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Effects of physical activity intervention on premenstrual syndrome among womens college students

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Abstract

The objective of this study was to find out the effects of physical activity intervention on premenstrual syndrome among college women students. To achieve the purpose of the study fifty subjects were selected randomly from Rani Anna Govt. College for Women, Tirunelveli, and their age ranged between 18-24 years. The subjects were divided into two groups namely Experimental and control groups. The experimental group underwent the specific training for six weeks and the control group did not take part in any training. The pre test was taken before the training programme and post test was taken after the six weeks of training period. The standardized questionnaire was used to measure the premenstrual syndromes. The data was statistically analyzed by using dependent t-test and ANCOVA. The level of significance was set at 0.05. It was concluded that, the experimental group showed significant changes on premenstrual syndrome due to the effects of physical activity intervention and also differed with control group.

Keywords: Physical activity intervention, premenstrual syndrome

Introduction

The slogan, "Healthy Women, Healthy World" embodies the fact that as custodians of family health, women play a critical role in maintaining the health and well being of their communities (World Health Organization, 2003) [6].

Physical activity includes all types of movement, from the smallest to the most complex. It may be voluntary, (including structured physical activity, planned, relatively limited in time and implemented to improve certain attributes of physical fitness or energy expenditure) or daily life activities (which includes walking, household, occupational activities or transportation). It can be typically involuntary and spontaneous, from small body movements, like a blink of an eye, to all muscle contractions associated with different postures of the body. However, it is difficult to assess and quantify separately these different physical activity domains, which leads them to being considered together (Teixeira, Silva, Vieira, Palmeira, & Sardinha, 2006) [4]. Aristotle the great philosopher observed that "the body is the temple of soul and to reach harmony of body, mind and spirit, the body must be physically fit" (John, 1968).

Premenstrual syndrome, also called premenstrual tension (PMT) is a collection of emotional symptoms, with or without physical symptoms, related to a woman's menstrual cycle. While most women of child-bearing age (up to 85%) report having experienced physical symptoms related to normal ovulatory function, such as bloating or breast tenderness, medical definitions of premenstrual syndrome are limited to a consistent pattern of emotional and physical symptoms occurring only during the luteal phase of the menstrual cycle that are of "sufficient severity to interfere with some aspects of life". (Dickerson, Lori M. 2003) In particular, emotional symptoms must be present consistently to diagnose premenstrual syndrome. The specific emotional and physical symptoms attributable to premenstrual syndrome vary from woman to woman, but each individual woman's pattern of symptoms is predictable, occurs consistently during the ten days prior to menses, and vanishes either shortly before or shortly after the start of menstrual flow. Two to ten percent of women have significant premenstrual symptoms that are separate from the normal discomfort associated with menstruation in healthy women (Matlin, Margaret W, 2008) [2].

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Women's menstrual cycles are controlled by a complex interaction of female hormones. These hormones help initiate menstruation during puberty, determine the rhythm and length of menstrual periods during childbearing years, and signal the end of menstruation at menopause. Hormonal control of menstruation involves the brain, pituitary gland, and ovaries. Proper nutrition, regular exercise, and a healthy lifestyle generally help with premenstrual syndrome. Regular exercise and stress reduction techniques may decrease nervousness and agitation as well as reduce symptoms associated with premenstrual syndrome. Speaking to a counsellor may help some women cope better with the psychological effects of premenstrual syndrome. Keeping a symptom diary can give you and your doctor a better picture of your symptoms and help you evaluate the effects of different treatments (Premenstrual Syndrome, 2014).

Purpose of the study

The purpose of this present study was to find out the effects of physical activity intervention on premenstrual syndrome among the college women students.

Methodology

To achieve the purpose of the study fifty subjects were selected randomly from Rani Anna Govt. College for Women, Tirunelveli, and their age ranged between 18-24 years. The subjects were divided into two groups namely Experimental and control groups. The experimental group underwent the specific training for six weeks and the control group did not take part in any training. The pre test was taken before the training programme and post test was taken after the six weeks of training period. As per the availability literature of and the personal knowledge of the investigator premenstrual syndrome were selected as dependent variables for this study and the standardized questionnaire namely premenstrual syndrome questionnaire developed by Ricki Pollycove (1994) was used to measure the premenstrual syndromes.

Statistics Technique

The pre and post test random group design was used as experimental design in which fifty subjects were divided into two groups of twenty five each at random. No attempt was made to equate the group in any manner. The subjects were tested on the selected criterion variables prior to and immediately after the treatment period. The collected data from the experimental and control group prior to and immediately after the training period on selected criterion variables were statistically analyzed with dependent "t" test to find out the significant improvement between pre and post-test means of experimental and control groups separately and analysis of covariance (ANCOVA) was used to find out the significant difference among experimental and control groups. In all the cases 0.05 level of significant was fixed to test the

hypothesis.

Analysis of the data

The analysis of dependent 't'-test on the data obtained for Premenstrual Syndrome of the pre-test and post-test means of experimental and control groups have been analyzed and presented in table 1.

Table 1: Means, standard deviation and dependent t- test values on premenstrual syndrome of experimental and control groups

Tests	Experimental group		Control group	
	Mean	SD	Mean	SD
Pre test	54.04	4.72	54.12	5.10
Post test	44.32	6.32	54.56	3.58
T-Test	8.56*		0.43	

*Significant at .05 level. The table value required at .05 level with df 24 is 2.06.

The table 1 show that the obtained dependent t-test values between pre-test and post test means of Experimental and control groups are 8.56 and 0.43 respectively. The table value required for significant difference with df 24 at .05 level is 2.06. Since, the obtained t-test value of experimental group is greater than the table value, it is understood that experimental group had significantly improved the participants' premenstrual syndromes positively and the control group has not improved as the obtained t-test value lesser than the table value because they were not subjected to any specific training. Pre and post test means of experimental and control groups on premenstrual syndrome among college women students were graphically represented in figure 1.

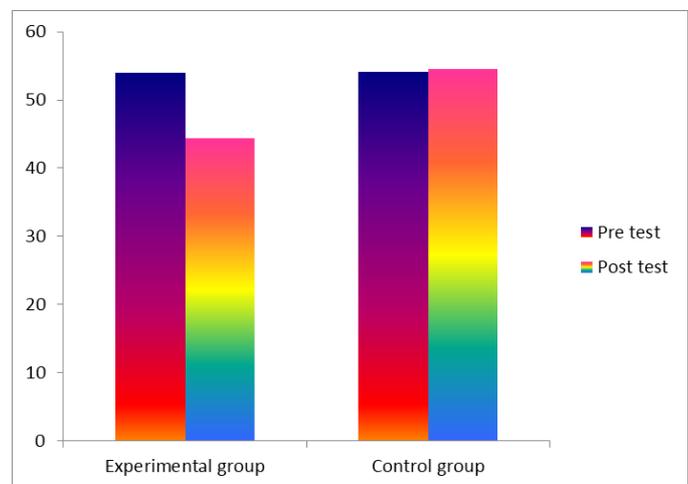


Fig 1

The analysis of covariance (ANCOVA) on premenstrual syndrome of experimental and control groups have been analyzed and presented in table 2.

Table 2: Analysis of covariance on premenstrual syndrome of experimental and control groups among college women students

Adjusted post test means		Sources of variance	Sum of square	df	Mean squares	F-ratio
Experimental group	Control group					
44.34	54.54	Between	1301.66	1	1301.66	58.70*
		Within	1042.17	47	22.17	

*Significant at .05 level of confidence. The table value F (1, 47) is 4.05.

Table 2 shows that the adjusted post test means of experimental and control groups are 44.34 and 54.54 respectively. The obtained F-ratio value is 58.70 which are higher than the table value 4.05 with df 1 and 47 required for

significance at .05 level. Since, the value of F- ratio is higher than the table value it indicates that there is significant difference exists between the adjusted post-test means of experimental and control groups on premenstrual syndrome.

Discussions on findings

The result of the study indicates that there was a significant improvement on premenstrual syndrome due to the effects of physical activity intervention among college women students. There is evidence that physical activity helps to make changes on premenstrual syndrome. According to Timonen, & Procopé, (1971) ^[5] examine the relationship between premenstrual syndrome and physical exercise was studied with the aid of questionnaires in a series of 748 female university students. Girls who practiced sports showed less symptoms of central nervous tension, particularly headache. Menstrual dysmenorrhoea also was less frequent in the athletes than in the control group.

Steege, & Blumenthal, (1993) ^[3] examined the effects of aerobic exercise and strength training on premenstrual symptoms were evaluated in 23 healthy premenopausal women. Premenstrual symptoms were assessed at baseline and following 3 months of exercise participation. Aganoff & Boyle, (1994) ^[1] examined the effects of regular, moderate exercise on mood states and menstrual cycle symptoms. A group of female regular exercisers (N = 97), and a second group of female non-exercisers (N = 159), completed the Menstrual Distress Questionnaire (MDQ) and the Differential Emotions Scale (DES-IV) premenstrually, menstrually and intermenstrually.

Physical activity was a part of the human daily life. It has been significantly improved the students life style. Physical activity appears to relieve symptoms of depression and anxiety and improve mood. Physical activity feels the students to feel better and get more energy, happy and relaxed, and sleep better. This study provides valuable research to the growing body of knowledge on physical activity, and premenstrual syndrome.

Conclusions

From the analysis of the data, the following results were drawn.

There was significant improvement on premenstrual syndrome due to the effects of physical activity intervention among college women students.

There was a significant difference between the experimental and control groups on premenstrual syndrome among college women students.

Recommendations

1. It is recommended that further research be designed to investigate the effects of physical activity on menstrual symptoms.
2. It is recommended that further research be designed to investigate with different age group.
3. It is recommended that further research be conducted using more subjects.

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