

## Research Article

# Effect of Yoga Practices with Varma Therapy on Total Cholesterol and Blood Urea among Aged Type II Diabetic Men

S. Murugesan, R. Elangovan

Department of Yoga, Tamil Nadu Physical Education and Sports University, Chennai, Tamil Nadu, India

\*Corresponding author: S. Murugesan, Department of Yoga, Tamil Nadu Physical Education and Sports University, Chennai-127. Tamil Nadu, India. Tel: +919443121146; Email: murugeshyoga@gmail.com

**Citation:** Murugesan S, Elangovan R (2017) Effect of Yoga Practices with Varma Therapy on Total Cholesterol and Blood Urea among Aged Type II Diabetic Men. Yoga Phys Ther Rehabil: YPTR-144. DOI: 10.29011/ YPTR-144. 000044

**Received Date:** 18 November, 2017; **Accepted Date:** 06 December, 2017; **Published Date:** 13 December, 2017

### Abstract

The present random group experimental study was designed to find out the effect of Yoga Practices with Varma Therapy on Total Cholesterol and Blood Urea among aged type II diabetic men. It was hypothesized that there would be significant difference among aged type II diabetic men practicing Yoga Practices with Varma Therapy than the control group on Total Cholesterol and Blood Urea. To achieve the purpose of the study, thirty (30) aged type II diabetic men residing in Chennai age between 60 to 70 years were selected randomly in two groups, namely experimental group and control group of fifteen (15) subjects each. Training period of this study was twelve weeks. Experimental group underwent Yoga Practices with Varma Therapy for twelve (12) weeks, six days a week for a maximum of one hour in the morning. The control group was kept in active rest. The pre-test and post-test were conducted before and after the training for both the groups. To analyses the data (ANCOVA) test was used. The test of significance was fixed as 0.05 level of confidence. It was concluded that there was significant decreased in experimental group (practicing Yoga Practices with Varma Therapy) than the control group on Total Cholesterol and Blood Urea among aged type II diabetic men.

**Keywords:** Blood urea; Total cholesterol; Varma therapy; Yoga practices

### Introduction

The World Health Organization estimates that 347 million people worldwide suffer from diabetes. This figure is expected to double by 2030. In India, an estimated 67 million people have diabetics, the highest number compared to any other country in the world and 30 million pre-diabetics. In India 50% of the type II diabetes are aged above 60 years. The peak prevalence of NIDDM is 65 - 69 years for men. Research suggests that one in ten in Tamil Nadu is affected by diabetic. Diabetes mellitus is most common chronic disease, lifelong condition that affects the body ability to use the energy found in food. There are two major types of diabetes type 1 and type 2. All the types of diabetes have something in common. All yogic techniques have beneficial effects which compound themselves when practiced in conjunction with each other [1]. Results indicated a significant difference in the changed levels of total cholesterol, triglycerides, LDL, HDL,

and blood glucose between the control and experimental group [2]. A study demonstrates that after practicing qigong for the short period of one-month, noteworthy changes in several blood biochemical parameters were induced [3]. Yoga practices may aid in the prevention and management of diabetes mellitus (DM) [4]. Yoga Practices with Varma Therapy is an effective tool to decrease the Total Cholesterol and Blood Urea among aged Type II Diabetic Men.

### Statement of the Problem

The purpose of the study was to find out the effect of Yoga Practices with Varma Therapy on Total Cholesterol and Blood Urea among aged type II diabetic men.

### Hypothesis

It was hypothesized that there would be significant difference in Experimental group (Yoga Practices with Varma Therapy) than the control group on Total Cholesterol and Blood Urea among aged type II diabetic men.

## Review of Related Literature

Vera, F. M, et al., (2007), conducted study on Biochemical changes after a qigong program: lipids, serum enzymes, urea, and creatinine in healthy subjects. Twenty-nine healthy subjects participated in the study of whom 16 were randomly assigned to the experimental group and 13 to the control. The experimental subjects underwent daily qigong training for one month. Blood samples for the quantification of biochemical parameters (total cholesterol, HDL, LDL, triglycerides, phospholipids, GOT, GPT, GGT, urea, creatinine) were taken before and after the training program. As statistical analysis, ANCOVA was performed. Statistically significant differences were found showing that the experimental group had lower serum levels of GOT (glutamic-oxaloacetic transaminase), GPT (glutamic-pyruvic transaminase), and urea and that there was a trend towards significance in GGT (gamma-glutamyl transferase). This study demonstrates that after practicing qigong for the short period of one-month, noteworthy changes in several blood biochemical parameters were induced. While it is tempting to speculate on the relevance and implications of these biochemical variations, further investigation is needed to elucidate the scope of these findings.

Sh.Dide Rast et al., (2013) conducted the study on the effect of yoga training on lipid profile and blood glucose in type II diabetic females. This work has been conducted to examine the impact of 8 weeks of yoga training on blood glucose and lipid profile in patients with type II diabetes. In this quasi-experimental study, 30 women with type II diabetes and between 45 to 60 years old were randomly selected and divided into two (n= 15) groups of experimental and control. Experimental group were subjected to regular yoga training for 8 weeks (3 sessions per week, 60 minutes per session), while the control group did not have any regular activity. The dependent variables were total cholesterol (TC), triglycerides (TG), LDL (low density lipoprotein), HDL (high density lipoprotein), and blood glucose and were examined before and after exercise training in both groups. Results indicated a significant difference in the changed levels of total cholesterol, triglycerides, LDL, HDL, and blood glucose between the control and experimental groups ( $P \leq 0.05$ ). Based on our results, it can be said that, yoga is a non-drug, non-invasive and cost-effective method to improve the quality of life. In addition, the effects of

yoga on the connection of mind and body and reducing stress hormones have been proved since long times. Therefore, it seems that, patients with type II diabetes, along with fully compliance with their diet, can benefit these exercises in order to control some risk factors associated with diabetes.

## Methodology

It was found that significant decrease in LDL TC, TSH and Stress and increase in HDL and improved self-confidence due to simplified kundalini yoga with Varma Therapy. For the purpose of this random group experimental study, Yoga Practices with Varma Therapy was given for six days per week for twelve weeks. All the subjects were randomly assigned to experimental group and control group each consisted of 15 subjects. Experimental group was involved in Yoga Practices with Varma Therapy practices for twelve (12) weeks; control group was kept in active rest. The yogic practices with Varma Therapy given to experimental group include prayer, Loosening the joining, Suryanamakar, Tadasana trikonasana, Ardhakatichakrasana Paschimottasana, Ustrasana, Ardhamatsyendrasana, Tandasana, Bhujangasana, Salabasana, Dhanurasana, Navasana, Sarvangasana, Savasana, Nadi shudhi, Kapalabati, Japa Meditation and yoga nidra (Relaxation) and Varma points Aamaikalavarmam, Annakalavarmam, Punalvarmam, Moottuvarmam, Kallidaikalavarmam, Nervarmam, adappakalam techniques [5]. Initially pre-test was taken and after the experimental period of twelve weeks, post-test was taken from both the groups. The differences between initial and final Total Cholesterol and Blood Urea were considered as the effect of Yoga Practices with Varma Therapy on selected subjects.

## Results and Discussion

The data pertaining to the variables collected from the two groups before and after the training period were statistically analyzed by using Analysis of Covariance (ANCOVA) to determine the significant difference and tested at 0.05 level of significance.

### Results on Total Cholesterol

The Analysis of Covariance (ANCOVA) on Total Cholesterol Yoga Practices with Varma Therapy and control group was analyzed and are presented in Table-1.

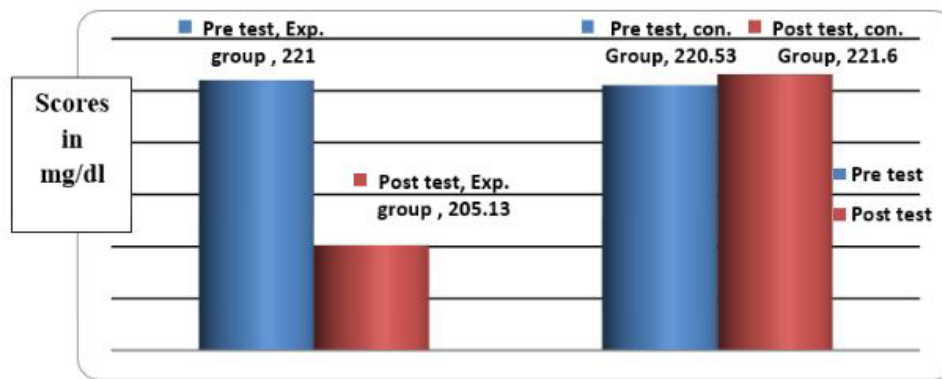
Test	EXP GROUP	CON GROUP	SV	SS	Df	MS	F
Pre-test	221	220.53	Between	1.63	2	1.63	0.06
			Within	653.73	28	23.34	
Post test	205.13	221.6	Between	2033.63	2	1016.81	25.66*
			Within	1109.33	28	39.61	

Adjusted	204.94	221.78	Between	2121.27	2	1060.63	41.27*
			Within	693.79	27	25.69	
*Significant at 0.05 level of confidence (Table F-ratio at 0.05 level of confidence for 2 and 28 (df) =3.31, 2 and 27 (df) =3.32).							

**Table 1:** Computation of Analysis of Covariance of Experimental Group and Control Group on Total Cholesterol (Scores in Mg/Dl).

The obtained F-ratio value for the Total Cholesterol were greater than the table value, it indicates that there was a significant difference among post-test and adjusted post-test means of the Yoga Practices with Varma Therapy group than the control group.

The pre-test, post-test and adjusted post-test mean values of Yoga Practices with Varma Therapy and the control group on Total Cholesterol were graphically presented in Figure 1.



**Figure 1:** Bar Diagram Showing the Mean Difference of Yoga Practices with Varma Therapy and Control Group on Total Cholesterol.

### Results on Blood Urea

The Analysis of Covariance (ANCOVA) on Blood Urea Yoga Practices with Varma Therapy and control group was analyzed and are presented in table-2.

Test	EXP GROUP	CON GROUP	SV	SS	Df	MS	F
Pre-test	24.42	23.73	Between	3.6	2	3.6	0.91
			Within	109.82	28	3.92	
Post test	20.66	24.01	Between	84.33	2	42.16	15.18*
			Within	77.75	28	2.77	
Adjusted	20.44	24.22	Between	103.61	2	51.8	38.14*
			Within	36.67	27	1.35	
*Significant at 0.05 level of confidence (Table F-ratio at 0.05 level of confidence for 2 and 28 (df) =3.31, 2 and 27 (df) =3.32).							

**Table 2:** Computation of Analysis of Covariance of Experimental Group and Control Groups on Blood Urea (Scores in mg/dl).

The obtained F-ratio value for the Blood Urea were greater than the table value, it indicates that there was a significant difference among post-test and adjusted post-test means of the Yoga Practices with Varma Therapy group than the control group.

The pre-test, post-test and adjusted post-test mean values of Yoga Practices with Varma Therapy and the control group on Blood Urea were graphically presented in Figure 2.

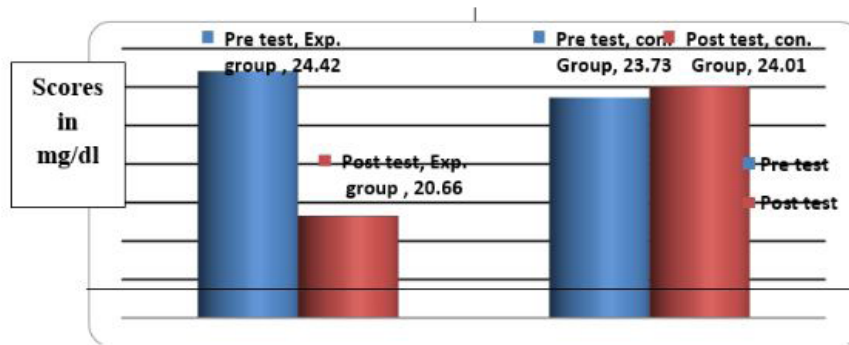


Figure 2: Bar Diagram Showing the Adjusted Post Test Means of Experimental and Control Groups on Blood Urea (Scores in mg/dl).

### Conclusion

It was concluded that there was significant decreased in Yoga Practices with Varma Therapy than the control group on Total Cholesterol and Blood Urea among aged type II diabetic diabetics men.

### References

1. Dr Swamy Shankardevananda (2005) Yogic Management of Asthma and Diabetes. Munger, Yoga Publication Trust 230-240.
2. Sh. Dide Rast, Hojjati Z, Shabani R (2013) The effect of yoga training on lipid profile and blood glucose in type II diabetic females. Annals of Biological Research 4: 128-133.
3. Vera FM, Manzanque JM, Maldonado EF, Gabriel A. Carranque GA, Victor M. Cubero VM, et al. (2007) Biochemical changes after a qigong program: lipids, serum enzymes, urea, and creatinine in healthy subjects. Medical Science Monitor 13: CR560-CR566.
4. Madanmohan, Bhavanani AB, Dayanidy G, Sanjay Z, Basavaraddi IV (2012) Effect of Yoga therapy on Reaction time biochemical parameters and wellness score of pre and popre-andpausal diabetic patients. International journal of Yoga 5: 10-15.
5. Revathi.R, (2014) Effect of simplified kundalini yoga with and without varma therapy on selected Hematological, bio chemical and psychological variables among women suffering with menstrual disorders.
6. Website: www.medscimonit.com, www.wikipedia.org , www.who.com , www.yoga point.com