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Effect of yogic intervention on some bio-chemical parameters of diabetic patients

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Abstract

The present study aimed to find the effect of Yogic intervention on some biochemical parameters such as hemoglobin and ESR level on diabetic patients. 50 diabetic patients suffering with type II Diabetes mellitus were selected and biochemical investigations were done before and after a comprehensive Yoga training program comprising of a sessions for three months.

There was a significant increase in hemoglobin and significant decrease in ESR levels a result of Yoga practices as the result shows statistically significant "t" value. Changes in these parameters may be due to improved immunity and better endurance capacity in the practitioners. Yoga improved the overall health of the subjects practicing Paschimottanasana and Shavian. A comprehensive yoga therapy program has the potential to enhance the beneficial effects of standard medical management of diabetes mellitus and can be used as an effective complementary or integrative therapy program.

Keywords: Paschimottanasana, Shavasana and Biochemical parameters

Introduction

Yoga has always been an essential part of life in traditional system of treatment, as it includes physical activities like several postures in the form of Asana and breathing exercises in the form of Pranayama which can play a vital role to prevent such lifestyle related diseases. Physical exercise and regular activities can enhance insulin sensitivity.

In the ensuing decades opponents to exercise therapy would change the irattitudes due to some of the first research in the area of exercise physiology. A group French researchers led by Chapeau and Kaufman (1887) measured the uptake of glucose by working muscle and found it to be higher than resting muscle. In additional reduction in blood glucose levels with muscular exercise was apparent. With this new scientific evidence, the therapeutic benefits of exercise, so long held byBouchardat, became common practice in other clinics for diabetics.

Yogic Interventions as a part of diabetes mellitus prevention and therapy has gained in popularity over the past few decades as more research has become available. However, its use is definitely not a novel approach in the management of this disease. According to the American College of Sports Medicine (2002), indications of the effectiveness of exercise in reducing glycosuria have been evident since 600 B.C. when an East Indian text, the Shushruta noted the reduction in the sweetness of urine from diabetic patients following exercise.

Statement of the Problem

The purpose of the study was to find out the effect of exploring the therapeutic effects of yoga and its ability to improve the well-being of type-2 diabetic mellitus

Delimitations of the Study

The following were taken into consideration as delimitations study is de

1. The study was confined to type-2 diabetes mellitus patients men and women only
2. The study was confined to 30 male and female citizens of different cites of Karnataka state will be randomly selected as subjects
3. The age of the subjects were ranged from 30 to 60 years only
4. The training schedule is delimited to three months

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Limitations of the Study

The Study Was Limited In The Following Aspects

1. The food habits, life style and climatic condition taken in to consideration of the limitation of the study.
2. The performance of the subject expected as limitation’
3. Heredity factor of the subjects is the limited.

Objective of the Study

1. To find out the effect of yogic practice on selected physiological among type-2 diabetic patients men and women
2. To find out the effect of yogic practice on selected bio-chemical variables among type-2 diabetic patients men and women
3. To find out the effect of yoga therapy to manage diabetes mellitus

Hypothesis of the Study

1. It was hypotheses that, yoga therapy will be helpful to control and maintain the normal blood glucose level
2. It was hypotheses that, yoga therapy will be helpful to control the other symptoms (wetness, skin sensitivity, gums problems etc) of diabetes by controlling their blood glucose level
3. It was hypotheses that, yoga therapy (meditation with object) will help to improve the vision in diabetic mellitus
4. It was hypotheses that, yoga therapy will be helpful to free from the frozen shoulder in diabetic mellitus
5. It was hypotheses that, yoga therapy will be helpful to improve the digestion capacity in diabetes mellitus

Significance of the Study

1. The finding of the study would explore the therapeutic effects of yoga practice among type-2 diabetic patients men and women
2. The study would bring out the relative effect of asana, meditation and pranayama among type-2 diabetic mellitus patients
3. The finding of the present study would be helpful for further research studies
4. This study would give an exact idea about the physiological variables like increasing and decreasing blood glucose level, maintain the normal blood glucose level,
5. The study would give an exact idea about avoiding or management of the other complications of diabetes like diabetic foot, frozen shoulder ect, and improve self confidence

Methodology

The sample consisted of 50 subjects were selected from BLD and Ayurvedic College and Hospital, (Karnatak). The institutional research ethics-committee approved this study. After signed informed consent by the subjects anthropometrics measurements were taken. Each subject was randomly assigned for this study. A professional not associated with this study generated the randomization scheme.

Fifty patients diagnosed as type 2 Diabetes and who met the following criteria were selected: no history of coronary artery disease, diagnose stroke, cerebrovascular disease, known neuropsychiatric illness or any other complications (retinopathy, nephropathy) of diabetes; age between 30-60 yrs with duration of DM between 2-7 yr. All the patients were

receiving conventional medical therapy. The drugs prescribed most commonly were oralhypoglycaemic drugs. Pre – post research design was used in this study. Each subject was tested individually. The subjects in this study have given Yogic practices daily for half an hour for 90 days. Yogi intervention plan was as followed:

Table1: Yogic Intervention program

| S. No. | Yogic Practice | Rounds | Duration |
|--------|--------------------------------|--------|------------|
| 1 | Preparation and Gayatri Mantra | 1 | 2 minutes |
| 2 | Joints loosening | 2-5 | 7 minutes |
| 3 | Paschimottanasana | 3-5 | 10 minutes |
| 4 | Shavasana | - | 10 minutes |
| 5 | Shanti patha and Ending | 1 | 1 minutes |

The subjects of experimental group used to visit the center for Yoga training for 90days daily under the supervision of a Yoga expert. The pre and post values were taken at the interval of three month for hemoglobin and ESR level of the patients suffering with diabetes and ‘t’ test was used for comparing the level of significance in present study.

Result

Table 2: Showing the Pre-post mean, SD, SED and t value of HB level

| Test | Mean | N | SD | SED | T value | Level of significance |
|------|-------|----|-------|------|---------|-----------------------|
| Pre | 7.92 | 50 | 0.543 | 0.11 | 18.76 | 0.01 |
| Post | 10.02 | 50 | 0.938 | | | |

Df = 49, r = 0.53

Show the graph

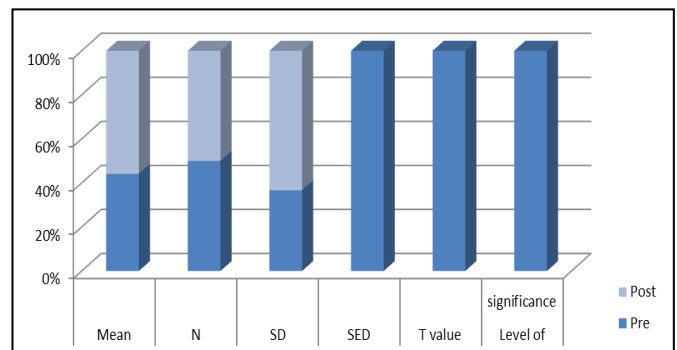
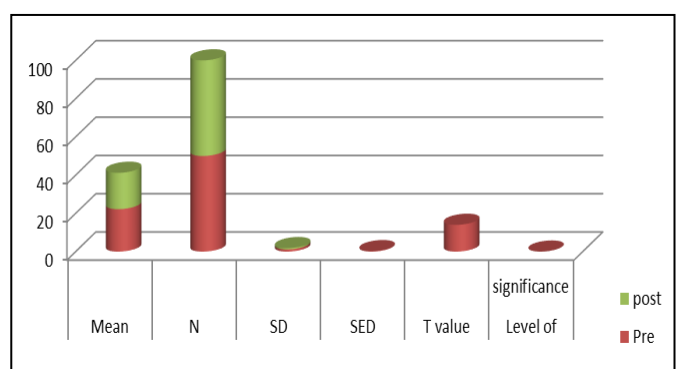


Table 3: Showing the Pre-post mean, SD, SED and t value of ESR

| Test | Mean | N | SD | SED | T value | Level of significance |
|------|-------|----|-------|-------|---------|-----------------------|
| Pre | 22.20 | 50 | 1.178 | 0.229 | 14.00 | 0.01 |
| post | 19.00 | 50 | 0.639 | | | |

Show the graph



Conclusion

Yoga is an old, traditional, Indian psychological, physical and spiritual exercise regimen that has been studied for several decades for its role in the management of several chronic diseases including hypertension, asthma, obesity, neuromuscular diseases and psychiatric illnesses.

Additionally yoga has been studied for controlling both the symptoms and the complications associated with diabetes mellitus type II. The results from the restudies suggested a statistically significant role for yoga in controlling diabetes. Furthermore, yoga practice showed significant improvement for those diabetic patients with pre-existing complications. These findings suggest that diabetics may benefit from yoga's ability to improve their quality of life.

These Asana encourage different groups of muscles to assume a state of stable equilibrium by introducing shifts in the line of gravity. *Paschimottansana* involve stretching by which one can actively affect the functioning of the locomotors system. Changes in the length of muscle and tendons subsequently cause anatomical, bio-chemical and physiological changes, which will affect both the biomechanical function of joints and metabolism of soft tissues. Clinical evidence also suggests that intramuscular connective tissue may account for a significant amount of limitation of the joint motion with ageing.

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