ISSN: 2349 - 4891

International
Journal of Recent Research and Applied Studies
(Multidisciplinary Open Access Refereed e-Journal)

Effect of Yogic Practices with and without Deep Relaxation Technique on Thyroid-Stimulating Hormone (TSH) among School Girls

K. Tamilselvi[1] & Dr. S. Arul[2]

[1]*Ph.D., Scholar, Centre for Yoga Studies, Faculty of Education, Annamalai University, Chidambaram, Tamilnadu, India.*
[2]*Associate Professor, Department of Physical Education, Annamalai University, Chidambaram, Tamilnadu, India.*

Received 24th September 2020, Accepted 8th November 2020

Abstract

Another form of menstrual disorder is the premenstrual syndrome or pms. This is characterized by uncomfortable mental and physical symptoms that can occur up to two weeks prior to the onset of menstruation. Though most experts believed that it is caused by the estrogen level, they also consider that a combination of psychological, genetic, nutritional, and behavioral factors are likely to be involved. Some psychological manifestations of PMS include anxiety, depression, irritability, anger, confusion, forgetfulness and the exacerbation of existing psychiatric ailments. Physical symptoms include tenderness of breasts, migraine, nausea, changes in energy level, swelling of arms and legs, feeling bloated, back pain and difficulty in sleeping. The study was undertaken with the aim to observe the effect of yogic practices with and without deep Relaxation technique on Thyroid-Stimulating Hormone (TSH) among Irregular Menstrual Disordered Government School Girls . For this study totally 45 female students were selected as subjects from Kanchipuram. Their age ranged between 15 to 18 years. They were divided in to three groups. Experimental group I –yogic practices with deep Relaxation technique, Experimental group II- yogic practices without deep Relaxation technique and group III –control group (no intervention). The data was collected from three groups prior to training and after 6 weeks of yogic practices with and without deep Relaxation technique. 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 deep Relaxation technique helped to significantly reduce the biochemical variable TSH.

Keywords: Yogic Practices, Relaxation, Thyroid, School Girls.

Introduction

Functional hypothalamic amenorrhea (FHA) is the absence of menstruation due to disturbances in the thyroid gland and hypothalamus-pituitary-adrenal (HPA) system, which regulates reproduction and other important functions. The eating disorders anorexia and bulimia are most often associated with FHA. FHA may be due to other different factors, most unknown. Severe weight loss, changes of appetite, or both appear to cause hormonal abnormalities that can cause FHA. How this occurs is not entirely clear. some observations include the following:

Extreme weight loss and reduced fat stores lead to hormonal changes that include low thyroid levels (hypothyroidism) and elevated stress hormone levels (hypercortisolism). These changes effect a reduction in reproductive hormones. some experts theorize that such changes may be due to a primitive protective biologic mechanism that was designed to prevent potentially harmful pregnancies during times of famine.

Correspondence
Dr. S.Arul
Annamalai University

Amenorrhea can also occur in young women with eating disorders whose weights are normal or above normal. factors other than low fat stores, then, may be involved in reproductive abnormalities. changes in appetite itself may have an effect on chemicals in the hypothalamus. one such important chemical in this system that may play a major role in fha is leptin. leptin is involved with regulation of appetite and is released by fat cells. levels fall as less fat is stored in the cells. Low levels of leptin appear to interfere with reproductive hormones, particularly luteinizing hormone and so may contribute to amenorrhea.

A syndrome known as the female athlete triad is associated with hormonal changes that occur with eating disorders in young women who excessively exercise. It comprises anorexia (severe weight loss), amenorrhea, and osteoporosis (decrease in bone density). one 2001 study suggested that repeated exercise modifies the hormonal responses to both activity and rest and may interfere with cyclic variations in reproductive hormones, particularly luteinizing hormone (lh), which triggers ovulation.

Purpose of the Study

The present study was designed to find out the

ISSN: 2349 – 4891

effect of yogic practices with and without deep Relaxation technique on Thyroid-Stimulating Hormone (TSH) among School girls.

Review of Related Literature

Mukhopadhyaya et al (2001)Effect of yogic exercises on physical and mental health of young fellowship course trainee A study was undertaken to observe any beneficial effect of yogic practices during training period on the young trainees. 54 trainees of 20-25 years age group were divided randomly in two groups i.e. yoga and control group. Yoga group (23 males and 5 females) was administered yogic practices for the first five months of the course while control group (21 males and 5 females) did not perform yogic exercises during this period. From the 6th to 10th month of training both the groups performed the yogic practices. Physiological parameters like heart rate, blood pressure, oral temperature, skin temperature in resting condition, responses to maximal and submaximal exercise, body flexibility were recorded. Psychological parameters like personality, learning, arithmetic and psychomotor ability, mental well being were also recorded. Various parameters were taken before and during the 5th and 10th month of training period. Initially there was relatively higher sympathetic activity in both the groups due to the new work/training environment but gradually it subsided. Later on at the 5th and 10th month, yoga group had relatively lower sympathetic activity than the control group. There was improvement in performance at submaximal level of exercise and in anaerobic threshold in the yoga group. Shoulder, hip, trunk and neck flexibility improved in the yoga group. There was improvement in various psychological parameters like reduction in anxiety and depression and a better mental function after yogic practices.

Methodology

For the purpose of the study, 45 female subjects with School girls from kanchipuram aged between 15 to 18 years were selected.. They were equally divided into three groups: experimental group I (yogic practices with deep Relaxation technique), Experimental group II (yogic practices without deep Relaxation technique) and control group (no intervention).

The experimental group I was involved in yogic practices with deep Relaxation technique for the duration of six weeks, experimental group II was involved yogic practices without deep Relaxation technique. 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 deep Relaxation technique as the independent variable and Thyroid-Stimulating Hormone (TSH) as the dependent variable.

Varied yogic practices and deep Relaxation technique were given to the experimental groups for the period of six weeks . The training scheduling comprises of six days per week for the maximum of one hour for six weeks . The data were collected before training as pre-test from three groups. After six weeks of yogic practices, data were again collected from all the experimental groups and control group. The equipment used to measure the level of Thyroid-Stimulating Hormone (TSH) through blood test from standard laboratory. Analysis of covariance (ANCOVA) was used to find out the significant differences among the groups. The level of significance was fixed at 0.05%.

Result and Discussion

Thyroid-Stimulating Hormone (TSH) was measured through standard laboratory. The pre and post test means of the experimental groups and control group statistically analyzed to find out the significance.

Table 1. *Computation of Analysis of Covariance of the Two Experimental Groups and Control Group on Tsh (Scores In Mg/Dl)*

Test	Exp. Gr. I	Exp. Gr. II	Cont. Group	Source of variance	Sum of squares	Degree of freedom	Means squares	Obtained F value
PRE TEST	1.4953	1.46	1.37	between	0.13	2	0.066	0.20
				within	14.11	42	0.34	
POST TEST	4.1126	3.88	1.49	between	63.28	2	31.64	113.46*
				within	11.71	42	0.28	
ADJUSTED POST TEST	4.09	3.87	1.51	between	60.76	2	30.38	125.47*
				within	9.928	41	0.24	
MEAN GAIN	2.6173	2.42	0.12					

*significant.

*Significant at 0.05 level of confidence. * F(0.05) (2,42 and 2, 41) = 3.23.

Since significant improvements were recorded, the results were subjected to post hoc analysis using scheffe's confidence interval test.

ISSN: 2349 – 4891

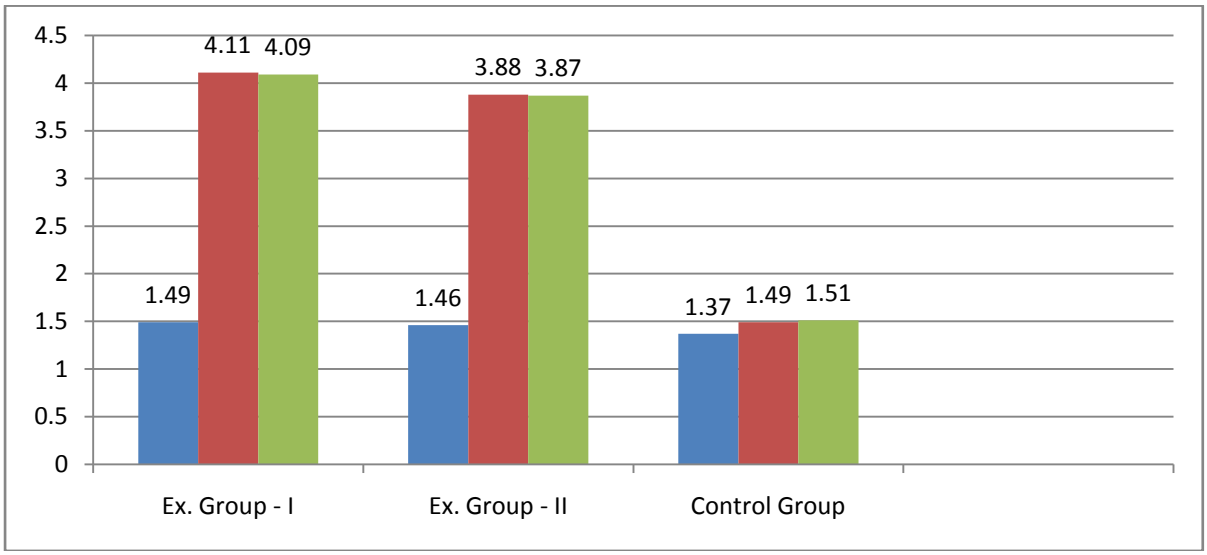
Table 2. *Scheffe's Post-Hoc Test For Thyroid-Stimulating Hormone (Tsh)*

Adjusted post mean for			Mean Difference	C.I
Control Group	**Group I**	**Group II**		
1.51	4.09	-	2.58*	
1.51	-	3.87	2.36*	
-	4.09	3.87	0.22	0.45

*significant at 0.05 level of significance

The pre test, post test mean values of EX.GR-I (yogic practices with deep Relaxation technique), EX.GR-II (yogic practices without deep Relaxation technique) and control group on Thyroid-Stimulating Hormone (TSH) are graphically presented.

Figure I. Bar Diagram Showing The Mean Difference Among Experimental Group I, Experimental Group II And Control Group Of TSH



Conclusion

The six-week of yogic practices and deep Relaxation technique significantly reduced the biochemical variable Thyroid-Stimulating Hormone (TSH) 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 deep Relaxation technique (experimental group I) was effective than the yogic practices without deep Relaxation technique (experimental group II) among School Girls.

References

1. James A. and Raub.(2002) "Psychophysiologic Effects of Hatha Yoga on Musculoskeletal and Cardiopulmonary Function" The Journal of Alternative and Complementary Medicine. 8(6): PP.797-812.
2. Jankowski C, Ben-Ezra V, Kendrick K, Morriss R and Nichols D (1999), "Effect of exercise on post prandial insulin responses in Mexico American and non Hisponic women", Metabolism, 48(8):pp.971-977.
3. Jeon CY, Lokken RP, Hu FB, van Dam RM (2007), "Physical activity of moderate intensity and risk of type 2 diabetes: a systematic review". Diabetes Care, 30(3): pp.744-752.
4. Joshi LN, et.al, (1992). "Effect of short term 'Pranayam' practice on breathing rate and ventilatory functions of lung". Indian journal of physiology and pharmacology 36(2):PP.105-8.
5. T K V Desikachar, et.al, (2009) 'The Viniyoga of Yoga" Published by Sudarsan Graphics, Chennai.Fourth Edition P.7
6. Thirumalaisamy R (1998), "Statistics in Physical Education", karaikudi : Senthil Publishers, pp.18.

ISSN: 2349 – 4891

7. Tortora G.J & Anagnostakos N.P.,(1990). "Principles of Anatomy and Physiology", 6th edition, New York: Harper-Collins, P.707.
8. Whichester, N.M.(1969) Biology and its relation to mankind, Englewood Cliffs, N.J: Prentice Hall Inc., pp.479.
9. World Health Organization (1986), "The Ottawa Charter for Health Promotion. Adopted at the First International Conference on Health Promotion, Ottawa, WHO/HPR/HEP/95.1.
10. Yogacharya Sundaram (2004) Sundara Yoga therapy or marvels of Yogic Cure, Yoga Publishing house (India) PP 3-36.