

# EFFECT OF YOGIC PRACTICES WITH AND WITHOUT DIET MODIFICATION ON SELECTED PHYSIOLOGICAL VARIABLES AMONG MIDDLE AGED DIABETIC MEN

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**Abstract** - The purpose of the random group experimental study is to investigate the effects of Yogic Practice with and without the diet modification on the selected physiological variables among the middle aged Type II diabetic men. It is hypothesized that there would be significant differences on the selected physiological variables due to Yogic Practices with and without diet modification among the middle aged Type II diabetic men than the control group. The study is confined to Type II diabetic men. The subjects are from Chennai. The age of the subjects are ranged from 40 - 50 years. The independent variables are Yogic Practices with and without diet modification. The selected dependent variables are Physiological variables namely Resting Pulse Rate and Body Mass Index. Random group experimental design is used. Random sampling method is followed to select the subjects. 120 Middle aged diabetic men come forward, 90 patients are found with Type II diabetes and finally 60 diabetic men are selected randomly. Random sampling method is followed. They are divided into three groups, 20 each are formed as a Yogic Practice With Diet Modification (YPWDG), Yogic Practice Without Diet Modification (YPWODG) and Control group (no treatment but in active rest - CG). Treatment is given for 12 weeks, 6 days a week, an hour daily maximum in this random group experimental design for the experimental groups. Pre-tests are conducted initially for all the groups on the selected dependent variables. Post-tests are conducted for all the groups on the selected dependent variables. Analysis of Co-Variance (ANCOVA) is used to assess the significant differences among the groups between the pretest and post test. The normality of the data collected is tested through the Standard statistical procedures, F test (ANCOVA). The results proved that there are significant differences due to the Yogic Practice With Diet Modification (YPWDG) and Yogic Practice Without Diet Modification (YPWODG) on the selected Physiological variables such as Resting Pulse Rate (decreased) and Body Mass Index (decreased) than the Control group (CG). Thus, the hypothesis is accepted at 0.05 level of significance.

**Key words:** Diabetic, Yogic Practices, Diet, Resting Pulse Rate and Body Mass Index.

## 1.INTRODUCTION

Health is the prime and basic parameter for better and quality living. In 2015, 40 million global deaths, 70 % of the total were due to non-communicable diseases including diabetes. The total number of annual deaths had increased from 48 million in 1990 to the maximum of 56 million in 2015. Diabetes is a metabolic disorder when there is a defect in utilization of sugar by the body. Diabetes is a life style related to the condition due to an imbalance in handling a glucose load and is not a disease. It is one of the life style related chronic conditions with an end result of complications that are related to the early aging changes, resulting in the blockage of small and large arteries. Yoga is complementing the lifestyle changes which are required to keep the diabetic symptoms under control, but also helps a lot in creating a life that is full of happiness and vitality. Yogic Practices and Diet reduce the harmful effects of Physical and Psychological related ailments.

## 2.OBJECTIVES OF THE STUDY

To find the significant differences on the selected physiological variables among the middle aged Type II diabetic men due to Yogic Practices with and without diet modification.

## 3.PURPOSE OF THE STUDY

The purpose of the study is to find out the effects of Yogic Practices with and without diet modification on the selected physiological variables among the middle aged Type II diabetic men.

## 4.HYPOTHESIS

It is hypothesized that there are significant differences on the selected physiological variables due to Yogic Practices with and without diet modification among the middle aged Type II diabetic men than the control group.

## 5. REVIEW OF RELATED LITERATURE

**Tamilazhagan (2010)** has done a research on the effects of suryanamaskar and yogic practice on the selected physiological and biochemical variables among the higher secondary school boys. The study consisted of forty five school boys from Ramakrishna Mission Higher Secondary School, T.Nagar, Chennai. Their age was ranged from 15 to 17 years. The subjects were divided into group A, group B and control group. Group A practiced Suryanamaskar and Group B practiced yogic practice. Group C was not involved in any experiment. All the variables were assessed before and after the training period of six weeks. The practice was given for five days a week. It was concluded that the heart rate was significantly reduced with suryanamaskar and yogic practice group than the control group. It was also observed that the yogic practice group had a significant decrease in heart rate when compared to the suryanamaskar group. **Kosuri et.al., (2009)** have done the study to examine the effects of yoga practice on the clinical and psychological outcomes in subjects with Type 2 Diabetes Mellitus (T2DM). In a 40-day yoga camp at the Institute of Yoga and Consciousness, ambulatory subjects with T2DM was not having any significant complications (n = 35), where the Yogic Practices were supervised by trained yoga teachers. Clinical, biochemical, and psychological well-being were studied at baseline and at the end of the camp. At the end of the study, there was a reduction of the Body Mass Index (BMI) (26.514 +/- 3.355 to 25.771 +/- 3.40; P < 0.001) and anxiety (6.20 +/- 3.72 to 4.29 +/- 4.46; P < 0.05) and an improvement in the total general well-being (48.6 +/- 11.13 to 52.66 +/- 12.87; P < 0.05). Participation of the subjects with T2DM in yoga practice for 40 days were resulted with reduced BMI, improved well-being, and reduced anxiety.

## 6. METHODOLOGY

In the random group experimental design, the study was limited to Type II diabetic patient. The subjects were selected from Chennai. The age of the subjects were ranged from 40 and 50 years. The independent variables were Yogic Practices with and without diet modification. The dependent variables chosen were Physiological variable such as Resting Pulse Rate and Body Mass Index. Random group experimental design was used. Random sampling

design was followed to select the subjects. 120 Middle aged diabetic men came forward, 90 patients were found with Type II diabetes and finally 60 diabetic men were selected randomly. Random sampling method was followed. Three groups, 20 subjects in each group was formed as yogic practice group with diet modification (YPWDG) Yogic practice group without diet modification (YPWODG) and Control group (no treatment but in active rest -CG). Physiological tests were conducted for the Pre and Posttests to collect the data.

VARIABLES	CRITERIAN MEASURES	INSTRUMENT USED
Resting Pulse Rate	Pulse per minute	Digital Pulse Rate Monitor
BMI	Kg/m <sup>2</sup>	Stadiometer & weight machine

Experimentation was done for 12 weeks, 6 days a week and daily an hour. Pre-tests were conducted initially for all the groups on the selected dependent variables. Post-tests were also conducted for all the groups on the selected dependent variables. Analysis of Co-Variance (ANCOVA) was used to assess the significant differences between the pretest and posttest of the group. The normality of the collected data was tested through the standard statistical Procedures, F test (ANCOVA). 0.05 level of significance was fixed to test the hypothesis.

## 7. RESULTS AND DISCUSSIONS

The data pertaining to the variables collected from the three groups before and after the training period were statistically analyzed by using Analysis of Co-variance (ANCOVA) to determine the significant difference and tested at 0.05 level of confidence.

**TABLE I**

**ANALYSIS OF CO-VARIANCE (ANCOVA) FOR PRE AND POST TESTS DATA ON RESTING PULSE RATE OF EXPERIMENTAL GROUPS AND CONTROL GROUP**

Tests/ Groups		YPWDG	YPWODG	CG	S O V	Sum of Squares	df	Mean Squares	"F" Ratio
	$\sigma^2$	1.00	1.30	3.08	W	233.40	57	4.09	
Post Test	$\bar{X}$	75.55	79.15	86.30	B	1197.63	2	598.82	211.09
	$\sigma^2$	1.23	1.09	2.41	W	161.70	57	2.84	*
Adjusted	-				B	260.80	2	130.40	249.36
Post Test	X	76.96	79.95	84.09	W	29.29	56	0.52	*

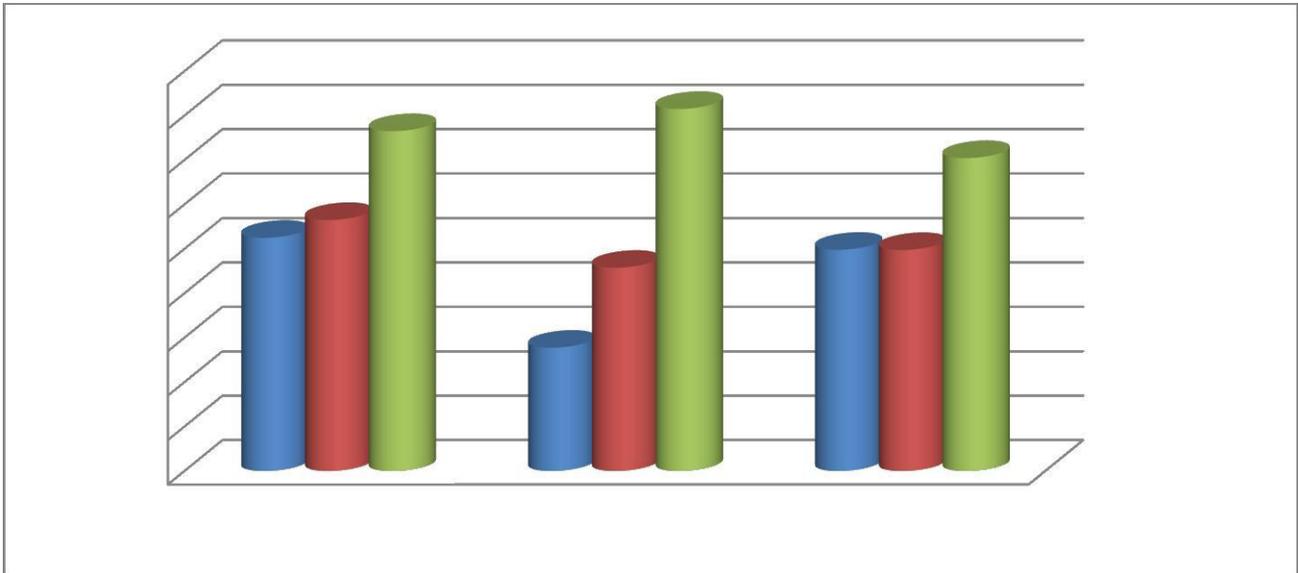
\* Significant at 0.05 level of confidence (The table values for significance at 0.05 level of confidence with df2 and 57 and 2 and 56 are 3.16 and 3.16)

The obtained F - ratio value for the Resting

Pulse Rate are greater than the table value, it Indicates that there is a significant difference among the posttest and adjusted post-test means of the Yogic Practices with and without Diet Modification group than the Control Group.

The pretest, posttest and adjusted post-test mean values of the YPWDG, YPWODG and CG on graphically presented in the figure1.

**BAR DIAGRAM SHOWING THE PRE TEST, POST TEST AND ORDERED ADJUSTED MEAN POST TEST ON RESTING PULSE RATE OF THE EXPERIMENTAL AND CONTROL GROUPS**



**Figure1**

The above findings substantiate the observations of the expert Tamilazhagan (2010).

The Analysis of Co-Variance (ANCOVA) on BMI – Body Mass Index of the Yogic Practices with and without Diet Modification and the Control Group are analysed and presented in the Table 2.

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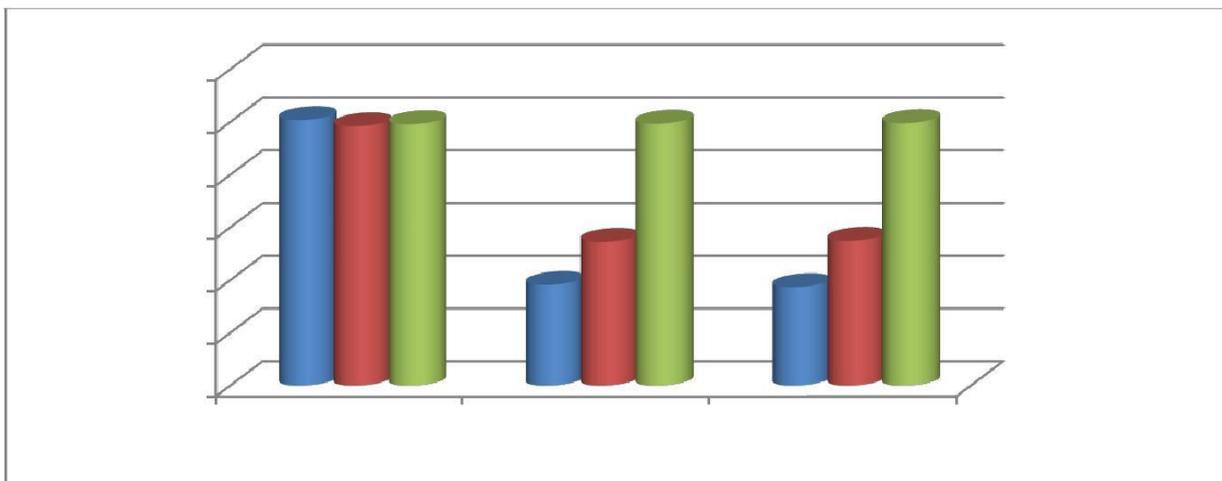
**Table II**

**ANALYSIS OF CO-VARIANCE (ANCOVA) FOR PRE AND POST TESTS DATA ON THE BODY MASS INDEX OF THE EXPERIMENTAL GROUPS AND CONTROL GROUP**

Tests/ Groups	YPWDG	YPWODG	CG	S O V	Sum of Squares	df	Mean Squares	"F" Ratio
Pre Test	$\bar{X}$ 28.04	27.92	27.96	B	0.18	2	0.092	0.03
	$\sigma^2$ 2.12	1.34	1.49	W	161.18	57	2.83	
Post Test	$\bar{X}$ 24.91	25.73	27.97	B	100.26	2	50.13	31.06*
	$\sigma^2$ 0.94	1.31	1.49	W	91.99	57	1.61	
Adjusted	-			B	103.21	2	51.61	56.69*
Post Test	X 24.87	25.75	27.98	W	50.98	56	0.91	

\* Significant at 0.05 level of confidence (The table values for significance at 0.05 level of confidence with df 2 and 57 and 2 and 56 are 3.16 and 3.16)

**BAR DIAGRAM SHOWING THE PRE TEST, POST TEST AND ORDERED ADJUSTED MEAN POST TEST ON THE BODY MASS INDEX OF THE EXPERIMENTAL AND CONTROL GROUPS**



➤ The above findings can also be substantiated by the observations made by renowned Kosuriet.al.,(2009)

➤ The results proved that there are significant differences due to Yogic Practice Group with Diet Modification (YPWDG) and Yogic practice group without diet modification (YPWODG) made the significant differences than the Control group (CG) among the Middle Aged Type II Diabetic Men on the selected Physiological variables such as Resting Pulse Rate(decreased) and BMI – Body Mass Index (decreased). Thus, the hypothesis was accepted at 0.05 level of significance.

## 8.CONCLUSIONS

It is concluded that the Yogic Practices with Diet Modification (YPWDG) and Yogic Practices without Diet Modification (YPWODG) made significant differences than the Control group (CG) among the Middle Aged Type II Diabetic Men on the selected Physiological variables such as Resting Pulse Rate (decreased) and BMI – Body Mass Index (decreased) .The practitioners of the Yogic Practices With And Without Diet Modification are better in the physiological variables than the non-practitioners.

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