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Sukhdeep Rani
Ph.D. Scholar, Department of
Physical Education, Punjabi
University, Patiala, Punjab,
India

Dr. Jasmel Kaur
Retd. Associate Professor, PGS
Govt. College of Physical
Education Patiala, Punjab,
India

Assessment of the selected physiological variables between working and non-working females in Punjab

Sukhdeep Rani and Dr. Jasmel Kaur

Abstract
The purpose of the present study was to investigate the significant difference on visceral fat, body fat percentage, BMI and skeletal muscle percentage (sugar level) between working and non-working females of Punjab. Total 1200 working and non-working females was selected from Punjab state. Further these 1200 working and non-working females were divided into two groups. Each groups was consists of 600 working and 600 non-working females. The age of subjects was between 40 to 60 years. These variables were measured with the help of Omron body composition monitor HBF212 and random plasma glucose (RPG). All values of the obesity variables were expressed as mean and standard deviation. Unpaired-t Test was applied and level of significance set at 0.05. It was found that significant difference on selected variables of working and non-working females.

Keywords: visceral fat, body fat percentage, BMI, skeletal muscle percentage etc.

Introduction
The women of modern days are busy in her day to day routine work. Scientific instruments and machineries have helped our daily life with easy and comfort. Much technological advancement is intended to eliminate physical exertion from everyday activities. Research findings in the last few years have shown that physical inactivity and negative lifestyle habits are a serious threat to the health of the nation. If an active life style is to be continued in the later years and a relatively high level of physical and physiological functioning is retained as compared to the physically inactive, one has to do some physical activity to be protected from the dangerous diseases like obesity, cardio vascular disease, high blood pressure and diabetics. The increasing prevalence of overweight and obesity is a critical public health problem for women of childbearing age. Obesity has been associated with both short and long-term health effects for women as well as for their offspring. Existing research supports a link between obesity and conditions that impair a women's ability to conceive and increase her risk for an adverse pregnancy outcome. Furthermore, this chronic condition has been linked to the development of diabetes and cardiovascular disease later in life. Clinical decision making and public health policy and education are driven in part by the prevalence of the condition in the general population. There are various types of diseases and health problem which are suffered by humans. But most of them are suffering from obesity and diabetes in these days. In recent years, the escalating worldwide prevalence of obesity is considered as one of the most serious issues. This is because obesity is significantly associated with diabetes, heart disease, cancer, high blood pressure, and high cholester1ol.

1.2 Review of literature
Garg and Dutta (2019) conducted the study between January 2015 and December 2016 and included 60 participants who were selected using the convenient sampling technique. Newly diagnosed patients with type 2 diabetes mellitus and BMI less than 18.5 kg/m^2 were considered for the study. Chi square test and Independent student *t* test were used for finding the statistically significant difference in proportions and between means, respectively; Pearson correlation coefficient was estimated for finding the linear association between two continuous variables.

Corresponding Author:
Sukhdeep Rani
Ph.D. Scholar, Department of
Physical Education, Punjabi
University, Patiala, Punjab,
India

Results: No statistically significant difference was observed between the two groups in terms of age, waist-hip ratio, and BMI. Higher amount of fat mass and percentage were observed among the patients with diabetes as compared to that of the control group (*P* value < 0.05). However, there was no statistically significant difference between the underweight and the control group patients (*P* value > 0.05). A significant positive correlation was observed between HbA1c values and body fat mass values (*P* value < 0.05). Conclusion: Underweight type 2 diabetic patients were found to have high body fat mass as compared to healthy controls and the HbA1C values of the study participants were found to be positively correlated with fat mass.

1.3 Purpose of the Study
The result of the study may convey the quality of being important and the influence of the study on the mass of the society such as sports scientists, physical education teachers, players and coaches. Purpose of the study may be helpful to investigate the significant difference on visceral fat percentage, BMI and skeletal muscle percentage (sugar level) between working and non-working females of Punjab.

2. Research objectives
1. To observe the significance difference on visceral fat between working and non-working females.
2. To evaluate the significance difference on body fat percentage between working and non-working females.
3. To measure the significance difference on BMI of working and non-working females.
4. To measure the significance difference on skeletal muscle percentage of working and non-working females.

3. Methods and materials
The study was descriptive. The criterion measures adopted for this study were visceral fat, body fat percentage, BMI and skeletal muscle percentage. The data collection tools used in the study were Omron body composition monitor HBF212 and self-made questionnaire for blood glucose level. Total 1200 working and non-working females was selected from Punjab state. Further these 1200 working and non-working females were divided into two groups. Each groups was consists of 600 working and 600 non-working females. The age of subjects was between 40 to 60years.

Variables: For this research following variables was selected:
- Visceral fat
- Body fat percentage
- BMI
- Skeletal Muscle percent

4. Results
The purpose of the study was to compare the significant difference on visceral fat, body fat percentage, BMI and skeletal muscle percentage (sugar level) between working and non-working females of Punjab. The statistical analyses of the data were collected on 1200 subjects. Each groups was consists of 600 working and 600 non-working females..

Table 1: Comparison between Working and nonworking females with Regard to visceral fat

Groups	Mean	Std. deviation	Difference between mean	Standard error of difference	't' Ratio	P value
Working females	12.10	1.971	-0.2254	.0.116	1.941*	.004 <0.05
Nonworking females	12.33	2.048				

* Significant at.05 level t=1.645

The table no. 4.1 statistically depict that the calculated t value 1.941 for visceral fat percentage of working and nonworking females was greater than table value that is 1.645. The mean of working females 12.10 and nonworking females mean 12.23. Hence, the values of table no. 4.1 show that, there was significant difference between working and nonworking females on visceral fat percentage. The results of table no 4.1 was also illustrated in figure no. 4.1
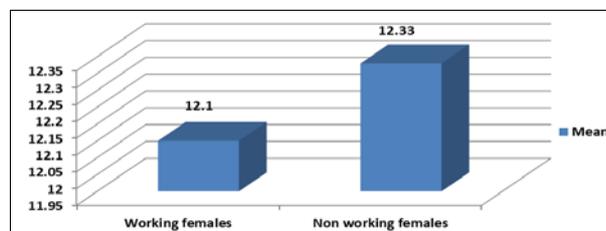

Fig 1: Comparison of Mean values for working and nonworking females of visceral fat percentage

Table 2: Comparison between Working and nonworking females with view to body fat percentage

Groups	Mean	Std. deviation	Difference between mean	Standard error of difference	't' Ratio	P value
Working females	31.24	2.71	-3.15	.276	11.41*	.000 <0.05
Nonworking females	34.40	6.20				

* Significant at.05 level t=1.645

It was observed from the table – 4.2 that the body fat percentage has shown significant difference between working and nonworking females means as obtained 't' ratio 11.41 was above than the tabulated value 1.645 required. The p value of working and nonworking females was.000 < 0.05 below than 0.05 level of significance. Also the table – 4.2 findings was presented in figure – 4.2.
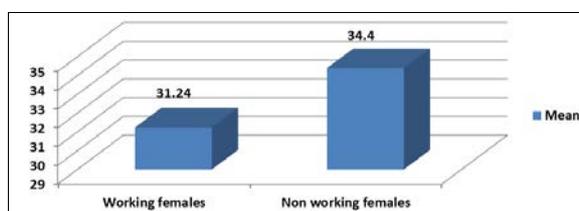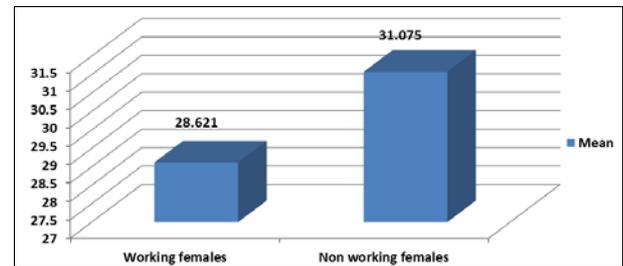

Fig 2: Comparison of Mean values for working and nonworking females of body fat percentage

Table 3: Comparison Between Working and nonworking females with Regard to BMI

Groups	Mean	Std. deviation	Difference between mean	Standard error of difference	't' Ratio	P value
Working females	28.621	3.77	-2.453	0.229	10.70	.000 <0.05
Nonworking females	31.075	4.156				

* Significant
at.05 level t=1.645

The results of working and nonworking females mean, std, and t values on BMI was given in table - 4.3. This table found that the working females mean of BMI 28.621 and nonworking females mean 31.075. Further the table reveals that the t value 10.70 for BMI in females was greater than table value that is 1.645 also the p value of working and nonworking females was.000 < 0.05 below than 0.05 at 0.05 level of significance. Therefore the values of table – 4.3 confirmed that, there was significant difference between working and nonworking females. The result of table - 4.3 was also illustrated in figure - 4.3.

Fig 3: Comparison of Mean values for working and nonworking females of BMI

Table 4: Comparison between Working and non-working females with regard to Skeletal Muscle Percentage

Groups	Mean	Std. deviation	Difference between mean	Standard error of difference	't' Ratio	P value
Working females	27.67	2.808	2.365	.180	13.139*	.000 <0.05
Nonworking females	25.31	3.399				

* Significant at.05 level t=1.645

It was pragmatic the table – 4.4 that the Skeletal muscle percentage made known significant difference between working and nonworking females means as obtain 't' value 13.139 was higher than the tabulated value 1.645. The p value of working and nonworking females was.000 < 0.05 below than 0.05 level of significance. Also the table – 4.4 findings was presented in figure – 4.4.
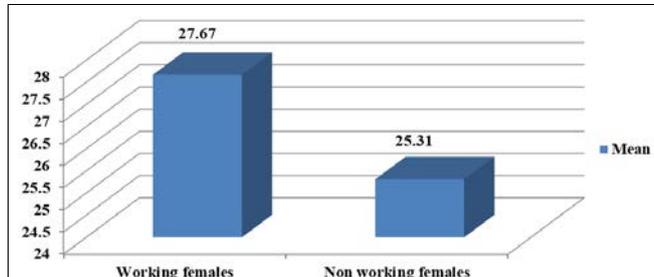
Fig 4: Comparison of Mean values for working and nonworking females of skeletal muscle percentage

5. Conclusion
Based on the statistical analysis of data following findings were drawn by the researcher:
1. The result of present study proved that the visceral fat percentage between nonworking females was more than the working females after applied the't' test. It showed significant difference in working and nonworking females.
2. The findings showed significant difference between working and nonworking females in body fat percentage.
3. The result of the study proved that BMI of working and nonworking females was more in both the group but after apply the 't' test significant difference establish working and nonworking females.
4. The findings of present study revealed that there was significant difference between working and nonworking females in skeletal muscle percentage.

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