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A study of blood sugar of active and inactive type II diabetic patients

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Abstract

The purpose of the present study was to compare blood sugar of active and inactive type II male and female diabetic patients. The present investigation has been conducted on 80 subjects. Out of them forty were active diabetic patients (20 male and 20 female = 40) and forty were inactive diabetic patients (20 male and 20 female = 40) from Patiala district only. The blood sample was taken for checking the fasting blood glucose. Blood Glucose (Fasting Blood Sugar) of the diabetic patient was assessed by using GOD-POD (Glucose Oxidase- Peroxide method). To analysis the computed scores of all groups of Blood Glucose 't' test was applied. Results of the study explicated statistically that there was significant difference in Blood Glucose (fasting Blood Sugar) of active male and inactive male type II diabetic patients and significance difference between active female and inactive female. However, insignificant difference was found in blood glucose (Fasting Blood Sugar) of active male and active female type II diabetic patients.

Keywords: Diabetes, active, inactive, fasting blood sugar, male, female

1. Introduction

Diabetes Mellitus is a pandemic that constitutes a major public health problem worldwide, both by the number of people affected and by the socioeconomic implications presented by the management and treatment of the disease and its complications. It is a chronic disease that occurs as a result of high blood glucose for which there is as yet no cure. It is one of the major causes of disease morbidity and mortality in Australia and throughout the world. Although biological factors are important for causes of diabetes however it is important to understand role of behavioral, cultural and lifestyles related factors for self-care and management of diabetes and impact of diabetes on quality of life. In 1985 around 30 million people were affected with diabetes worldwide; over ten years this number increased to 150 million. Diabetes caused 4.6 million deaths in 2011. The World Health Organization (WHO) warned that an estimated 300 million people would be affected by the disease by 2025. In regard to its global prevalence, morbidity and mortality, the rapid increase of diabetes is comparable to the 14th-century plague. An updated estimate for the incidence of diabetes in 2030 is now a staggering 552 million people. Diabetes is ranked in the top 10 leading causes of death in Australia and is listed as the underlying cause of death in almost 3% of all deaths. An estimated 275 Australians develop diabetes every day. According to self-reported data of 2007, around 4.5% of Australians were diagnosed with the disease, almost the twice the number of people diagnosed in 1990. The 2005 Australian Aus Diab Follow-up Study showed that 1.7 million Australians had diabetes and that up to half of the cases of Type II diabetes remained undiagnosed. It is estimated that by 2025 about 3 million Australians will have Type II diabetes, with an increase to 3.3 million by 2031.

1.1 Blood Glucose (Fasting Blood Glucose)

The concentration of glucose in the blood is termed as blood glucose concentration. It is approximately 90 mg. in each 100 ml of blood. This level of concentration is regulated by the liver, insulin production by the pancreas, adrenal glands and secretion of glucagon by the pancreas and by the phenomenon called gluconeogenesis.

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2. Methods and materials

2.1 Subjects

Eighty subjects have been recruited for the study. 20 active male, 20 inactive male and 20 active female and 20 inactive female were recruited as subjects. After that the researcher will take the blood sample of the subjects. These subjects will be exposing to selected variable:

1. Fasting Blood Sugar (FBS)

2.2 Tool Used

1. Erba Chem – 5 V₂ Plus Analyzer
2. Incubator
3. Centrifuge Machine
4. Needle Cutter
5. Test Tubes (Ria vials)
6. Disposable Syringes
7. Cotton
8. Spirit
9. Test tube Stands
10. Distilled water
11. Hypochlorite Solution (HCL)
12. Tourniquet
13. Auto Pipettes
14. Micro Tips

2.3 Statistical Analysis

In order to find out the “A study of blood glucose of active and inactive type II diabetic patients” after collecting the data unpaired t- test was applied. Where ‘t’-ratio found significant. The level of significance to test the hypothesis was set at 0.05.

3. Results and Discussion

The result of the study is presented in the following Tables.

Table 1: Comparison of fasting blood sugar of active male and inactive male type11 diabetic patients

Group	N	Mean	SD	t value
Active male	20	170.75	55.00	3.47*
Inactive male	20	120.10	35.15	

$t_{0.05} (38) = 2.02$

The table & figure 1 reveals that the mean of fasting blood sugar of active male and inactive male of type11 diabetic patients were recorded as 170.75 & 120.10 whereas the standard deviation was 55.00 & 35.15 respectively. The calculated t- value for active male and inactive male of type 11 diabetic patients was 3.47*, which is greater than the tabulated t- value (2.02) at 0.05 level of significance. So, it implies that there was significant difference found between active male and inactive male of type 11 diabetic patients.

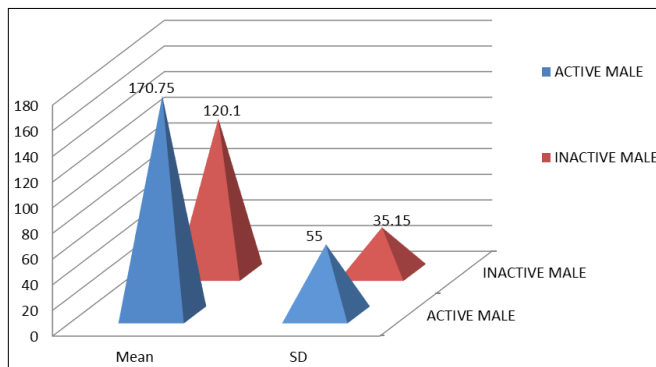


Fig 1: Comparison of fasting blood sugar of active male and inactive male type11 diabetic patients

Table 2: Comparison of fasting blood sugar of active female and inactive female type11 diabetic patients

Group	N	Mean	SD	t value
Active female	20	122.65	49.48	2.12*
Inactive female	20	157.65	54.50	

$t_{0.05} (38) = 2.02$

The table & figure 2 reveals that the mean of fasting blood sugar of active female and inactive female of type11 diabetic patients were recorded as 122.65 & 157.65 whereas the standard deviation was 49.48 & 54.50 respectively. The calculated t- value for active female and inactive female of type 11 diabetic patients was 2.12, which is greater than the tabulated t- value (2.02) at 0.05 level of significance. So, it implies that there was significant difference found between active female and inactive female of type 11 diabetic patients.

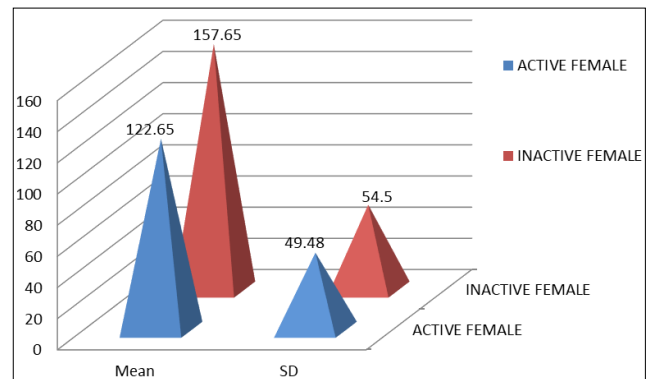


Fig 2: Comparison of fasting blood sugar of active female and inactive female type11 diabetic patients

Table 3. Comparison of fasting blood sugar of active male and active female type11 diabetic patients

Group	N	Mean	SD	t value
Active male	20	120.10	35.15	0.18
Active female	20	122.65	49.48	

$t_{0.05} (38) = 2.02$

The table & figure 3 reveals that the mean of fasting blood sugar of active male and active female of type11 diabetic patients were recorded as 120.10 & 122.65 whereas the standard deviation was 35.15 & 49.48 respectively. The calculated t- value for active male and active female of type 11 diabetic patients was 0.18, which is lesser than the tabulated t- value (2.02) at 0.05 level of significance. So, it implies that there was no significant difference found between active male and active female of typeII diabetic patients.

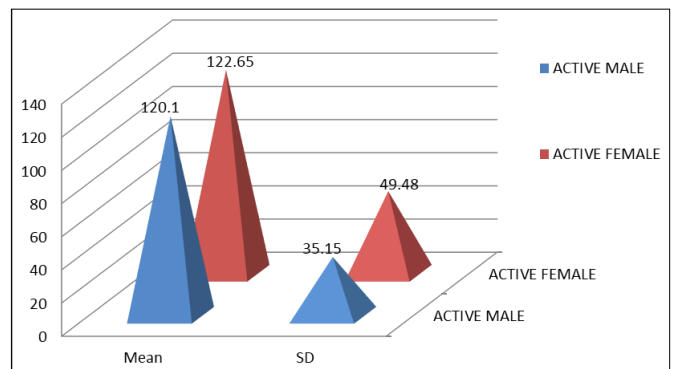


Fig 3: Comparison of fasting blood sugar of active male and active female type11 diabetic patients

4. Conclusion

The results powerfully prove that, significant differences were observed between active male and inactive male type II diabetic patients and active female and inactive female of their Blood Glucose (Fasting Blood Sugar) and Insignificant differences were found between active male and inactive female type II diabetic patients of their blood glucose (Fasting Blood Sugar).

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