

# Awareness and attitude towards premenstrual syndrome among foundation year students at Princess Nourah University: Cross-sectional study

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## ABSTRACT

Students cannot learn about the physiological state of their bodies if there is no free conversation about it. To fill up the knowledge gaps about Premenstrual syndrome [PMS], we performed this study among Foundation Year Students at Princess Nourah University to ascertain awareness and attitude toward PMS and to evaluate their understanding of various coping mechanisms during PMS. We conducted a cross-sectional study by sending out an online questionnaire to students. In total, 99 students agreed to take part in the survey and filled out the questionnaire. We performed analysis using Excel software and generated frequencies and proportions for the categorical variables such as age, marital status, knowledge, and attitudes of the students about premenstrual syndrome. About a quarter of the students [23.2%] had not heard about PMS before and 63.6% of the students had not been diagnosed with PMS before. 27.3% of the students felt hesitant in discussing or talking about PMS with their family members. About 55.6% of the students reported having skin problems, like Acne, 48.5% reported backache, and 46.5% had cramps. About 40.4% of the students reported that they use hot packs, one-third [37.4%] reported taking painkillers or medications, and 22.2% reported exercising to cope with PMS. Although students' general knowledge of the PMS was reasonable, one-fourth of them still need access to materials that can increase their understanding and provide them with a forum to discuss it openly. Additionally, students had a favorable view regarding PMS, indicating it is a worthwhile topic for college students.

**Keywords:** Premenstrual syndrome, Knowledge, Attitude, University students

## Introduction

Premenstrual syndrome (PMS) is commonly occurring phenomenon experienced by the females of reproductive age [1]. PMS is characterized by the occurrence of both physical and behavioural symptoms that repetitively happens during the second half of the menstrual cycle and lead to interference with

women's routine [1, 2]. Psychological or somatic symptoms associated with PMS occur during the luteal phase of the cycle and these symptoms reduce in intensity by the onset of menstruation. One can distinguish between normal and physiological premenstrual symptoms due to negative effect of PMS on daily function and associated distress [3, 4]. Most of the women experience physical or psychological symptom prior to menstruation onset [5]. About 95% of the women experience mild physiological symptoms that can be managed by conservative lifestyle changes such as dietary modifications and exercise [6-8]. Nevertheless, for 5% of the women, the symptoms are so severe that their lives are completely influenced during the second half of the cycle [9]. Some of the women are so badly affected that it causes disturbance in their physical, mental, and social well-being [5, 10].

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The burden of PMS is not uncommon among unmarried women from low-middle income class living in socially disadvantaged areas [4, 11-13]. Numerous studies have documented that factors such as age, low parity, marital status, alcohol intake, and female's body mass index exacerbate the PMS symptoms [14]. According to the American Psychiatric association, diagnostic and statistical Manual of Mental disorders fourth edition (DSM-IV), premenstrual dysphoric disorder is a severe form of PMS where one may experience symptoms of anger, irritability, and internal tension [15, 16]. Although the prevalence of PMS is high with about 30% of the women being affected, premenstrual dysphoric disorder only affects 3-8% of the women [17]. Although PMS is a commonly occurring phenomenon, for 5% of the women, the influence is so severe that it can lead to interference between personal relationships, studies, or work. Females may incline to take pharmacological treatment to fight with the severity of the disease and some of these medications have been tested in the literature [18-20].

University or college can be a crucial period where one can better understand certain physical conditions. However, very often students feel hesitant to discuss the physiological conditions such as PMS and how it influences the lives of the students. Not doing an open discussion prevents students from acquiring knowledge about the physiological conditions of their own body. To address the gaps in knowledge, we conducted this study to determine awareness and attitude towards PMS among Foundation Year Students at Princess Nourah University in Riyadh, Saudi Arabia and to assess their knowledge to different coping methods during PMS.

## Materials and Methods

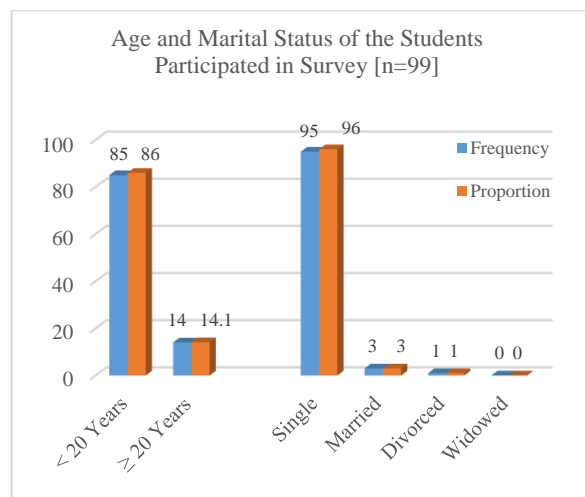
We undertook this study to investigate awareness and attitude towards Premenstrual Syndrome [PMS] among Foundation Year Students at Princess Nourah University in Riyadh, Saudi Arabia. We conducted a cross-sectional study by sending out an online questionnaire to students. The target population was foundation year students at Princess Nourah University in Riyadh, Saudi Arabia. We identified students from the university using a convenient sampling technique. The online questionnaire was emailed to students via Google Drive. The questionnaire was comprised of two parts. The first part had data on sociodemographic variables such as age, height, weight, and marital status. The second part focused on assessing the knowledge and attitude of students towards Premenstrual Syndrome and coping mechanisms by which students could cope with their symptoms. In total, 99 students agreed to take part in the survey and filled out the questionnaire. An informed consent was obtained from the students who agreed to participate in the survey. We performed analysis using Excel software and generated frequencies and proportions for the categorical variables such as age, marital status, knowledge, and attitudes of the students about premenstrual syndrome.

## Results and Discussion

**Figure 1** illustrates the Sociodemographic characteristics [Age and Marital Status] of Students Participated in the Survey. Most of the students [86%] were less than 20 years old and 96% of the students reported being single.

**(Table 1)** reveals the findings regarding the knowledge and attitude of the students towards Premenstrual Syndrome [PMS]. About a quarter of the students [23.2%] had not heard about Premenstrual Syndrome [PMS] before and 63.6% of the students had not been diagnosed with Premenstrual Syndrome before. However, 67.7% of the students reported noticing any psychological and/ or physical symptoms 7-10 days before the periods and 75% of the students reported that Premenstrual Syndrome disturbs their normal routine. About three-fourths [74.7%] of the students thought to have "PMS leave" for at least one day in female universities or workplaces.

About 14% of the students did not believe that premenstrual symptoms are a normal part of the menstrual cycle and 27.3% of the students felt hesitant in discussing or talking about PMS with their family members. About a quarter of the students [27.3%] liked to consult with a doctor due to PMS symptoms and 11% of the students did not believe PMS to be a significant issue to be discussed. Nearly half the students [55.6%] reported ever missing their school/university due to PMS and 56% of the students reported ever missing a social event due to PMS as shown in **(Table 1)**.



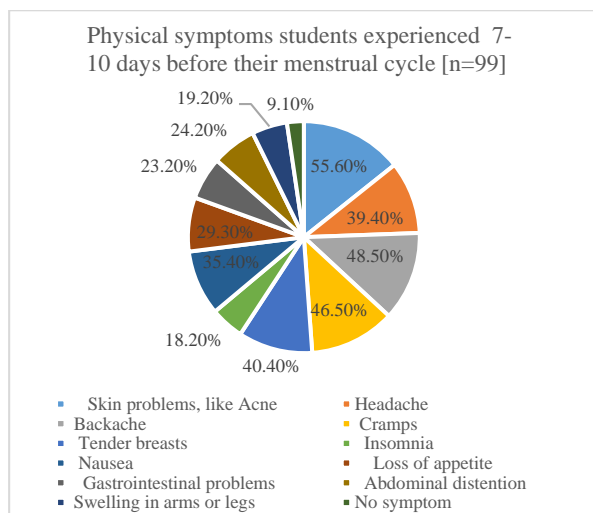
**Figure 1.** Sociodemographic characteristics [Age and Marital Status] of Students Participated in the Survey [n=99]

**Figure 2** illustrates the physical symptoms experienced by them 7-10 days before their menstrual cycle. The data showed that 55.6% of the students reported having skin problems, like Acne, 48.5% reported having backache, 46.5% had cramps, and 40.4% reported having breast tenderness. The less-reported symptoms included nausea [29.3%], insomnia [35.4%], gastrointestinal problems [23.2%], and loss of appetite [29.3%]. Only 9.1% of the students did not report experiencing any symptoms as shown in **Figure 2**.

**Table 1. Knowledge and attitude of the students towards Premenstrual Syndrome [n=99]**

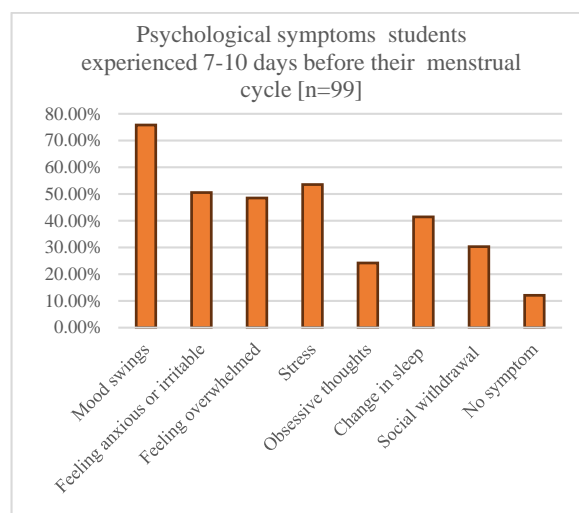
Questions	Yes		No		Not sure	
	n	%	n	%	n	%
-Have you heard about Premenstrual Syndrome [PMS] before?	58	58.60%	23	23.20%	18	18.20%
-Have you been diagnosed with Premenstrual syndrome [PMS]?	19	19.20%	63	63.60%	17	17.20%
-Have you noticed any psychological and/ or physical symptoms 7-10 days before your period?	67	67.70%	19	19.20%	13	13.10%
-Do you think that premenstrual symptoms disturb your routine?	75	75.80%	12	12.10%	12	12.1
-Do you think "PMS leave "for at least one day should be an option in female universities /workplaces?	74	74.70%	10	10.10%	15	15.20%
-Do you believe that premenstrual symptoms are a normal part of menstrual cycle?	58	58.60%	14	14.10%	27	27.30%
-Do you likely talk to your family members or friends about PMS?	48	48.50%	27	27.30%	24	24.2
-Do you likely consult with a doctor due to PMS symptoms?	27	27.30%	52	52.50%	20	20.20%
-Do you believe that PMS is a significant issue to be discussed?	66	66.70%	11	11.10%	22	22.20%
-Do you think that premenstrual symptoms affect the normal life of females who experience PMS?	67	67.70%	10	10.10%	22	22.20%
-Have you ever missed your school /university days due to PMS symptoms?	55	55.60%	28	28.30%	16	16.20%
-Have you ever missed a social event due to PMS symptoms?	56	56.60%	28	28.30%	15	15.20%

Figure 2 illustrates the physical symptoms experienced by them 7-10 days before their menstrual cycle. The data showed that 55.6% of the students reported having skin problems, like Acne, 48.5% reported having backache, 46.5% had cramps, and 40.4% reported having breast tenderness. The less-reported symptoms included nausea [29.3%], insomnia [35.4%], gastrointestinal problems [23.2%], and loss of appetite [29.3%]. Only 9.1% of the students did not report experiencing any symptoms as shown in Figure 2.



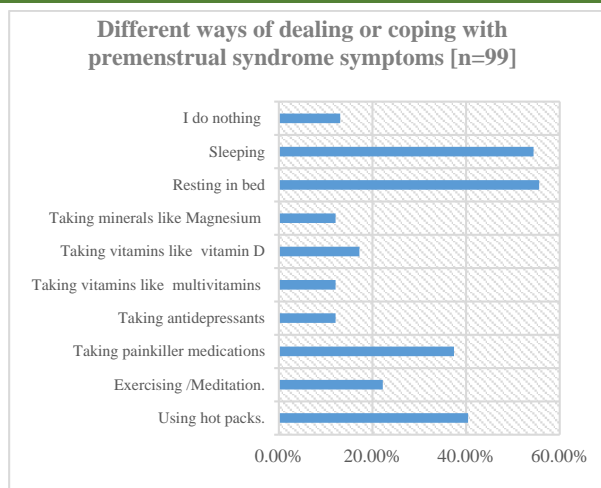
**Figure 2.** Physical symptoms experienced by students 7-10 days before their menstrual cycle [n=99]

Figure 3 illustrates the psychological symptoms experienced by students 7-10 days before their menstrual cycle. About three-fourths of the students [75.8%] had experienced mood swings, 50.5% felt anxious, 48.5% felt overwhelmed, 53.5% had stress, and 41.4% had reported a change in sleep. The less common symptoms included social withdrawal [30.3%] and 12.1% did not report any psychological symptoms as shown in Figure 3.



**Figure 3.** Psychological symptoms experienced by students 7-10 days before their menstrual cycle [n=99]

Figure 4 illustrates the findings about different ways of dealing or coping with premenstrual syndrome symptoms. About 40.4% of the students reported that they use hot packs, one-third [37.4%] reported taking painkillers or medications, 22.2% reported exercising, and about half of the students reported each resting in bed [55.6%] and sleeping [54.4%], whereas 13.1% reported doing nothing as shown in Figure 4.



**Figure 4.** Different ways of dealing or coping with premenstrual syndrome symptoms [n=99]

In some Muslim societies, menstruation and or PMS are considered taboo where females are made to accept that PMS is not a significant issue to be discussed with family members even PMS negatively influence the lives of women. We performed this study to determine awareness and attitude towards PMS among Foundation Year Students and to assess their knowledge to different coping methods during PMS. Our findings revealed that three fourth of the students had heard about the PMS before, suggesting that majority of the university students are indeed aware of the PMS. These findings contradict with one study conducted in Pakistani women where 98.8% of the Pakistani women were found to be not aware of the PMS [21]. These differences in study findings could be due to profile of the study participants as we conducted study on well-educated university students, who were perhaps familiar with the PMS. However, we did not assess knowledge about premenstrual dysphoric disorder.

Further, our findings suggest that one third of the students had been diagnosed with PMS before and about the same proportion of the students reported noticing any physical and psychological symptoms. About one fourth of the students perceived that PMS does affect their normal routine and similar proportion of the students thought that they should have PMS leave for at least one day in the universities or workplaces, which revealed a positive attitude of university students towards PMS. A greater proportion of the university students perceived that PMS is an issue to be discussed, reflecting an affirmative attitude towards PMS. These findings regarding positive attitude of the students towards PMS are consistent with prior study undertaken in low-middle income country, where three fourth of students believed to have a leave for at least one day during PMS [22].

The signs of positive attitude were comparable to the responses of seeking treatment for PMS as near about half of the university students reported to do something to cope with PMS. The findings of our study revealed that university students use different coping mechanisms to handle the PMS. A common coping mechanism to deal with PMS was found to be rest or sleep in bed, using hot packs, and taking pain killer and medications. Our findings are in accordance with the existing literature where

women from the prior studies have reported to similar coping mechanisms such as use analgesics, hot fluid intake, taking rest and adequate sleep, support from warm attire, and lying down on the abdomen [23-25]. However, our findings contradict with the prior study in Spain where 18.7% of the women reported to seek medical advice [26].

Very few students did not believe that PMS is normal part of their menstrual cycle, and more than a quarter of students did not feel comfortable in discussing PMS with their family members. About a half of the students reported missing their school or university or social event due to PMS. These findings about significant negative effects of PMS on women's normal daily lives are not surprising, rather PMS can affect occupational and social life of women [27].

PMS is a combination of somatic and affective symptoms that occur before the onset of menstruation and resolves with the periods [1, 28, 29]. Our findings also suggested that mood swings or anxiety or feeling overwhelmed was a common symptom experienced by students, whereas a common physical symptom was found to be acne followed by backache and cramps. Our findings are consistent with one study conducted by Pal *et al.* in Pakistan [21]. The authors found that Pakistani women experience physical symptoms predominantly during PMS and reported that abdominal bloating and cramps, irritability, and mood swings as commonly experienced symptoms by Pakistani women [21]. Likewise, another study found that muscular and joint pain, backache, and tenderness in breast to be commonly occurring symptoms among women, findings in agreement with our study [30]. Like our study, several authors have reported that anxiety, fatigue and tiredness, and depression to be common symptoms experienced by women prior to their periods [31, 32]. Another study conducted in Pakistan found irritability, outbursts, and depression were common than physical symptoms [22]. Like our study, study undertaken in Pakistan found skin problems and tenderness on breasts as the most common physical symptoms [22]. Moreover, our findings are in accordance with prior studies undertaken in Thailand and Malaysia [33, 34]. However, study from Iran found tiredness and low mood being the most common symptoms [35].

### *Strengths and limitations*

Since we undertook a cross-sectional study among university students of Saudi Arabia, our findings need to be interpreted with a caution. Given the nature of the topic, cross-sectional study would achieve the objective, however, convenient sampling may limit our ability to generalize the findings to all university students and to general population in Saudi Arabia. In addition, we did not explore the factors of PMS and various coping mechanisms in this study. Besides, we used self-reported data collection method, which most likely will overestimate the PMS related symptoms and coping mechanisms. In addition, our sample size was too small to compare the PMS related symptoms across different socio-economic backgrounds, age groups, or marital status. Despite these limitations, our study provides useful insights about the awareness and attitude towards PMS

among university students and we were able to assess the knowledge of the university students to different coping methods during PMS.

## Conclusion

We conclude that PMS is a commonly occurring problem among university students in Saudi Arabia that affects the quality of life of students. While overall awareness of the PMS was reasonable among students, one-fourth of students still need to be given access to resources that can improve their knowledge and provide them space to discuss the PMS freely. We also found a positive attitude of students towards PMS, suggesting that university students consider PMS an important issue to be discussed. In the future, more longitudinal epidemiological studies are required with larger sample sizes with women from various universities and diverse backgrounds to understand the PMS in a much better way.

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**Ethics statement:** None

## References

1. Gudipally PR, Sharma GK. Premenstrual syndrome. 2020.
2. Granda D, Szmidski MK, Kaluza J. Is premenstrual syndrome associated with inflammation, oxidative stress and antioxidant status? A Systematic review of case-control and cross-sectional studies. *Antioxidants*. 2021;10(4):604.
3. Maity S, Wray J, Coffin T, Nath R, Nauhria S, Sah R, et al. Academic and social impact of menstrual disturbances in female medical students: A systematic review and meta-analysis. *Front Med*. 2022;9:821908.
4. Sahu R, Barnwal SL, Vishvakarma S. Prevalence and severity of premenstrual syndrome among young females in Chhattisgarh, India. *Asian Pac J Health Sci*. 2022;9(1):120-5.
5. Quintana-Zinn FA, Whitcomb BW, Ronnenberg AG, Bigelow C, Houghton SC, Bertone-Johnson ER. Premenstrual symptom patterns and behavioral risk factors in young women: A cross-sectional study. *J Womens Health (Larchmt)*. 2017;26(10):1099-105.
6. Ravichandran H, Janakiraman B. Effect of aerobic exercises in improving premenstrual symptoms among healthy women: A systematic review of randomized controlled trials. *Int J Women's Health*. 2022:1105-14.
7. Yilmaz-Akyuz E, Aydin-Kartal Y. The effect of diet and aerobic exercise on premenstrual syndrome: Randomized controlled trial. *Rev Nutr*. 2019;32.
8. Günebakan Ö, Acar M. The effect of tele-yoga training in healthy women on menstrual symptoms, quality of life, anxiety-depression level, body awareness, and self-esteem during COVID-19 pandemic. *Ir J Med Sci (1971-)*. 2023;192(1):467-79.
9. Dutta A, Sharma A. Prevalence of premenstrual syndrome and premenstrual dysphoric disorder in India: A systematic review and meta-analysis. *Health Promot Perspect*. 2021;11(2):161.
10. Labots-Vogeleang MS, Kooiman-Andringa R, Teunissen TA, Lagro-Janssen AL. Perspectives of dutch women on premenstrual disorder. A qualitative study exploring women's experiences. *Eur J Gen Pract*. 2023;29(1):2166033.
11. Teotia S, Kumari S, Taneja N, Kaur KN, Awasthi AA, Janardhanan R. A study on premenstrual syndrome among female students of a private university of Delhi NCR. *J Womens Health and Dev*. 2020;3(4):413-22.
12. Mahat A, Dhungana R, Amatya A. Pre-menstrual syndrome and pre-menstrual dysphoric disorder in female medical students of Nepal. *Kathmandu Univ Med J*. 2023;81(1):46-51.
13. Gao M, Gao D, Sun H, Cheng X, An L, Qiao M. Trends in research related to premenstrual syndrome and premenstrual dysphoric disorder from 1945 to 2018: A bibliometric analysis. *Front Public Health*. 2021;9:596128.
14. Geta TG, Woldeamanuel GG, Dassa TT. Prevalence and associated factors of premenstrual syndrome among women of the reproductive age group in Ethiopia: Systematic review and meta-analysis. *PloS one*. 2020;15(11):e0241702.
15. O'Brien PM, Bäckström T, Brown C, Dennerstein L, Endicott J, Epperson CN, et al. Towards a consensus on diagnostic criteria, measurement and trial design of the premenstrual disorders: The ISPMO Montreal consensus. *Arch Womens Ment Health*. 2011;14(1):13-21.
16. Braverman PK. Premenstrual syndrome and premenstrual dysphoric disorder. *J Pediatr Adolesc Gynecol*. 2007;20(1):3-12.
17. Yonkers KA, Casper RF, Barbieri R, Crowley Jr W, Martin K. Clinical manifestations and diagnosis of premenstrual syndrome and premenstrual dysphoric disorder. Up to Date. 2016.
18. Csupor D, Lantos T, Hegyi P, Benkő R, Viola R, Gyöngyi Z, et al. Vitex agnus-castus in premenstrual syndrome: A meta-analysis of double-blind randomised controlled trials. *Complement Ther Med*. 2019;47:102190.
19. Suaidi MT, Wong PK, Mohd Tahir NA, Chua EW. Community pharmacists' knowledge, attitude, and practice in providing self-care recommendations for the



- management of premenstrual syndrome. *Medicina*. 2020;56(4):181.
20. Khalesi ZB, Beiranvand SP, Bokaie M. Efficacy of chamomile in the treatment of premenstrual syndrome: A systematic review. *J Pharmacopuncture*. 2019;22(4):204.
  21. Pal SA, Dennerstein L, Lehert P. Premenstrual symptoms in Pakistani women and their effect on activities of daily life. *J Pak Med Assoc*. 2011;61(8):763-8.
  22. Mohib A, Zafar A, Najam A, Tanveer H, Rehman R. Premenstrual syndrome: Existence, knowledge, and attitude among female university students in Karachi. *Cureus*. 2018;10(3).
  23. Hamaideh SH, Al-Ashram SA, Al-Modallal H. Premenstrual syndrome and premenstrual dysphoric disorder among Jordanian women. *J Psychiatr Ment Health Nurs*. 2014;21(1):60-8.
  24. Eshetu N, Abebe H, Fikadu E, Getaye S, Jemal S, Geze S, et al. Premenstrual syndrome, coping mechanisms and associated factors among Wolkite university female regular students, Ethiopia, 2021. *BMC Women's Health*. 2022;22(1):88.
  25. Zeleke B, Workineh Y, Melese A, Semachew A, Yigizaw M. Premenstrual syndrome, life style & behavioral coping mechanisms and associated factors among public high school regular female students at Bahir Dar City, Northwest, Ethiopia. 2023.
  26. Lete I, Dueñas JL, Serrano I, Doval JL, Martínez-Salmeán J, Coll C, et al. Attitudes of Spanish women toward premenstrual symptoms, premenstrual syndrome and premenstrual dysphoric disorder: Results of a nationwide survey. *Eur J Obstet Gynecol Reprod Biol*. 2011;159(1):115-8.
  27. Rapkin AJ, Winer SA. Premenstrual syndrome and premenstrual dysphoric disorder: Quality of life and burden of illness. *Expert Rev Pharmacoecon Outcomes Res*. 2009;9(2):157-70.
  28. Gnanasambanthan S, Datta S. Premenstrual syndrome. *Obstet Gynaecol Reprod Med*. 2019;29(10):281-5.
  29. Itriyeva K. Premenstrual syndrome and premenstrual dysphoric disorder in adolescents. *Curr Probl Pediatr Adolesc Health Care*. 2022;52(5):101187.
  30. Dennerstein L, Lehert P, Keung LS, Pal SA, Choi D. A population-based survey of Asian women's experience of premenstrual symptoms. *Menopause Int*. 2010;16(4):139-45.
  31. Tabassum S, Afridi B, Aman Z, Tabassum W, Durrani R. Premenstrual syndrome: Frequency and severity in young college girls. *J Pak Med Assoc*. 2005;55(12):546-9.
  32. Abu Alwafa R, Badrasawi M, Haj Hamad R. Prevalence of premenstrual syndrome and its association with psychosocial and lifestyle variables: A cross-sectional study from Palestine. *BMC Women's Health*. 2021;21(1):233.
  33. Buddhabunyakan N, Kaewrudee S, Chongsomchai C, Soontrapa S, Somboonporn W, Sothornwit J. Premenstrual syndrome (PMS) among high school students. *Int J Women's Health*. 2017:501-5.
  34. Wong LP, Khoo EM. Menstrual-related attitudes and symptoms among multi-racial Asian adolescent females. *Int J Behav Med*. 2011;18(3):246-53.
  35. Bakhshani NM, Mousavi MN, Khodabandeh G. Prevalence and severity of premenstrual symptoms among Iranian female university students. *J Pak Med Assoc*. 2009;59(4):205-8.