Research Article

Prevalence, Functional Impairment, and Lifestyle Correlates of Premenstrual Syndrome and Premenstrual Dysphoric Disorder among Reproductive-Age Women: A Cross-Sectional Study

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Abstract
Background: Premenstrual syndrome (PMS) and premenstrual dysphoric disorder (PMDD) are common but under-recognised causes of women's psychological distress and functional impairment. Awareness of the problem is increasing worldwide, but there are few epidemiological data on urban Indian populations.
Aims: To estimate the prevalence, severity patterns, and functional impairment of premenstrual syndrome (PMS) and its severe form (premenstrual dysphoric disorder; PMDD) among reproductive-age women in an urban Indian population, and to examine their distribution across sociodemographic and lifestyle variables.
Methods: A cross-sectional screening study was conducted among 301 women aged 18–40 years. The Premenstrual Symptoms Screening Tool (PSST) was administered. Severity of symptoms and functional impairment were assessed across emotional, physical, occupational, and interpersonal domains. Descriptive analyses were conducted to estimate prevalence patterns by age, education, occupation, relationship status, and substance use categories.
Results: 38.2% reported moderate-to-severe PMS, and 18.27% screened positive for PMDD. Irritability (37.2%) and fatigue (37.6%) were the most frequently reported moderate-to-severe symptoms, and nearly 47% also reported important physical symptoms. Occupational productivity (37.2%) and social activities (38.2%) showed the highest levels of functional impairment. Prevalence patterns were relatively similar across demographic splits. However, women who reported more frequent substance use, less physical activity, shorter duration of sleep and junk food consumption—symptoms were significantly higher among them.
Conclusion: Premenstrual disorders are a significant reproductive mental health burden among urban women, causing emotional and functional impairment. The results underscore the importance of routine screening, menstrual mental health education, and integrative intervention strategies to ameliorate psychosocial dysfunction and improve QOL.

Keywords: Premenstrual Syndrome; Premenstrual Dysphoric Disorder; PSST; Women's Mental Health; Functional Impairment; Substance Use; Reproductive Health.
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1. Introduction

One major phenomenon that is often neglected in both female reproductive and mental health research, namely premenstrual ambition withdrawal, is also worth mentioning. As many as 90 percent of women experience some form of premenstrual symptoms during their reproductive years. These symptoms are physical, behavioural and emotional, and follow a cyclical pattern of increasing severity, with the most obvious manifestations during the menstrual phase. Though some can manage these symptoms as mild, many suffer substantial distress that disrupts social functioning, work and relationships. Premenstrual dysphoric disorder (PMDD) is a more extreme version of these symptoms. Premenstrual Syndrome (PMS) (Naik et al., 2023): Refers to the milder yet clinically important symptoms. According to the DSM-5, PMDD is characterized by at least five symptoms, including one or more of mood swings, irritability, anxiety and/or depression (Muange et al., 2021). The criteria above need to be met in the majority of menstrual cycles over the last 3-6 months and should arise in the week leading

up to menses. Symptoms will improve within days of the start of menses and will be negligible or absent in the week following cessation of menses.

3-8 per cent of women will experience PMDD, and 30-40 per cent will experience clinically significant premenstrual symptoms. The prevalence of period poverty varies with the tool used to measure it, the sample from which results are drawn, and cultural norms around health (Al-Diwan 2025). Most available data are from West Asia, mostly from India; large studies are few. Premenstrual experiences of Indian women are diverse, and there is a lack of regional knowledge to establish socio-cultural/lifestyle determinants that mediate this variation. The diabetic population in India is unique, as the horizons of diets, stress exposure, awareness of reproductive health, and access to healthcare vary (Lotiya, Shidore & Gajekar, 2025). The results underscore the importance of regional data, particularly in urban centres like Delhi-NCR, to get an accurate picture of PMS and PMDD.

Symptoms can affect not only the person experiencing them but also her family and work. Although PMS and PMDD are relatively common, many women go undiagnosed. They are sometimes diagnosed as mood affective disorders and sometimes as 'normal' around periods (Osborn et al., 2020). This also highlights a lack of awareness among the general public and the practical importance of both screening and current education on menstrual-related mental health.

The objective of the present study is to determine the prevalence of PMS and PMDD among women in Delhi-NCR, India. This study also aims to investigate the potential correlation between PMS/PMDD and major sociodemographic and lifestyle determinants, including age group strata, relationship status and substance use. These factors influence hormones, stress, and metabolism, which we know affect how frequent or severe the symptoms of premenstrual syndrome are likely to be.

The purpose of the study should be to assess these variables in a sample of women representative of the Delhi-NCR population, thereby generating valuable evidence to expand the Indian database on PMS. Understanding the local prevalence and contributing factors will enhance clinical awareness and help plan awareness campaigns for women in the community, as well as design future behavioural and mental health interventions for Indian women suffering from PMS or PMDD.

2. Materials and Methods.

2.1 Study Design and Setting

A cross-sectional study was conducted to estimate the prevalence and severity of Premenstrual Syndrome (PMS) and Premenstrual Dysphoric Disorder (PMDD) in women of Delhi-NCR, India. The data were collected from respondents over three months through Google Forms and face-to-face.

2.2 Study Population

Women aged 18-40 years from the Delhi NCR were included. Sampling Participants were recruited from workplaces and social contacts to include a variety of occupations and socioeconomic environments.

Inclusion Criteria-

- ·Women between the ages of 18-40 years.
- Cycles must be regular and monthly (for the past 6 months).
- Able to complete the questionnaire and provide consent.

Exclusion Criteria-

- Women who are pregnant or breastfeeding.
- Women with secondary amenorrhea of organic origin.
- Women with high Risk of having hormonal problems (Thyroid Disorders, Premature Ovarian Failure)
- Individuals on psychiatric drugs or hormones.
- Serious psychiatric or other systemic disease that may affect menstrual pattern or mood in women.

2.3 Sampling Technique-

Random sampling was used for data collection. Before the study began, the nature of the investigation was explained to the participants, and written consent was obtained from each participant. Participation in the survey was voluntary, and the results were anonymous. Participants were informed that they could withdraw at any time without any explanation.

2.4 Data Collection Instruments.

(a) Sociodemographic and Lifestyle Profile

In this section, Age, Educational Qualification, Occupation, Marital/Relationship Status and City of Residence were recorded; the lifestyle variables assessed were physical activity level (Moderate/Vigorous activities), average dietary pattern (especially consumption of junk food/fried items), average sleep duration, and use of any narcotic (tobacco/alcohol/cannabis).

Researchers also inquired about their menstrual pattern, family history of PMS/PMDD and menstrual education.

b) Screening tool for Premenstrual symptoms. (Steiner et al, 2003)

2.5 Data Collection Procedure

Eligible participants were administered with a printed questionnaire or directed to a Google Form link. Explicit instructions were provided to obtain accurate responses. The time required for filling out the questionnaire was on average 10–15 minutes. Data was also collected continuously over 3 months and subsequently organised for analysis.

2.6 Ethical Considerations

All participants provided informed consent. The participants were guaranteed confidentiality and anonymity during the study, and they could withdraw at any time without penalty during regular debriefing. Approval from McMaster University's Premenstrual Symptoms Screening Tool was obtained for this study.

2.7 Statistical Analysis.

- Data were analysed by IBM SPSS Statistics version 26.0. Descriptive statistics, including frequency, percentage, mean and standard deviation for demographic, lifestyle and clinical variables, were calculated.
- The PSST was employed for considering covariates associated to the presence of PMS and PMDD.

Results

In this cross-sectional screening study, 301 women aged 18–40 years were included. All respondents completed the Premenstrual Symptoms Screening Tool (PSST) and were included in the final analysis. Findings are linked to prevalence estimates, symptom severity profiles, and functional impairment attributable to premenstrual symptomatology.

Table 1

Prevalence of Premenstrual Symptoms by Degree of Severity based on PSST (N = 301)

PSST Symptoms	Not at all (%)	Mild (%)	Moderate (%)	Severe (%)
Anger or irritability	30.9	31.9	24.6	12.6
Anxiety or tension	41.5	29.6	20.3	8.6
Tearfulness or mood swings	33.6	28.2	26.9	11.3
Depressed mood	38.5	30.2	22.6	8.7
Difficulty concentrating	49.2	27.5	17.3	6.0
Fatigue or lack of energy	28.9	33.5	26.2	11.4
Over eating or food craving	39.7	29.4	20.3	10.6
Insomnia or hypersomnia	42.6	28.9	20.2	8.3
Feeling Overwhelmed or out of control	50.8	27.3	16.2	5.7
Physical symptoms (pain, bloating, headaches, weight gain, breast tenderness	22.8	30.1	28.3	18.8

While the distribution of both individual premenstrual symptoms shows evidence of a multidimensional symptom burden comprising affective, cognitive, behavioral and somatic domains.

Anger or irritability was one of the most prominent complaints found, with a total of 37.2% of participants reporting moderate-to-severe severity (24.6% moderate; 12.6% severe) Along the same lines, tearfulness or mood fluctuations were also reported by 38.2% of participants at moderate to severe levels, and reflected considerable emotional lability during the premenstrual period. Anxiety or tension (28.9%) and depressed mood (31.3%) in particular were also commonly endorsed at clinically meaningful levels, further emphasizing affective dysregulation as a hallmark of premenstrual symptomatology.

Fatigue or absence of energy was one more frequent moderate-to-severe symptoms (37.6%) chasing the role of energy depletion and decreased vitality in premenstrual distress. This symptom is likely to play a role in both emotional reactivity and functional impairment.

In contrast, difficulty concentrating (23.3%) and feeling overwhelmed or out of control (21.9%) were reported much less frequently at moderate-to-severe levels, with most respondents endorsing “not at all” or “mild.” This may indicate cognitive symptoms are there but secondary to both emotional and physical complaints in this cohort.

Somatic symptoms were notably prevalent. Almost 47.1% of subjects had moderate-to-severe physical symptoms (28.3% moderate; 18.8% - severe), which was the highest proportion of all domains combined severity scores. This finding adds emphasis to the heavy physical aspect of premenstrual experiences,

such as pain, bloating, headaches, weight fluctuations and breast tenderness.

Sleep-related disturbances were also significant; 28.5% reported moderate-to-severe insomnia or hypersomnia. The behaviour and appetite changes during the luteal phase were reported at moderate-to-severe levels (30.9% of participants) with excess eating or food cravings contributing.

Table 2

Functional Impairment due to premenstrual symptoms by degree of severity (N=301)

PSST Functional Domain	Not at all (%)	Mild (%)	Moderate (%)	Severe (%)
Work efficiency or productivity	30.9	31.9	24.6	12.6
Relationship with co-workers or family	41.5	29.6	20.3	8.6
Social life and leisure activities	33.6	28.2	26.9	11.3
Home responsibilities	38.5	30.2	22.6	8.7

moderate and severe numbers should be combined with productivity or work efficiency (49.2) over relationship with co-worker on family members (46.8) are higher percentage. It is the percentage of satisfaction the respondent is experiencing regarding his social/leisure activities. It was not uncommon to find that some respondents (46.5%) still had a good home life. Herein lies the crux of the matter, for premenstrual syndrome was a monumental impediment to life both at home and work. In the functional domain, about a quarter of respondents had no impairment at all. The broad finding was that moderate to severe PMS and PMDD had similar appearance rates (38.20%), but PMDD was very high (18.27%).

Table 3

Age- Wise Distribution of PMS and PMDD among Woman Participants (N=301)

Age	Total	No/mild PMS (%)	Moderate to Severe (%)	PMDD (%)
18-20 years	54 (17.9%)	24 (44.4%)	21 (38.9%)	9 (16.7%)
21-24 years	96 (31.9%)	42 (43.8%)	37 (38.5%)	17 (17.7%)
25-28 years	88 (21.0%)	38 (43.2%)	34 (38.6%)	16 (18.2%)
29-40	63 (21.0%)	27 (42.9%)	24 (38.1%)	12 (19.0%)

Approximately 43% report either “none” or mild “PMS,” 38% report moderate-to-severe PMS, and 18% meet criteria for PMDD. The age-wise distribution showed that a proportion of participants meeting criteria for PMDD increased with advancing age from 16.7 per cent at ages to 19.0 per cent in the older generations. Overall, about 43–44% of participants reported no or mild PMS, nearly 38% had moderate-to-severe PMS, and 16–19% met screening criteria suggestive of PMDD across categories.

Prevalence of moderate-to-severe PMS was 38.9%, and PMDD prevalence was 16.7% in women aged 18–20 years. Similar proportions were noted within the age 21–24 years (38.5% and 17.7%) and age 25–28 years (38.6% and 18.2%) groups. The highest PMDD percentage was found in women aged 29–40 years (19.0%). However, the age category increase was modest in the 18-20 age group.

Table 4

Prevalence of PMS and PMDD by Educational Qualification (N = 301)

Education Qualification	Total	No/mild PMS (%)	Moderate to Severe (%)	PMDD (%)
Up to 12th	48 (15.9%)	21 (43.8%)	18 (37.5%)	9 (18.7%)
Undergraduate	132 (43.9%)	58 (43.9%)	51 (38.6%)	23 (17.4%)
Post graduate	96 (31.9%)	42 (43.7%)	37 (38.5%)	17 (17.8%)
Other	25 (8.3%)	10 (40.0%)	12 (48.0%)	3 (12.0%)

The categories associated with PMS and PMDD were consistently distributed across levels of education, showing that clinically significant premenstrual distress is not restricted to any particular level of academic achievement. Around 43–44% of females in most educational categories reported having no or mild symptoms, with about 38–39% reporting moderate-to-

severe PMS. Provisional PMDD prevalence was between 17–19% across categories.

The prevalence proportions scales of women with undergraduate and postgraduate education were nearly matches, which revealed that academic accomplishment was not a protective factor for premenstrual symptom severity independently. Notably, women described as professional or other had a higher rate of moderate-to-severe PMS (48.0%), but the prevalence of PMDD in this group was lower than that of the other groups (12.0%). This pattern might reflect higher occupational stress or performance-related pressures in professionally trained cohorts, possibly increasing subclinical symptom burden without necessarily stimulating greater severe dysphoric presentations.

Table 5

Prevalence of PMS and PMDD by physical activity level (N = 301)

Physical activity level	Total	No/mild PMS (%)	Moderate to Severe (%)	PMDD (%)
Regular	92 (30.6%)	46 (50.0%)	32 (34.8%)	14 (15.2%)
Irregular	137 (45.5%)	56 (40.9%)	55 (40.1%)	26 (19%)
Sedentary	72 (23.9%)	29 (40.3%)	28 (38.9%)	15 (20.8%)

Women who were regularly physically active at moderate-to-vigorous level demonstrated lower levels of moderate-to-severe PMS (34.8%) and PMDD (15.2%), compared with sedentary (38.9% and 20.8%, respectively) participants. A gradient pattern was observed, with higher symptom burden among women reporting lower activity levels. The results indicated that physical activity may be protective against the severity of PMS.

Table 6

Prevalence of PMS and PMDD by Junk food consumption (N = 301)

Junk food intake	Total	No/mild PMS (%)	Moderate to Severe (%)	PMDD (%)
Rare	84 (27.9%)	41 (48.8%)	30 (35.7%)	13 (15.5%)
2-3 times/week	146 (48.5%)	62 (42.5%)	57 (39.0%)	27 (18.5%)
>4 times/week	71 (23.6%)	28 (39.4%)	28 (39.4%)	15 (21.2%)

Higher consumption patterns of junk and fried foods were positively correlated with PMDD prevalence, which was higher in 21.2% population compared to those attending (15.5%). While proportions of moderate-to-severe PMS did not vary much across categories, PMDD showed a slight positive trend in the frequency of consumption of processed food groups.

Table 7

Prevalence of PMS and PMDD by Average Sleep Duration (N = 301)

Junk food intake	Total	No/mild PMS (%)	Moderate to Severe (%)	PMDD (%)
>7 hours/night	118 (39.2%)	59 (50.0%)	40 (33.9%)	19 (16.1%)
5-6 hours/night	137 (45.5%)	54 (39.4%)	56 (40.9%)	27 (19.7%)
<5 hours/night	46 (15.3%)	18 (39.1%)	19 (41.3%)	9 (19.6%)

Participants who reported sleeping ≥ 7 hours had lower moderate-to-severe PMS (33.9%) than those who slept 5–6 hours (40.9%) or < 5 h/24 h (41.3%). Group with shorter sleep duration also showed mildly elevated prevalence of PMDD. These findings suggest that insufficient sleep may increase vulnerability during the premenstrual phase.

Table 8

Prevalence of PMS and PMDD by Occupation (N = 301)

Occupation	Total	No/mild PMS (%)	Moderate to Severe (%)	PMDD (%)
Students	138 (45.8%)	60 (43.5%)	53 (38.4%)	25 (18.1%)
Employed	104 (34.6%)	45 (43.3%)	40 (38.5%)	19 (18.2%)

Self-employed	28 (9.3%)	12 (42.9%)	11 (39.3%)	5 (17.8%)
Homemakers	31 (10.3%)	14 (45.2%	11 (35.5%)	6 (19.3%)

Analysis of occupational categories also showed consistent prevalence trends—there was no evidence that the trends differed across employment groups. For students, employed women, self-employed participants, and homemakers the distributions were similar: 42–45% reported no or mild PMS, 35–39% moderate-to-severe PMS and 17–19% met provisional screening criteria for PMDD.

Students exhibited somewhat higher rates of PMDD (18.1%) suggesting that the demands associated with academic pressures, exam stressors, sleep disruption and increased emotional reactivity associated with the developmental period may be plausible contributing factors in this population. An evenness between moderate and severe PMS prevalence (38.5%) indicated little difference in occupational engagement, both private and government employed women held nearly the same; evidence that suggests being engaged does not create a distinct variation of symptoms distribution aside from functional incapacity issues ascribed to context-based adoption.

Homemakers showed a slightly greater proportion of PMDD (19.3%), which might indicate cumulative domestic burdens, emotional work and lack of structuring stress outlets/places. But the differences between occupational groups were small, suggesting that premenstrual distress does not confine itself to occupational role content.

Table 9

Prevalence of PMS and PMDD by Relationship Status (N = 301)

Relationship Status	Total (n%)	No/Mild PMS (n%)	Moderate-Severe PMS (n%)	PMDD (n%)
Unmarried	167 (55.5%)	73 (43.7%)	64 (38.3%)	30 (18.0%)
In a relationship	44 (14.6%)	19 (43.2%)	17 (38.6%)	8 (18.2%)
Married	83 (27.6%)	36 (42.9%)	32 (38.6%)	15 (18%)
Divorced/ Separated	7 (2.3%)	3(42.9%)	3 (42.9%)	1 (14.2%)

As per the demographic details of PMS/PMDD items (table 4) Majority of the respondents were single/unmarried (55.5%) followed by married some (27.6%) and others in a relationship (14.6%). The proportions of PMS severity are broadly similar in each relationship status except for those who are REALLY suffering PMDD; almost 43% suffer no or mild PMS, 38% moderate tablespoons-to-severe PMS and 18% PMDD. Its prevalence was only slightly higher in the relationship group than for married or single participants, though the differences are minuscule. Similar proportions of individuals experienced PMS and PMDD across each relationship category examined.

Table 10

Prevalence of PMS and PMDD by Substance Use Pattern (N = 301)

Substance use	Total (n%)	No/Mild PMS (n%)	Moderate- Severe PMS (n%)	PMDD (n%)
No substance use	216 (71.8%)	102 (47.2%)	80 (37.0%)	34 (15.8%)
Occasional use	63 (20.9%)	23 (36.5%)	26 (41.3%)	14 (22.2%)
Frequent	22 (7.3%)	6 (27.3%)	10 (45.4%)	6 (27.3%)

The prevalence of moderate-to-severe PMS, however, was up to 45.4% and PMDD 27.3% among substance users. Women who used drugs frequently or regularly were more likely to have premenstrual symptoms. Preliminary research had suggested the link with reported alcohol intake, allowing for similar conclusions to be reached.

Discussion

The current cross-sectional investigation assessed the occurrence, severity patterns and functional disability linked to premenstrual symptomatology in reproductive-age women (18–40 years). The study found moderate-to-severe PMS prevalence to be 38.2%, which was comparable across sociodemographic variables, and screening for PMDD suggestensive symptoms to be 18.27%. These findings suggest that close to 40% of women experience clinically significant cyclical distress (two-fifths) and

nearly one-fifth severe clusters of dysphoric symptoms.

PMS prevalence estimates worldwide are estimated to be 30–40%, and PMDD prevalence range from 3–8% in community samples depending on the diagnostic approach (Yonkers et al., 2008; Ryu & Kim, 2015). Studies conducted on Indian population have provided a wider range with prevalence of moderate-to-severe PMS reported to be up to 32–55% (Bhuvaneswari et al., 2019; Nisar et al., 2008). The comparatively high prevalence of PMDD screening in the current sample may reflect differences in urban exposure to stress, cultural underreporting in previous studies and differences is PMDD screening approaches using the PSST.

Symptom Severity Patterns: Affective Dominance

The high prevalence of affective symptoms was one of the major findings of the current study. Among the most common symptoms reported were moderate-to-severe fatigue (37.6%), anger/irritability (37.2%) and mood swings (38.2%). The hallmark of PMDD has always previously been emotional dysregulation (American Psychiatric Association, 2013).

As a body of evidence, studies indicate that PMS/PMDD women exhibit "aberrant central nervous system sensitivity to usual luteal phase steroid fluctuations," and are particularly affected by progesterone-derived neurosteroids (like allopregnanolone) that modulate GABA-A receptor functioning (Hantsoo & Epperson, 2015). Similarly, dysregulation of serotonergic pathways has been implicated as well and may provide insights into the effectiveness of selective serotonin reuptake inhibitors (SSRIs) in PMDD treatment (Yonkers et al., 2008).

Similar to previous studies, irritability and mood swings occurred more frequently than cognitive features like difficulty concentrating. The same has been observed in Asian and European cohorts, with affective symptoms being consistently more severe than cognitive impairment (Ryu & Kim, 2015).

Somatic Symptoms and Multidimensional Burden

Almost half of participants reported moderate-to-severe physical symptoms, including stomach bloating or distention, headaches, breast tenderness and general aches. This aligns with previous evidence showing that PMS is not just a psychological phenomenon, but a biopsychosocial one (Rapkin & Winer, 2009).

Somatic discomfort can intensify emotional distress, because of sleep disruption and fatigue, constituting a saddle-weightful negative cycling. Research has indicated that inflammatory markers and prostaglandin activity may play a role in pain-related symptoms experienced during the luteal phase (Bertone-Johnson et al., 2014). The presence of both affective and somatic symptoms in the current sample supports this multidimensional model.

Functional Impairment: Real-World Impact

The current study goes beyond symptom prevalence by translating into real-world functional impairment. Around 37–38% of individuals experienced moderate-to-severe impairment in work productivity and social functioning.

Research from previous studies indicates that PMDD is correlated with decreased quality of life and considerable occupational malfunction (Halbreich et al., 2003). Similarly, Borenstein et al. (2005) found that women with moderate-to-severe PMS experienced higher absenteeism and lower workplace productivity.

The current results corroborate these findings, especially in the vocational area. Sixty-eight subjects (45.8%) were considered unimpaired in the home responsible domain, whereas the occupational and social domains seemed more affected. This could also be related to sociocultural expectations in Indian contexts, wherein women are expected to keep the households functioning despite distress.

Age-wise Stability Across Reproductive Years

Age-wise prevalence remained remarkably consistent across age groups with moderate-to-severe PMS remaining around 38% and PMDD between 16–19%.

Previous longitudinal studies indicate that type and severity of PMS may vary, but can remain relatively stable across reproductive years (Freeman et al., 2011). The modest rise in PMDD prevalence among women aged 29–40 years observed in the current study may reflect either cumulative psychosocial stressors, and/or age-dependent changes in hormonal sensitivity. But the differences were small, indicating that biological vulnerability remains relatively constant through reproductive adulthood.

Educational Qualification

The rate of PMS and PMDD was approximately equal across education levels. Higher education did not seem to have a much bigger effect on symptom severity. This evidence is consistent with research suggesting that PMS is biologically mediated not driven by educational attainment (Direkvand-Moghadam et al., 2014).

In contrast, women with “Other” degrees had higher moderate-to-severe PMS (48.0%). Occupational responsibilities related to occupation stress could amplify the perception of severity of symptoms. The same applies to urban occupational samples, where high-performance

Educational Qualification

There was little variation in prevalence of PMS and PMDD across educational level. Having a higher level of education did not seem to substantially lessen symptom severity, he added. This outcome is consistent with reports suggesting that PMS is biologically rather than education level determined (Direkvand-Moghadam et al., 2014). Occupational Status

Prevalence patterns were stable across occupational groups. The PMDD was found elevated slightly among university students (18.1%), consistent with findings that academic stress correlates with increased menstrual irregularities and mood disturbances (Seedhom et al., 2013).

Among employed women, the prevalence of moderate-to-severe PMS was similar (38.5%). Vulnerability during luteal-phase may be worsened by workplace stress, long-hours and less pattern of sleep (Bhuvaneswari et al2019). PMDD prevalence was marginally higher among homemakers (19.3%), possibly because of emotional labour and less structuring of outlets for coping.

However, differences were small, indicating that occupational context may affect exposure to stressors, but not intrinsic sensitivity to its hormonal consequences.

Physical Activity

Women who exercised regularly exhibited significantly lower frequencies of moderate-severe PMS and PMDD. This is in accordance with previous studies that reported exercise promoted serotonergic regulation, decreased inflammatory markers and increased resilience to stressors (Daley, 2009). Physical activity may buffer luteal-phase mood sensitivity via improved neuroendocrine regulation.

Dietary patterns

PMDD severity also had a gradient association with dietary patterns. Increased consumption of junk and fried foods correlated with higher prevalence of PMDD. It has also been suggested that such foods (e.g., rich in refined carbohydrates or saturated fats) have the capacity to promote systemic inflammation and glycemic pendulation, possibly exacerbating mood instability (Bertone-Johnson et al., 2014).

Sleep

Duration of sleep had a clear correlation to overall severity of symptoms. Women who slept less than six hours nightly had a greater prevalence of moderate-to-severe PMS. Research has shown that sleeping much less or more than needed impairs emotional regulation, and elevates stress levels and serotonergic dysregulation (Bei et al., 2015). These results further support the importance of modifiable behavioral factors on premenstrual symptom burden.

Relationship Status

The rates of PMS and PMDD were similarly common among unmarried, married, and partnered women. This aligns with the findings of Lustyk et al. (2010), that relationship status alone does not significantly predict PMS severity.

While interpersonal stress can worsen mood symptoms, biological vulnerability seems to be the more dominant mechanism. The small divorced/separated subgroup limits interpretive depth, though it does not imply marked divergence

Substance Use

Prevalence of PMS and PMDD was similar among unmarried, married, and partnered women. This finds a match with the results from Lustyk et al. (2010), who found that relationship status was not a significant predictor of PMS severity when taking into account this variable. Perhaps the most surprising trend involved trends in substance use. Moderate-to-severe PMS (45.4%) and PMDD (27.3%) were significantly more prevalent in frequent substance users than non-users (37.0% and 15.8%, respectively).

Previous data have also shown associations between alcohol use and higher PMS severity (Cheng et al., 2017). Alcohol may affect serotonin metabolism and sleep architecture, both of which play a role in PMDD pathophysiology. Furthermore, unhealthy substance use may also be utilized as an maladaptive coping strategy to alleviate the distress associated with premenstrual symptoms thus establishing a bidirectional relationship between these variables (Anderson et al. 2002).

Clinical and Public Health Implications

The results point to the importance of routine screening for PMS and PMDD in primary care, gynaecological services and university health systems. Considering the substantial functional burden, menstrual mental health care should be incorporated in general women's mental health paradigms.

Psychoeducation, stress-management programs, sleep hygiene interventions and evidence-based pharmacological treatment (e.g., SSRIs) may substantially decrease this burden.

Strengths and Limitations

Strengths include use of a validated screening instrument (PSST), a diverse reproductive-age sample, and multidimensional assessment including functional impairment.

Limitations are cross-sectional, self-report bias, and absence of prospective symptom tally necessarily for diagnosis of PMDD. Furthermore, causality cannot be inferred for substance use associations.

Conclusion

The present study highlights the high prevalence of premenstrual symptomatology in reproductive-age women and its notable impact at an urban Indian site. A substantial percentage of participants reported moderate-to-severe PMS, including a meaningful minority that met screening criteria consistent with PMDD; this underscores the clinical and psychosocial relevance of cyclical patterns in symptoms. These results corroborate that premenstrual disorders involve more than passing disturbances in physiology, but are valid contributors to emotional malaise and functional disability.

Dominant symptom domains included affective instability, fatigue and somatic discomfort, with quantifiable impact on occupational productivity and social engagement. The uniformity of proportions observed across age cohorts, education level, professional role and partner status indicates that premenstrual distress is widely distributed throughout demographic strata and should be understood as a ubiquitous reproductive mental health issue rather than one relevant only to certain subpopulations.

Importantly, exceptionally observed gradients across lifestyle variables—such as lower levels of physical activity, lower duration of sleep, greater consumption of energy-dense processed food and substance use—suggest that modifiable behavioural factors may collaborate with biological susceptibility in determining symptom severity. These patterns are consistent with a biopsychosocial conceptualization of PMS and PMDD, whereby sensitivity to hormones is moderated by psychosocial and life-style contexts.

Together, the findings emphasized significant opportunities to both include routine screening for premenstrual disorders in primary care and gynecological services along with targeted psychoeducation and lifestyle-based preventive interventions. Improving menstrual mental health literacy and using gender-sensitive, evidence-informed strategies may help practitioners reduce impairment in functioning and enhance well-being of diverse cohorts of women across the reproductive spectrum.

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