

EFFECT OF SIX WEEKS THERAPEUTIC EXERCISES TRAINING ON CHOLESTEROL LEVEL & DIASTOLIC BLOOD PRESSURE AMONG TYPE II DIABETIC PATIENTS

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The focus of this investigation was to find out the effect of six weeks therapeutic training on cholesterol level & diastolic blood pressure among type-II diabetes patients. Thirty male diabetic patients (15 control group + 15 experimental group) were selected for this study from two districts (Fazlika and Patiala) of Punjab state. The age of the subjects were ranged between 45 to 55 years. For the purpose of this study selected physiological variables were selected, there were cholesterol and diastolic blood pressure. Serum cholesterol was measured by "Erba Chem-5 V2 Plus" and Diastolic blood pressure was measured by "Sphygmomanometer, Stethoscope, and digital equipment. Paired t-test was employed to investigate the effect of six weeks therapeutic training on cholesterol level and diastolic blood pressure. Findings showed that there was significant effect of six weeks therapeutic training on selected physiological variable serum cholesterol (p =.043) and diastolic blood pressure (p =.012) among type-II diabetics patients. The study concludes that therapeutic exercises training plan significantly contribute to improve the level of selected physiological variables (serum cholesterol and diastolic blood pressure) among type-II diabetes patients.

Keywords: Diabetes, Serum Cholesterol, Diastolic blood pressure, Therapeutic Exercises.

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Introduction

Physiology is among greatest common ranges of study within the domain of physical activity [1]. Fitness and performance are the two areas of research that have dominated physiology. Specialists in this field discriminates the conditions fully examine and recognize human performance [2]. The principles of physiology can be used to progress and sustain both health-related fitness and motor-skill related fitness. Physiologists are doing research on the active human body and associated components which can contribute to improve the human performance. They are trying to develop the physiological capabilities of the players to manage the pressure of rigid training [3].

Diabetes mellitus is a constant sickness of complement failure defined through improved degree of blood glucose and its expulsion within the pee off and man or woman that upsets several organ structures of individual [4]. Diabetes mellitus is one of the maximums broadly recognized endocrine problems. Its miles a disease of failure of sugar, Protein and fats due to ideal or relative loss of insulin emission and with instable levels of insulin competition [5]. Therapeutic exercises are the systematic and planned act of body activities, events which objectives to enhance physical fitness. Exercise is described as "Interest that is achieved or skillful to broaden a specific function or skill to broaden and keep bodily fitness [6]. Therapeutic exercises are specific exercises meant for modifying unique difficulties. Therapeutic exercises combine using more than one parameter, such as balance, electricity and range of motion, for a purposeful interest. Examples consist of lifting stations, closed dynamic cable activities, hand get-together activities, transmissions: chair to bed, lying to sitting, throwing, catching, swinging arm, forward bending, backward bending, side to side bending [7].

The study was to find out the effect of six weeks therapeutic training on blood glucose level & systolic blood pressure among type-II diabetes patients. Thirty male diabetes patients (15 control group + 15 experimental group) were selected for this study from two districts (Fazlika and Patiala) of Punjab state. The age of the subjects was ranged between 45 to 55 years. Selected physiological variables: blood glucose level was measured by "Erba Chem-5 V2 Plus" and systolic blood pressure

Was measured by "Sphygmomanometer, Stethoscope, digital equipment". Paired t-test was employed to investigate the effect of six weeks therapeutic training on blood glucose level & systolic blood pressure among type-II diabetes patients. Results findings showed that there was significant effect of six weeks therapeutic training on blood glucose level variable ($p = .026$) and systolic blood pressure ($p = .012$) among type-II diabetes patients. The study concludes that therapeutic exercises training plan can significantly contribute to decrease the level of blood glucose level & systolic blood pressure among type-II diabetes patients [8].

Cholesterol is the maximum she occurrence of the strong correlation among high levels of cholesterol within the blood and the prevalence of human cardiac diseases. Cholesterol may be very critical in particle in many beasts, consisting of human beings. A small fraction of the cholesterol made there is incorporated into the membrane of hepatocytes, but maximum of its exported in one among three bureaucracies: bile acids, biliary cholesterol or cholesterol esters. The three forms of *Idl* cholesterol exported from the liver is, a fluid saved in the sore bladder and defecated into the small intestine aid in the breakdown of fat encompassing meals [9].

Blood stress is the pressure or force which the blood applies at the partitions of the blood vessels. Circulatory of blood has outstanding force; that blood put on upon the partitions of the veins or assemblages of the heart [10].

Aim of Study

The aim of the present study was to find out the effect of six weeks therapeutic exercises training on cholesterol level & diastolic blood pressure among type-II diabetic patients. It was hypothesized that there will be no significant effect of six weeks therapeutic exercises training on cholesterol level & diastolic blood pressure among type-II diabetic patients.

Material and Methods

The study was conducted on thirty male (15 control group + 15 experimental group) type-II diabetic patients from two districts of Punjab (Patiala and Fazlika) (Figure-1). The age of the subjects were ranged from 45 to 55 years of age group. Samples

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Were selected by purposive sampling technique. Subjects were divided into two groups named as control group and experimental group respectively.

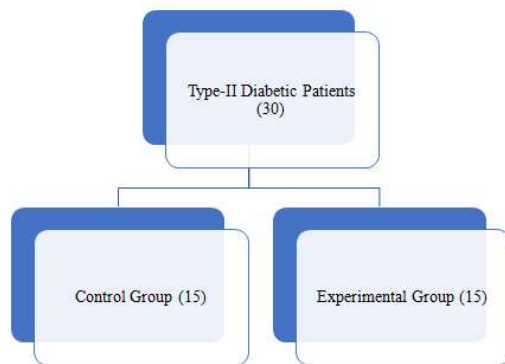


Figure 1: Description of selection of subjects.

Procedure

All the participants were informed in details about research protocol and the basic characteristics of the study. No special motivational technique was used to motivate the subjects before data collection. Pre-test of both groups was taken by standardized equipment (Table-1). After pre-test, training was given to experimental group for six weeks and no training was given to control group. After the completion of six weeks, post-test of both groups was taken.

Table No. 1: Description of selected equipment and their measurement units

Variables	Test Analyzer	Unit Of Measurements (Milligrams Per Deciliter)
Serum Cholesterol	Erba Chem- 5 V ₂ plus	mg/dl
Diastolic blood pressure	Sphygmomanometer	Millimeters of mercury

Statistical Technique

In order to find out the effect of six weeks therapeutic exercises training on cholesterol level & diastolic blood pressure among male type-II diabetic patients, descriptive statistics i.e., mean and standard deviation were calculated. Paired t-test was applied with the help of statistical package of social sciences version-23. The level of significance to test the hypothesis was set at 0.05.

Results

Table No. 2: Mean, standard deviation and 't' value of pre and post-test of serum cholesterol

Group Name	Normal Range	Mean	SD	t-value	Sig.
Pre-Control Group		166.47	7.47		
Post-Control Group	130 to 170 mg/dl	165.60	7.55	1.825	.089
Pre-Experimental Group		159.67	5.70		
Post-Experimental Group		164.23	5.95	2.229	.043

† 0.05=2.048

The table no. 2 reveals that the mean and standard deviation values of serum cholesterol level in pre-control, post-control, pre-experimental and post-experimental groups were 166.47 ± 7.47 , 165.60 ± 7.55 , 159.67 ± 5.70 and 164.23 ± 5.95 respectively. It also shows that in case of experimental group, calculated t-value was 2.229 which show that there was a significant effect of six weeks therapeutic exercise training on serum cholesterol variable of Type-II diabetic patients.

Table No. 3: Mean, standard deviation and 't' value of pre and post-test of diastolic blood pressure

Group Name	Normal Range	Mean	SD	t-value	Sig.
Pre-Control Group		90.40	3.22		
Post-Control Group		89.93	3.55	1.388	.187
Pre-Experimental Group	80 to 90 mm Hg	90.33	2.89		
Post-Experimental Group		88.93	2.91	2.881	.012

† 0.05=2.048, df=28

The table no. 3 reveals that the mean and standard deviation values of diastolic blood pressure in pre-control, post-control, pre-experimental and post-experimental groups were 90.40 ± 3.22 , 89.93 ± 3.55 , 90.33 ± 2.89 and 88.93 ± 2.91 respectively. It also shows that in case of experimental group, calculated t-value was 2.91 which shows that there is a significant effect of six weeks therapeutic exercise training program on diastolic blood pressure variable of Type-II diabetic patients.

Discussion

■ Serum Cholesterol Level

The present study was designed to examine the effect of six weeks therapeutic exercises training program on cholesterol level & diastolic blood pressure among male type-II diabetic patients. A total thirty (N=30) male patients between age group of 45 to 55 years from two district in Punjab (Patiala and Fazlika) were selected as subjects.

The results of the study revealed that there was a significant effect of six weeks therapeutic exercises program on serum cholesterol variable in type-II diabetic patients, there was an increase in serum cholesterol level variable in subjects of experimental group. These results of the study confirmed the findings of **Godara and Bishnoi (2013)** who also found that there were significant changes in Total cholesterol (TC) and High-Density Lipoprotein-Cholesterol (HDL-C) [11].

▪ Diastolic Blood Pressure

The results of the study revealed that there was a significant effect of six weeks therapeutic exercises program on diastolic blood pressure variable in type-II diabetic patients, there was an improvement in diastolic blood pressure level variable in subjects of experimental group. These results of the study are confirmed by the findings of **De Sousa et. al (2017)** who also reported that exercises training may help to improve diastolic blood pressure [12].

Conclusion

The results of the study depicts that there exists a positive effect of therapeutic exercises training on male Type-II diabetic patients for their serum cholesterol and diastolic blood pressure level.

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