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IMPACT OF PHYSICAL ACTIVITY AND PHYSICAL SYMPTOMS: INDICATION OF PREMENSTRUAL DYSPHORIC DISORDER

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ABSTRACT:

Introduction: PMDD is a more severe premenstrual condition that affects about 5% of women during their reproductive years. Despite the fact it is different PMDD, like PMS evolve with physical symptoms, involving a worsened mood, significantly with the woman's quality of life. . Aims &Objectives: Premenstrual dysphoric disorder is a mostly observed menstrual disorder affecting the female population of reproductive age. This study compared the effect of engaging people in exercises and sports activities on the indication of premenstrual dysphoric disorder and menstrual symptoms with that of the indication of premenstrual dysphoric disorder. Materials and methods: The study was conducted at Madras School of social work, Chennai a complete of 72 students were analyzed with an easy random sampling method. Data was analyzed using SPSS 20.0 version Results: The result of the study showed that there was a positive significance in the participants who are involved in these activities when compared to the indication of premenstrual dysphoric disorder. There are evidences that certain disparities in the lifestyle and the habits accompanied which also have contribution to those respondents who has indication of PMDD. Conclusions: Exercises and the involvement in sports and other physical activities were as effective which could diminish the physical symptoms and thereby lessening the occurrence of premenstrual dysphoric disorder. This study results put forward that the effect of exercise has positive influence in the Premenstrual dysphoric disorder indication and in the drop of the physical symptoms.

Keywords: **Premenstrual dysphoric disorder, Sports and Physical exercises, Physical symptoms, BMI Range**

1 .INTRODUCTION

Menstrual cycle is the common process of hormonal variations which a woman's body undergoes in each month, making her capable of bearing a child. A steady menstrual cycle in the reproductive age are normally is an indication of good health. Menstrual disorder is a common problem among females that appears during their propagative age. After menarche, female adolescents encounter many common menstrual characteristics such as irregularities in the menstrual cycle, premenstrual pain, premenstrual syndrome, dysmenorrhea, prolonged menstrual bleeding, and emotional disturbances

which can affect the health of the adolescent. 75% of adolescents experience one or the other menstrual problems are prone to menstrual disorders. Currently it's estimated that 3–8% of women of reproductive age meet strict criteria for premenstrual dysphoric disorder [PMDD]. PMDD is not something to find fault with women, its affect by it or the outcomes of it make them a "vulnerable, helpless, uncertain" and more a volatile state. Rather, PMDD may be a medical illness which will be treated. Before her menstrual days, women with PMDD may experience various emotional disturbances varying from moodiness, anger, lack of interest etc. which seems uncontrollable and threatening to the life events and relationships. Assessment of published reports demonstrate that the prevalence of clinically relevant dysphoric premenstrual disorder is maybe higher. 13– 18% of girls of reproductive age may have premenstrual dysphoric symptoms severe enough to induce impairment and distress, though the amount of symptoms might not meet the arbitrary count of 5 symptoms on the PMDD list. The impairment and lowered quality of life for PMDD is comparable to that of dysthymic disorder and isn't much less than major emotional disturbance. Nevertheless, PMS/PMDD is still under-recognized in large published epidemiological studies, also as assessments of burden of disease. It is demonstrated here that the burden of PMS/PMDD in addition as the disability adjusted life years lost because of this repeated-cyclic disorder is within the same magnitude as major recognized disorders. Appropriate recognition of the disorder and its impact should result in treatment of more women with PMS/PMDD. Efficacious treatments are available. They should reduce individual suffering and impact on family, society, and economy. Thus the population has problems with relationships at home and at work, parenting, and work performance etc. that can be assessed to determine the extent to which the woman's life is disrupted [1].

The characteristic feature and the menstrual abnormalities of the adolescent thus vary across globe. Premenstrual disorders disturbs approximately 12% of women. Nearly 80% of women of reproductive proficiency conveys at least one physical or psychiatric symptom at some point of the luteal phase of their menstrual cycle. In spite of all these, not a hint of substantial deficiency are observed or reported in the daily life of womanhood. A study showed a result that 1.3% to 5.3% patients with diagnostic criteria for PMDD with vigorousness [2].

Among the population of 2,800 French women, around 12% encountered with the diagnostic criteria for PMS, and 4% happened to have severe symptoms. It was evident that the occurrence of PMS is not related with age of the women, educational qualification, or employment status. This is due to the severity and the persistence of indicators that incline to rise and fall. Another study found that 36% of females diagnosed with PMS were continued to have diagnostic criteria even after one year.

Women who diagnosed with PMS, were those who gained weight or had a stressful event in the past year [3].

Despite the prevalence of the disorder, the supply of treatment and media exposure, many lay people and professionals are still unaware of its impact on the individual, her family and environment. A comprehensive report by the world Health Organization [WHO] and therefore the World Bank concerning the burden of disease and lost productivity from a mess of physical and mental disorders [total of 483 disorders] did not include PMDD or PMS. The WHO World Health Report for 2001, which was dedicated to mental state, didn't mention PMS/PMDD either, despite the fact that it listed updated 2000 disability rates for about 90 disorders, including 14 neuropsychiatric illnesses. [4]

Females diagnosed with PMS indicates a poorer work-related quality of life in their professional lives and health-related quality of life. Severe menstrual symptoms can notably impact the quality of life of the affected women, which interfering in education, profession, relationships, family, social life. This can also lead to increased healthcare utilization, decreased occupational productivity, and absence from work. Female employees with menstrual disorders have decreased career satisfaction, well-being; and they found to have more problems in adjusting with their commitments, more stress at work, and decreased involvement in decision making at work, decreased happiness in their working conditions. Most of the women, irrespective of cultural, demographic, socioeconomic status, experiences discomfort during their menstrual periods [5].Several medications for the same addresses the body's hormonal activity through suppression of ovulation, whereas others affect the concentration of neurotransmitters such as serotonin, norepinephrine, or dopamine in the brain [6].Apart from medications the effect of the exercises and other activities has effect on the menstrual cycle and other disorders. Exercise is normally found as a remedy for PMS and other menstrual disorders. Intervention studies validates that aerobic exercise increases various factors of blood such as hemoglobin, hematocrit, red cell count, and platelet count at the same time it decreases the amount of prolactin, estradiol, and progesterone. The result of which is result is effective in enhancement of fatigue, lessened concentration, confusion, and many other premenstrual symptoms [7] [8]. Another study resulted that three yoga poses mainly the cobra, cat, and fish poses, eases the rigorousness and duration of primary dysmenorrhea [9].Whereas, another study stated yoga intervention was connected with the decreased severity of dysmenorrhea [10] . It suggests that a light home-based yoga program with the help of a DVD can lessen menstrual pain and improve overall health status[11].The findings of a review article hints that evenly menstruating athletes, in strength-specific sports and deep and powerful anaerobic/aerobic sports, do not require to modify for

menstrual cycle phase to improve performance. The menstrual cycle may have an upshot on prolonged exercise performances. The review search identified an article which reflects the fluctuations in the metabolic responses that are fluctuated to the ovarian hormones influencing exercise performance. The women reproductive hormones, oestrogen and progesterone, changes around the normal cycle and that of cycle of a eumenorrhoeic women. The study shows that," Moreover, supplementing energy intake during exercise with protein could also be more relevant when progesterone concentration is elevated compared with menstrual phases favoring a better relative estrogen concentration, as progesterone promotes protein catabolism while oestrogen suppresses protein catabolism" [12]. The review evaluating the status of the occurrence of exercise disturbs the menstrual cycle. It shows indication of presence of delayed menarche, amenorrhea, and luteal suppression among the female athletes. However it is not clinically proven that athletics delays menarche. Although a possibility of sociological and statistical reasons for late attainment of menstruation have been present.

2. OBJECTIVES

This study was designed to survey and determine the relationship between physical exercises and indication of premenstrual dysphoric disorder. The study focuses on the effect of physical exercises and sports with the amount of physical symptoms of menstrual cycle and the indication of PMDD in the adults with physical exercises.

1. To determine the indication of premenstrual dysphoric disorder and relationship with physical exercises.

2. To identify the effect of physical exercises and physical symptoms of menstruation.

3. To identify the effect of physical symptoms and indication of premenstrual dysphoric disorder.

3. METHODOLOGY

The diagnostic study conducted among students of Madras School of Social Work, to assess the effect of indication of premenstrual dysphoric disorder and the engagement in exercise, physical activities, and other sports events. The study also focused on the incidence of the physical symptoms and the indication of that in PMDD. Study population was the participants who are currently doing their under graduation and post-graduation courses with an age group of 18-24 years. Based on the prevalence from the similar previous study from India, sample size derived was 72. Simple sampling

was used for sampling the population. The survey was carried out with a pre-tested semi structured questionnaire.

The questionnaire consisted of demographic details, menstrual history, and symptoms of the menstrual cycle, physical exercises, details of menstrual cycle, BMI Range, engagement in sports were noted. The study subjects were briefed and requested to answer the questionnaire, they were given understanding about the study too.

4. RESULTS & DISCUSSION

Table 1:Physical exercise * PMDD INDICATOR RANGE

Physical exercise	PMDD INDICATOR RANGE			Total
	Low	Moderate	Heavy	
Yes	12	14	0	26
No	13	30	2	45
Total	26	44	2	72

Table 1 shows the respondents who answered about the physical activities and exercises which they practice. Among the 72 respondents26 people are involved in various physical exercises, and the rest are not having any physical exercises. Around 14 respondents who does involve in physical activities are found to have indication of PMDD, and similarly 12 respondents with little indication of PMDD. Comparatively those who are not engaged in any sort of physical activities among this sample are 45.it is evident from the data that minority of 2 out of this sample size indicated greater probability of PMDD. More than half of the population showed moderate and little indications of PMDD i.e.) 30 and 13 respectively who are not occupied with any of the physical activities. However, the data can also be interpreted as the people who does physical exercises do not have heavy indication of premenstrual dysphoric disorder. A study showed that female personnel involving in a little yoga exercises related comparatively lesser physical premenstrual symptoms and lesser menstrual pain. Organizations, Workplaces and the workers can help other employees to know the importance of proper exercises, yoga, which can decrease premenstrual issues and develop the health of women professionals [10].

A study showed the positive impact of doing regular aerobic exercise for 8 weeks leaves an incredible result of physical and psychological symptoms of PMS which was observed in female non-athletes.

These findings of this study revealed a positive drift of exercise on PMS symptoms, which is consistent with the studies showing that aerobic activity to be effective [13].Also, some studies showed that regular aerobic exercise has many benefits, including increased power for women's heart vascular activity, increasing the bone density, and reducing the stress and PMS[14].

Physical symptoms like swelling, weight gain, headaches, and breast pain are possibly associated with increased aldosterone in serum, prostaglandin E2, and deficiency of B-complex vitamin and Mg. Increased level of prolactin within the late luteal phase is one among the causes of breast pain and swelling, and possibly aerobics in non-athletes reduces the extent of this hormone, and thus may reduce the symptoms and increased level of aldosterone in the serum increases the reabsorption of sodium and water, and as a result causes edema and physical symptoms. Recommended first-line treatments include a diet low in salt, fat, caffeine, and sugar; an aerobics regimen; and stress reduction via changes in lifestyle [15].

Table 2:Engage in sports * PMDD INDICATOR RANGE

Engage in sports	PMDD INDICATOR RANGE			Total
	Little	Moderate	Heavy	
Yes	6	7	0	13
No	19	37	2	58
Total	26	44	2	72

Table 2 shows the respondents who are engaged in sports. Amongst the population majority of them are not involved in any sports activities. A few respondents i.e.] about 13 of them are involved in sports. It is evident that 7 and 6 of the respondents have shown the indications of moderate and little indication of PMDD respectively. Compared to that of who does engage in sports, the percentage of people who have PMDD indications are more in this group. Less than a percentage of people are having heavy indication of PMDD. Those who have moderate and light indication of PMDD are 37 and 19 respectively. Results of study were women engaged in sports or exercises usually had an optimistic view toward menstruation. The findings associated regular exercises with significant decrease in both the physical and psychological premenstrual symptoms [16].

A study showed an intensive physical exercise delayed menarche. PMDD was diagnosed in low population and PMS in below average respondents. PMS was significantly more frequent among athletes than among controls, also the prevalence of PMS correlated significantly with mean age and age at menarche in athletes. PMS was more common among the older athletes and in girls with older age at menarche." Competitive sports, older age, older age at menarche, length of sporting career, and intensity of training are conducive to PMS". The incidence of PMS increases with the duration and intensity of competitive exercises [17].

Table 3: Physical symptoms *PMDD INDICATOR RANGE

PHYSICAL SYMPTOMS		PMDD INDICATOR RANGE			TOTAL
		Light	Moderate	Heavy	
Breast tenderness	Yes	23	34	0	57
	No	3	10	2	15
Anxiety	Yes	25	30	0	55
	No	1	14	2	17
Mood swings	Yes	10	13	0	23
	No	16	31	2	49
Nausea	Yes	23	40	2	65
	No	3	4	0	7
Bloating	Yes	23	31	1	55
	No	3	13	1	17
Dizziness	Yes	21	39	1	61
	No	5	5	1	11
Menstrual cramps	Yes	12	11	0	23
	No	14	33	2	49

Table 3 shows the details of the physical symptoms and therefore the indication of premenstrual dysphoric disorder. It is evident from the info that respondents who have the physical symptoms are vulnerable to have indication of premenstrual disorder. Majority of the respondents who have breast tenderness, anxiety, nausea, bloating, and dizziness are found to own indication of PMDD. Compared to the other symptoms, minority of the respondents have lesser symptoms of the nausea and menstrual cramps and are found to own premenstrual dysphoric disorder. A study on menstrual disorders in adolescent school girls of Nigeria resulted in the identification of menstrual disorders

among below average respondents. Dysmenorrhea, pre-menstrual syndromes and short cycle were characterized [18] as observed during this study. Premenstrual problems consists of physical, emotional and mental disturbances such as abdominal pain, back pain, vomiting, headache, diarrhea, and feeling of heaviness, tenseness, emotional irritability, acne and breast tenderness. A study showed other symptoms included reproductive health issues and other problems included "white discharge, itching around the genital area, painful menstrual cramps, vaginal odors, white patches, and blisters, permanent scarring, and burning sensation during urination, and continuous leakage of urine" [19]

Table 4 : BMI RANGES * PMDD INDICATOR RANGE

BMI RANGES	PMDD INDICATOR RANGE			Total
	Low	Moderate	Heavy	
Underweight	4	9	1	14
Normal weight	16	24	0	40
Over weight	4	11	1	16
Obesity	1	0	0	1
Total	25	44	2	71

Table 4 shows the Body Mass Index Range and the Premenstrual Dysphoric Disorder Indicator range. This particular study displays the mean attainment of the menstruation as 12 years. This particular study confirms that 1.38 percentage of the population from underweight category and overweight category falls under the heavy range of premenstrual dysphoric disorder indication respectively. Whereas, the normal weight category among the Body Mass Index range falls with moderate indication of Premenstrual Dysphoric Disorder Indication i.e.]33.3 percentage of the population. Similarly, This normal weight category appears to be having the low indication too. However, a least population comprising 5 percentage draw closer to underweight and overweight category of Body Mass Index. Even though the Premenstrual Dysphoric Disorder Indicator rims near to the normal weight category, indication of Premenstrual Dysphoric Disorder Indicator residues in the underweight and the overweight category.

A study showed that 75.51% of girls with moderate BMI had a normal menstrual pattern, whereas a High BMI had infrequent cycles. Anemia affects approximately 30% to 55% of adolescents of all over the world [20].Some sort of menstrual dysfunction occurs in adolescent girls which can affect normal lifetime of adolescent and young adult women. Physical, Mental, Social, Psychological, Reproductive problems are often related to menstrual irregularities and menstrual problems. Due to change in life style, habits, diet, the prevalence of obesity has increased in developed world which results in decreased age at menarche [21].

A study that intended to understand the impact of competitive sports on the menstrual cycle, menstrual disorders, and the prevalence of PMS/PMDD in girls and young women showed that Intensive physical exercise delayed menarche. Also, the frequency of PMDD did not diverge significantly among the groups. PMS was significantly more frequent among athletes than among the population. [17]

Another study in this field displayed that as the number of physical symptoms in a girl increases. There is a possibility for her to have PMS/PMDD. Symptoms followed by declined interest in work activity and depressed mood/hopelessness significantly showed the indications of PMDD. Similarly, in common, with in the PMDD&PMS and the none/mild PMS groups, the interference with school/work efficiency or productivity, relationships with friends, classmates or co-workers' and 'interference with home responsibilities were moderate to severe[22].Similar to the Physical activity, exercises and sports, associating to the eating habits, An adverse effect of the lifestyle changes and their impact on the menstrual disorders and reproductive health has to be explored further with a large population in the future [23].

CONCLUSION

To lessen the mental health problems and to comfort on other symptoms of PMDD, health professionals suggest practicing daily meditation. Meditation involves that specialize in the breath to remain grounded within the here and now .Regular meditation can help individuals relax and obtain relief from both physical and emotional symptoms. Research suggests that regular exercise is useful for premenstrual symptoms. Regular exercise for PMS has positive effect on decreasing pain and increased mood. For best results, engage during a mixture of aerobic activities and strength training every week. The Physical Activity Guidelines for Americans recommends that every adults aim for at least: 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity aerobic

activity weekly strength-based activities that work all the main muscle groups, 2 or more days every week Overall, regular exercises, sports and other physical activities can be beneficial as a short, handy and inexpensive way to diminish the premenstrual and psychological symptoms so far. The findings of the study it was evident that rate of the physical symptoms as well as the indication of PMDD are comparatively lesser for those who are engaged in these kind of activities. Thus it is suggested that yoga can improve menstrual pain and physical function significantly decrease abdominal swelling, cramps, and breast tenderness enhance general health perception, energy levels, and mental health. Consequently, prospective research ideas and studies in this field for furthering the impact of the menstrual cycle, their symptoms indication of premenstrual dysphoric disorder and exercise performance are to be recommended.

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