart disease, and hyperlipidemia. Individuals who accumulate a lot of fat around the waist (apple-shaped) are worse off than those who tend to accumulate fat in the thighs and buttocks (pear-shaped). The apple-shaped pattern of fat deposition is more commonly seen in men; whereas women tend to be pear-shaped. The development of skin fold (anthropometric) measurements came as the result of investigations for simpler and less expensive methods of estimating body composition. Body circumferences and/or skin fold thickness are used in a regression equation, of which there are many available, for prediction of body composition. Among the most commonly employed are the generalized equations for use with skin fold measurements developed for adult males and females by Jackson and Pollock (1978) and Jackson, Pollock, and Ward (1980), respectively. They are termed generalized because they are most accurate in predicting body composition of people with average amounts of body fat. Generalized equations tend to be less accurate with the very lean (e.g. athletes), obese, young old, or other special populations. Other, more appropriate, equations have been developed for such populations which increase their accuracy for prediction of body composition.

Methodology

To achieve the purpose of these study 346 women students selected from Bharathiar University. The age of the subjects were ranged between 20-30 years. The selected subjects are divided into two groups in Humanities and Science department women student's in Bharathiar University.

Selection of Test

S. No	VARIABLE	TEST ITEMS
1.	Percent body fat	Skin fold caliper
2.	Fat Weight	Body weight× Percent body fat/100
3.	Lean body weight	Body weight-Fat weight
4.	Body mass index	Weight/height^2

Result and Discussion

TABLE-I Analysis of variance on percent body fat between humanities and science students

Groups	Mean	S.D	Sources	Sum of square	df	Mean square	F- ratio	Sig
Humanities	24.38	4.58	B/G	3.69	1.00	3.69		
Science	24.59	5.27	W/G	8195.21	345.00	23.79	0.15	0.69

*Significant at 0.05 level

The table I reveals that the obtained 'F' value was 0.15to be significant at 0.05 level of degree of freedom 346, the required critical value was 3.86 Hence, observed 'F' value (0.15) was found as less than the table value (3.86),it was inferred that there was significant difference between the humanities and science department women students.

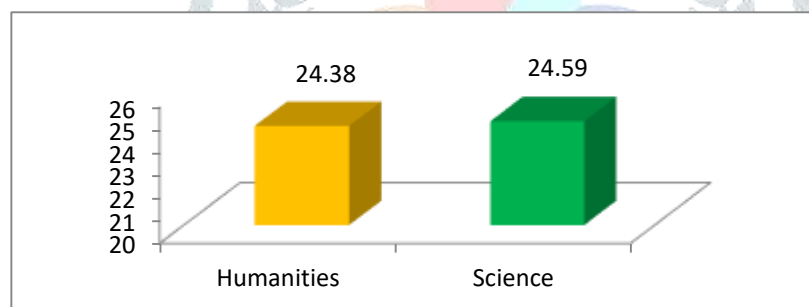**FIGURE -I showing percent body fat between humanities and science students**

TABLE –II Analysis of variance on fat weight between humanities and science students

Groups	Mean	S.D	Sources	Sum of square	df	Mean square	F-ratio	Sig
Humanities	13.62	4.50	B/G	4.09	1.00	4.095		
Science	13.40	4.79	W/G	7370.80	345.00	21.365	0.19	0.66

*Significant at 0.05 level of confidence

The table II reveals that the obtained 'F' value was 0.19to be significant at 0.05 level of degree of freedom 346, the required critical value was 3.86 Hence, observed 'F' value (0.19) was found as less than the

table value (3.86),it was inferred that there was significant difference between the humanities and science department women students.

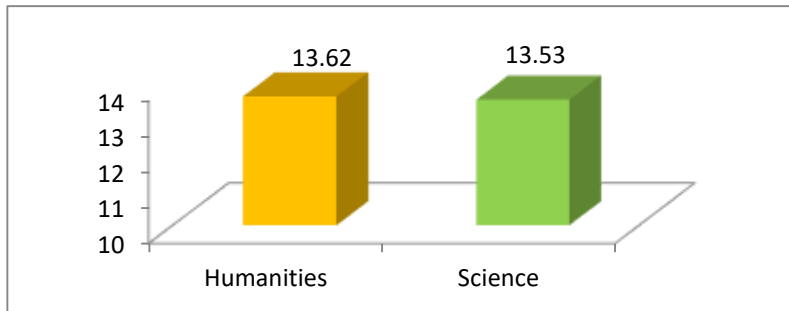**FIGURE II showing fat weight between humanities and science students**

TABLE –III Analysis of variance on lean body weight between humanities and science students

Groups	Mean	S.D	Sources	Sum of square	df	Mean square	F-ratio	Sig
Humanities	44.80	12.52	B/G	441.98	1.00	441.98	3.28	0.71
Science	42.50	10.09	W/G	46482.72	345.00	134.73		

*Significant at 0.05 level

The table 4.2.3 reveals that the obtained 'F' value was 3.28 to be significant at 0.05 level of degree of freedom 346, the required critical value was 3.86 Hence, observed 'F' value (3.28) was found as less than the table value (3.86),it was inferred that there was significant difference between the humanities and science department women students.

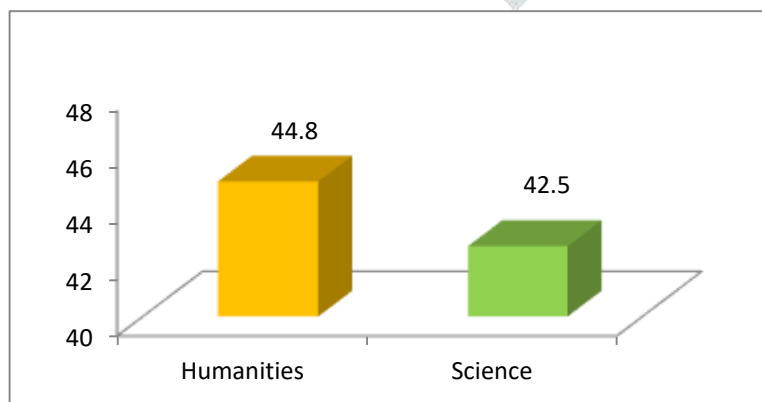**FIGURE-III showing lean body weight between humanities and science students**

TABLE –IV Analysis of variance on body mass index between humanities and science students

Groups	Mean	S.D	Sources	Sum of square	df	Mean square	F-ratio	Sig
Humanities	22.03	3.96	B/G	42.73	1.00	42.731	2.64	0.10
Science	21.32	4.08	W/G	5566.91	345.00	16.136		

*Significant at 0.05 level

The table 4.2.4 reveals that the obtained 'F' value was 2.64 to be significant at 0.05 level of degree of freedom 346, the required critical value was 3.86 Hence, observed 'F' value (2.64) was found as less than the table value (3.86),it was inferred that there was significant difference between the humanities and science department women students.

FIGURE IV showing body mass index between humanities and science students
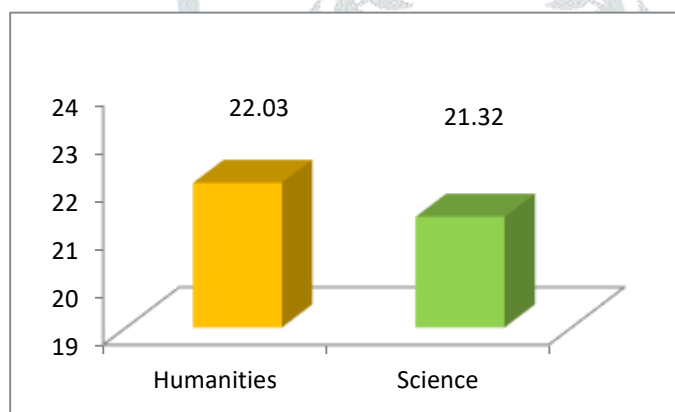
Discussion on Findings

The present study was to find out the impact of body composition on women students in Bharathiar University. The findings of the present study had similarity with the findings of the investigations referred in this study. **D'Angelo et al., (2010)** conducted a study on relationships between physical exercise practice, dietary behavior and body composition in female university students. **Ko *et al.,* (2007)**conducted a study onthe comparison in daily intake of nutrients, dietary habits and body composition of female college students by body mass. **Gonçalves *et al*., (2010)** conducted a study on body composition in females with 21-hydroxylase deficiency: comparison of anthropometric methods and bioelectric impede. **Turner *et al*., (2010)** conducted a study on Body Mass Index and spontaneous miscarriage.**Dancause et al., (2009)** conducted a study on relationships between body size and percent body fat among Melanesians in Vanuatu.**Sood*et al*., (2007)**conducted a study on BMI and Body Fat Percent: Affluent Adolescent Girls in Bangalore City. In

testing the significance of mean difference on body composition of Humanities and Science department women students it was observed that 'F' ratio were found to be statically insignificant for percent body fat, fat weight, lean body weight, body mass index variables.

Conclusions

Based on the results the following conclusions were drawn

1. The percent body fat does not have significant difference between the humanities and science department students.

2. The fat weight does not have significant difference between the humanities and science department students.

3. The lean body weight does not have significant difference between the humanities and science department students.

4. The body mass index does not have significant difference between the humanities and science department students.

References

1. E D'Angelo , A Di Blasio, F Di Donato, S Di Gregorio, D Di Renzo, P Ripari(2010).Relationships between physical exercise practice, dietary behavior and body Composition in female university students. Department of Human Movement Sciences, Faculty of Motor Sciences Education, d'Annunzio University, Chieti, Italy.J Sports Med Phys Fitness Sep;50(3):311-7.

2. Ko MS(2007), The comparison in daily intake of nutrients, dietary habits and body composition of fe male college students by body mass. Department of Bio Science, Silla University Korea Food & Drug Administration 194 Togilro, Eunpyeong, Seoul 122-704, Korea.Nutr Res Pract;1(2):131-42.doi: 10.4162/nrp.2007.1.2.131. Epub 2007 Jun 30.

3. Ezequiel Moreira Gonçalves 1, Sofia Helena Valente de Lemos-Marini, MaricildaPalandi de Mello, Alexandre Duarte Baldin, Wellington Roberto Gomes Carvalho, Edson Santos Farias, Gil Guerra-Júnior (2010)Body composition in females with 21-hydroxylase deficiency: comparison of anthropometric methods and bioelectric impeda. Laboratório de CrescimentoeComposição Corporal, Ciped, FCM, Unicamp, Campinas, SP, Brasil. Arquivosbrasileiros de endocrinologia e metabologia.Arq Bras Endocrinol Metabol Mar;54(3):274-81doi: 10.1590/s0004-27302010000300005

4. Michael J Turner 1, Chro Fattah, Norah O'Connor, Nadine Farah, Mairead Kennelly, Bernard Stuart (2010) Body Mass Index and spontaneous miscarriage. UCD Centre for Human Reproduction, Coombe Women and Infants University Hospital, Dublin 8, Ireland Eur J ObstetGynecolReprod Biol Aug;151(2):168-70.doi: 10.1016/j.ejogrb.2010.04.021. Epub 2010 May 21.

5. Sood*et al*., (2007)BMI and Body Fat Percent: Affluent Adolescent Girls in Bangalore City. Department of Food and Nutrition, Lady Irwin College (University of Delhi), Sikandra Road, New Delhi 110 001, India and Division of Nutrition, Institute of Population Health and Clinical Research, St. Johns Medical College, Bangalore, Karnataka, India.

6. Dancause et al., (2009)Predicting fat percent by skin folds in racial groups: Durnin and Women sley revisited. New York Obesity Nutrition Research Center, St. Luke's-Roosevelt Hospital, Columbia University, New York, NY, USA. lance. Davidson @utah.edu.

7. A S Jackson, M L Pollock (1978)Generalized equations for predicting body density of men Br J Nutr Nov;40(3):497-504.doi: 10.1079/bjn19780152.

8. A S Jackson, M L Pollock, A Ward (1980) Generalized equations for predicting body density of women Med Sci Sports Exerc1980;12(3):175-81.

9. Wilmore, J. H., Buskirk, E. R., DiGirolamo, M., & Lohman, T. G. (1986). Body composition: A round table. The Physician and Sportsmedicine, 14(3), 144-162.Guide to Skinfold Calipers.