

VOLUME 10 SPECIAL ISSUE 1 2024

ISSN 2454 – 3055

**Manuscripts under special issue are published
under the theme
"Biological Aspects of Alternative Therapeutic Strategies"**

**Guest Editor: Dr. S. Mohanasundaram
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**INTERNATIONAL
JOURNAL OF
ZOOLOGICAL
INVESTIGATIONS**

*Forum for Biological and Environmental
Sciences*

Published by Saran Publications, India



International Journal of Zoological Investigations

Contents available at Journals Home Page: www.ijzi.net

Editor-in-Chief: Prof. Ajai Kumar Srivastav

Published by: Saran Publications, Gorakhpur, India



ISSN: 2454-3055

Impact of Yogic Practices on HbA1c Among Geriatric Type 2 Diabetic Men

Kishan Rangrao Bhawar^{1*} and Shankar K.²

¹Faculty of Yoga Science and Therapy, Meenakshi Academy of Higher Education and Research (deemed to be University), Chennai 600078, Tamil Nadu, India

²Department of Community Medicine, Meenakshi Academy of Higher Education and Research (deemed to be University), Chennai 600078, Tamil Nadu, India

**Corresponding Author*

Received: 15th February, 2024; **Accepted:** 20th March, 2024; **Published online:** 12th April, 2024

<https://doi.org/10.33745/ijzi.2024.v10ispl1.007>

Abstract: Diabetes is a disease which occurs when blood glucose or blood sugar is too high. When blood glucose level remains high over a long period of time, body's tissues and organs can be seriously damaged. Over time having too much glucose in blood can cause diabetes. The aim of this study was to examine the effects of yoga practices on clinical outcomes in subjects with geriatric Type 2 Diabetic men. In a human being their mind and body is closely interrelated. Mental tensions and problems lead to the psychological problems. Yoga recognized the relations between body and mind. Regular practices of yoga characterized by deep relaxation to the body and slowing down of the breath improving the will power to manage the diabetes with the joy. Type2 diabetes is common for general population and specially in geriatric men. It is estimated that 33 % of Indian population is suffering from Type 2 diabetes. Diabetes is more common in sedentary lifestyle people. The total number of sample size in this study was 70. Based on the information obtained, subjects were divided into two groups. Yoga practices group (35 persons) and control group (35 persons). Subjects were trained with yoga practices, for 4 months (16 weeks). 6 days per week for 60 min per day. Obtained results were analyzed with 't' test. From the results it is concluded that Yogic practices reduced HbA1c in geriatric men.

Keywords: Type 2 Diabetes, Geriatric Men, HbA1c test, Yoga Practices, Blood glucose

Citation: Kishan Rangrao Bhawar and Shankar K.: Impact of yogic practices on HbA1c among geriatric type 2 diabetic men. Intern. J. Zool. Invest. 10(Special Issue 1): 58-62, 2024.

<https://doi.org/10.33745/ijzi.2024.v10ispl1.007>



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Introduction

Diabetes type 2 is often identified as a condition in people who are in their middle years or later in life. According to the findings of the study, guys were at a greater risk for developing diabetes even when both sexes had the same BMI. Because, in contrast to women, men often put on weight

first and foremost in their abdominal regions, where it is more likely to cause health issues (a condition known as "visceral fat"). The metabolic activity of visceral fat makes it far more hazardous to one's health than the activity of subcutaneous fat. In addition, the habits of

Table 1: selected outcomes and their specific aims

Variables	Assessment Tools	Objectives
Biochemical Variables	HbA1c Test, FBS (Fasting Blood Sugar), PPBS (Post Prandial Blood Sugar)	Sensitive measure in Type2 Diabetes.
Physiological Variables.	Heart Rate (HR)BMI	To estimate the impact of yoga practices on Physiological Variables.
Psychological Variables.	Life style, Happiness.	To estimate the impact of yoga practices on psychological variables.

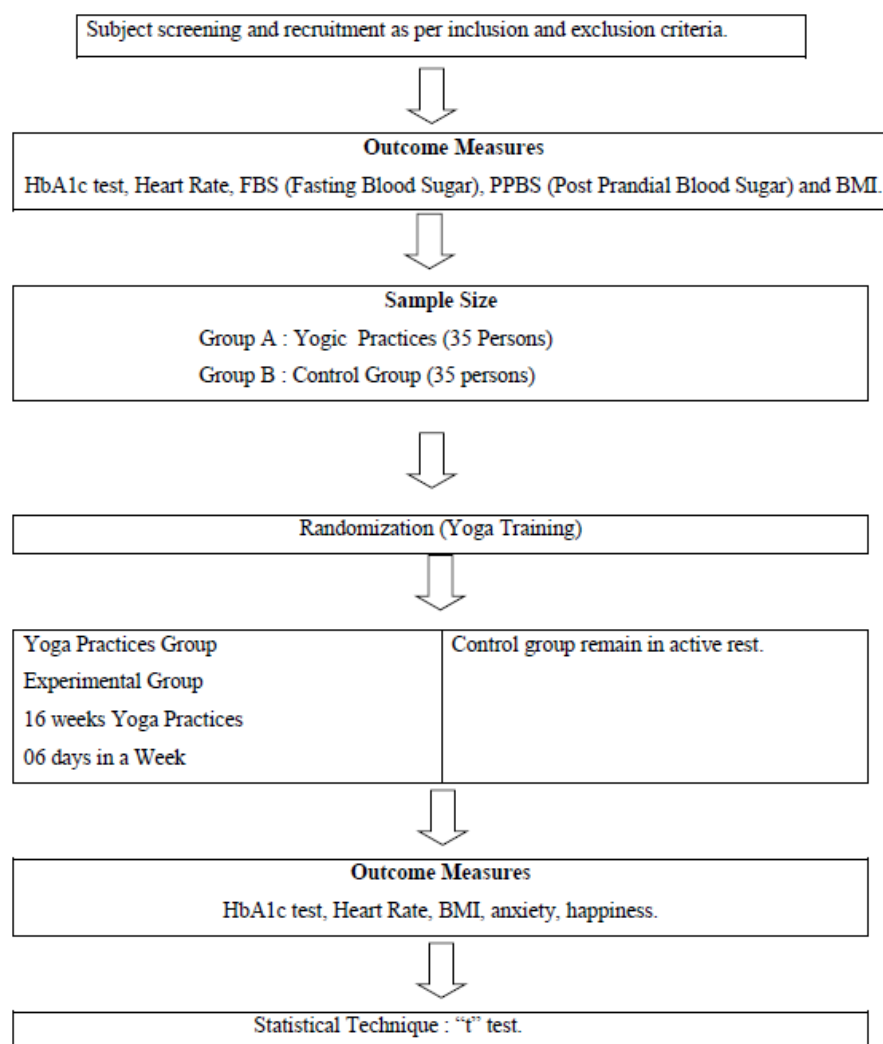


Fig. 1: Flowchart of the study.

smoking and drinking excessive amounts of alcohol are risk factors that might lead to the development of diabetes in males. On the basis of the findings presented in the 8th edition of its

diabetes atlas, the International Diabetes Federation (IDF) has estimated that 425 million people all over the globe are living with type 2 diabetes.

The purpose of this research was to investigate the impact that yoga practices have on clinical, physiological, and psychological outcomes in older men who have type 2 diabetes. The major purpose of this study was to evaluate whether or not engaging in yoga practices may bring about a reduction in blood sugar levels in type 2 diabetics who are elderly. The purpose of this research was to determine whether or not there are (i) any significant variations on chosen group biochemical, physiological, and psychological variables as a result of the influence of yoga practices on HbA1c tests carried out on elderly men who have type 2 diabetes; and (ii) if there will be any significant alterations in chosen hormonal variables among senior type 2 diabetes males as a result of yoga practices.

It is hypothesized that compared to control group training with the yoga practices group would significantly decrease the sugar level in the blood and improve the lifestyle in geriatric type2 diabetes men. The inclusion criteria were – (i) Those diagnosed with Type2 diabetes symptoms, (ii) Geriatric Men with Type2 diabetes (Age group 65 to 80 yrs), (iii) No history of practicing yoga or other exercise, (iv) Assessed suitable for practicing yoga practices based on physical fitness examination, and (v) Living in Nanded city only (Maharashtra State) (Matoshri Vrudhashram, Nerli Road, Nanded). The exclusion criteria were – (i) A history of psychosis, depressed or brain damage persons, (ii) Active clinical surgery or other major clinically disease, (iii) Presence of any tumor, (iv) Blood clotting disorders, (v) Patients on prolonged anti-coagulant drugs, (vi) Persons suffering with high blood pressure, and (vii) Those who do not give consent form.

Materials and Methods

Measuring the impact of yoga therapy or practices on HbA1c among geriatric type2 diabetic men involved and selected for the study. The subjects were old aged men age 65 to 80 years old. All subjects were informed about the aim and nature of the study and their written

consent were obtained prior to data collection. The total number of sample size was 70. Based on the information obtained subjects were divided into two groups. Yoga practices group (35 persons) and control group (35 persons). Subject were given yoga therapy (yoga practices), for 4 months (16 weeks), 6 days per week for 60 min per day. Total 16 weeks duration were included in the yoga practices group. Control group was engaged in active rest. Clinically, biochemical wellbeing were studied at baseline and at the end of the yoga training (Table 1; Fig. 1). The study will help to the geriatric men who are suffering from Type 2 Diabetes and the yoga practices will helpful to decrease the sugar level.

Results and Discussion

Table 2 and Figure 2 present Pre-test and Post-test values of HbA1c before and after the treatment. Table 3 and Figure 3 shows the paired t test calculated from the results obtained from selected subjects.

From the above results it is clear that p value is <0.001. Hence Yogic treatment is highly beneficial to geriatric men as substantiated by Uttio Gupta, et al. 2020. In this study, a good drop in HbA1c was seen in the YBEP group compared to standard care when the intention to treat analysis was used. 44.7% of people in the YBEP group saw their HbA1c drop by at least 0.5%, compared to 37.5% of people in the normal care group. People who went to $\geq 75\%$ of the sessions saw their HbA1c drop by 0.3%, while people who went to <75% of the sessions only saw it drop by 0.1%. In people who had gone to at least 75% of the yoga classes, YBEP showed a clinically relevant HbA1c decrease compared to normal care. The fact that 44.7% of people in the yoga group had a drop in HbA1c of more than 0.5% suggests that yoga can be recommended as an exercise for people who can't do physical activity and so on. Beena RK et al (2013) has also confirmed that a noteworthy drop in glucose, HbA(1c), lipids, cortisol, ferritin, and MDA, as well as a substantial rise in catalase activity after yogic

Table 2: Pre Test and Post Test Values of HbA1c

Group	Pre-Test	Post Test	Mean Diff
Yogic Practices	6.85	5.45	-1.445
Control Group	6.81	6.42	-0.39

Significance level fixed at $p < 0.01$

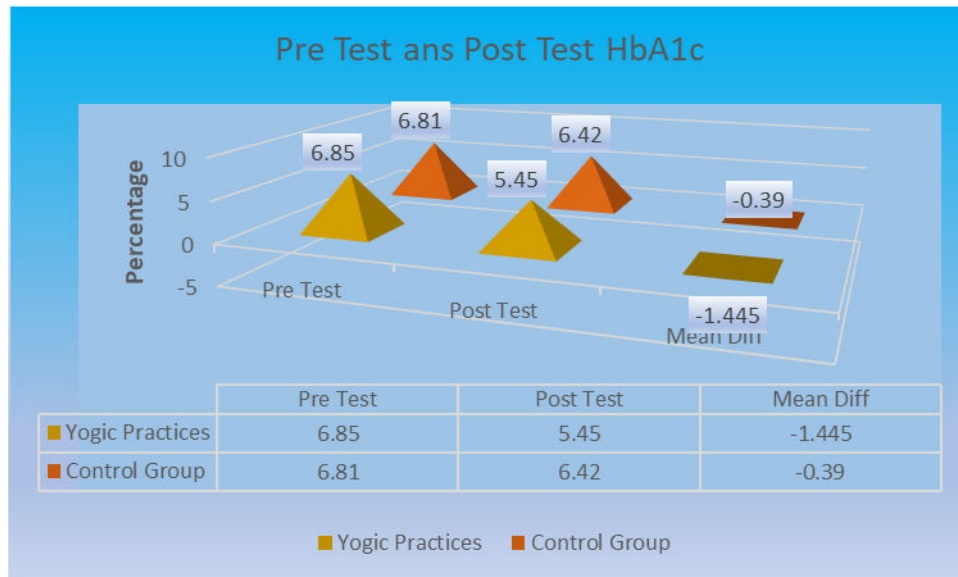


Fig. 2: Pre-test and Post-test HbA1c.

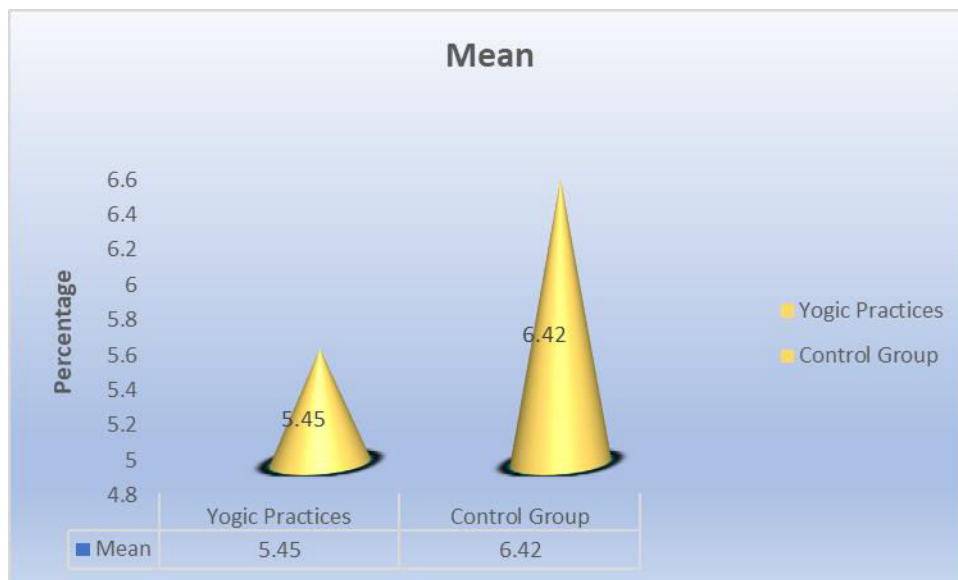


Fig. 3: Statistical significance among control and yoga groups.

Table 3: Paired t Test between Yogic Practices and Control Group

Group	Mean	SD	Paired test	p value
Yogic Practices	5.45	1	5.7	<.001
Control Group	6.42	1		

Significance level fixed at $p < 0.01$

practice, with a statistical significance level of $P < 0.001$.

Conclusion

Yoga has the potential to enhance risk profiles caused by stress in elderly individuals with type 2 diabetes and may provide hope for preventing or delaying diabetic complications. Yogic practice may lead to a notable improvement in geriatric diabetes at all stages of the illness. The significant decrease in HbA1c levels in participants in the yoga group indicates that yoga can be recommended as a form of exercise for individuals who are unable to walk due to factors such as restricted joint movement, unfavorable weather conditions, limited space for walking, cultural or religious restrictions on outdoor physical activity for women, and similar reasons. Participation of subjects with T2DM in yogic practices for 16 weeks resulted in reduced BMI improved well-being and reduced anxiety. Fortreating type2 diabetic among geriatric men,

yogic practices are the potential alternative treatment. Numerous studies have also demonstrated the value of yoga practices for type 2 diabetes men. Indirect evidence of the benefit of yoga practices in type2 diabetes can see in some research. To demonstrate the benefit of yoga practices in type2 diabetic condition, several clinical investigations are required.

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