https://doi.org/ 10.48047/AFJBS.6.5.2024. 9052-9059

African Journal of Biological Sciences

EFFECT OF YOGA THERAPY ONFASTING BLOOD SUGAR AND HEMOGLOBIN AMONG GERIATRIC MEN

V.Srinivasa Rao. Ph.D. Scholar, Faculty of Yoga Sciences and Therapy, Meenakshi Academy of Higher Education and Research (Deemed to be University), No.12, VembuliammanKoil Street, West K.K.Nagar, Chennai-78, Tamil Nadu, India., Email ID :vhfvja@gmail.com

DrS.Murugesan,Professor ,Faculty of Yoga science and Therapy, Meenakshi academy of higher education and research .Email ID:murugeshyoga@gmail.com

Article History
Volume 6, Issue 5, 2024
Received: 15 May 2024
Accepted: 02 Jun 2024
doi: *10.48047/AFJBS.6.5.2024. 9052-9059*

ABSTRACT

Male geriatrics are those who are above 65 and who experience a variety of physiological and cognitive changes as they age. Men are affected by ageing differently than women are, with geriatric men's morbidity and death being the main emphasis. The purpose of this paper is to address the difficulties that older men encounter, such as mental health problems, social isolation, and health-related concerns (Robine et al., 2018; McLaughlin et al., 2012).To make the random group experiment work, 60 older men were asked to take part, 45 were screened, and 30 were chosen at random to be the study's subjects. This is called random group sampling. The people were split into two groups of fifteen each. The experimental group got yoga therapy for 12 weeks, while the control group did nothing but physical rest. Before and after the training, both the experimental and control groups took a pre-test and a post-test. Scores on Fasting Blood Sugar and Hemoglobinwere recorded. An analysis of covariance (ANCOVA) was used to find the groups that were significantly different from each other. In the Experimental Group, yogic activities led to big drops in fasting blood sugar and improvement in Hemoglobin, according to the study. At a 0.05 level of certainty, this means that the theory is true. What they found was that the yogic techniques helped older men lower their fasting blood sugar and improve hemoglobin level.

KEYWORDS: Yogic practices, Geriatric Men, Fasting Blood Sugar and Hemoglobin.

INTRODUCTION

Geriatric people often have limited regenerative abilities and are more susceptible to disease, syndromes, injuries and sickness than younger adults. The organic process of ageing is called senescence, Yogic practices are essential for Geriatric men.Prevalent ailments among the elderly include hearing loss, cataracts, refractive errors, back and neck discomfort, osteoarthritis, chronic obstructive pulmonary disease, diabetes, depression, and dementia.Older age is also marked by the emergence of several intricate health conditions usually referred to as geriatric syndromes.Common health conditions that often affect older individuals include auditory impairment, cataracts, vision problems, musculoskeletal pain in the back and neck, osteoarthritis, chronic obstructive pulmonary disease, diabetes, depression, and dementia. As individuals get older, they often experience the development of complex health disorders known as geriatric syndromes.The purpose of the study was to find out the effect of yoga therapy with on fasting blood sugar and hemoglobin.Diabetes occurs when the body is unable to effectively absorb sugar (glucose) into its cells and use it as energy. This leads to an accumulation of excess sugar in the circulation.Inadequately managed diabetes might result in severe repercussions, inflicting harm upon various organs and tissues inside your body, such as the heart, kidneys, eyes, and nerves.The typical range for blood sugar levels is 70 to 130 mg/dL prior to consuming meals. People who are elderly are more susceptible to a wide range of illnesses and medical issues. According to the World Health Organization, the leading causes of death and disability among the elderly are non-communicable diseases (NCDs), which include diabetes, cancer, COPD, and cardiovascular disease. Older adults often suffer from a variety of chronic pain conditions, including depression, osteoporosis, and arthritis. In addition, as people age, their vulnerability to infectious diseases like influenza and pneumonia may increase due to changes in their immune system and a diminished capacity to fight infections. Reducing the risk of disease and enhancing the overall health and well-being of older persons may be accomplished via changing lifestyle habits, receiving vaccinations, and attending for routine checkups (WHO, 2021).

AIM AND OBJECTIVES:

The aim and objectives of the study was to find out whether there would be any significant difference on selected Physiological variable such as Fasting Blood Sugar and hemoglobindue to yogic practices among Geriatric men.

HYPOTHESIS

It is hypothesized that there would be significant differences between yogic practices group and control group on fasting blood sugar and hemoglobinamong Geriatric men.

DELIMITATIONS

- The study was confined to Geriatric Menonly.
- The age of the subject was ranged from 65 to 70 years only.
- The study was confined to yogic practices as an independent variableonly
- The study was confined to Fasting Blood Sugar and Hemoglobin as dependent variables only.

LIMITATIONS

- The Factors like Socio-Economical status were not taken into consideration.
- The climatic conditions were not considered.
- Factors like Life style habits were not taken into consideration.
- Subjects'day to day activities were not taken into account.
- Diet and Medication followed by subjects was not controlled.

REVIEW OF RELATED LITERATURE

(Mondal et.al 2018) The point of this study was to look into what changes happen in blood sugar and cholesterol levels after 12 weeks of yoga intervention in older people with Type 2 diabetes mellitus (T2DM).Twenty older women with T2DM (ages 55 to 70) were split into two groups: the yoga intervention group (YIG; n = 10, age 64.70 ± 4.03, BMI 24.26 ± 3.40) and the control group (CG; n = 10, age 64.40 ± 4.79, BMI 24.28 ± 2.36). YIG did yoga (Asanas, Kriyas, and Pranayamas) three times a week for 12 weeks, while CG went about their normal daily lives. People in both groups had their standing height, body weight, BMI, blood sugar, and cholesterol makeup checked before and after 6 and 12 weeks of yoga assistance. Fasting plasma glucose, postprandial blood sugar, total cholesterol, triglycerides, low-density lipoprotein, and very low density lipoprotein all went down significantly ($P < 0.01$). On the other hand, high-density lipoprotein levels went up significantly ($P < 0.01$) from their starting point in YIG, but they didn't change much in CG. One could say that yoga practice may be good for older people with T2DM because it may help their blood sugar and cholesterol makeup.

(Corona et.al 2022) Anaemia is the most common haematological problem in older people, and it is linked to worse physical performance. But it's still not clear what part haemoglobin

plays when there is no anaemia. The goal of this study was to find out how haemoglobin levels affect the physical abilities of older Brazilians who do not have anaemia.Both waves of the Saúde, Bem-Estar e Envelhecimento (SABE) study were used in this continuous study. The first wave was in 2010 and the second was from 2015 to 2016. To find out how the amount of haemoglobin affected the Short Physical Performance Battery (SPPB) over time in the 1,023 people who had full data and did not have anaemia in 2010, mixed-effects linear regression was used. During the follow-up, 567 people did not have anaemia.After taking into account factors like age, education level, illnesses, body mass index, and physical laziness, we discovered that the relationship between haemoglobin concentration and SBBP was different for men and women, with a positive interaction (^{2} Hb*female= 0.20, 95% CI 0.04,0.37). When haemoglobin levels are low, women have lower amounts of SPPB than men. But when haemoglobin levels are high, there are no changes in how well men and women do in sports. Also, being older was linked to lower SPPB levels, cardiometabolic diseases, other diseases, and not being active enough. Physical success was linked to education in a good way. Our research shows that older adults in Brazil who did not have anaemia who had higher haemoglobin levels did better in outdoor activities. However, this relationship was different for men and women. This result is important because most doctors and nurses use the World Health Organization's understanding of anaemia in their work. Our study shows that older people' haemoglobin levels are important, even for those who don't have anaemia, and it also shows differences between men and women.

METHODOLOGY

To make the random group experiment work, 60 older men were asked to take part, 45 were screened, and 30 were chosen at random to be the study's subjects. This is called random group sampling. The people were split into two groups of fifteen each. The experimental group got yoga therapy for 12 weeks, while the control group did nothing but physical rest. To find out how well the experimental and control groups did on the tests, scores were taken before and after the training on both and blood. An analysis of covariance (ANCOVA) was used to find the groups that were significantly different from each other.

The practice of yoga techniques like Asana, Pranayama, Meditation, Mudra etc helps to overcome any imbalances and creates harmony in the physical, mental, psychological and spiritual aspects of human personality

RESULTS AND DISCUSSIONS

The results of the study on the selected variables showed that for the Group A, and B.The data pertaining to the variables collected from the two groups before and after the training period were statistically analysed by using Analysis of Co-variance (ANCOVA) to determine the significant difference and tested at 0.05 level of confidence. These are shown in the tables below

RESULTS ON BLOOD SUGAR (FASTING)

TABLE I

ANALYSIS OF CO-VARIANCE OF THE MEANS OF YOGIC PRACTICES GROUP AND CONTROL GROUP ON FASTING BLOOD SUGAR

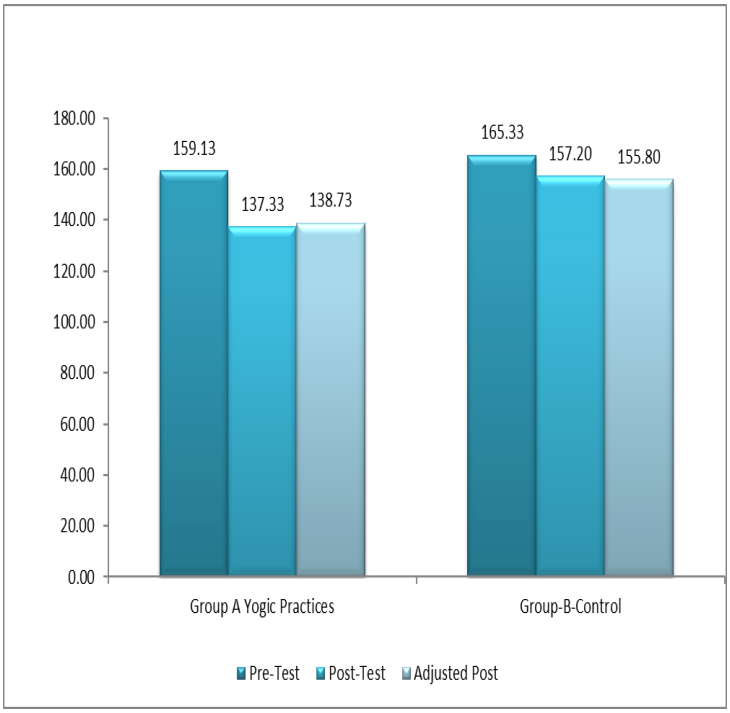
Test	Yogic Practices Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F Ratio
Pre test	131.67	133.87	between	133.87	1	133.87	1.32
			within	2835.07	28	101.25	
Post test	108.33	125.20	between	2133.63	1	2133.63	25.60
			within	2333.73	28	83.35	
Adjusted	108.28	125.25	between	2131.73	1	2131.73	24.73
			within	2327.87	27	86.22	

***Significant at 0.05 level of confidence. (Table F ratio at 0.05 level of confidence for 1 and 28 (df) =4.2, 1 and 27(df) =4.21.**

The obtained F ratio on pre-test scores 1.32 at 0.05 level of confidence. This proved that there was no significant difference between the groups on fasting blood sugar in pre-test and the randomization at the pre-test was equal.The posttest and adjusted post test scores analysis proved that there was significant difference between the groups , as obtained F values 25.60 and 24.73 were greater than the required F value of 4.2 and 4.21 respectively) in line with the study conducted **Mondal et.al 2018.**The pre- test, post- test and adjusted post –test mean values of Yogic Practices group and the Control Group on Fasting Blood Sugar were graphically presented in Figure 1.

Figure – 1

ANALYSIS OF CO-VARIANCE OF THE MEANS OF YOGIC PRACTICES GROUP AND CONTROL GROUP ON FASTING BLOOD SUGAR



***Significant at 0.05 level of confidence. (Table F ratio at 0.05 level of confidence for 1 and 28 (df) =4.2, 1 and 27(df) =4.21.**

RESULTS ON HEMOGLOBIN

The Analysis of Co-variance (ANCOVA) on HaemoglobinOf Yogic Practices Group and Control Group was analysed and presented in Table II.

Table II

ANALYSIS OF CO-VARIANCE OF THE MEANS OF YOGIC PRACTICES GROUP AND CONTROL GROUP ON HEMOGLOBIN

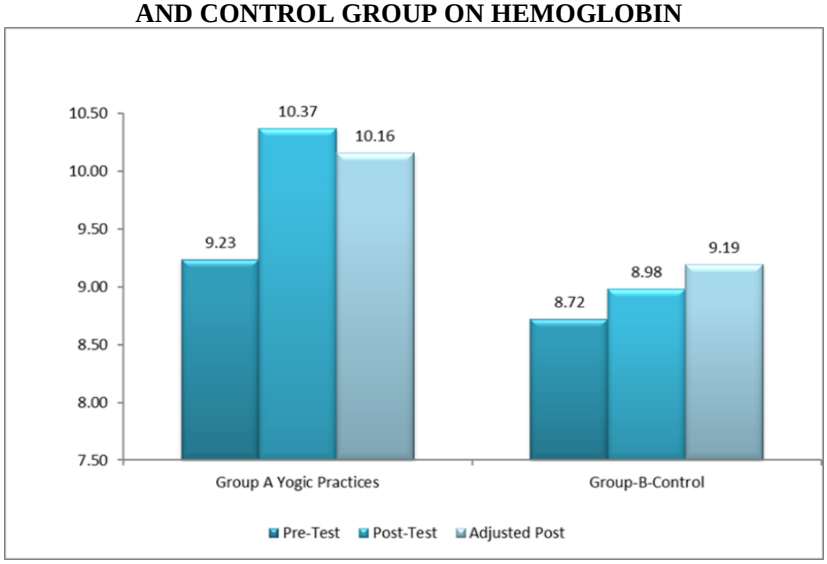
TEST	Experimental Group	Control Group	Source of Variance	Degree of Freedom	Sum of Squares	Mean Sum	F Ratio
Pre	9.23	8.72	Between	1	8.72	8.72	**3.70**
			With in	28	31.70	1.13	
Post	10.37	8.98	Between	1	14.42	14.42	**10.32**
			With in	28	39.12	1.40	
Adjusted Post	10.15	9.19	Between	1	6.56	6.56	**10.04**
			With in	27	17.64	0.65	

***Significant at 0.05 level of confidence. (Table F ratio at 0.05 level of confidence for 1 and 28 (df) =4.2, 1 and 27(df) =4.21.**

The obtained F ratio on pre-test scores 3.70 at 0.05 level of confidence. This proved that there was no significant difference between the groups on hemoglobinin pre-test and the randomization at the pre-test was equal.The posttest and adjusted post test scores analysis proved that there was significant difference between the groups , as obtained F values 10.32 and 10.4 were greater than the required F value of 4.2 and 4.21 respectively) in line with the study conducted by **Corona et.al 2022**. The pre- test, post- test and adjusted post –test mean values of Yogic Practices group and the Control Group on hemoglobin were graphically presented in Figure II.

Figure – 1I

ANALYSIS OF CO-VARIANCE OF THE MEANS OF YOGIC PRACTICES GROUP AND CONTROL GROUP ON HEMOGLOBIN



***Significant at 0.05 level of confidence. (Table F ratio at 0.05 level of confidence for 1 and 28 (df) =4.2, 1 and 27(df) =4.21.**

CONCLUSIONS

It was concluded Yoga therapy has reduced Blood Sugar (Fasting) and improved hemoglobin significantly among Geriatric men suffering with aged symptoms.

REFERENCES

- Mondal S, Kundu B, Saha S. Yoga as a Therapeutic Intervention for the Management of Type 2 Diabetes Mellitus. Int J Yoga. 2018 May-Aug;11(2):129-138. doi: 10.4103/ijoy.IJOY_74_16. PMID: 29755222; PMCID: PMC5934948.
- Corona, L.P., Andrade, F.C.D., da Silva Alexandre, T. et al. Higher hemoglobin levels are associated with better physical performance among older adults without anemia: a longitudinal analysis. BMC Geriatr 22, 233 (2022). https://doi.org/10.1186/s12877-022-02937-4
- Iyengar BKS. Light on Yoga.
- Sharma M. Effects of a Yoga intervention as supportive therapy