



EFFECT OF YOGIC PRACTICES ON SYSTOLIC BLOOD PRESSURE AND ANXIETY AMONG MIDDLE AGED WOMEN SUFFERING WITH HYPOTHYROIDISM

***C. Kamatchi, ** Dr.R.Elangovan** *Ph.D Scholar (Full Time), Faculty of Yoga Sciences and Therapy, Meenakshi Academy of Higher Education and Research, No.12, Vembuliamman Kovil Street, west K.K.Nagar, Chennai-600078. Tamil Nadu, India. Email Id: kamachi12497@gmail.com ** Professor and Head, Faculty of Yoga Sciences and Therapy, Meenakshi Academy of Higher Education and Research, No.12, Vembuliamman Kovil Street, west K.K.Nagar, Chennai - 600078. Email Id: relangovantnpesu@gmail.com.

ABSTRACT

The purpose of the Random group experimental study was to find out the effect of yogic practices on systolic blood pressure and anxiety among middle aged women suffering with hypothyroidism. It was hypothesized that there would be significant differences due to yogic practices on selected physiological and psychological variables such as Systolic blood pressure and Anxiety among middle aged hypothyroidism women than the control group. For the purpose of the study, 30 middle aged hypothyroidism women were selected randomly from Chennai, between the age group of 45 and 55 years and they were divided into two groups A and B having 15 subjects in each. Pretest was conducted for the two Groups (A and B) on the selected dependent variables before the start of the training program. Group A was given yogic practices; Group B (Control Group) didn't receive any specific treatment, but in active rest. After the experimental period of eight weeks, the two Groups (A and B) were retested again on the same selected dependent variables as posttest. Analysis of co-variance (ANCOVA) was used to find out the significant differences between experimental group and the control group. The results of the study proved that the Experimental group showed significant differences than the control group on the selected physiological and psychological variables due to yogic practices. The hypothesis was accepted at 0.05 level of confidence Hence, it is concluded that yogic practices are beneficial to middle-aged women with Hypothyroidism to decreased systolic blood pressure and to reduced anxiety.

MOTIVATION OF RESEARCH

Thyroid problems are common worldwide. Middle age is the period of age beyond young adulthood but before the onset of old age. According to a projection from various studies on thyroid diseases, it has been estimated that about 42 million middle aged women in India suffer from thyroid diseases. Thyroid disease, one of the most common endocrine disorder in women, can be particularly vexing when presenting at midlife. Hypothyroidism (also called underactive thyroid, low thyroid or hypothyroid) is a disorder of the endocrine system in which the thyroid gland does not produce enough thyroid hormone. It can cause a number of symptoms, such as poor ability to tolerate cold, a feeling of tiredness, constipation, slow heart rate, depression, and weight gain. Occasionally there may be swelling of the front part of the neck due to goitre. Untreated cases of hypothyroidism during pregnancy can lead to delays in growth and intellectual development in the baby or congenital iodine deficiency syndrome. Worldwide, too little iodine in the diet is the most common cause of hypothyroidism. Hashimoto's thyroiditis is the most common cause of hypothyroidism in countries with sufficient dietary iodine. Less common causes include previous treatment with radioactive iodine, injury to the hypothalamus or the anterior pituitary gland, certain medications, a lack of a functioning thyroid at birth, or previous thyroid surgery. The diagnosis of hypothyroidism, when suspected, can be confirmed with blood tests measuring thyroid-stimulating hormone (TSH) and thyroxine levels. Yogic practices balance the endocrine system and good for hypothyroidism. Yogic practices balance the endocrine system and good for hypothyroidism in particular.

CAUSES OF HYPOTHYROIDISM

- Auto-Immunity
- Sluggish Liver
- Leaky Gut Syndrome
- Iodine deficiency in diet
- Inflammatory processes of tissue of thyroid gland
- Damage and inflammation of the hypothalamus

SYMPTOMS OF HYPOTHYROIDISM

- Hair loss
- Fatigue
- Weight gain
- Menstrual changes
- Feeling cold
- Goitre
- High cholesterol
- Constipation
- Dry skin
- Sore muscles and joints

STATEMENT OF THE PROBLEM

The purpose of the study was to find out the effect of yogic practices on Systolic blood pressure and anxiety among middle aged women suffering with hypothyroidism.

HYPOTHESIS

It was hypothesized that there would be significant differences on Systolic blood pressure and anxiety among middle aged women suffering with hypothyroidism due to yogic practices than the control group.

RESEARCH OBJECTIVES

The objective of the study was to find out whether there would be any significant difference on Systolic blood pressure due to yogic practices among middle aged women suffering with Hypothyroidism.

The objective of the study was to find out whether there would be any significant difference on anxiety due to yogic practices among middle aged women suffering with Hypothyroidism

DELIMITATIONS

- The subjects were middle aged women suffering with hypothyroidism from Chennai city only.
- Age of subjects was ranged from 45 to 55 years only.
- Independent variable was yogic practices only.
- The dependent variables were restricted to Systolic blood pressure and anxiety only.

LIMITATIONS

- The Factors like socio-economic 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 were not controlled.

REVIEW OF RELATTED LITERATURE

Stabouli, S et.al., (2010) conducted the study on subclinical hypothyroidism, is the most common thyroid dysfunction in the general population. The relationship between overt thyroid dysfunction and hypertension is generally understood. Besides high blood pressure, non-dipper hypertension is known to increase cardiovascular risk. Our aim is to investigate daily blood pressure changes and the frequency of non-dipping patterns in patients with subclinical hypothyroidism. Forty-nine patients without hypertension with subclinical hypothyroidism were compared with 50 healthy sex- and age-matched controls using ambulatory blood pressure monitoring. Thyroid-stimulating hormone (TSH) levels were significantly higher in the sub clinic hypothyroidism group, and there was no difference between free triiodothyronine (FT3) and free thyroxine (FT4) levels which could be predicted as a result of the study design. Levels of mean diastolic, daytime diastolic, night-time diastolic and night-time systolic blood pressure were significantly higher in the sub clinic hypothyroidism group ($p = 0.001$ for mean, daytime and night-time diastolic and $p = 0.01$ for night-time systolic). Diastolic non-dipping occurred more frequently in the sub clinic hypothyroidism group [subclinical hypothyroidism group 24 patients (49%), control group 13 patients (26%), $p = 0.01$]. On multivariate analysis, subclinical hypothyroidism was independently associated with diastolic non-dipping (95% confidence interval 1.162-8.053, odds ratio 1.182, $p = 0.024$). Our study found that both the frequency of diastolic non-dipping pattern and diastolic blood pressure increase with subclinical hypothyroidism. Therefore, it would appear that searching for non-dipping pattern can add valuable information for patients with subclinical hypothyroidism.

Bathla, M et.al., (2016) conducted the study on the association between depression and thyroid function which was well known. Both conditions express many similar symptoms, thus making the diagnosis and treatment difficult. To find the prevalence of anxiety and depressive symptoms among patients with hypothyroid. Cross-sectional study. A total of 100 patients diagnosed as hypothyroidism were evaluated using Hamilton depression rating scale (HDRS) and Hamilton scale for anxiety (HAM-A). The data were analysed using the SPSS for Windows version 17.0 software. The quantitative data were expressed in number and percentage. The results obtained were compared using the Chi-square test. Females constituted 70% of the sample. A total of 60% reported some degree of depression based on HDRS (males – 56.63% and females – 64.29%) whereas about 63% out of the total patients screened showed some degree of anxiety (males – 56.66% and females – 65.72%) based on HAM-A. The most common depressive symptom among the males was depressed mood (73.33%) and among females was gastrointestinal somatic symptoms (68.54%). The most common anxiety symptom among the males was depressed mood (70.0%) and among females was anxious mood (92.85%). Psychiatric symptoms/disorders are common in patients with thyroid dysfunction.

METHODOLOGY AND SUBSTANCE

To achieve the purpose of the study, 30 middle aged women suffering with hypothyroidism were selected randomly for the study from Chennai city, between the age group of 45 and 55 years and they are equally divided

into two groups A and B with 15 subjects in each group. Preliminary test was taken for the two groups (A and B) on the selected dependent variable before the start of the training program. Group A was given yogic practices for 60 minutes six days for a total period of eight weeks. Group B (control group) was permitted to undergo their routine and normal life style during the course of experiment without any specific training. After eight weeks, the two groups were rested again on the same selected dependent variable, the selected physiological and psychological variables such as Systolic blood pressure and anxiety. Analysis of co-variance (ANCOVA) was used to find out the significant differences between experimental groups and the control group. The test of significance was fixed at 0.05 level of confidence.

YOGIC PRACTICES

1. Loosening the joints.
2. Surya Namaskar
3. Asanas
 - Navasana
 - Paschimottanasana
 - Noukasana
 - Ardha matsyendrasana
 - Sarvangasana
 - Matsyasana
 - Ardha halasana
 - Savasana
4. Pranayama
 - Anulomvilom
 - Kapalpathi
 - Ujjai
5. Yoga Nidra



RESULTS

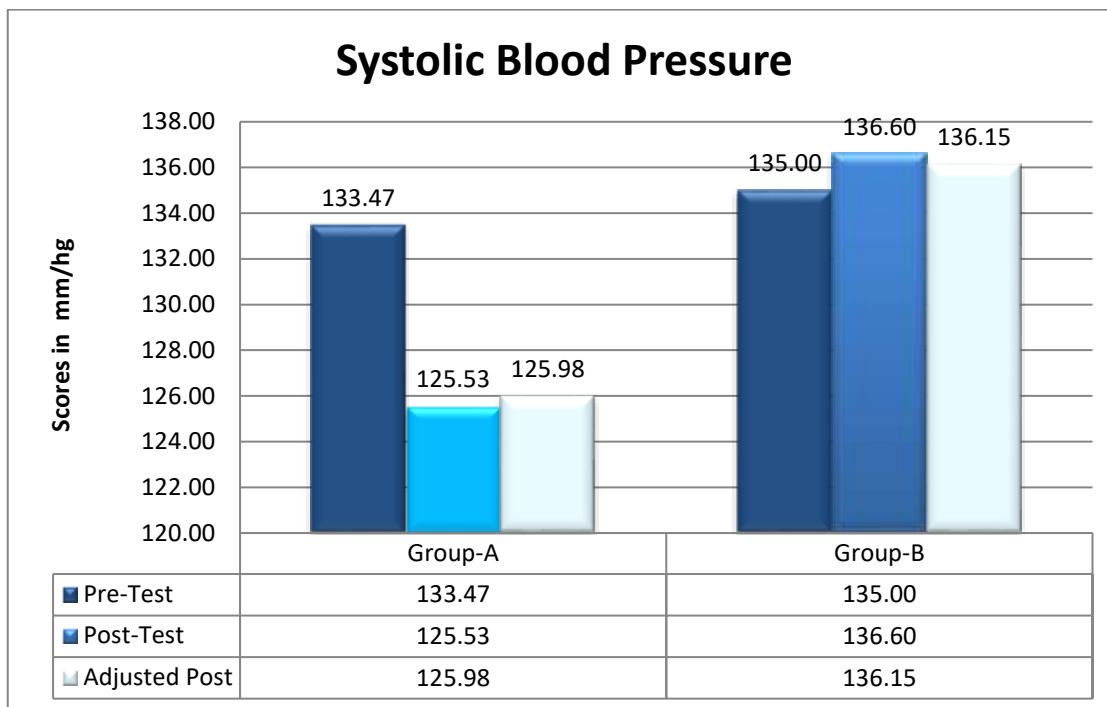
- The data pertaining to the variable collected from the groups before and after the training period were statistically analyzed by using analysis of covariance (ANCOVA) to determine the significant difference and the hypothesis was tested at 0.05 level of confidence.
- The obtained F-ratio value for the Systolic blood pressure and anxiety were greater than the table value, indicating that there was a significant difference among the posttest and adjusted posttest means of the yogic practice group than the control group on selected Physiological and Psychological variables.

COMPUTATION OF MEAN AND ANALYSIS OF COVARIANCE OF SYSTOLIC BLOOD PRESSURE OF EXPERIMENTAL AND CONTROL GROUP (Scores in mm/Hg)

Test	Experimental Group (Yogic Practices)	Control group	Source of variance	Df	Sum of square	Mean square	F
Pre-test mean	133.47	135	Between	1	17.63	17.63	0.51
			Within	28	961.73	34.35	
Post-test mean	125.53	136.60	Between	1	918.53	918.53	45.33*
			Within	28	567.33	20.26	
Adjusted mean	125.98	136.15	Between	1	760.83	760.83	87.82*
			Within	27	233.92	8.66	

* Significant at 0.05 level of confidence. (The table value required for significance at 0.05 with df 1 and 28 and 1 and 27 are 4.2 and 4.21 respectively)

The obtained F value on pre test scores 0.51 was lesser than the required F value of 4.2 to be significant at 0.05 level. This proved that there was no significant difference between the groups a pre test and post test and the randomization at the pre test was equal. The post test scores analysis proved that there was significant difference between the groups, as obtained F value 45.33 was greater than the required F value of 4.21. This proved that the differences between the posttest means of the subjects were significant. Taking into consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment.



The results of the study on the selected physiological variable showed that group I has significant differences on systolic blood pressure, due to yogic practices. Hence, the hypothesis was accepted at 0.05 level of confidence. The above findings were substantiated by the observations made by experts such as **Stabouli, S et. al., (2010)**

TABLE II
ANALYSIS OF COVARIANCE ON ANXIETY OF THE MEANS OF TWO EXPERIMENTAL GROUPS AND THE CONTROL GROUP ON SCORE)

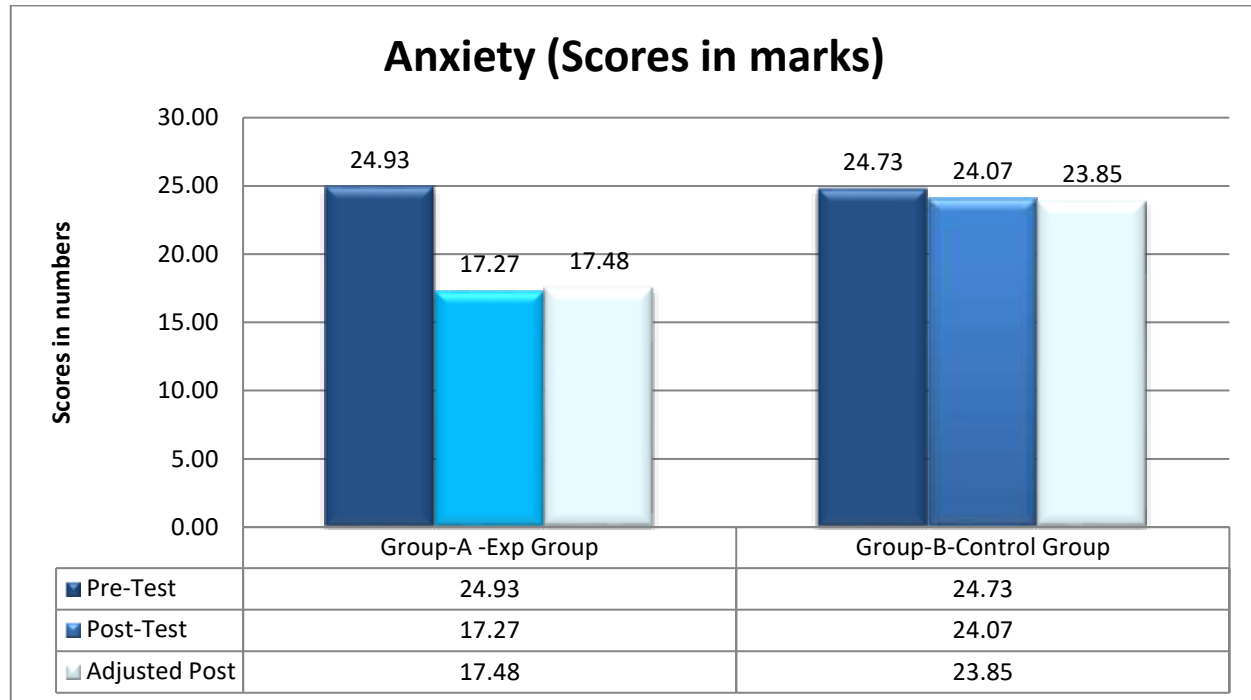
Test	Exp Group I	Control Group	SOV	Degrees of Freedom	Sum of Squares	Mean Sum of Squares	F-Ratio
Pre	24.93	24.73	B	1	2.13	2.13	0.60
			W	28	99.33	3.55	
Post	17.27	24.07	B	1	346.80	346.80	72.54*
			W	28	133.87	4.78	
Adjusted Post	17.48	23.85	B	1	297.74	297.74	117.04*
			W	27	68.68	2.54	

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

The obtained F - ratio value for the anxiety was greater than the table value. This indicates that there was a significant difference among the post-test and adjusted post-test means of the Experimental group than the control Group on anxiety. The above findings were substantiated by the observations of experts. **Bathla, M et.al., (2016)** The pretest, posttest and the adjusted posttest mean values of Experimental group and Control group on anxiety are graphically presented in the following table.

The ordered adjusted means on anxiety were presented through bar diagram for better understanding of the results of this study in Figure - 2.

Figure 2
BAR DIAGRAM SHOWING THE MEAN DIFFERENCES AMONG THE
GROUPS ON SCORE



* Significant at 0.05 level of confidence. (The table value required for significance at 0.05 with df 1 and 28 and 1 and 27 are 4.2 and 4.21 respectively)

The results of the study on the selected psychological variable showed that group I showed significant differences on anxiety, due to yogic practices. Hence, the hypothesis was accepted at 0.05 level of confidence. The above findings were substantiated by the observations made by experts such as **Bathla, M et.al., (2016)**

DISCUSSION ON HYPOTHESIS

It was hypothesized that there would be significant differences on selected Physiological and Psychological variable such as Systolic blood pressure and anxiety due to yogic practices among middle aged women suffering with Hypothyroidism than the control group. The results proved that there were significant differences on Systolic blood pressure (decreased) and Anxiety (reduced) due to yogic practices than the control group among middle aged women suffering with hypothyroidism.

CONCLUSION

It is concluded that yogic practices decreased Systolic blood pressure and reduced anxiety significantly among middle aged women suffering with hypothyroidism. Hence, yogic practices are beneficial to middle aged women suffering with hypothyroidism to maintain good health.

REFERENCES

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KEYWORDS

Yogic practices, Hypothyroidism, Middle aged women, Systolic blood pressure, Anxiety

AUTHOR'S CONTRIBUTIONS TOWARDS CREATIONS OF NEW KNOWLEDGE

The study will be useful to women to understand the importance of yogic practices and serves as a guide for the overall well-being of middle-aged women in particular.

