

Analysis Of Premenstrual Syndrome In Sedentary Lifestyle Women

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Abstract-

Background- Premenstrual syndrome (PMS) is a type of menstrual cycle abnormality with pattern of symptoms which typically occurs after ovulatory phase, about 7–14 days prior to menstruation and spontaneously resolves after menses. Certain risk factors of PMS can include women's diet, health, occupations, genetics, activity status & lifestyle. Sedentary lifestyle is now common and is a common risk factor to affect health in many ways. Analysis of such sedentary women with PMS is important to evaluate symptomatic changes.

Aim- To analyse Premenstrual syndrome in sedentary lifestyle women.

Methodology- 109 consenting participants fulfilling the selection criteria were included. They were evaluated with outcome measure Premenstrual syndrome scale (PMSS) via online circulated google form.

Results- According to PMSS, Prevalence of PMS in given population is 99% while moderate symptom showing population is highest (46%). Statistical analysis shows that 73.3% of the total population has sedentary occupation, from which 36% of the population is significantly showing severe physical symptoms. 38.5% and 4.5% of the population is obese and underweight in BMI measurements respectively.

Conclusion- The study analyses women of various occupations, age and BMIs differing in PMS grading. Women with sedentary occupations has more prominent physical symptoms than psychological and behavioural symptoms.

Keywords- Premenstrual syndrome (PMS), Premenstrual syndrome scale (PMSS), Sedentary lifestyle.

Introduction-

Menstruation is a normal part of every woman's life. Menarche occurs when a girl reaches her puberty. Average age of onset of menarche is 12-14 years. Nowadays, the mean age of menarche has changed, that could be due to many reasons including lifestyle changes, diet habits, physical inactivity, obesity etc leading to hormonal imbalances. Hormonal level insufficiency or excess leads to many problems of menstrual health. Many factors are responsible for hormonal fluctuations such as

fast foods, bad habits, lack of activity, medications, genetics and lifestyle changes. Sedentary lifestyle is one of the common factors.

Among many menstrual disorders, Premenstrual syndrome or Premenstrual tension (PMT) is a condition that occurs during ovulatory phase of menstrual cycle and resolves as the menses start. Despite the growing awareness, there remains a considerable deficiency of knowledge about the necessity to

consult a doctor or seek treatment for their symptoms¹.

PMS is one of the commonly neglected and under diagnosed gynaecological health conditions in young adults. PMS and Premenstrual dysphoric disorder (PMDD) are reported to minimize the well-being, develop emotional instability, affect academic performance, social and occupational aspects of the individual².

Typically symptoms of PMS occur between 7th to 14th day of a menstrual cycle. Sometimes a severe type of abdominal cramp or abdominal bloating is experienced by females in lower abdomen during ovulatory period of menstrual cycle, this could probably be a premenstrual symptom. Since the pain/ discomfort resolves in some time period, women often ignore to seek treatment from doctors and use certain home remedies to have relieve from pain/ discomfort. Symptoms of PMS has wide variety and are boundless and not associated with organic lesion in the pelvis. PMS does not occur before puberty, during pregnancy or after menopause. It may however occur if the post-menopausal woman goes on hormone replacement therapy (HRT). These symptoms of PMS are a set of distressing physical and psychological symptoms that begin a few days before menstruation and last for a few days after. This was first described by Frank and Horney in 1931³. PMDD is a severe form of PMS and recurs for at least two menstrual cycles. PMDD has been included as a psychiatric disorder in the Fifth Edition of the Diagnostic and Statistical Manual for Mental Disorders (DSM-5)⁴. The study in Nepal was found prevalence of PMDD 3.8% in 266 female students⁵. Premenstrual dysphoric disorder (PMDD), a severe mood disorder, is characterized by cognitive-affective and physical symptoms in the week before menses and affects millions of women worldwide^{6,7}.

Previous Indian studies have found a 20% prevalence of PMS in the general population and among those with PMS 8% had severe

symptoms^{8,9}. Raval et al. did a study in Gujarat among 489 college students and found the prevalence of PMS was 18.4% and of PMDD was 3.7%¹⁰. In a study of medical students in Delhi, about 37% of participants had PMDD¹¹. Several studies have reported multiple risk factors associated with PMS, where stress, age, body mass index, and marital status were found to exacerbate the symptoms¹². A study also found a direct association of PMS with parity, which was low in the low parity group¹³. Premenstrual symptom frequency was also significantly associated with maternal history of PMS¹⁴. While all these factors show significant correlation with PMS, caffeine intake was reportedly not associated with it¹⁵. Hormonal contraceptive use was not associated with the risk of premenstrual symptoms at mild severity. Hormonal contraceptive use was not associated with symptoms of PMS¹⁶.

Premenstrual symptoms disturb the daily activities of reproductive-aged women and adversely affect their educational, occupational and psychosocial functioning¹⁷. Even some women are so severely affected that it interferes with their mental health, interpersonal relationships, and studies. These conditions are not life-threatening, but they can seriously decrease the quality of life of many women and affect their mental health and their productivity¹⁸.

Little is known about the pathophysiology of premenstrual symptoms, and consequently, few effective therapies have been developed for them¹⁹. Due to the timing of the symptoms, changes in plasma levels of progesterone and estradiol are thought to be involved in their etiology¹⁹. Stabilizing fluctuations of these hormones during the luteal phase with the use of hormonal contraceptives may be effective in treating premenstrual symptoms¹⁹, but the evidence has been inconsistent^{19,20}. Treatments preventing ovulation, such as long-acting GnRH agonists and bilateral oophorectomy, have been highly effective in diminishing premenstrual symptoms²¹. At present it is not

yet clear whether PMS is an abnormal response to normal hormonal fluctuation or a result of hormonal abnormalities.

Most women can manage their PMS symptoms through conservative treatments and changes in lifestyle such as dietary modifications, stress management, daily charting of symptoms, exercising, relaxation, education. It is recommended to reduce or eliminate the intake of salt, caffeine, chocolate, tobacco, and alcohol, consume small frequent meals rich in complex carbohydrates, and take vitamins and minerals moderately²². Some of the women use some self-treatment strategies, amongst which the most frequently used are taking analgesics, increasing hot fluid intake, wearing warm clothes, and lying down on the abdomen, doing Yoga while majority refer not to seek any treatment for their complaints. PMS symptoms can be considered as a periodic recurrence of a combination of disruptive, physical, psychological, and behavioural changes during the luteal phase of the menstrual cycle that interferes with family, social, and occupational activities.

Among many responsible factors, sedentary life and busy work schedules cause lack of activeness and that is the commonest reason to develop sedentary lifestyle related health issues among people.

The findings of the study revealed a relatively high prevalence of PMS syndrome with a significant relationship with dietary habits and psychosocial status²². Similarly this study is important for 2 reasons, firstly to find out the occupations which demands a continuous sitting work impacting women's overall health, which needs to be improved and advised accordingly and secondly to analyse such occupational background women in PMS symptoms and its association during the premenstrual period.

This study aims at analysing women in different aspects and evaluates their premenstrual syndrome symptoms. No study has been

previously conducted that analyses PMS in working women and their occupation to find out any correlation in sedentary job life and PMS. Along with this, the purpose of this study is to evaluate PMS symptoms among women of sedentary occupation and to discuss treatment options to minimize the severity.

Methodology-

The study was approved by ethical committee of the institute. The study was conducted in Karad and the duration of the study was 6 months. It was an analytical study. Sample size was 98. A random sampling method was used to include subjects in this study. A Google form was created and circulated among groups via social media platforms. 109 individuals were included who fulfilled the inclusion and exclusion criteria. All 109 individuals willingly consented and participated in the study. Menstruating women above age group of 20 and women of all occupations were included while, women with any history of menopausal symptoms, hysterectomy or related surgeries and women above age of 65 were excluded. The circulated form was submitted by each individual and data was collected from those collected forms.

Demographic characteristics like Age, Weight, Height, Occupation, working hours, Diet and Menstrual history were taken through same google form. PMSS was mainly used to diagnose and grade PMS among participated individuals. All the subjects were evaluated on outcome measure of Premenstrual syndrome scale. This scale consists of 40 questions with 3 subscales (physiological, behavioural and psychological symptoms) and 5-pointer scores. Based on percentage of scores the levels of Premenstrual symptoms were graded in four categories, "No symptoms", "Mild", "Moderate", "Severe" and "Very severe"²³.

After collection of data software Instat was used to analyse the data. Results were obtained and study aim was achieved.

Results-

Demographic characteristics of all the individuals are shown in fig. 1, 2 and 3. (Age, Body Mass Index (BMI) and Dietary Habits)

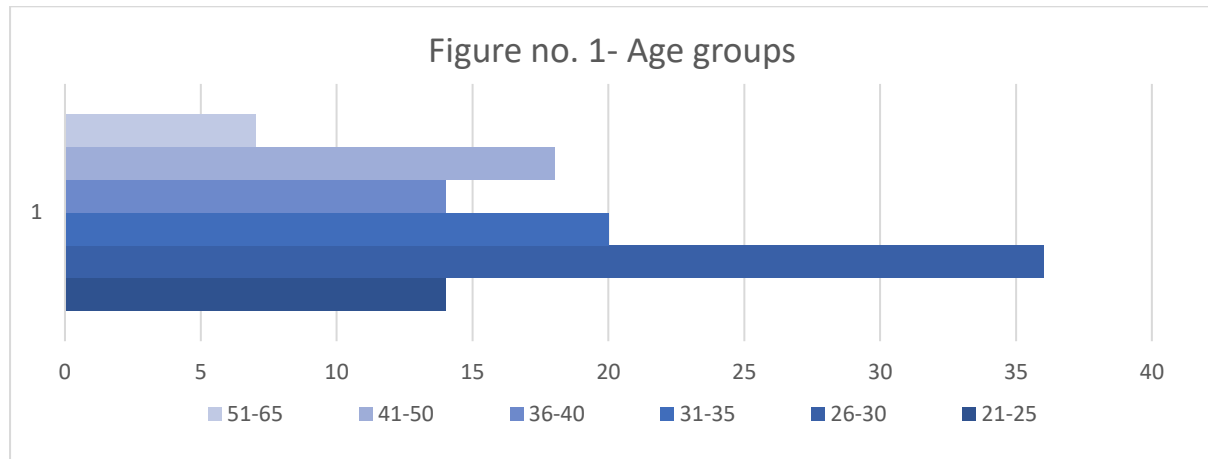


Figure no.1 shows Age groups of participated individuals, 26 to 30 years of age group individuals are more in population (33%) while 51 to 65 years of age group individuals being the least population (0.06%). p value of age

groups is <0.0001. Age group information is important factor in evaluation of PMS to analyse about the differences in PMS symptoms according to age groups.

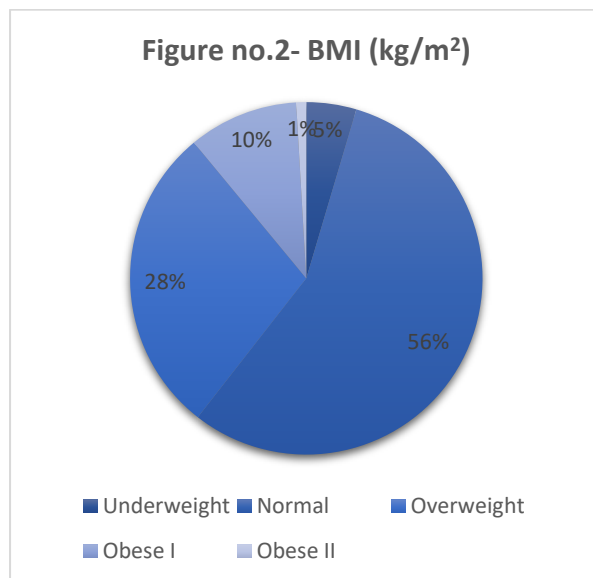
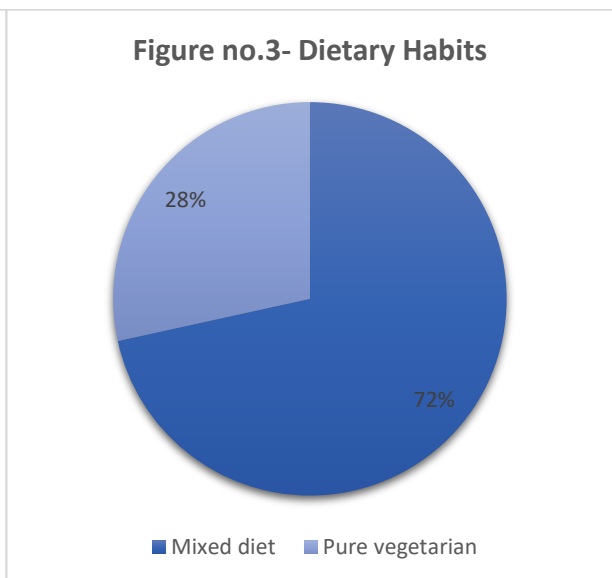


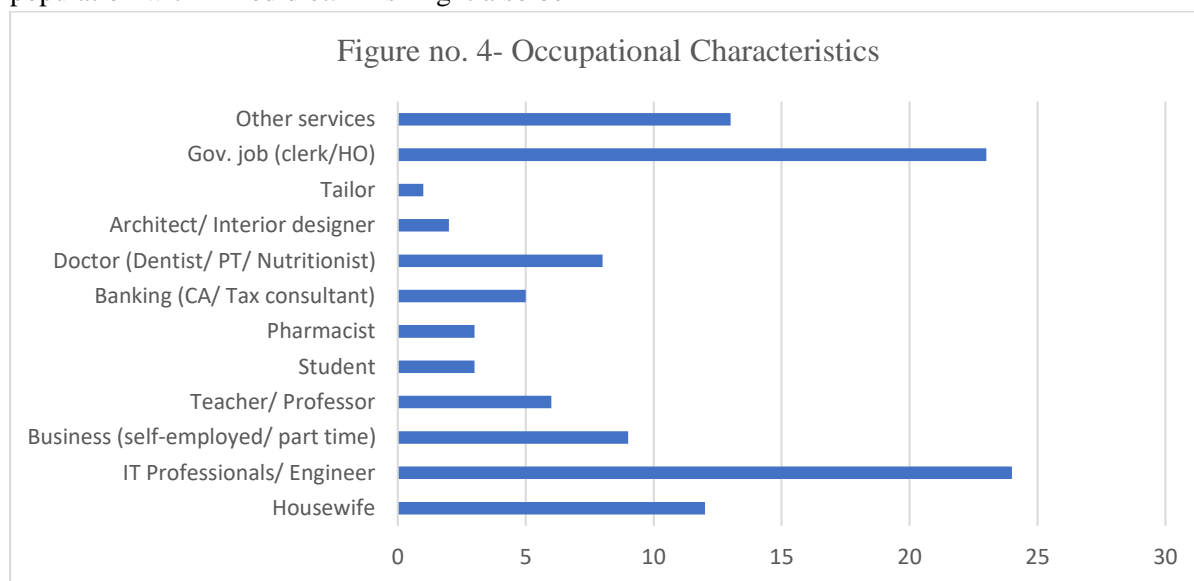
Figure no.2 Indicates BMI variations among participated population, Around 10% individuals of all 109 are falling under obese category while 28.4% participant's falls under overweight category. 0.0587 is the p value of



BMI variations among participants. Body Mass Index levels tells about the physique and hence that too needs to be evaluated in all the participants to analyse differences in PMS symptoms.

Figure no.3 denotes dietary habits of the population, measuring maximum (72%) population with mixed diet. This might also be

useful in interpreting individual's nutritional status and diet background.



The figure no. 4 graph shows occupational characteristics of participated individuals, majority being IT Professionals and Government job employees (43% of the total participants). Among all these occupations,

sedentary work is more common in occupations like Tailors, Banking jobs, Government jobs, IT professions, Business owners, Architectures and Pharmacists. These account for about 73% of the total participants.

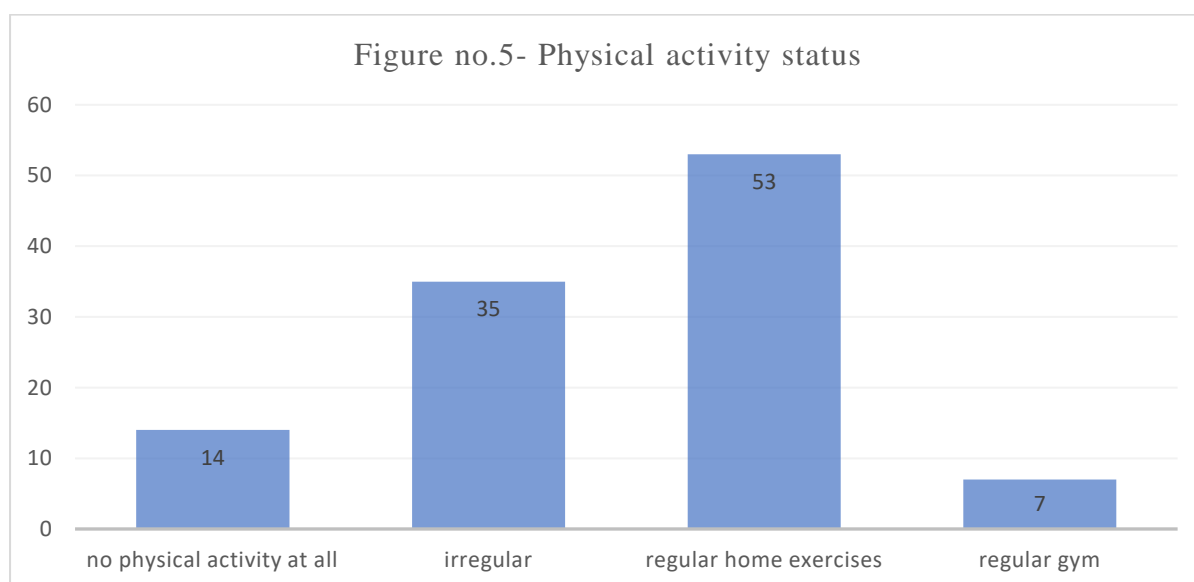


Figure no.5 plots a graph of Physical activity status of participants, their frequency of exercises is important to know about their overall activity which would be a factor to consider the individual as a sedentary one.

About 32% of participants are irregularly exercising and 12% of participants are not following any physical activity during their day making them a sedentary individual.

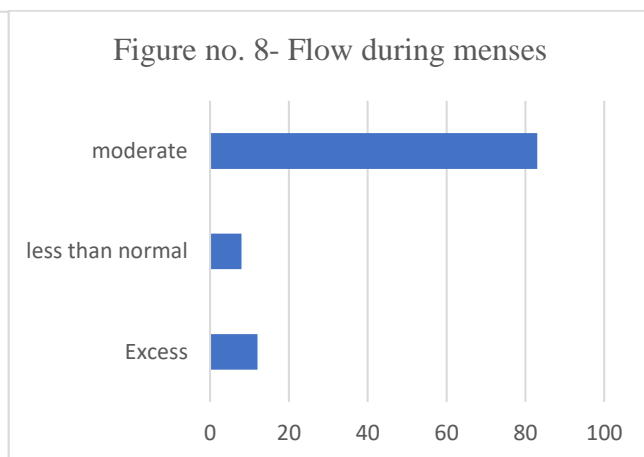
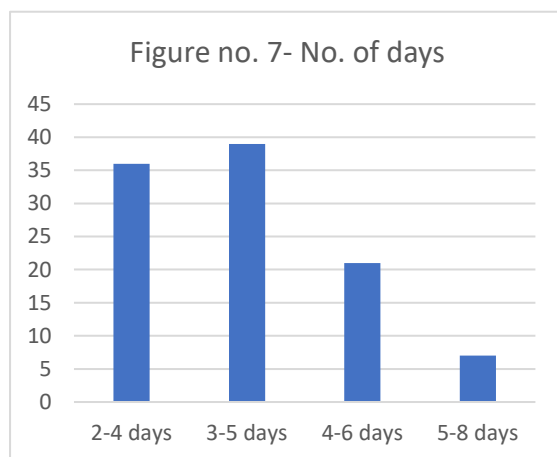
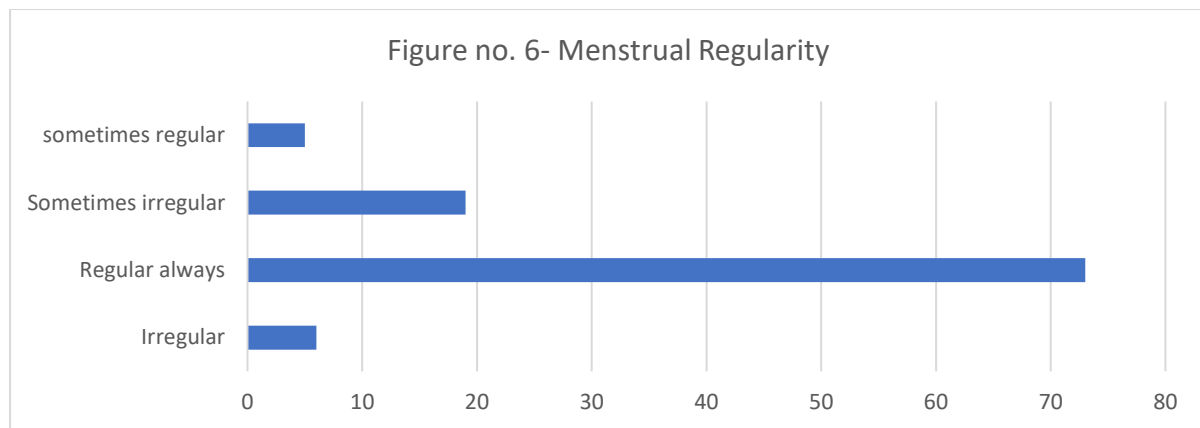


Fig. 6,7 and 8 shows parameters of menstrual history of the participants, majority of population shows regularity in menses (72.5%), moderate flow during menses (80%) and 3 to 5

days of menstrual cycle (38%). Menstrual history of the individual is important to evaluate any presence of menstrual abnormality, which might be associated with occurrence of PMS.

Below table shows health issues faced by participants, 78% population has no apparent issue.

Table no.1- Medical issues of participants:

Variables	Total (N=109)	Percentage
Thyroid problems	5	4.5%
PCOD/PCOS	3	2.75%
Hypertension	2	1.8%
Diabetes	1	0.9%
Menopausal/ Hormonal	3	2.75%
Asthma	2	1.8%

Migraine	1	0.9%
Musculoskeletal problems	3	2.75%
No health issues	85	77.9%

Table no.2 shows scoring of Premenstrual Syndrome according to Premenstrual syndrome scale (PMSS). 99% of PMS prevalence is seen among the participants from which most of the

population is having moderate symptom severity while only 1 individual experienced very severe symptom form of PMS. >0.10 is the P value of PMS scores in the participants.

Variables (scores)	Total (N=109)	Percentage
No symptoms (1-40)	1	0.9%
Mild symptoms (41-80)	40	36.6%
Moderate symptoms (81-120)	50	45.8%
Sever symptoms (121-160)	17	15.5%
Very severe symptoms (161-200)	1	0.9%

Table no.2- Premenstrual syndrome grading:

Discussion-

This study successfully analysed the premenstrual syndrome in participated women and its relation between their occupation and lifestyle. Most of the study participants (99%) suffered from some kind of PMS symptoms. Among them (50) 45.8% and (17) 15.5% had moderate and severe symptoms respectively. These results are higher than those obtained from a Palestinian study on the prevalence of PMS among university students (71.9%)²². A study conducted at a university in the UAE showed that all participants (100%) had PMS symptoms, 55% had moderate PMS symptoms and 8% had severe symptoms²⁴. A study by Cheng et al. showed a positive and significant relationship with food intake such as fried foods, sweet drink, fast food, and fruit, not having sports habits, and PMS²⁵. While smoking and high calorie/fat/sugar/salt food consumption identified as strong risk

factors for PMS in study of UAE²⁴. Similarly this study aims at finding sedentary lifestyle/ inactivity/ sedentary occupation as a risk factor of PMS.

Prevalence of Physiological symptoms among our sample was 99.5%. Among all the participants, sedentary job individuals accounted for 73% and more than 36% of them showed severe physical symptoms. A study on prevalence of PMS in Palestine showed 100% of physical symptoms prevalence. More than half of them had moderate physical symptoms (52.5%), while 18.3% had severe physical symptoms²². Similarly, university students in UAE had a high prevalence of physical PMS symptoms (99.3%), while 57.7% suffered from moderate physical symptoms and 8.7% suffered from severe moderate physical symptoms²⁴.

Prevalence of psychological symptoms among our sample was 90.8%. A study in Palestine showed 99.7% PMS prevalence with 52.5% and 20.4% of moderate and severe psychological symptoms respectively ²². The same high percentages (99.7%) reported in university students in UAE where 47.3% and 13% had suffered from moderate and severe psychological symptoms respectively ²⁴.

Prevalence of behavioural symptoms among our sample was 84.4%. The study on prevalence of PMS in Palestine showed 85.2% of participants' behaviours, 29.1% had moderate behavioural symptoms and 13.6% had severe behavioural symptoms ²². 77.7% university students in UAE were found to have behavioural symptoms, with 20% and 2% had moderate and severe behavioural symptoms respectively ²⁴.

Out of all 109 participants, 80 individuals work in sedentary occupations out of them 47.5% are less active and do not practice any physical activity, while 38.7% individuals have higher BMI (above 25 kg/m²) and about 18.7% of them are having high BMI as well as inactive physical status. Among these 80 individuals (9) 11.2% individuals shows severe physical symptoms, higher BMI and inactive lifestyle too. The more common and frequent physical symptoms experienced in these individuals were pelvic pain, abdominal cramps/ bloating, joint pain, weakness, generalized aches, etc. The remaining non sedentary work background individuals (29) experienced less severe physical symptoms than sedentary category population. Hence aim of this study is achieved.

Conclusion-

The study concludes that sedentary women with long hours of jobs, higher BMIs and less physical activity are showing more significant severity and frequency of physical symptoms according to PMSS with inactive lifestyle being the risk factor for PMS.

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