



EFFECTS OF VETHATHIRI MAHARISHI'S SIMPLIFIED PHYSICAL EXERCISE AND KAYAKALPA YOGA FOR THE MANAGEMENT OF TYPE-II DIABETES MELLITUS

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INTRODUCTION:

MODERN VIEW OF DIABETES:

Diabetes mellitus is reaching potentially epidemic proportions in India. Diabetes is a complex condition with a multitude of metabolic imbalances involving the regulation and utilization of insulin and glucose (sugar) in the body. It is condition characterized by an elevation of the level of glucose in the blood. Insulin is a hormone produced by the pancreas and controls the blood glucose level. The following are the symptoms of diabetes: Unusual thirst, Frequent urination, especially at night , Excessive hunger , Abnormal weight loss , Blurred vision , Irritability , Increased fatigue , Slow healing of wounds, Itching around the genitals .

ASSESSMENT OF TYPE 2 DIABETES:

GLYCOSYLATED HEMOGLOBIN:

The normal range for level for hemoglobin A1C is less than 6%. HbA1c also is known as glycosylated, or glycated hemoglobin. HbA1c levels are reflective of blood glucose

levels over the past six to eight weeks and do not reflect daily ups and downs of blood glucose.

FASTING BLOOD SUGAR:

Fasting, as the name suggests, means refraining from eating or drinking any liquids other than water for eight hours. Normal range is 70 to 110mg.

POSTPRANDIAL:

As the blood glucose level typically increases after eating, testing after a meal – known as a postprandial glucose level. Normal range is 80 to 140mg.

LIPID PROFILE: Lipid profile is a panel of blood tests that serves as an initial screening tool for abnormalities in lipids, such as cholesterol and triglycerides. The particles measured with a lipid profile are classified by their density into high-density lipoproteins (HDL), low-density lipoproteins (LDL), and very low-density lipoproteins (VLDL). Monitoring and maintaining healthy levels of these lipids is important in staying healthy.

HIGH BLOOD PRESSURE: About half the diabetic population is hypertensive and, depending on the ethnic group, between 5% and 25% of people with hypertension have diabetes.

BLOOD PRESSURE:

Systolic Blood Pressure: Systolic heart murmurs are heart murmurs heard during systole.

Diastolic Blood Pressure: Diastolic heart murmurs are [heart murmurs](#) heard during [diastole](#).

VETHATHIRI MAHARISHI'S KAYAKALPA YOGA:

Kayakalpa yoga is a yogic technique discovered by siddhas from south India reoriented by Vethathiri Maharishi. Kayakalpa can be called as an internal exercise. This internal exercise can be done in various postures combined with breathing techniques taught personally in the course in WCSC (WORLD COMMUNITY SERVICE CENTER).

SKY PHYSICAL EXERCISE: TWO FORMS OF EXERCISE:

1 .Body postures 2. Movements

Vethathiri Maharishi has taught 9 types of exercises- Exercises for hands and arms, Leg exercises, Breathing exercises, Eye exercises Kapalapathy, Makarasanam, Massage, Acupressure, and Relaxation. Arm exercises are done in standing postures, In sitting posture leg exercises, breathing exercises, eye exercises, and Kapalapathy exercises are done, Lying posture facing up: Makarasanam, Massage, Acupressure, Relaxation exercises. Lying posture facing downwards: Makarasanam.

TYPE OF RESEARCH: Experimental research

ALLOCATION: Randomized

STATEMENT OF THE PROBLEM: This research is aimed at scientifically studying and establishing the overall effect of sky Simplified Physical exercise and Kayakalpa yoga as a powerful intervention technique to control type 2 diabetes as well as BP and cholesterol levels.

SIGNIFICANCE OF THE STUDY: This research aims at verifying the real scientific benefits of Sky Simplified Physical exercise and Kayakalpa yoga and to disseminate the message at national level, to save India from becoming the capital of diabetes. This study was unique in suggesting the Simplified Physical exercise and Kayakalpa yoga on blood sugar levels, blood cholesterol levels and high blood pressure.

HYPOTHESIS: It was hypothesized that there would be any significant differences in the experimental group on blood sugar levels (HbA1c, Fasting, Post – Prandial), and Lipid profile, Blood pressure level, than the control group.

DELIMITATIONS: This study was delimited to **Type-2 diabetes mellitus**.

1. Age of subjects was ranged from 40 to 60 years only. All selected subjects are men only and the independent variable was Simplified Physical exercise and Kayakalpa yoga.
2. The dependent variable was Blood sugar levels (HbA1c, Fasting, Post – Prandial) Lipid Profile (cholesterol levels), Blood pressure level.
3. To achieve the Purpose of the study 60 samples were selected at random and their age was ranged from 40 – 60. 30 samples were included in the experimental group and 30 samples were in controlled group individually and the duration of the study was three months.

PERIOD OF THE STUDY: The period of the study was from 2015 February to 2015 April

INTERVENTION: Shri Vethathiri Maharishi's Simplified Physical Exercise and, Kayakalpa yoga.

LIMITATIONS OF THE STUDY: The changes in climatic conditions such as temperature, atmospheric pressure, medicines, taken by the subjects are not considered and certain factors like rest period, family history, economic conditions and other motivational factors will not be taken into consideration for this study.

DURATION OF THE INTERVENTION: 3 Months

METHODOLOGY

The Experimental group comprising 30 men was subjected to Sky Physical exercise and Kayakalpa yoga for a period of three months. The second group namely Control group which also comprised of 30 men subjects went without any practice. The study was Randomized control trial. The subjects n=60 were randomly assigned to two equal groups of 30 type 2 diabetic, Hyperlipidemia and hypertension men patients in each. Daily they do the practices of Kayakalpa yoga and Simplified Physical exercise. To facilitate and guide home practice. Participants were given an audio recording (CD), sessions were held twice per week. They were regulated by the yoga instructor through phone and direct communication. Daily records of diary were maintained. Food restriction was given to the patients. In the beginning pretest scores were collected, after the experimental period of 3 months practices post test scores were measured for biochemical variables. Fasting blood samples were taken for testing Fasting blood sugar, HbA1c, Complete Lipid profile (HDL, LDL, VLDL) and Total cholesterol, Post prandial blood sugar level also taken. Finally findings and solutions were drawn

DATA ANALYSIS AND INTERPRETATION OF THE STUDY:

SIGNIFICANCE OF MEAN GAINS & LOSSES BETWEEN PRE AND POST TEST SCORES ON SELECTED VARIABLES OF SKY PHYSICAL EXERCISE AND KAYKALPA YOGA GROUP

| S. No | Variables | Pre-Test | Post -Test | Mean differ | Std. Dev | Std. Dev | Std. Dev | 95% confid | 95% confid | 't' Rat |
|-------|-----------|----------|------------|-------------|----------|----------|----------|------------|------------|---------|
|-------|-----------|----------|------------|-------------|----------|----------|----------|------------|------------|---------|

| | | Mean | Mean | Standard Deviation | (±) Pre test | (±) Post test | (±) Difference | Lower interval of the differences - LOWER | Upper interval of the differences - UPPER | Significance |
|---|---------------------------|---------|---------|--------------------|--------------|---------------|----------------|---|---|--------------|
| 1 | HBA1C | 8.1267 | 7.2600 | 1.86667 | 1.64776 | 1.28616 | 0.54541 | 0.66301 | 1.07033 | 0.03 |
| 2 | FASTING BLOOD SUGAR | 1.4563 | 1.0270 | 4.29333 | 70.56349 | 42.03623 | 61.11884 | 20.11118 | 65.75548 | 3.848 |
| 3 | POST PRANDIAL BLOOD SUGAR | 2.3757 | 1.6780 | 6.97667 | 96.60930 | 66.02006 | 88.46612 | 36.73288 | 102.80046 | 4.319 |
| 4 | 4.TOTAL CHOLESTEROL | 1.7407 | 1.3817 | 3.59000 | 43.20994 | 31.42049 | 45.20707 | 19.01940 | 52.78060 | 4.350 |
| 5 | 5.TRIGLYCERIDES | 1.5250 | 1.0207 | 5.04333 | 62.48517 | 39.23926 | 60.10318 | 27.99044 | 72.87623 | 4.596 |
| 6 | 6.HDL | 35.4333 | 32.3000 | 3.13333 | 7.85069 | 4.88594 | 1.15642 | 0.76818 | 5.49849 | 2.710 |
| 7 | 7.LDL | 1.1860 | 1.0244 | 1.61600 | 26.56586 | 26.02882 | 17.88387 | 9.48205 | 22.83795 | 4.949 |
| 8 | SYSTOLIC BLOOD PRESSURE | 1.3717 | 1.2083 | 1.63333 | 22.24020 | 15.65156 | 18.7788 | 9.32121 | 23.34546 | 4.764 |

| | | | | | | | | | | |
|-----------|---|---------------------|---------------------|-------------------------|----------------------|---------------------|-------------------------|--------------------|---------------------|-------------------|
| | E | | | | | | | | | |
| 9 | DISTOLIC BLOOD PRESSUR E | 79.3 667 | 75.0 000 | 4.366 67 | 10.7 6547 | 7.31 083 | 9.061 03 | . 98322 | 7.750 11 | 2.6 40 |
| 10 | VLDL | 32.3 800 | 24.4 367 | 7.943 33 | 6.69 335 | 5.64 920 | 4.652 30 | 6.20613 | 9.68053 | 9.3 52 |
| 11 | HbA1c | 8.12 67 | 7.26 00 | . 8666 7 | 1.64 776 | 1.28 616 | . 5454 1 | .66301 | 1.07033 | 8.7 03 |

CONCLUSIONS:

Within the limitations of the present study the conclusions were drawn. The Sky Physical exercise and Kayakalpa yoga group had shown significant improvement in all the physiological and Bio chemical parameters. Findings from this research reports indicate that Type 2 Diabetic, Hyperlipidemia, Hypertension patient got good result by practicing the SKY Physical exercise and Kayakalpa yoga regularly. The result of the study reveals that there was a significant improvement on the research parameters. Blood sugar Fasting level get controlled, Post prandial blood sugar level get controlled, Total cholesterol, LDL, HDL ,VLDL, comes to normal level , HbA1c level get controlled, Systolic and Diastolic blood pressure get comes to normal level when compared to the controlled group after the completion of 3 months of regular practices of SKY Physical exercises and Kayakalpa yoga .