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Effect of Yogic Practices with and Without Diet Modifications on Systolic Blood Pressure Among Adult Women with Oligomenorrhea

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ABSTRACT

A periodic discharge of a bloody fluid from the uterus occurring at more or less at regular interval of 28 days in woman from the age of puberty to menopause is known as menstruation. The flow of altered blood along with endometrial and stoma cells, glandular secretion and occasional blood clots occurs for 3 to 5 days through a vaginal passage. Menstruation ceases during pregnancy. Its failure to occur may result from some abnormalities, physical disorders and emotional and hormonal disturbances. From puberty until menopause a women's reproduction system under goes many cyclic changes. The cyclic changes are related to the changes in the endometrium, breast, ovaries, vagina, hormone secretions, and even emotional attitudes. The cyclic reproduction changes of the human female are marked by menstruation, during which some cells, uncoated blood from ruptured blood vessels, other fluids and uterine endometrium are released through the cervix and vagina. Each menstrual cycle occurs about every 28 days and last for 4 – 5 days. The study was undertaken with the aim to observe the effect of yogic practices with and without diet modifications on selected physiological variable as systolic blood pressure among Adult women with oligomenorrhea . For this study totally 45 female students were selected as subjects from Sholinganallur area, Chennai. Their age ranged between 25 to 35 years. They were divided in to three groups. Experimental group I –yogic practices with diet modifications , Experimental group II- yogic practices without diet modifications and group III –control group (no intervention). The data was collected from three groups prior to training and after 12 weeks of yogic practices with and without diet modifications. Analysis of covariance was used to find out the significant difference between the three groups. The level of significance at 0.05%. The results proved that the regular yogic practices and diet modifications helped to significantly reduce the physiological variable systolic blood pressure.

Keywords: Yogic Practices, Diet Modifications, Systolic Blood Pressure.

INTRODUCTION

Oligomenorrhea is infrequent menstruation. More strictly, it is menstrual periods occurring at intervals of greater than 35 days, with only four to nine periods in a year. In the modern era, the origin of yoga is not usually given much importance. While 'yoga' has now become a veritable household word, knowledge of its roots escapes most people, even many of those practising it with regularity."Historically yoga is more than a particular teaching. Yoga, a way of life, a culture and a lifestyle which encompassed not just techniques, practices or ideas, but also eating habits, bathing habits, prayer, social interaction, and work. Yoga included a vast body of 'attitudes toward being', an ingrained sense of morality and ethic and it is the bedrock of the personal – social – cosmic order which developed in that part of the earth known as India. Therefore it is in the ancient Samskrithi (culture) of Bharata that origin of yoga is to be found."- Smt. Meenakshi Devi Bhavanani, "Returning to the Roots; Classical Yoga". Yoga is one of the six orthodox systems of Indian philosophy. It is coordinated and systematized by Patanjali in his classical work, the Yoga Sutras, which consists of 195 terse aphorisms in which it is stated that yoga is a state where all activities of the mind are channelized in one direction or the mind is free from distractions. (B.K.S. Iyengar,).

A balanced diet comprising of diverse and healthy foods is key to promoting good health. After all, we are what we eat - Research continues to prove that eating healthy food promotes good health and unhealthy food habits lead to a diseased body. Foods contain vital nutrients that aid our body's metabolic function. However, a lack of consumption of these nutrients or feeding upon the wrong kinds of food leads to an accumulation of toxins within the body, resulting in chronic diseases in the long run.

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PURPOSE OF THE STUDY

The present study was designed to find out the effect of yogic practices with and without diet modifications on selected physiological variable as systolic blood pressure among Adult women with oligomenorrhea .

HYPOTHESES

1. 1.It was hypothesized that there would be significant differences on selected physiological variable Systolic blood pressure among Adult women with oligomenorrhea due to yogic practices with and without diet modifications groups than the control group.
2. 2. It was hypothesized that there would be significant differences on selected physiological variable Systolic blood pressure among Adult women with oligomenorrhea due to yogic practices with diet modifications group than the yogic practices without diet modifications group.

REVIEW OF RELATED LITERATURE

Mohan, et.al.(2000) studied the effects of yoga training on cardiovascular response to exercise and the time course of recovery after the exercise. Cardiovascular response to exercise was determined by Harvard test using a platform of 45 cm height. The subjects were asked to up and down the platform at a rate of 30/min for a total duration of 5 min or until fatigue, whichever was earlier. Heart rate (HR) and blood pressure response to exercise were measured in supine position before exercise and at 1, 2, 3, 4, 5, 7 and 10 minutes after the exercise. Rate-pressure product [RPP = (HR × SP)/100] and double product (Do P = HR × MP), which are indices of work done by the heart were also calculated. Exercise produced a significant increase in HR, systolic pressure, RPP & DoP and a significant decrease in diastolic pressure. After two months of yoga training, exercise induced changes in these parameters were significantly reduced. It is concluded that after yoga training a given level of exercise leads to a milder cardiovascular response, suggesting better exercise tolerance..

Stancak, et.al. (1991) studied cardiovascular and respiratory changes during yogic breathing exercise kapalabhati (KB) in 17 advanced yoga practitioners. The exercise consisted in fast shallow abdominal respiratory movements at about 2 Hz frequency. Blood pressure, ECG and respiration were recorded continuously during three 5 min periods of KB and during pre- and post- KB resting periods. The beat-to-beat series of systolic blood pressure (SBP) and diastolic blood pressure (DBP), R-R intervals and respiration were analyzed by spectral analysis of time series. The mean absolute power was calculated in three frequency bands--band of spontaneous respiration, band of 0.1 Hz rhythm and the low-frequency band greater than 15 s in all spectra. The mean modulus calculated between SBP and R-R intervals was used as a parameter of baroreceptor-cardiac reflex sensitivity (BRS). Heart rate increased by 9 beats per min during KB. SBP and DBP increased during KB by 15 and 6 mmHg respectively. All frequency bands of R-R interval variability were reduced in KB. Also the BRS parameter was reduced in KB. The amplitude of the high-frequency oscillations in SBP and DBP increased during KB. The low-frequency blood pressure oscillations were increased after KB. The results point to decreased cardiac vagal tone during KB which was due to changes in respiratory pattern and due to decreased sensitivity of arterial baroreflex. Decreased respiratory rate and increased SBP and low- frequency blood pressure oscillations after KB suggest a differentiated pattern of vegetative activation and inhibition associated with KB exercise.

METHODOLOGY

For the purpose of the study, 45 female subjects with Adult women with oligomenorrhea from Sholinganallur, Chennai aged between 25 to 35 years were selected. They were equally divided into three groups: experimental group I (yogic practices with diet modifications), Experimental group II (yogic practices without diet modifications) and control group (no intervention). The experimental groups were involved in yogic practices for the duration of twelve weeks with diet modifications. The control group was in active rest during the period of the study. This study employed the experimental random group design, with yogic practices with and without diet modifications as the independent variable and systolic blood pressure as the dependent variable. Yogic practices such as prayer, loosening exercises, Suryanamaskar, Asanas, Pranayama, meditation and relaxation were given to the experimental groups for the period of twelve weeks. The training scheduling comprises of six days per week for the maximum of one hour for twelve weeks. The data were collected before training as pre-test from three groups. After twelve weeks of yogic practices, data were again collected from all the experimental groups and control group. Systolic blood pressure is a measure by sphygmomanometer. Analysis of covariance (ANCOVA) was used to find out the significant differences among groups. The level of significance was fixed at 0.05%.**RESULT AND DISCUSSION**

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TABLE 1
COMPUTATION OF ANALYSIS OF COVARIANCE OF EXPERIMENTAL GROUPS AND CONTROL GROUP ON SYSTOLIC BLOOD PRESSURE
(Scores in mm/hg)

Test	EXP GROUP-I	EXP GROUP-II	CON GROUP	SV	SS	Df	MS	F
Pre test	142.4	142.33	141.00	B	18.71	2	9.356	0.72
				W	544.93	42	12.97	
Posttest	132	135.60	139.87	B	575.24	2	287.62	8.06*
				W	1499.33	42	35.70	
Adjusted	131.71	135.35	140.42	B	683.42	2	341.71	10.76*
				W	1301.907	41	31.75	
mean gain	10.4	6.73	1.13					

***Significant at0.05level of confidence.**

(Table F-ratio at 0.05 level of confidence for2 and 42(df) =3.22, 2 and41 (df) =3.23)

As shown in Table, the obtained F value on the scores of pre test means 0.72 was less than the required table of 3.22 value ,which proved that the random assignment of the subjects were successful and their scores in systolic blood pressure before the training were equal and there was no significant differences. The obtained F value on post test means was 8.06, which was greater than the required table value of 3.22 the study was significant. Taking into consideration of the pre test means and post test means adjusted post test means were determined and analysis of covariance was done and the obtained F value 10.76 was greater than the required table value of 3.23 and hence it was accepted that there was significant differences among the treated groups.

TABLE II
SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON SYSTOLIC BLOOD PRESSURE

Mean Values			MD	Required C.I
EX.GR-I	EX.GR-II	CG		
131.71	135.35	-	3.64*	3.42
131.71	-	140.42	8.71*	
-	135.35	140.42	5.07*	

*** Significant at 0.05 level of confidence.**

The post hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between yogic practices with diet modifications group and control group and there was significant differences existed between yogic practices without diet modifications and control group and there was significant differences existed between yogic with diet modifications group and yogic practices without diet modifications group on systolic blood pressure. The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in the Figure.

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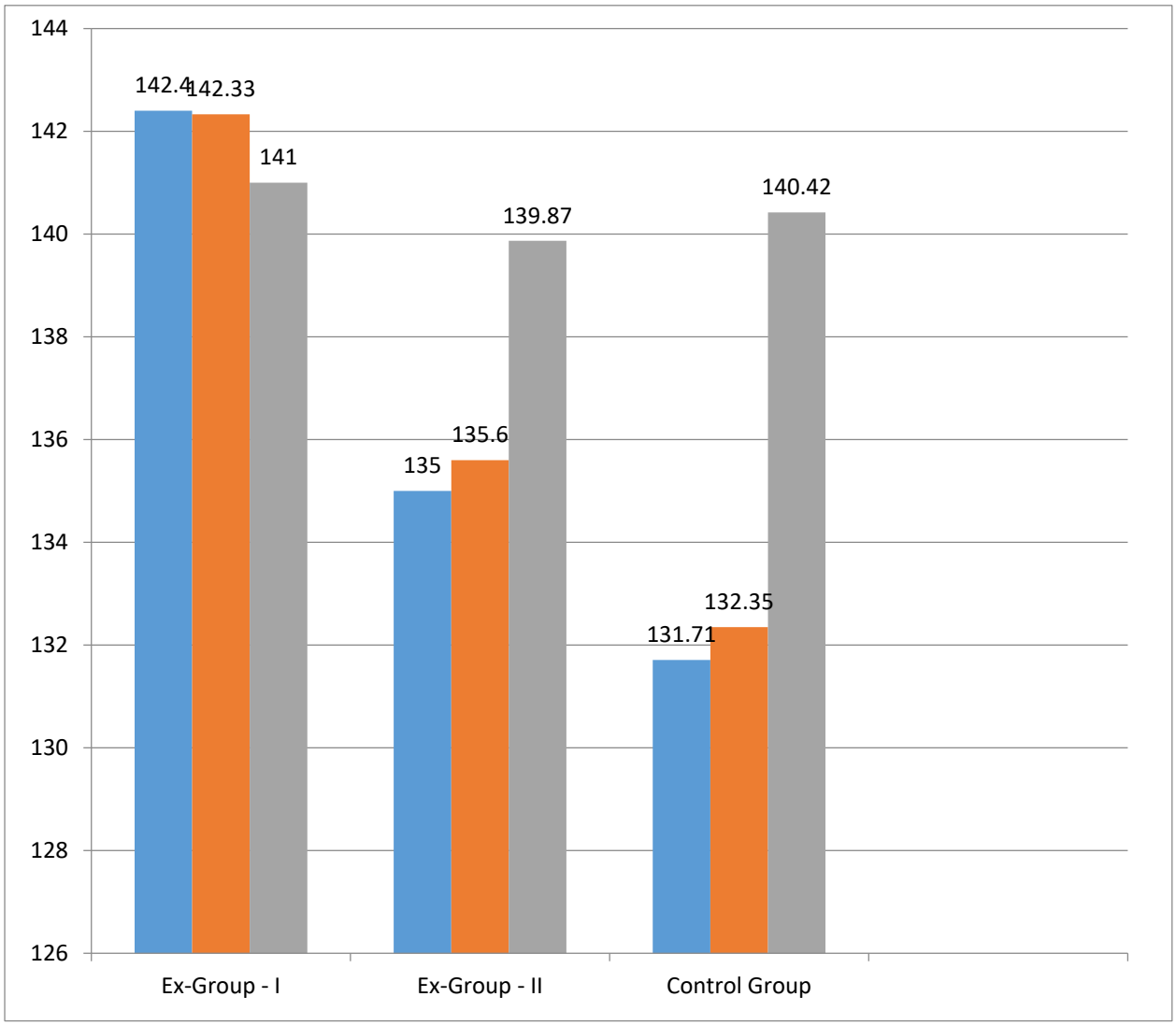
FIGURE I
BAR DIAGRAM SHOWING THE ADJUSTED POST TEST MEANS OF EXPERIMENTAL AND CONTROL GROUPS ON SYSTOLIC BLOOD PRESSURE
(Scores in mm/hg)



DISCUSSION ON THE FINDINGS OF SYSTOLIC BLOOD PRESSURE

As shown in Table ,the obtained F value on the scores of pre test means 0.72 was less than the required table of 3.22 value ,which proved that the random assignment of the subjects were successful and their scores in systolic blood pressure before the training were equal and there was no significant differences. The obtained F value on post test means was 8.06, which was greater than the required table value of 3.22 the

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study was significant. Taking in to consideration of the pre test means and post test means adjusted post test means were determined and analysis of covariance was done and the obtained F value 10.76 was greater than the required table value of 3.23 and hence it was accepted that there was significant differences among the treated groups compared to the control group.

From the Table ,it is clear that the Adjusted mean value of Yogic practices with diet modifications group I, yogic practices without diet modifications group II, and control group III, of Adult women with oligomenorrhea were 131.71, 135.35 and 140.42 respectively. The mean difference between Yogic practices with diet modifications group I, yogic practices without diet modifications group II, and control group group III were 3.64, 8.71 and 5.07 respectively. The required Scheffe's common interval to be significant at 0.05 level was 3.42 and the difference between yogic practices with diet modifications group I, yogic practices without diet modifications group II, and control group III of Systolic Blood Pressure were greater than the required constant interval and hence it is significant yogic practices with diet modifications group is found to be better compared to yogic practices without diet modifications group in reducing the dependent variable Systolic blood pressure.

DISCUSSION ON HYPOTHESIS

1. The first hypothesis results shows that the calculated 'F' value is greater than the table value on the physiological variable among Adult women with oligomenorrhea for post test scores as systolic blood pressure is decreased. This proves that there was significant difference between the experimental groups and control group. Hence the first hypothesis was accepted at 0.05 level of significance.
2. The second hypothesis results proved that the post mean differences between experimental group I , experimental group II, and control group III were found to be greater than the Scheffe's common interval on the selected physiological variable as systolic blood pressure decreased. This proves that there was significant difference between the experimental group I and experimental group II. Hence the second hypothesis was accepted at 0.05 level of confidence.

CONCLUSION

The twelve-weeks yogic intervention significantly reduced the physiological variable systolic blood pressure in the post test data of experimental groups, compared to the control group. The post hoc analysis of the results proved that the yogic practices with diet modifications (experimental group I) was effective than the yogic practices without diet modifications (experimental group II) among Adult women with oligomenorrhea.

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