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Effect of yogic practices selected risk factors among aged diabetic women

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Abstract---Diabetes mellitus often referred to simply as diabetes is a syndrome of disordered metabolism, usually due to a combination of hereditary and environmental causes, resulting in abnormally high blood sugar levels (hyperglycemia). The purpose of the present study is to find out the effect of yogic practices with and without diet modifications on the FBS (Fasting Blood Sugar) among Aged Diabetic women. The study is conducted on 120 Aged Diabetic women, randomly selected into two groups, namely, the experimental group and the Control Group, each group consist of 20 Aged Diabetic women. The Experimental Group underwent twelve weeks of Yogic practices whereas the control group do not undergo any type of training. The Fasting Blood Sugar was measured before and after training. The results were analyzed with a statistical technique of Analysis of Covariance (ANCOVA) and concluded that the experimental group with Yogic Practices have significantly reduced Fasting Blood sugar significantly than the Control Group.

Keywords---aged diabetic women, yogic practices, fasting blood sugar.

Introduction

Old Age is a natural part of the life cycle. All living organisms including humans undergo the process from conception to infancy, childhood puberty, maturity, and senescence. Longer life means more frailty and more disability. Apart from economic problems they face in their life, the common diseases like ortho, visual,

audio and mental some face grave diseases of heart, blood etc., The care of old people in a separate branch of medicine called Geriatrics and scientific study of old age and process of growing old is called Gerontology. The definition of ageing varies from society to society and has been modified considerably over time.

Diabetes Mellitus is a constitutional disease with heritable tendencies. A disorder caused by decreased insulin production or decreased ability to use insulin. Insulin is a hormone produced by the pancreas that is necessary for cells to be able to use blood sugar. The medical name for diabetes, diabetes mellitus, comes with Greek and Latin roots. Diabetes comes from a Greek word that means to 'Siphon'. The most obvious sign of diabetes is excessive urination. Water passes through the body of a person with diabetes as if it were being siphoned from the mouth through the urinary system out of the body. Mellitus comes from a Latin word that means "sweet like honey".

The cause of diabetes mellitus is unknown, but heredity and diet are believed to play a role in its development. Diabetes results when the pancreas produces insufficient amounts of insulin to meet the body's needs. It can also result when the pancreas produces insulin, but the cells are unable to efficiently use it that is, the cells have insulin resistance. Insulin is necessary for blood sugar (glucose) to go from the blood to the inside of the cells and unless the sugar enters into the cells, the body cannot produce energy. The excess sugar remains in the blood. Diabetes mellitus is the commonest endocrine disorder.

In recent decades, women's health issues have attained higher international visibility and renewed political commitment. While targeted policies and programs have enabled women to lead healthier lives, significant gender-based health disparities remain in many countries. With limited access to education or employment, high illiteracy rates and increasing poverty levels are making health improvements for women exceedingly difficult. Yoga is the science that teach us a way of life. It works on all aspects of the person: the physical, mental, emotional, and spiritual. The word *yoga* means 'unity' or 'oneness' and is derived from the Sanskrit work *yuj*, which means 'to join'. This unity or joining is described in spiritual terms as the union of the individual consciousness with the universal consciousness. On a more practical level, yoga is a means of balancing and harmonizing the body, mind and emotions.

Statement of the problem

The purpose of the study is to find out the effect of yogic practices with and without diet modifications on the FBS (Fasting Blood Sugar) among Aged Diabetic women.

Review of related literature

Samyukta Kudigram, Akanksha NS SVYASA University, India(Feb 2017) DOI: 10.15406/ijcam.2018.11.00345: Diabetes has become one of the most dreaded diseases in the modern world. In the case of India, it has become the diabetes capital of the world. In the future it will increase, making one out of six a diabetic person. Further a majority of the people are not aware that they are

diabetic. Diabetes leads to complications like risk of heart attack, kidney failure, stroke, nerve damage etc. Yoga therapy strikes at the root of the problem which is life style. It is greatly useful for pre diabetics. It is cost effective and safe. Studies have brought out the role of yoga therapy in creating positive emotions and in the management of diabetes mellitus. The aim of the study is to assess the effect of SVYASA prescribed yoga module on fasting blood sugar in type 2 diabetes.^{1,2} 60 participants with diabetes within the age group of 25-65 in and around Bengaluru city limit namely Yelahanka and Matthikere in Karnataka. All the participants were given the yoga module which included asana, pranayama, relaxation practices, and meditation classes, for a period of two weeks. An introduction to the study, a comprehensive questionnaire, and written informed signed consent was got from all participants at the beginning of the study. Assessments were done using calibrated electronic glucometer. Fasting and postprandial blood sugars were measured before and after yoga intervention. The study also focused on the personalization of the yoga module based on profiling of the participants leading to better outcomes as opposed to a standard protocol-based therapy.

J Clin Diagn Res. 2015 Apr 9 doi: 10.7860/JCDR/2015/12666.5744: A prospective case-control study was conducted in the Department of Physiology and Diabetic clinic of a tertiary care teaching hospital over period of two years. The study subjects consisted of 30 male diabetic patients attending diabetic clinic and 30 non-diabetic male volunteers constituted control group. The patients in the age group of 36 to 55 years with T2DM of at least one year duration and those on diabetic diet and oral hypoglycemic agents were included in the study group. The age matched healthy male volunteers who had come to join yoga training at yoga centre were included in the control group. All the participants were trained by yoga experts and subjected to regular practice under supervision for six months. In all the participants fasting (FBS) and post-prandial blood sugar (PPBS) was estimated before, during (at three months) and after (six months) yoga training. Paired Student t-test was used to estimate difference in means calculated before and after yoga training in a same group. A p-value of <0.05 was considered as statistically significant.

Methodology

The purpose of the present study is to find out the effect of yogic practices on FBS (Fasting Blood Sugar) among Aged Diabetic women. The study is conducted on 120 Aged Diabetic women, randomly selected into two groups, namely, the experimental group and the Control Group, each group consist of 20 Aged Diabetic women. The Experimental Group underwent twelve weeks of Yogic practices whereas the control group do not undergo any type of training. The Fasting Blood Sugar was measured before and after training. The Age group range from 60 to 70 of age. The Training Schedule is given as listed below:

Experimental Group – I: Yogic practices

Training Programme for Twelve Weeks

S.No	Yogic Training
1	Prayer
2	Loosening Exercises*
3	Tadasana
4	Kati Chakrasana
5	Padahastasana
6	Vakrasana
7	Shasangasana
8	Mandukasana
9	Ardha Ushtrasana
10	Ardha Salabhasana
11	Saral Dhanurasana
12	Bhujangasana
13	Sethubandasana
14	Udhan Padasana
15	Ardha Halasana
16	Kabalapatti
17	Sheetali
18	Anuloma- Viloma pranayama
19	Bramari
20	Meditation
21	Relaxation

The results were analyzed with a statistical technique of Analysis of Covariance (ANCOVA) and concluded that the experimental group with Yogic Practices have significantly reduced Fasting Blood sugar significantly than the Control Group.

Results and Discussion

The statistical analysis comparing initial and final means of FBS (Fasting Blood Sugar) due to yogic practices with and without diet modifications among the Aged Diabetic women is presented in the Table I. Aged Diabetic women

Table – II
Analysis of covariance of the means of the Experimental group and the control Group in blood sugar level (fasting)

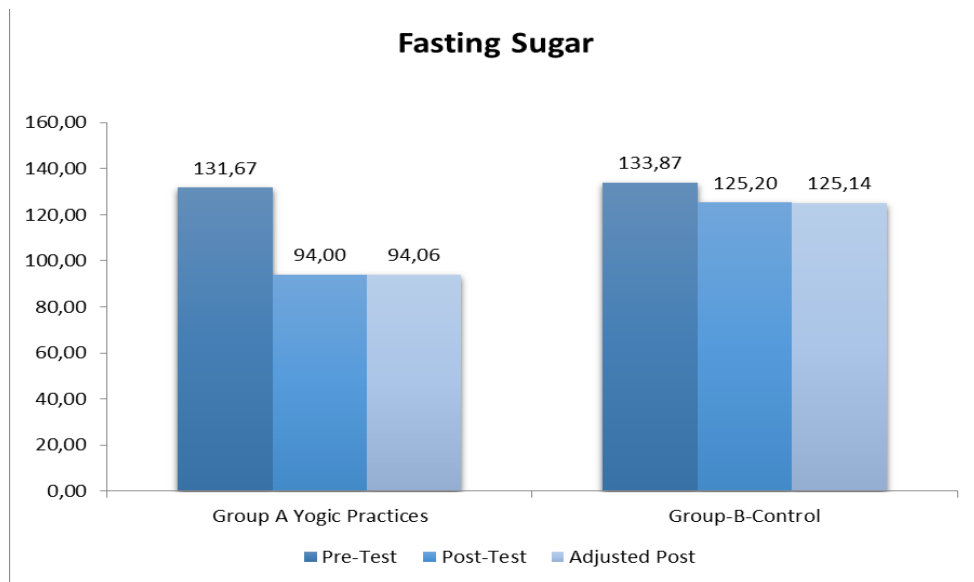
Test	Exptl group	Cont group	Source of variance	Sum of Squares	Degree of freedom	Mean Sum of Squares	F-Ratio
Pre-test	131.67	133.87	between	133.87	1.00	133.87	1.32*
			within	2835.07	28.00	101.25	
Post test	94.00	125.20	between	7300.80	1.00	7300.80	67.91*
			within	3010.40	28.00	107.51	
Adjusted	94.06	125.14	between	7153.25	1.00	7153.25	64.34*

			within	3001.99	27.00	111.18	
Mean gain	-37.67	--8.67					

*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)

Taking into consideration of the post-test means and adjusted post-test means were determined and an analysis of covariance was done the obtained F value 67.91 and 64.34 were greater than the required value of 1.32 and hence it was accepted that the yogic practices with and without diet modifications significantly reduced the FBS (Fasting Blood Sugar) of the Aged Diabetic women in par with J Clin Diagn Res. 2015 Apr 9.

Figure – 1
Bar diagram showing the mean difference among Experimental Group and Control Group in Blood Sugar level (Fasting)



*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)

Conclusion

The analysis of co-variance of FBS (Fasting Blood Sugar) indicated that the Experimental Group (yogic practices) value was better than the Control group), and was significantly reduced in the FBS (Fasting Blood Sugar). It may be due to the effect of Yogic Practices being carefully scheduled.

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