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EFFICACY OF AEROBIC EXERCISE ON PHYSICAL ACTIVITY IN UNDERGRADUATING FEMALES SUFFERING FROM PREMENSTRUAL SYNDROME

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ABSTRACT

Introduction: Pre-menstrual syndrome is a disorder that most young females deal with frequently. Symptoms though mild but substantially affect quality of living in females. Fluctuations in gonadal hormones triggers the symptoms embarking a spectrum of mood and behavioural symptoms. The efficacy of various pharmacotherapeutic measures in relieving symptoms have been investigated earlier, evidence of which is available in literature. The aim of this study is to see the efficacy of aerobic exercise on physical activity in under graduating females suffering from premenstrual syndrome.

Materials & Methods: A sample size of 30 women was taken by using PSST scale who were divided into two groups of 15 each. The experimental group was asked to perform 30 minutes of Aerobic exercise that included Warm up phase for duration of 5 minutes. Aerobic exercise for the duration of 20 minutes. Cool down phase was 5 minutes and the controlled group was asked to carry out their normal routine. Pre and Post intervention assessment of physical activity was taken on GPAQ scale for drawing inferences.

Results: The results stated that the females suffering from PMS who perform Aerobic exercise, experience changes in their physical activity level. Also it was found to be effective in reducing their PMS symptoms compared to the females who do not perform any kind of physical activity.

Conclusion: Therefore, with this study we reached a conclusion that in giving a positive effect on physical activity of under graduating females suffering from premenstrual syndrome as this study showed that there is a increment in physical activity after performing aerobic exercises and there is reduction in premenstrual symptoms as well. And as the statistical analysis also showed Group 1 to be statistically significant than Group 2.

KEYWORDS- Aerobic exercises, pre-menstrual syndrome, Physical activity.

INTRODUCTION

Premenstrual syndrome is common in girls and young women. The effects of PMS are a concern for the patient and their families. The most common diseases in young girls include excessive bleeding, missed menstruation. [1] PMS starts during the reproductive years and ends during menopause. The disease manifests itself during the menopause phase of the monthly cycle form of physical, mental and behavioural disorders. About 75% to 95% women experience disease before menstruation. The disease usually begins 5 to 11 days prior period and endures 3 to 5 days after menstrual menorrhea. [1] . Up to 82 percent of ladies report at least one side effects during the luteal period of their feminine cycle, and 22 to 34 percent of premenopausal ladies' report that PMS indications intervene with their everyday life. [2] The etiologies of PMS are not obviously defined, however it is accepted that way of life and nourishing components like dozing time, caffeine utilization, liquor admission, and smoking are related with PMS. [1] PMS symptoms include low back pain, constipation, fluid retention, weight gain, breast tenderness, and headaches. Depression, anxiety, irritability, restlessness, anger, confusion, and loneliness are common psychological and behavioral symptoms of PMS [2] Premenstrual Syndrome contrarily affects little youngsters' lives, which can prompt decreased work effectiveness and nature of work, expanded mishaps and absence of school participation. comparing exercise with medical treatment, exercise has no side effects and it is more suitable to add it on daily activities.

"It is believed that fluctuations in hormone levels are triggers and harbingers of these symptoms.Decreasing use of salt, weight loss plan changes, decreasing caffeine, stress, and alcohol in conjunction with calcium and nutrition D dietary supplements can be useful with inside the discount of PMS"[.18]

Vigorous exercise appears to expand the level of spreading endorphins and diminish adrenal cortisol for a brief timeframe and go about as a vague pain relieving, and can likewise lessen the manifestations of sorrow and

mental issues. Oxygen consuming additionally assumes a significant part in lessening pressure, outrage, sorrow, torment, and by and large seriousness of premenstrual condition. Exercise like strolling, cycling, swimming furthermore, running easily is a decent method to dispose of premenstrual disorder. [19] Many causes of the disease have been reported, together with Estrogen, Progesterone, Water maintenance, Vitamin B6, Hypoglycemia, Hyperprolactinemia, Lack of Prostaglandin, Androgen hormone allergies, Mental disorder, Increased performance of Renin plasma and aldosterone, Lack of serotonin, issue of thyroid [3] Physical activity plays an important role in determining and improving an individual's health. Many Researchers think that exercising like aerobic for 25 to 30 minutes 3 times a week and exercise as a way to reduce stress helps to improve the feature of PMS. Although the impact of exercises treating PMS features have not studied directly, evidence suggest that it may help to reduce symptoms [4]

METHOD AND MATERIAL

This study was a Pre-Post experimental study design. A total number of 30 subjects aged 18-25 years were selected who diagnosed cases of premenstrual syndrome by doing were screening through PMS questionnaire based on inclusion and exclusion crieteria. They were divided into two groups (15 subjects in each group). Group1 – Experimental group Group 2 – Control group .The duration of the study was of 4 times in a week and 30 minute per session for 8 weeks .All subjects gave their informed consent to participate in the study and the information on the consent form was kept confidential by assigning a number to each subject. Premenstrual symptom screening tool (PSST) was used for screening of PMS and Global physical activity questionnaire (GPAQ) was used for physical activity.

Selection and description of participants

A total number of 30 female subjects aged 18-25 years were selected based on inclusion criteria and with a written consent of patient to participate in the study. Consent form gives data in regards to the reasons and purposed results of the examination and permits the member to express their consent to take part in the investigation. The subject were educated about the secret idea of the examination. After completion of consent form, PSST Questionnaire were given through google form to do the screening of premenstrual syndrome [16]A total of 30 subjects was considered which was assigned into 2 groups (15 each) i.e. Group A (Experimental group); Group B (Controlled group).After this by using GPAQ (Global physical activity questionnaire) we measured the physical activity level of those 30 subjects [7]. Then the experimental group received aerobic

exercises . It incorporates three stages, warm up stage, oxygen consuming dance and cool down stage. Warm up stage for term of 5 minutes and each motion for 15 tallies. Heel motion, upward reaches, Neck motion, Arm turn, Trunk turn, Hip turn, Knee rolling, Hamstrings extends, Leg motion. High-impact Dance for the span of 20 minutes. bounces, Abdomen crunches, jogging, setup, upward reaches, rocking side to side, alternate shoulder shrug, Jumping jacks, back extension, forward backward kicks, alternate knee lifts. Cool down stage was 5 minutes. Heel motion, Flexion of the trunk between the legs, jogging for 4 times a week 30 minute per session for 4 weeks. The controlled group did not get aerobic exercise they had followed their normal routine. After completion of 4 weeks exercise training program we again used the GPAQ scale to measure the level of physical activity [24].The scores were calculated of the readings of GPAQ [7]

STATISTICAL ANALYSIS

Data analysis was done under the Social Science Packaging Software SPSS 21.0 version. An independent T-test and paired t test were used to compare the pre and post readings. The graphical representation is done using MS EXCEL 2016.

RESULT

The results are very clear and show that there is indeed an efficacy of aerobic exercise on physical activity in under graduating females suffering from premenstrual syndrome as shown in following tables:

Table 1 shows the demographic details of both Groups 1 and 2 related to age, weight, height and BMI

Table 2 shows the comparison of both the pre and post-intervention scores of both the group's Group 1 and Group 2 through paired t-test and it shows that the p-value is less than 0.005 Group 1 and hence it is significant for Group 1. Hence Group 1 is more effective than Group 2.

Table 3 correlation between pre and post intervention data of Group1 and Group 2.

DISCUSSION

The study aimed to find out the efficacy of aerobic exercises on physical activity levels in females suffering from PMS. The baseline demographic variables taken were age, weight, height and BMI. The results suggested that on comparing the Pre and post data in experimental group, result shows that after aerobic exercises for four times in a week for 8 week helps in increment of physical activity level and reduction of PMS symptoms (table 5.2).

on the other hand there was no change in control group and on comparison between experimental and control group better result shows in experimental group so it is concluded that by doing regular aerobic exercises helps in increasing physical activity levels in female suffering from PMS. The study above shows the increment in physical activity level by doing aerobic exercises and this is similar to the study done by Fallah Rostami et.al in 2015 but the only difference here is that she was she has taken the population of High School females and I had taken and the under graduating females. The result of our study showed the reduction of PMS symptoms which is similar to the study done by Ameneh Safarzadeh et al in 2016 in her study about exercise and menstrual function this study showed through the PSST questionnaire that there is a great effect of exercise on women during their menstruation and concluded that sportswomen irrespective of the sport type and duration experience PMS lesser than that of others and there was a further scope of studying in this field as it was done mostly only upon PMS and vigorous sports activity like swimming, cycling, etc.

The result of present study also resembles with the study done by Marino saori et.al in 2016 in her studies she showed that PMS was high on individual who have low physical activity with the individual who are having typical degree of active work so in my study there is a very clear results showing effectiveness of aerobic exercises on physical activity levels and reduction of PMS symptoms. As a result this study proved the effectiveness of aerobic exercise on physical activity level and was also be very clear that physical activity reduces the PMS symptoms as well.

CONCLUSION

Therefore, this study resulted in giving a positive effect on physical activity of under graduating females suffering from premenstrual syndrome as this study showed that there is a increment in physical activity after performing aerobic exercises and there is reduction in premenstrual symptoms as well. And as the statistical analysis also showed Group 1 to be statistically significant than Group 2, henceforth we can reject the null hypothesis and accept the alternate hypothesis that is there is an effect of Aerobic exercise in physical activity in female suffering from PMS.

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CONFLICT OF INTEREST

The authors have no conflicts of interest.

LIMITATIONS AND STRENGTHS

The study is limited in terms of its respondent. Only 30 respondents were engaged for responses. It is due to only time constraints that the sample taken was too less. Difficulties in follow up of patient due to lockdown period in covid-19. Further research may be conducted with greater number of subjects.

FUTURE RECOMMENDATIONS

In future, empirical studies can be done on bigger sample and efficacy of aerobics can be traced on Premenstrual Symptoms separately such as pain, fatigue, functional ability etc.

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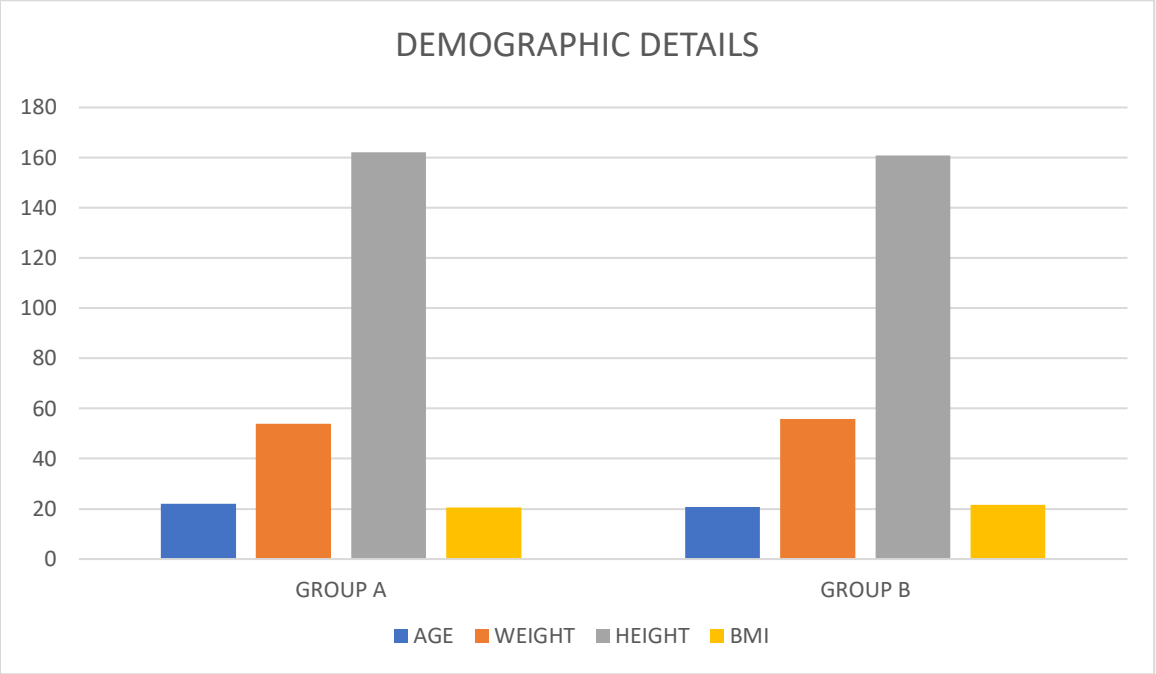
Tables and figures

TABLE 5.1. DEMOGRAPHICS CHARACTERSTICS OF PARTICIPANTS

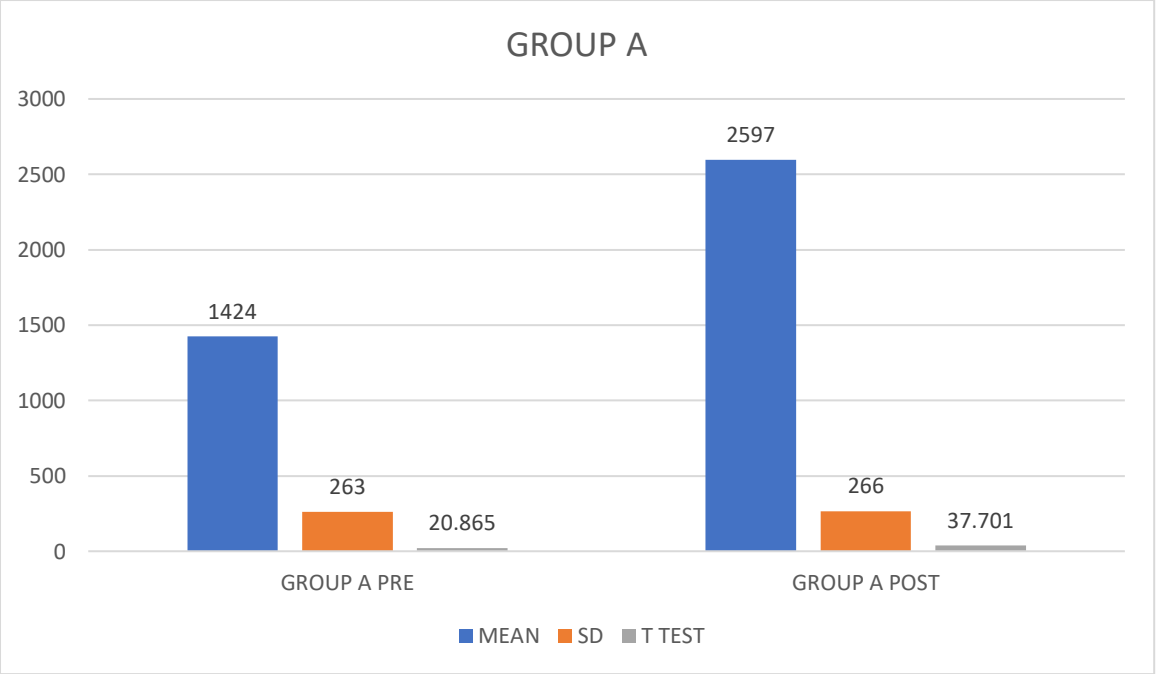
VARIABLES	GROUP 1 (N = 15)		GROUP 2 (N = 15)	
	MEAN	SD	MEAN	SD
AGE	22.0000	1.57569	20.8667	1.96053
WEIGHT	53.8667	8.33660	55.7333	10.48787
HEIGHT	162.1333	4.72509	160.9333	11.77646
BMI	20.4933	3.13566	21.5733	7.13229

TABLE 5.2. . COMPARISON OF MEAN BETWEEN THE PRE INTERVENTION AND POST INTERVENTION SCORES OF GROUP 1 AND GROUP 2 (PAIRED T TEST)

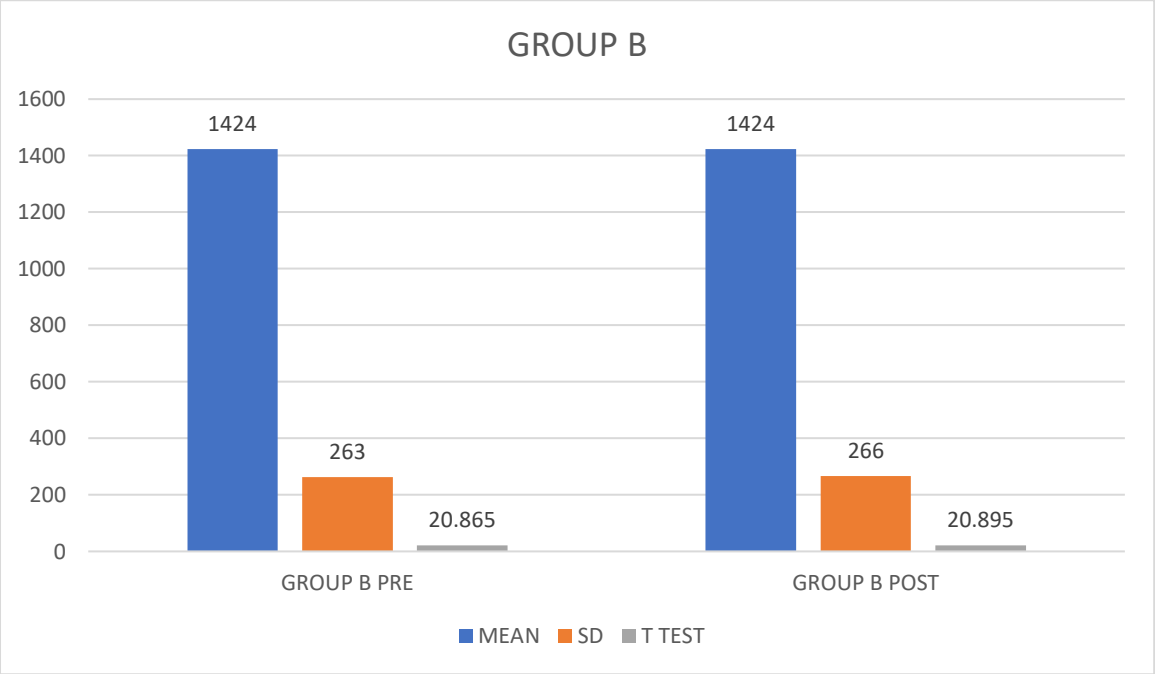
VARIABLE	GROUP 1 (N = 15)				GROUP2 (N =15)			
	MEAN	SD	T VALUE	P VALUE	MEAN	SD	T VALUE	P VALUE
P1(Total MET min/week)	1424	263.94	20.86	P<0.05	1424	263.94	20.89	P<0.05
P2(Total MET min/week)	2597.33	266.81	37.70	P<0.05	1424	263.94	20.89	P<0.05



5.4 DEMOGRAPHIC DESCRIPTIVE STATISTICS OF GROUP 1 AND GROUP 2



5.5. Shows the pre and post intervention of Group 1



5.6. Shows the pre and post intervention of Group 2