

# Prevalence of Premenstrual Syndrome (PMS) Among Female Biomedical Students in Kabul, Afghanistan: A Cross-Sectional Study

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**Background:** Premenstrual Syndrome (PMS) is a significant public health concern affecting a substantial proportion of women worldwide, with a global prevalence of approximately 47.8%. In Afghanistan, the PMS is prevalent, and the magnitude is unknown. Due to a lack of studies, this is the first study that sheds light on prevalence of PMS.

**Objective:** This study investigates the prevalence and symptoms of PMS among female students in Kabul, Afghanistan.

**Materials and Methods:** This descriptive cross-sectional study was conducted between May and September 2024 on a sample of 285 students. A systematic and stratified random sampling method was employed. Data were collected using a standardized questionnaire and analyzed using SPSS version 26. The chi-square test was performed to assess the association between PMS prevalence and variables such as age and menstrual cycle status.

**Results:** The study achieved a response rate of 84.91%. The participants' age distribution was 39.7% between 18–20 years, 57% between 21–25 years, and 3.3% above 25 years. Most participants were single (87.6%), and 76.9% reported having regular menstrual cycles. The prevalence of PMS was 72.3% based on ICD-10 criteria and 21.1% based on ACOG criteria. The chi-square test indicated no statistically significant association between age groups and PMS prevalence ( $p$ -value= 0.151), but significant relationship was observed between menstrual cycle regularity and PMS prevalence ( $p$ -value= 0.018). The most frequently reported symptoms were muscle, joint, and back pain (86.8%), fatigue (84.3%), and reduced interest in activities (77.3%).

**Conclusion:** The high prevalence of PMS and its association with irregular menstrual cycles highlight the need for targeted awareness campaigns, culturally sensitive interventions, and improved healthcare access to mitigate its effects.

**Keywords:** menstruation, premenstrual syndrome, premenstrual disorder, prevalence

## Introduction

Premenstrual Syndrome (PMS) is a set of physical, psychological, and behavioral symptoms that occur during the luteal phase of the menstrual cycle and usually subside after menstruation begins. This syndrome can negatively impact women's quality of life, work productivity, and social functioning. According to the American College of Obstetricians and Gynecologists (ACOG), PMS is characterized by the presence of at least one affective or somatic symptom that interferes with women's daily activities, occurring during the five days before menstruation and persisting for at least three consecutive menstrual cycles.<sup>1,2</sup>

Various studies have shown that the prevalence of PMS varies worldwide due to cultural characteristics, diagnostic criteria, and the population studied. For instance, in Turkey, the prevalence of PMS has been reported to range from 5.9% to 76%.<sup>3</sup> Similarly, a study conducted among university students in Iran found that 98.2% of participants experienced at least one mild to severe premenstrual symptom, while 16% met the DSM-IV diagnostic criteria for PMS.<sup>2</sup> Additionally, a systematic review and meta-analysis estimated the global pooled prevalence of PMS at 47.8%, with rates ranging from 12% in France to 98.2% in Iran.<sup>4</sup> In India, a study in Erode reported that 54% of adolescent girls experienced mild PMS,

28% had moderate PMS, and 18% suffered from severe PMS.<sup>1</sup> Another study among medical students in India found a PMS prevalence of 31.1%, with significant associations between PMS and factors such as BMI, place of residence, and age at menarche.<sup>5</sup> Research in a rural school in West Bengal reported that 61.5% of adolescent girls experienced PMS, with irritability (84.8%), anxiety (76%), and depression (62.7%) being the most common symptoms.<sup>6</sup>

PMS symptoms can be categorized into three main groups: physical, psychological, and behavioral. Physical symptoms include abdominal bloating, breast tenderness, headaches, and muscle pain. Psychological symptoms consist of anxiety, irritability, mood swings, and depression. Behavioral symptoms such as poor concentration, social withdrawal, and sleep disturbances further exacerbate the burden of PMS. Several contributing factors have been identified, including hormonal imbalances, genetic predisposition, lifestyle, diet, and stress.<sup>3,4,7</sup> Recent studies also suggest a possible link between gut microbiota and PMS symptoms, highlighting the role of neurotransmitters like serotonin and GABA in symptom severity.<sup>3</sup>

In addition to PMS, a more severe condition known as Premenstrual Dysphoric Disorder (PMDD) affects approximately 3–8% of menstruating women and is associated with extreme emotional and physical symptoms that can significantly impair daily functioning. PMDD is formally recognized in the DSM-5 and ICD-11 and is primarily characterized by intense mood disturbances such as irritability, anxiety, and depression, which emerge during the luteal phase and subside after menstruation begins. Unlike PMS, PMDD has a profound impact on mental health and quality of life. The disorder is thought to involve an abnormal neurobiological response to normal hormonal fluctuations, particularly involving serotonin dysregulation. While less prevalent than PMS, PMDD remains underdiagnosed and underreported in many culturally conservative and low-resource countries due to stigma and lack of awareness.<sup>8</sup>

In Afghanistan, menstruation remains a cultural taboo, resulting in limited awareness and inadequate menstrual health management. A study conducted among female students at Kabul University of Medical Sciences (KUMS) revealed that while most students had good or acceptable knowledge of menstruation, their beliefs were often influenced by myths and misconceptions. The primary source of menstrual information was mothers, although their guidance was sometimes insufficient or inaccurate. Additionally, 51.9% of students reported experiencing dysmenorrhea, and 70.8% had menstrual cycles within the normal range (21–35 days).<sup>9</sup> Similar cultural challenges exist in rural India, where young women face social rejection due to PMS symptoms.<sup>6</sup>

This culture of silence surrounding menstruation perpetuates a range of myths and misinformation that are passed down through generations, often from mother to daughter. Many adolescent girls receive limited or incorrect knowledge about menstruation from informal sources, and schools frequently lack trained female staff or supportive environments to offer proper guidance. The resulting stigma not only undermines menstrual hygiene management but also deepens gender inequalities by discouraging girls from participating in education and public life. Consequently, menstruation-related challenges are often ignored, creating long-term impacts on girls' physical and psychological well-being.<sup>10</sup>

Despite the high prevalence of PMS, it is often underdiagnosed and undertreated due to cultural stigmas and a lack of awareness. The standard diagnostic criteria for PMS require prospective symptom tracking across at least two menstrual cycles; however, adherence to this practice in clinical settings remains low. Studies indicate that only 11.5% of physicians in the United States and 8.4% in Japan implement this method.<sup>3</sup> As a result, alternative diagnostic approaches, including biomarker development and simplified screening tools, are being explored.<sup>3,5</sup>

These studies highlight the significance of research in this field, revealing that nearly half of all women of reproductive age worldwide (47.8%) experience this condition.<sup>4</sup> Among the reviewed articles, only one focused on Afghanistan, underscoring the lack of studies in this area. This indicates that such disorders and syndromes remain largely unrecognized in Afghan society and are often considered taboo. In Afghanistan, these issues are not only unfamiliar to men and other family members but also to women themselves, leading to a lack of awareness and reluctance to express their experiences. When such health concerns are not acknowledged, they remain unaddressed, negatively impacting women's mental, psychological, and behavioral well-being. This, in turn, contributes to family conflicts and, in severe cases, even divorce.

Given these challenges, this study aimed to assess the prevalence and symptoms of premenstrual syndrome among female students at a medical institute in Kabul, Afghanistan. By shedding light on this issue, the research seeks to

promote awareness and improve the management of these disorders. The finding will serve as a foundation for advocacy efforts to educate female students in schools, institutes, and mosques, ensuring greater awareness and support.

## Research Methodology

### Type of Study

The research follows a descriptive-cross-sectional design which is categorized as basic research in terms of usage, it is quantitative in terms of questions, primary in terms of data collection principles, and descriptive in its objectives.

### Study Setting and Participants

The research was conducted at the Mellat Institute of Health Sciences (A post-secondary Institute), located in the 13<sup>th</sup> District of Kabul city. The participants were female students from the fields of midwifery, nursing, pharmacy, dental prosthetics, and medical technology at this institute. It is worth mentioning that most of the students at mentioned institute have been studying midwifery.

### Duration

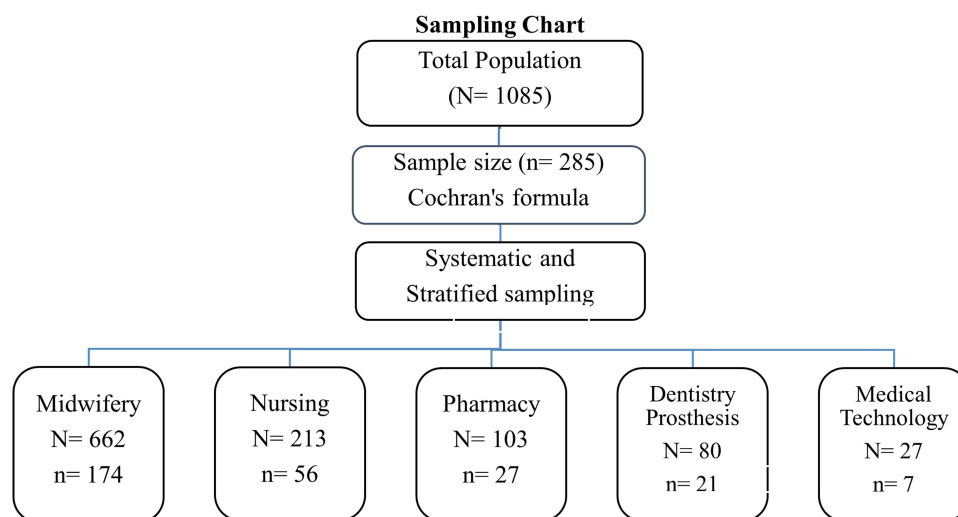
The study has been done from May 4<sup>th</sup> to September 28<sup>th</sup>, 2024.

### Sample Technique

A stratified random sampling method was used to ensure proportional representation of female students from different departments and academic years within the institute. First, the student population was divided into strata based on faculties (eg, Midwifery, Nursing, etc). Within each stratum, systematic sampling was applied to select participants by using a fixed interval from a class attendance list. This approach helped reduce selection bias and ensured equal representation. The sample size was determined using Cochran's formula, considering the target population. The proportion of each field and class was calculated, and the samples were selected systematically from each class (Figure 1).

### Sample Size

The study population consisted of 1,085 female students and sample size is defined using Cochran's formula with a 95% confidence interval, a 0.5 probability of success (the proportion of individuals with the characteristic under study), a 0.5 probability of failure, and a 0.05 margin of error, the sample size was calculated to be 285 participants, of which 285 participants were included in the research and the majority of participants (about 96.7%) fell within the 18–25 age range (Figure 1).



**Figure 1** Sampling Chart.

## Data Collection Tools and Management

Data collection was conducted using the Premenstrual Symptom Screening Tool (PSST), a standardized and internationally validated instrument designed to screen for Premenstrual Syndrome (PMS) symptoms, adapted from review of literature.<sup>11–13</sup> Printed questionnaires were distributed in person during classroom sessions with prior permission from the institute instructors. The survey was administered face-to-face, and written informed consent was obtained from all participants before participation. No personal identifiers (eg, names, student numbers) were collected, and participants were assured of complete anonymity and confidentiality. Once the questionnaires were fully collected, the data were entered into IBM SPSS-26 for statistical analysis. Graphs and charts were generated using MS Excel 2019.

The PSST was selected because of its scientific validity, ease of administration, and close alignment with internationally recognized diagnostic criteria, particularly those of the American College of Obstetrician and Gynecologists (ACOG) and the International Classification of Diseases (ICD-10).

In this study, the PSST was utilized exclusively to identify the presence or absence of PMS-related symptoms among participants. Neither the severity of symptoms nor the functional impairment was assessed. Although the original Premenstrual Symptom Screening Tool (PSST) was designed to assess the severity of symptoms, a modification was made in the current study to suit the research objective. Specifically, binary response options (“Yes” and “No”) were added to each item to capture the presence or absence of symptom, as the primary focus of this study was to determine the prevalence and pattern of PMS symptoms among female students.

Participants were categorized according to the following diagnostic standards:

- According to ACOG criteria, a diagnosis required at least one affective (emotional) and one somatic (physical) symptom appearing during the five days before menstruation, resolving within four days after the onset of menstruation, recurring across at least three consecutive cycles, and causing some degree of dysfunction.
- According to ICD-10 criteria, diagnosis was based on the presence of cyclical emotional or physical symptoms occurring during the luteal phase across at least two consecutive menstrual cycles, regardless of symptom severity.

No pilot study was conducted prior to the main data collection. However, the PSST used in this research has been extensively validated in various populations, and minor cultural adaptations were made during its adaptation to ensure clarity and relevance for the target population.

## Inclusion Criteria

- All randomly selected female students studying for the 14th-grade diploma in the mentioned institute were included.
- Individuals within the reproductive age range (15–49 years).
- Students who provided informed consent by signing the written consent form after fully understanding the study objective.

## Exclusion Criteria

- Institute staff and male students were excluded from the study.
- Students who declined to participate or did not sign the consent form were not included in the analysis.
- Incomplete or invalid questionnaires were excluded from the analysis.

## Ethics

- The study was supervised by a mentor and officially approved by the Kabul University of Medical Science under protocol number 21, agenda number 11, and date 2024. Moreover, the following ethical principles were strictly considered during the research process.
- All the procedures were according to the Helsinki Declaration
- Ethical guidelines established by global organizations for research were strictly adhered to.
- The university issued an official letter to the relevant institution to facilitate the research.

- Participants were thoroughly informed about the research and its objectives before distributing the questionnaires.
- Written consent forms were provided, which participants signed after understanding the study's objectives and expressing willingness to participate.
- Participant identities were kept confidential, even from the researcher.
- The data collected was solely used to complete the present study.

## Findings (Results)

This chapter outlines and explains the results and statistical data obtained from the questionnaire-based study. This research was conducted to determine the prevalence of Premenstrual Syndrome (PMS) among female students. To collect data, a modified version of the standardized Premenstrual Syndrome Screening Tool (PSST) was utilized.

After collecting the questionnaires, the data was entered into the Statistical Package for Social Sciences (SPSS), version 26. Of the 285 distributed questionnaires, 257 were returned, while 28 were not. Among the returned questionnaires, 242 were complete and valid, and 15 were deemed unacceptable and excluded from the study. Thus, the response rate for this research was 84.91%. The findings derived from relevant statistical analyses are presented and interpreted below.

### Section One: Demographic Characteristics and Menstrual Cycle Status

The finding shows that 39.7% of participants were in the age group of 18–20 years, 57% were in the 21–25 Years age group, and only 3.3% were above 25 years. Therefore, the majority of participants in this study were aged 21–25 years. Meanwhile, findings indicate that 87.6% of participants were single, while 12.4% were married.

In this study, 65.7% of participants were midwifery students, 18.2% were nursing students, 7.9% were pharmacy students, 6.6% were dentistry prosthetics students, and 1.7% were medical technology students. According to academic years, 47.9% of participants were first-year students, while 52.1% were second-year students, and according to the menstrual cycle, 76.9% of participants reported having regular menstrual cycles, while 23.1% reported irregular cycles (Table 1).

**Table 1** Demographic Characteristics and Menstrual Cycle Status

| Category                 | Percentage % | Frequency |
|--------------------------|--------------|-----------|
| <b>a) Age in Years</b>   |              |           |
| 18–20                    | 39.7%        | 96        |
| 21–25                    | 57%          | 138       |
| Above 25                 | 3.3%         | 8         |
| <b>b) Marital Status</b> |              |           |
| Single                   | 87.6%        | 212       |
| Married                  | 12.4%        | 30        |
| <b>c) Field of Study</b> |              |           |
| Midwifery                | 65.7%        | 159       |
| Nursing                  | 18.2%        | 44        |
| Pharmacy                 | 7.9%         | 19        |
| Dentistry Prosthetics    | 6.6%         | 16        |
| Medical Technology       | 1.7%         | 4         |

(Continued)

**Table 1** (Continued).

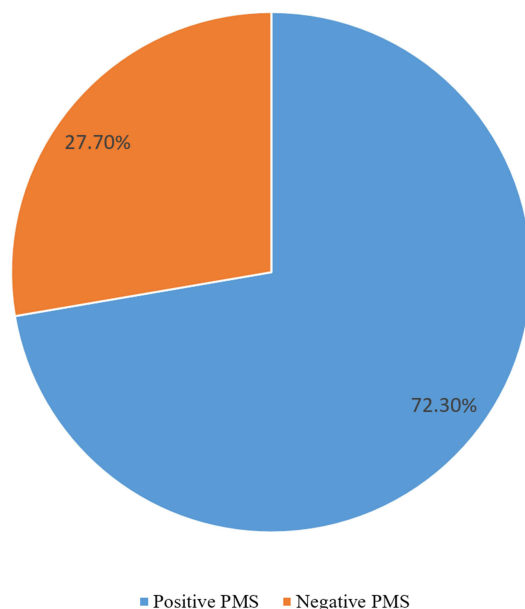
| Category                         | Percentage % | Frequency |
|----------------------------------|--------------|-----------|
| <b>d) Academic Year</b>          |              |           |
| First year                       | 47.9%        | 116       |
| Second year                      | 52.1%        | 126       |
| <b>e) Menstrual Cycle Status</b> |              |           |
| Regular                          | 76.9%        | 186       |
| Irregular                        | 23.1%        | 56        |

## Section Two: The Prevalence and Symptoms of Premenstrual Syndrome

The prevalence of premenstrual syndrome (PMS) varied significantly depending on the diagnostic criteria used. According to the ICD-10 criteria, which define PMS as the presence of at least one symptom in two consecutive menstrual cycles, the prevalence was 72.3% (175 individuals). This criterion does not consider symptom severity or its impact on daily life, potentially leading to a higher prevalence estimate. In contrast, based on the American College of Obstetricians and Gynecologists (ACOG) criteria, PMS is diagnosed when symptoms occur in three consecutive cycles, begin within five days before menstruation, and resolve within four days after the onset of menstruation. Additionally, the symptoms must not be caused by medications or other medical conditions and must be severe enough to interfere with daily, social, or occupational activities. Using this stricter definition, the prevalence of PMS in this study was 21.1% (51 individuals). This notable difference highlights how the choice of diagnostic criteria significantly influences prevalence estimates, with ACOG providing a more stringent and clinically relevant assessment of PMS (Figures 2 and 3).

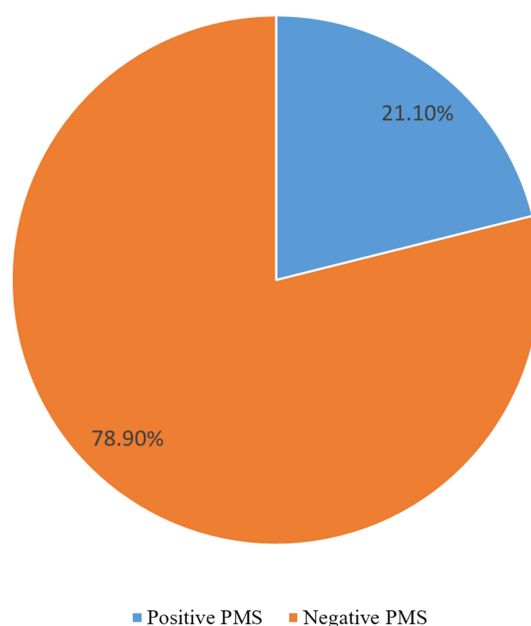
Table 2 illustrates PMS's symptoms and their frequency, which includes Physiological, Psychological, and Behavioral symptoms.

Prevalence of Premenstrual Syndrome (PMS) According to International Classification of Disease (ICD-10)



**Figure 2** Premenstrual Syndrome (PMS) Prevalence according to International Classification of Diseases (ICD-10) Criteria.

Prevalence of Premenstrual Syndrome (PMS) According to American College of Obstetricians and Gynecologists (ACOG)



**Figure 3** Premenstrual Syndrome (PMS) Prevalence according to American College of Obstetricians and Gynecologists (ACOG) Criteria.

To define the relationship between Age groups and Menstrual Cycle Status with the prevalence of PMS, there are conducted two chi-squared tests which are illustrated below:

A chi-square test was conducted to assess whether there is a significant relationship between age groups and the prevalence of PMS. The p-value was 0.151, which is greater than 0.05. This indicates no statistically significant relationship between age groups and PMS prevalence. However, the highest prevalence was observed in the 18–20 age group (83.3%) (Table 3).

**Table 2** Premenstrual Syndrome (PMS) Symptoms

| No                                     | Variables                           | Present |     | Absent |     |
|----------------------------------------|-------------------------------------|---------|-----|--------|-----|
|                                        |                                     | %       | N   | %      | N   |
| a) Physiological and Physical Symptoms |                                     |         |     |        |     |
| 1                                      | Muscle, joint, and back pain        | 86.8%   | 210 | 13.2%  | 32  |
| 2                                      | Fatigue and low energy              | 84.3%   | 204 | 15.7%  | 38  |
| 3                                      | Skin sensitivity, acne, and itching | 67.4%   | 163 | 32.6%  | 79  |
| 4                                      | Generalized body pain               | 54.5%   | 132 | 45.5%  | 110 |
| 5                                      | Bloating                            | 54.1%   | 131 | 45.9%  | 111 |
| 6                                      | Headache and dizziness              | 43.8%   | 106 | 56.2%  | 136 |
| 7                                      | Nausea, vomiting, and queasiness    | 34.7%   | 84  | 65.3%  | 158 |
| 8                                      | Breast pain and tenderness          | 33.1%   | 80  | 66.9%  | 162 |
| 9                                      | Increased appetite and weight gain  | 25.2%   | 61  | 74.8%  | 181 |

(Continued)



**Table 2** (Continued).

| No                        | Variables                                           | Present |     | Absent |     |
|---------------------------|-----------------------------------------------------|---------|-----|--------|-----|
|                           |                                                     | %       | N   | %      | N   |
| b) Psychological Symptoms |                                                     |         |     |        |     |
| 1                         | Sleep disturbances                                  | 69.4%   | 168 | 30.6%  | 74  |
| 2                         | Depression                                          | 66.9%   | 162 | 33.1%  | 80  |
| 3                         | Aggression                                          | 63.2%   | 153 | 36.8%  | 89  |
| 4                         | Loss of concentration                               | 56.2%   | 136 | 43.8%  | 106 |
| 5                         | Anxiety and tension                                 | 50.8%   | 123 | 49.2%  | 119 |
| 6                         | Crying spells                                       | 45.5%   | 110 | 54.5%  | 132 |
| 7                         | Forgetfulness                                       | 39.3%   | 95  | 60.7%  | 147 |
| c) Behavioral Symptoms    |                                                     |         |     |        |     |
| 1                         | Reduced interest in household and social activities | 77.3%   | 187 | 22.7%  | 55  |
| 2                         | Withdrawal from social settings                     | 54.5%   | 132 | 45.5%  | 110 |
| 3                         | Restlessness                                        | 53.7%   | 130 | 46.3%  | 112 |
| 4                         | Reduce communication with friends...                | 45.9%   | 111 | 54.1%  | 131 |
| 5                         | Loss of self-control                                | 44.6%   | 108 | 55.4%  | 134 |
| 6                         | Feel guilty                                         | 24.4%   | 59  | 75.6%  | 183 |

**Table 3** Association Between Age, Menstrual Cycle Status, and Prevalence of Premenstrual Syndrome (PMS)

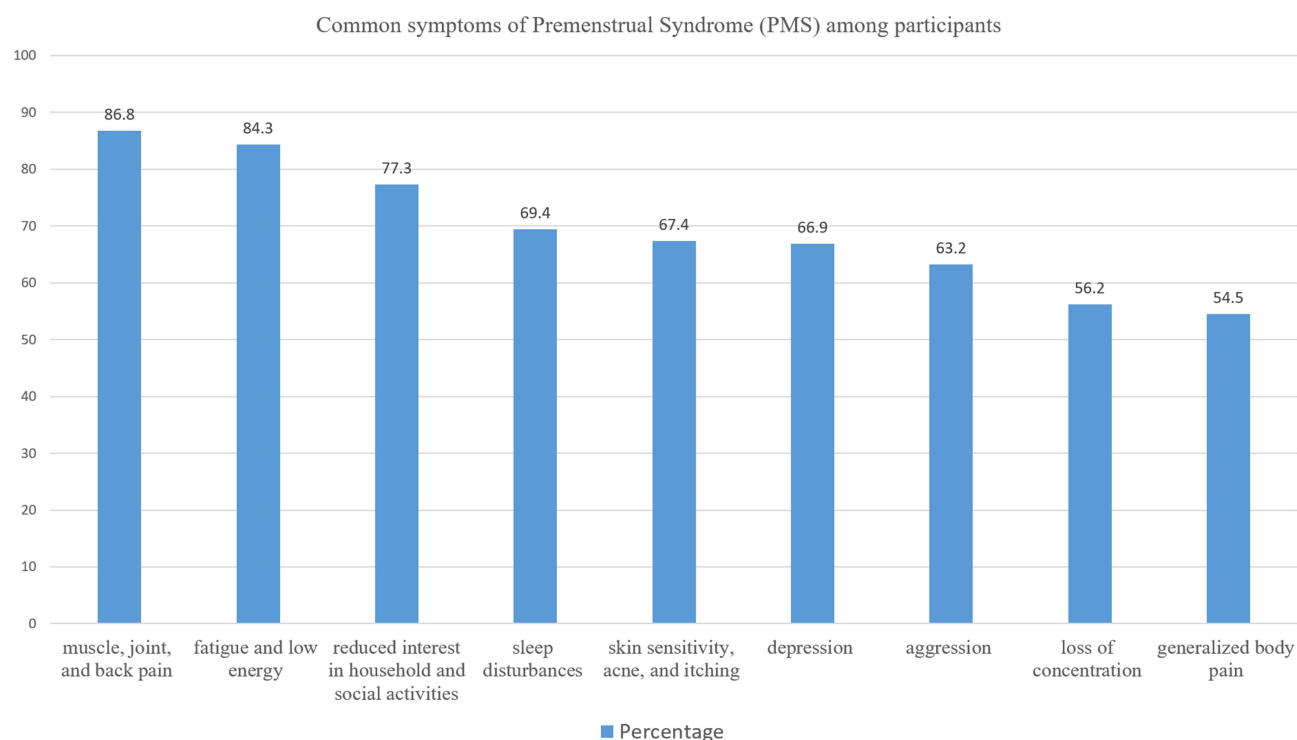
| Test & Variables                                                 | Categories Compared         | Value | df | P-value | Significance    | Interpretation                                                                                                                   | Sample Size (N) |
|------------------------------------------------------------------|-----------------------------|-------|----|---------|-----------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Chi-square statistic (PMS prevalence and Age Group)              | 18–20<br>21– 25<br>Above 25 | 3.78  | 2  | 0.151   | Not Significant | Nor strong evidence of a relationship between age and PMS prevalence. The highest prevalence was in the 18–20 age group (83.3%). | 242             |
| Chi-square Statistic (PMS prevalence and Menstrual Cycle Status) | Regular vs Irregular        | 5.59  | 1  | 0.018   | Significant     | A significant relationship exists. Participants with irregular cycles are more likely to experience PMS symptoms.                | 242             |

Another chi-square test was performed to evaluate whether menstrual cycle status (regular vs: irregular) is significantly associated with PMS prevalence. The p-value was 0.018, which is less than 0.05. This result is statistically significant, indicating that participants with irregular menstrual cycles are more likely to experience PMS symptoms compared to those with regular cycles (Table 3).

## The Most Common Symptoms of PMS Among Participants

This research also identifies the most common PMS symptoms among participants as follows: muscle, joint, and back pain (86.8%), fatigue and low energy (84.3%), reduced interest in household and social activities (77.3%), sleep disturbances (69.4%), skin sensitivity, acne, and itching (67.4%), depression (66.9%), aggression (63.2%), loss of concentration (56.2%), generalized body pain (54.5%), withdrawal from social settings (54.5%), bloating and gas (54.1%), restlessness (53.7%), anxiety and tension (50.8%), and crying spells (45.5%). These symptoms are illustrated in (Figure 4).





**Figure 4** The Most Common Symptoms of Premenstrual Syndrome (PMS) among participants.

## Discussion

Since premenstrual syndrome (PMS) is relatively common among women and affects their personal, academic, and social lives in various ways, and given the limited information available on this topic in Afghanistan, this study aimed to investigate the prevalence and frequency of PMS symptoms.

The findings of this study indicate that the prevalence of PMS among students at the mentioned institute was 72.3%. The most common symptoms reported by participants included: muscle, joint, and back pain (86.8%), fatigue and lack of energy (84.3%), decreased interest in household and social activities (77.3%), Sleep disturbances (69.4%), skin sensitivity, acne, and itching (67.4%), depression (66.9%), irritability (63.2%), loss of concentration (56.2%), general body aches (54.5%), social withdrawal (54.5%), bloating and abdominal gas (54.1%), restlessness (53.7%), anxiety and tension (50.8%), crying easily and crying spells (45.5%), and so on.

The findings of this study (72.3% PMS prevalence) reinforce the conclusions of the referenced study on menstrual health among Afghan female students,<sup>9</sup> highlighting the urgent need for awareness and improved healthcare access. Both studies emphasize the widespread presence of menstrual discomfort, with this research reporting muscle, joint, and back pain (86.8%) as the most prevalent symptom, compared to dysmenorrhea (51.9%) in the referenced study. Furthermore, the significant association between irregular menstrual cycles and PMS's prevalence ( $p$ -value= 0.018) complements the referenced study's focus on menstrual patterns, underscoring the importance of early monitoring and intervention for menstrual irregularities. Together, these findings highlight the need for targeted educational initiatives, cultural interventions, and enhanced healthcare services to improve menstrual health outcomes for Afghan women.<sup>9</sup>

The similarity between this study's findings and study conducted by Pinar et al<sup>14</sup> can be attributed to several key factors. Both studies report a high prevalence of PMS among female college students, with this study finding a prevalence of 72.3% (21.1% according to ACOG) and Pinar et al<sup>14</sup> reporting 72.1%. The most commonly reported symptoms in both studies include back pains, stress, and emotional disturbances, indicating a shared symptom pattern. Additionally, both studies found a significant association between menstrual irregularity and PMS, suggesting that irregular cycles contribute to higher symptom severity. The consistency in these results may be due to similar age groups, educational environments, and cultural influences,

all of which impact students' menstrual health and symptom perception. These findings underscore the global impact of PMS and highlight the need for targeted awareness and intervention programs in university settings.<sup>14</sup>

The finding of this study align with those of Shamnani et al<sup>15</sup> which reported a PMS prevalence of 65% among medical students in India, compared to 72.3% in the present study. Both study identified body pain as the most frequent somatic symptom (52% vs 86.8%) and irritability or emotional disturbance as the most common effective symptom. The association between PMS and academic and school performance was also highlighted in both studies, with a percentage of students avoiding social activities due to PMS (32% in Shamnani et al<sup>15</sup> vs a significant proportion in this study). The similarity in results can be attributed to several factors. Firstly, both studies focus on young female students in a rigorous academic environment, where stress and lifestyle factors may contribute to PMS symptoms. Secondly, cultural perceptions and awareness of PMS are comparable in both settings. Thirdly, physiological and hormonal factors influencing PMS prevalence are likely similar across populations of the same age range and reproductive status. These shared findings reinforce the global impact of PMS on student's health and academic performance, emphasizing the need for awareness programs, early interventions, and access to healthcare services to support affected individuals.<sup>15</sup>

The study's findings align with research from Pakistan<sup>16</sup> as well, which reported a 69.6% prevalence of PMS and similar symptoms such as fatigue, irritability, and breast tenderness. Another Pakistani<sup>16</sup> a study using ICD-10 criteria showed a 79.9% prevalence, while the prevalence dropped to 12.7% when using ACOG criteria, highlighting the impact of diagnostic methods on reported rates. The slight differences in findings may also be explained by differences in the study populations- university students in Kabul versus high school or adolescent students in Pakistan- as well as variations in access to health education. These contextual and methodological differences emphasize the importance of considering demographic and diagnostic factors when comparing PMS research across countries.<sup>16</sup>

Similar findings were reported in a study conducted in Puducherry, India, which observed a PMS prevalence of 62.7% among female college students. The most common symptoms in that study included back, joint, and muscle aches (71.3%) and abdominal discomfort (64.3%), which are consistent with the physical complaints identified in our study. These comparisons highlight the similarity of symptom patterns across different cultural contexts, underscoring the importance of recognizing PMS as a significant public health concern in the young female population.<sup>17</sup>

However, the findings of this study differ significantly from a study conducted by Bakhshani et al<sup>2</sup> in Iran, which reported a higher PMS prevalence of 98.2% among university students. This discrepancy may be attributed to variations in cultural norms, healthcare access, and lifestyle. For example, Afghan women may engage in more physical activities, which might mitigate some PMS symptoms. Additionally, differences in diagnostic criteria and methodologies could explain these variations.<sup>2</sup>

Globally, the variability in PMS prevalence (ranging from 10% in Switzerland to 98% in Iran)<sup>4</sup> underscores the necessity of culturally tailored interventions. This study emphasizes the need for localized approaches to address the unique socio-cultural, educational, and healthcare barriers faced by Afghan women.<sup>2,4</sup>

Overall, the findings of this study align with some similar studies conducted in different countries, while differing from others. These similarities and differences may be attributed to the cultural, economic, nutritional, and environmental factors, awareness and education level, and accessibility of health services. These results serve as a foundation for further longitudinal and interventional studies to reduce its prevalence in Afghanistan.

## Research Limitations

- This study aimed solely to determine the overall prevalence of PMS and did not assess the severity of symptoms.
- The results cannot be generalized to the broader population, as most participants were aged 21–25 years.
- The time allocated for conducting this research was very limited, whereas such studies typically require at least a year.
- The resources for conducting this study were highly constrained.

## Strengths of the Study

- A validated questionnaire (PSST) was used to assess PMS prevalence.
- Random (stratified and systematic) sampling was employed.
- Data were analyzed using SPSS software.

## Weaknesses of the Study

- This study only examined PMS prevalence and did not measure symptom severity.
- The results cannot be generalized to the general population due to the specific age group studied.
- The response rate was relatively low (85%).

## Conclusion and Suggestions

This study highlights Premenstrual Syndrome (PMS) as a significant public health concern among female students in Kabul and is characterized by a wide range of physical, emotional, and behavioral symptoms. These findings highlight the need to recognize PMS as a relevant public health concern among young women.

Given the frequency and diversity of reported symptoms, targeted interventions are needed to improve symptom management and provide appropriate support within educational environments. Further studies are recommended to investigate symptom severity, contributing factors, and effective evidence-based management strategies.

In particular, longitudinal and interventional research is essential to better understand the progression of PMS symptoms over time, identify potential causal relationships, and evaluate the effectiveness of culturally appropriate interventions. Such research can serve as a foundation for developing tailored education and support programs within academic settings.

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## Disclosure

The authors report no conflicts of interest in this work.

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