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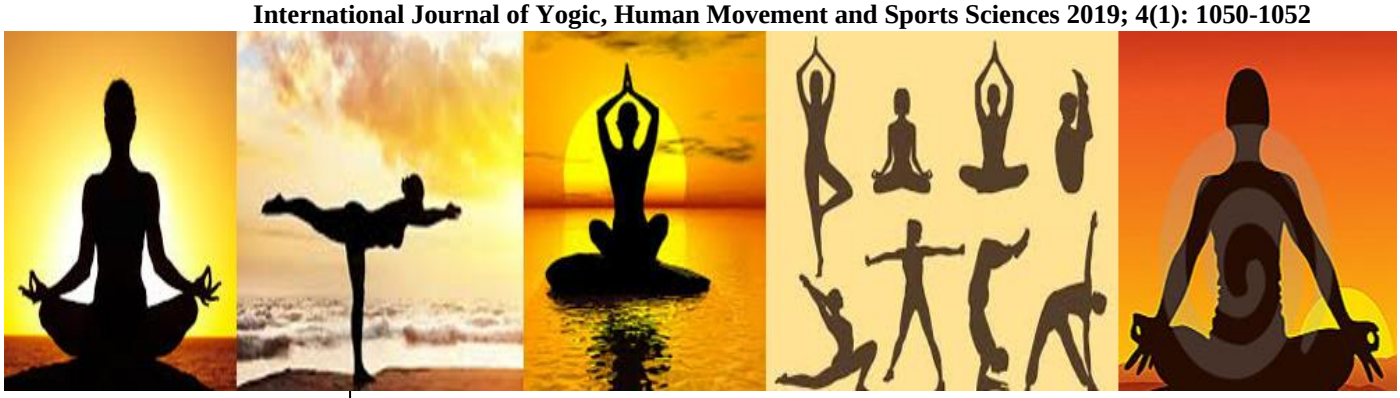

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Sonia
M.Phil Scholar, Department of Physical Education, Punjabi University, Patiala, Punjab, India

Baljinder Rana
M.P.Ed, Department of Physical Education, Punjabi University, Patiala, Punjab, India

Correspondence
Sonia
M.Phil Scholar, Department of Physical Education, Punjabi University, Patiala, Punjab, India

Comparative study of PMS between sedentary lifestyle and physically active females

Sonia and Baljinder Rana

Abstract
Among the menstrual disorders of the female reproductive period, Premenstrual Syndrome (PMS) is the most prevalent. The intensity of the signs and symptoms in each of these conditions may compromise the physical, psychological and social well-being of the woman at the stage of the menstrual cycle. Various researches showed a positive correlation between physical exercises and PMS. The purpose of the study is to observe the prevalence of PMS in females doing regular exercises daily and sedentary lifestyle women also to compare the sign and symptoms of PMS between two groups. Premenstrual Symptoms Screening Tool (PSST-A) which is a revised form of PSST (Steiner *et al*. 2003) is used as a tool. Questionnaire also include the personal and medical information in it. Significant difference exists between both the groups which revealed physical exercises can reduce the symptoms of PMS.

Keywords: PMS, menstruation, sedentary lifestyle, physical exercise

1. Introduction
Menstruation is a normal physiological impact in each Girls life. Menstruation is a monthly uterine bleeding for 3-5 days after every 28 days from puberty till menopause [1]. A change in mood, behavior, appearance of some abnormal vague symptoms is often noticed in second half of the cycle. But if the symptoms are severe enough to disturb life cycle of a women or require medical help, called premenstrual syndrome (PMS) [2]. Atleast one of the following somatic &affective symptoms appear 5 days before menses or prior menstrual cycle [3]. Affect symptoms are depression, anger outburst, irritability, anxiety, confusion & social withdrawals. While in somatic symptoms there are breast tenderness, abdominal bloating headache [4]. The intensity of the signs and symptoms in each of these conditions may compromise the physical, psychological and social well-being of the woman at the stage of the menstrual cycle. Between the age of 25-35 year upto 85% of menstruating women repor t having one or more PMS. Dalton says PMS is caused by an imbalance during luteal phase of menstrual cycle. Treatment options for these disorders include integrated and multiple actions among professionals of various academic backgrounds. Despite of drug treatments are safe and effective in some situations, changing lifestyle habits related to diet, regular physical exercise and body care, present more lasting effects in promoting the welfare and reduces signs and symptoms [5].
Physical activity has been characterized as any body movement produced by the skeletal muscles, which results in an energy expenditure above resting levels. In this way, it includes all activities performed daily, whether at work, leisure or other activities such as eating, clothing and walking [6]. The positive relation between the physical, psychological health and exercise is recently more under spotlight. Considering the side effects of medical and surgical modalities of treatment, which are used in severe cases of PMS, more ever all of the cases may not even respond to therapeutic management, center of attention can be made on safe exercises in women with mild to moderate symptoms.
Various studies have shown that regular aerobic sport (endurance) can improve the women's physical and psychological-behavioral symptoms before menstruation [7]. Also, some of the researchers believe that doing physical activity more than three times per a week reduces the dysmenorrheal somatic symptoms during the menstruation period in women [8]. Aerobic sport activities such as walking and swimming in comparison with the anaerobic and strength sport

activities are very much effective in reducing the PMS psychological symptoms [9]. It is clear that performing sport activities in comparison with medicinal treatments are without side effects and therefore they are devoid of any risks [10]. Sports such as walking, cycling, swimming and mild running are favorable methods for settling down and elimination of the premenstrual tension [11]. The results of the study conducted by Mosalla Nejad *et al*. indicated that eight weeks of aerobic exercises considerably reduces the physical and affective symptoms of the PMS [12].

2. Statement of the Purpose

The purpose of the study is to see the prevalence of PMS in players and sedentary lifestyle women. There is also a difference exists between both the categories and the investigator is also interested to find out the difference between symptoms of PMS in both categories.

3. Objectives

1. To see the prevalence of PMS between sedentary lifestyle female and females who practicing daily (players).
2. To compare the signs and symptoms of PMS between women who practice regular exercises and sedentary women.

4. Methodology

4.1 Study sample

A cross-sectional study carried out on total sample of 200 women who were divided into two categories. The one who practice exercises regularly and the other were sedentary women. The data was collected from the Punjabi university, Patiala in the month of march 2019. Total of 150 females in each category were taken as a sample. The age of the samples were taken between 15-35 and the data were collected in the Patiala district of Punjab.

4.2 Study tool

The tool is a revised form of Premenstrual Symptoms Screening Tool (PSST) (Steiner *et al*. 2003) which is PSST-A. PSST-A were revised by Steiner M, Peer M, Palova E, Freeman EW, Macdougall M, Soares CN in the year 2011. The Premenstrual Symptoms Screening Tool (PSST-A) is a validated, simple, user-friendly screening tool to identify women who suffer from severe Premenstrual Syndrome (PMS) or Premenstrual Dysphoric Disorder (PMDD). The questionnaire could be used on female between the ages of 18 and 55 yrs, devided into two parts. Part I consists of 14 premenstrual symptoms, and part II consists of 5 functional items, in line with DSM-IV criteria, regarding how symptoms interfere with relationships and daily activities to quickly establish if a woman qualifies for PMS or PMDD. For each item four scales of “not at all”, “low”, “moderate” and ‘severe” have been mentioned which are scored from 0 to 3. To diagnose severe PMS, the following three conditions should be met: first condition: from questions 1 to 4 there should exist at least one severe case. Second condition: plus the previous one there should be existing 4 moderate or severe cases and third condition: in the effective life factors section (five ending questions) there should be one severe case existing.

4.3 Reliability

The Premenstrual Symptoms Screening Tool was modified for use in adolescents and piloted in 578 girls at three international sites. Nearly one third (29.6%) reported experiencing severe PMS or PMDD, with irritability being the most commonly reported symptom. Rates of menstrual related pain were high, particularly in those with severe PMS or PMDD. Severe PMS and PMDD present with similar rates and symptoms in adolescents as in adults, and the Premenstrual Symptoms Screening Tool modified for adolescents is a fast, reliable tool to screen for these syndromes in adolescents.

4.4 Validity

The results of PSST-A questionnaire and the other studies are similar to prevalence rates from other large-scale adolescent studies (Derman *et al*. 2004; Vichnin *et al*. 2006; Parker *et al*. 2010), suggesting that the PSST-A is a valid measure in this population. Proper validation of the PSST-A, however, requires concurrent use of the tool alongside prospective daily charting of symptom severity across two menstrual cycles.

4.5 Study variables

In the present study, the independent variables are women with exercising life style and the women with sedentary lifestyle. The dependent variable taken as PSST-A questionnaire.

5. Findings

The average age of the players in the present study was estimated 21.06 ± 2.19 and the average age of the sedentary females was estimated 23.04±2.19. the players samples do physical exercise daily for more than four hours whereas sedentary females are not included in any type of the physical exercise on any day of the week.

Objective-1

Table 1: Prevalence of PMS in Sedentary Females and Players

Symptoms Intensity	Sedentary Females (%)	Players (%)
Not at all or mild	49	75
moderate	35	16
severe	16	9
Total	100	100

From table 1 and fig. 1 it is concluded that there are 49% of the sedentary life females who feels none or mild PMS but the percentage rate of players are 75% which is very higher. 35% of the sedentary females experiences moderate PMS whereas in players, there are only 16%. 16% of the sedentary lifestyle females experiences severe PMS while only 9% of the players experiences severe PMS in their life. The percentage results clearly shows that players have better results than sedentary lifestyle women in relation with PMS.

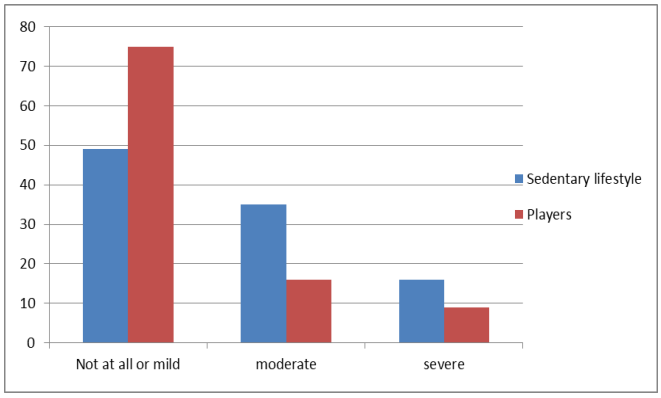

Fig 1: Prevalence of PMS in Sedentary Females and Players

6. Discussions

In the present study, the PMS expression rate was higher in sedentary lifestyle females in comparison to the players or those females who do regular physical exercises and it was statistically significant which is consistent with the results obtained by Kroll [21]. In a study performed by Stoddard *et al*., PMS was lower in women who had more physical activities [22] and the relationship is significant. It seems that performing aerobic sport activities cause a reduction in rennin level and it brings about a estrogen progesterone equilibrium, therefore sodium and water retake is reduced. Therefore, playing sports and doing physical exercises reduce edema and improve the physical and psychological symptoms [19, 25]. Some of the researchers believe that if sport activity is performed 2 or 3 times a week and for a long period during 2 to 6 months it would be effective on many of the PMS symptoms reduction [26-28] of course, the fact that the voluminous sport exercises or an abrupt initiation of heavy exercises lead to menstruation disorders in university students [30] cannot be a reason for stopping such regular exercises by the students and their coaches; rather there should be offered solutions and programs by the medical team of the university and the professors. According to the physiological and psychological variations during the menstruation cycle one of the suggested solutions for the officials can be this solution that because in luteal stage the progesterone levels increase and estrogen level is in an intermediate level, thus, in this stage the body is more prepared to tolerate intensive and long exercises. So, designing and implementing exercises with high intensity and volume in luteal stage and on the other hand implementing exercises with lower intensity and volume in other menstruation cycle stages can prevent from hormone variations and this can contribute the athlete to reduce the exercise pressure and therefore to prevent from abnormal bleedings.

7. Conclusion

The results obtained in the present study indicated that the regular and continuous sport exercises can be of a great effect on PMS prevention, but, according to the present study plan constraints and ignoring some of the disadvantageous factors such as neglecting the sport type and sport duration in every time it is suggested that there isa need for other studies in a wider scope in order for more optimized results to show up.

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