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# Effect of Yoga Practice on Blood Glucose Level and Resting Heart Rate among Male Diabetic Patients

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**ARTICLE DETAILS**

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**ABSTRACT**

The purpose of the study is to determine the effect of yoga practice on Blood glucose level and resting heart rate among male diabetic patients. Thirty subjects were randomly selected from Thodupuzha, Kerala, who were suffering from diabetes. The age range of subjects varied from 40-45 years. The subjects chosen were divided into two groups. One experimental group and one control group with fifteen subjects in each group (n=15). Experimental group I (YTG=15) underwent yoga practice and Group II acted as a control group (CG=15). The training programme scheduled eight-week yoga practice. The dependent variable of blood sugar was measured by Omni Glucometer and the Resting heart rate was assessed by using radial pulse. The data collected from the two groups before and after the experimental period were statistically examined to find out significant improvement using analysis of covariance (ANCOVA). In these cases, the criterion for statistical significance was set at 0.05 level of confidence (P<0.05). The result of the study shows that Blood glucose level and resting heart rate was decreased due to the effect of eight weeks of yoga practice.

## 1. Introduction

The Vedic Samhitas contain references to ascetics, while ascetic practices are referenced in the Brahmanas (900–500 B.C.E), early commentaries on the Vedas. Several seals discovered at Indus Valley Civilization (3300–1700 B.C.E.) sites in Pakistan depict figures in positions resembling a universal yoga or meditation pose, showing “a form of ritual discipline, suggesting a precursor of yoga”, according to archaeologists. Some connection between the Indus Valley seals and later yoga and meditation practices is speculated (thought) upon by many scholars, though there is no conclusive evidence.

### *Yoga Benefits*

The yoga practice usually makes physical and mental therapy. The ageing process, which is mostly an artificial condition, caused mainly by autointoxication or self-poisoning can be slowed down by practising yoga. It maintains the body clean, increases the flexibility and keeps well lubricated. Significantly, the human body catabolic process of cell deterioration will be reduced. To get the maximum benefits of yoga practising, one has to combine the yoga practices such as asanas, pranayama and meditation. It will help reducing different ailments such as diabetes, digestive disorders, chronic fatigue, arthritis, arteriosclerosis, blood pressure, asthma, varicose veins and heart conditions. Many medical tests have proved the yogi’s abilities to control autonomic or involuntary functions, such as blood pressure, temperature and heartbeats, have become higher than before. Research study shows that the effects of yogic practices on HIV are currently underway with hopeful results. Medical scientists suggest yoga therapy is a successful method to balance the nervous and endocrine systems which directly influence all the body systems and organs. Yoga has an active role in curative and preventive therapy. Yoga has a significant role in maintaining mental peace, increasing concentration powers and relax the state of living and harmony.

Diabetes is an upsetting medical condition affecting different ages and genders of people. Diabetes prevents bringing of glucose from the blood to the cells. This variation is due to either a lack of production of insulin by the pancreas or insensitivity of the cells to react to the insulin percentage. Both cases result in a low level of glucose in the cells and an excess of glucose in the bloodstream. Research study says that high glucose levels in the blood lead to cardiovascular damage and the result is decreased blood flow to all areas of the body. This process leads to decreased blood flow which is responsible for conditions such as kidney failure, diabetes, neuropathy, urinary difficulties and loss of limbs.

There are two forms of diabetes. Type 1, known as insulin-dependent or juvenile diabetes, where almost no insulin is produced and manifests especially in young persons. However, it can also affect adults under 40 years of age, and occasionally older persons. Type 2 diabetes (non-insulin dependent), there is only reduced production of insulin, generally attributed to some degenerative process. It manifests especially in persons above 40 years of age and those who are of overweight.

## 2. Statement of the problem

The purpose of the study was to find out the effect of yoga practice on blood glucose level and resting heart rate among male diabetic patients**.**

## 3. Hypotheses

It was hypothesised that the effect of yoga practice would improve the blood glucose level and resting heart rate among male diabetic patients.

## 4. Significance of the problem

1. The finding of the study may add to the existing knowledge concerning male diabetic patients.
2. The result of the investigation may be helpful for all male diabetic patients.
3. This study may help to formulate a suitable programme to control male diabetic patients' problems.

## 5. Methodology

### *Selection of Subjects*

To achieve the purpose thirty male subjects those who were suffering from diabetes were selected at random from Thodupuzha, Kerala. The age of the subjects varied from 40-45 years. The chosen subjects were divided into two groups. One experimental group and one control group with fifteen subjects in each group (n=15). Experimental group I (YTG=15) underwent yoga practice and Group II acted as a control group (CG=15). The training programme scheduled an eight-week yoga practice.

### *Statistical Techniques*

For pre-test and post-test the subjects were selected randomly, that is,random group design was employed as an experimental design for the study. In which, ten male subjects were taken. This study consisted of one independent variable as yoga practice. The collected data were statistically analysed with ANCOVA. In this case, 0.05 level significance was fixed.

**Selection of Tests and Tools**

| Criterion Variables | Test items | Unit of Measurement |
|---|---|---|
| Blood Glucose | Omni Glucometer | mg/dl |
| Resting heart rate | Radial pulse | In beats/min |

## 6. Analysis and interpretation

The Effect of yoga practice on Blood glucose level variables was analysed separately, and the data is presented below.

**TABLE-I**

**Analysis of covariance on blood glucose of yoga practice and control groups**

| Tests/Groups | YPG | CG | SV | SS | df | MS | F |
|---|---|---|---|---|---|---|---|
| **Adjusted Post-Test Mean** | 91.89 | 106.58 | **B** | 1380.9 | 1 | 1380.9 | **11.06*** |
| | | | **W** | 3371.95 | 27 | 124.89 | |

* Significant at .05 level of confidence

(Blood Glucose level in mg/dl)

(The table value required for 0.05 level of significance with f 1, 28 and 1,27are 4.20 and 4.21 respectively)

The adjusted post-test means of yoga practice group and control group were 91.89 and 106.58, respectively. The obtained F-ratio value was 11.06, which was higher than the table value 4.21 with df 1 and 27 required for significance at the 0.05 level. It indicates that there was a significant difference among the adjusted posttest means of yoga practice group and control group.

Blood glucose levels of pre-, post- and adjusted post-tests means of yoga practice group and control group are graphically represented figure-I

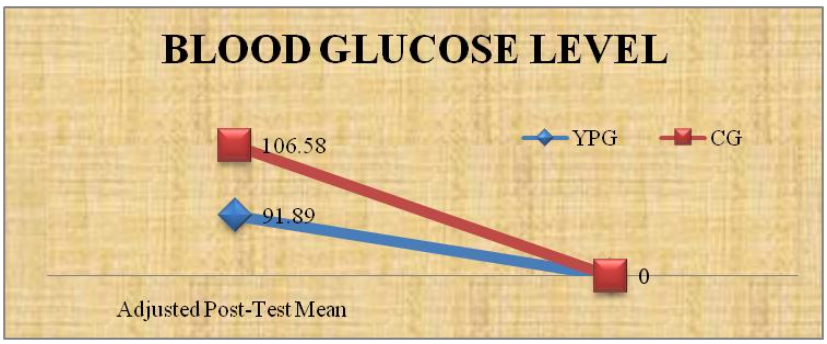


Figure I: Blood glucose level of adjusted post tests means of yoga practice group and control group

The Effect of yoga practice on Blood glucose level variables was analysed separately, and the data is presented below.

**TABLE-II**

**Analysis of covariance on resting heart rate of yoga practice group and control group**

| Tests/Groups | YPG | CG | SV | SS | df | MS | F |
|---|---|---|---|---|---|---|---|
| **Adjusted Post-Test Mean** | 75.90 | 78.18 | **B** | 37.96 | 1 | 37.96 | **2.43** |
| | | | **W** | 421.46 | 27 | 15.61 | |

* Significant at .05 level of confidence

(Resting heart rate in beats/min)
(The table value required for 0.05 level of significance with f 1, 28 and 1,27are 4.20 and 4.21 respectively)

The adjusted post-test means of yoga practice group and control group were 75.90 and 78.18, respectively. The obtained F-ratio value was 2.43, which was less than the table value 4.21 with df 1 and 27 required for significance at the 0.05 level. It indicates that there was no significant difference among the adjusted posttest means of yoga practice group and control group.

Resting heart rate of adjusted post-tests means of yoga practice group and control group are graphically represented in figure-II.

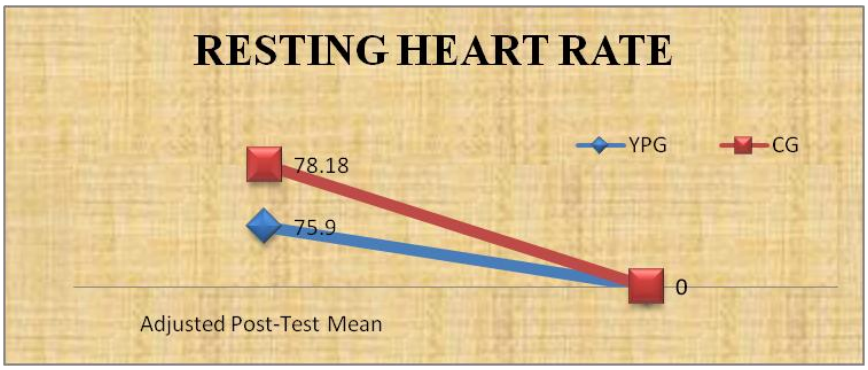


Figure II: Resting heart rate level adjusted post tests means of yoga practice group and control group

## 7. Discussion on findings

The result of the study reveals that there was a significant change in the decrease in glucose level due to the influence of yoga practice among male diabetic patients. Amit Singha., et al., and Yekefallah et al., study supported the present study findings. The yoga training programme induced a positive change in blood glucose level among the Type 2 Diabetes patients. Hence, the first hypothesis was accepted at 0.05 level of confidence. The resting heart rate has no significant change from that due to the influence of yoga practice among male diabetic patients. Raghavendra., et al., study shows that yoga training reduces the rate. Hence the second hypothesis was rejected at 0.05 level of confidence.

## 8. Conclusions

By the findings of the study, the following conclusions were drawn.

1. Blood glucose level was decreased due to the effect of eight weeks of yoga practice.
2. Yoga practice did not change the resting heart rate among male diabetic patients.

## Reference


1. Amit Singha., et al., (2017). Effect of a Residential Integrated Yoga Program on Blood Glucose Levels, Physiological Variables, and Anti-Diabetic Medication Score of Patients with Type 2 Diabetes Mellitus, A Retrospective Study: ***Med Int***, 4, P181–186.
2. Amita S., et al., (2009). Effect of Yoga-Nidra on Blood Glucose Level in Diabetic Patients: ***Indian J Physiol Pharmacol***., 53(1), PP.97-10.
3. Benardot Dan, (2006). ***Advance Sports Nutrition***, Champaign Illinois: Human Kinetics Publishers Inc., PP.3-18.
4. Bhatia, H.R. (1988), ***Abnormal Psychology***: New Delhi: Oxford & IBH Publishing Co. Pvt Ltd., P.52.
5. Crowe, and Crowe A.A, (1977). ***Principles and Methods of Adapted Physical Education and Recreation***: Saint Louis: G.V. Mosby Company, P.131.
6. Guerci, B. et al., (2003). Self-Monitoring of Blood Glucose Significantly Improves Metabolic Control in Patients With Type 2 Diabetes Mellitus: The Auto-Surveillance Intervention Active (Asia) Study", ***Diabetes Metab.,*** 29(6), PP.587-94.
7. Kosuri M. and Sridhar GR., (2009). Yoga practice in diabetes improve physical and psychological outcomes: ***Metab Syndr Relat Disord***, 7(6), PP.515-7.
8. Kuppuswamy, B., (1984). ***Advanced Educational Psychology:*** New Delhi: Sterling Publishers Pvt. Ltd., P. 388.
9. Pramanik T., et al., (2009). Immediate Effect of Slow Pace Bhastrika Pranayama on Blood Pressure and Heart Rate: ***J Altern Complement Med.***, 15(3), PP.293-5.
10. Raghavendra., et al., (2013). Voluntary heart rate reduction following yoga using different strategies: Int J Yoga. 6(1),PP. 26–30.
11. Singh, Malhotra, Tandon OP and Sharam SB, (2005). The Beneficial Effect of Yoga in Diabetes: ***Nepal Med Coll J.,*** 7(2), PP.145-7.
12. Yekefallah et al., (2015). The Effect of Walking and Yoga on Blood Glucose Levels in Type II Diabetes: ***Int. J. Rev. Life. Sci***., 5(9), 1079-1084.


 