



STUDY OF PREVALENCE OF PRE-MENSTRUAL SYNDROME IN NURSING STUDENTS IN A TERTIARY CARE TEACHING INSTITUTION

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ABSTRACT

Premenstrual symptoms are significant public health problem seen in reproductive age young girl's groups. This study aims to estimate the prevalence, severity, determinants of premenstrual symptoms among the female nursing students. The mean age of the participants was 19 years. Out of total participants 79 (96.3%), were unmarried. 74 (90.2%), participants reported having regular menses, 59(71.9%), experienced prior premenstrual symptoms. 31(37.8%), gave prior history of PMS. Out of total participants 68 (82.9%), reported pain during menses, 67 (81.7%), participants experienced irritability and of them 48(58.53%), had mild, 13(90.2%), had moderate and 6 (7.3%), had severe irritability. In the present study, we found that emotional symptoms like irritability seen in 67 (81.7%), mood swings in 66(80.3%), anxiety in 64(77.5%), depression in 38(46.5%) and somatic symptoms like backache in 60 (73.2%) and fatigue in 62(74.8%). The association of having PMS symptoms and variables like age at menarche and regularity of menses was not statistically significant. The prevalence of premenstrual syndrome among nursing students was similar to other studies and it is high. The health education, appropriate medical treatment and counseling services, should be provided to these students.

KEYWORDS: Premenstrual Syndrome, Prevalence, Emotional, Somatic, Nursing

Premenstrual syndrome (PMS) includes clinically significant somatic and psychological symptoms felt during the luteal phase of the menstrual cycle week prior to onset of menses and subsiding within a few days of the menses. This leads to substantial suffering, pain and impairment in performing daily activities thus negatively impacting quality of life. The global prevalence of reproductive age females affected with PMS is 47.8%. (Bhandari *et al.*, 2023; Gudipally and Sharma, 2023; Ashraf *et al.*, 2014). The stated prevalence of PMS in India have ranged from 14.3% to 74.4%. Symptoms of PMS include changes in appetite, weight gain, abdominal pain, back pain, headache, swelling and tenderness of the breasts, nausea, constipation, anxiety, irritability, anger, fatigue, restlessness, mood swings and crying. Although the exact cause of premenstrual syndrome is unknown, it is supposed to be triggered by hormonal changes subsequent after ovulation and progesterone is the main reason behind PMS symptoms. Premenstrual syndrome is associated with different socio-demographic factors like age and marital status and also other factors like stress, age at menarche, long menstrual cycles duration, and being sexually active, previous history of depression. Premenstrual symptoms severely negatively affect the health-related quality of life and decrease work productivity. The decreased productivity at work and performance at school is associated with a lack of

concentration, motivation, and absentism. (Dutta and Sharma, 2021; Geta *et al.*, 2020)

The PMS was defined by the American College of Obstetricians and Gynecologists (ACOG) as "a clinical condition characterized by the cyclic presence of at least one of the somatic and emotional symptoms unrelated to any organic disease that appear during the 5 days before menses in each of the three prior menstrual cycles and disappear within 4 days of the onset of menses, the highest rate is among the 20- to 24-year-old age. Somatic symptoms include abdominal bloating, headache, edema, breast tenderness, joint or muscle pain, and weight gain. While, psychological symptoms include anxiety, social withdrawal, anger, irritability, confusion, and depression. The known risk factors for PMS are hormonal imbalance, genetic factors, lifestyle, diet, drugs, stress and psychological factors. (Geta *et al.*, 2020; Iman *et al.*, 2020)

Medical literature is full of studies on PMS in young students, but there is a scarcity of studies on PMS seen in medical and paramedical, nursing students who are supposedly considered educated, well aware, mature enough to fight these issues as they have a better understanding of problems, pathophysiology related to menstruation. However, these students on the other hand are also considered at high risk of having menstrual irregularities owing to stressful life, variations in sleep

patterns, irregular, bad food habits and exercise habits. (Singh *et al.*, 2022; Raval *et al.*, 2016)

MATERIALS AND METHODS

The descriptive cross-sectional study was carried out among female nursing students, after taking written consent at of tertiary care teaching institution, Mumbai for duration of 1 month from with ethical approval from the Institutional Review Committee. The nursing students having a regular menstrual period in the past six consecutive months, full time nursing student irrespective of marital status were included. While nursing students having irregular menstrual cycle, pregnant, with history of comorbidities like diabetes, high blood pressure, heart disease, thyroid disorder, current depression, anxiety or any other psychiatric disorders, using contraceptives were excluded from the study. Female students studying in all years of the institution were 82 in number. All of them were recruited in study through universal sampling method. Case proforma and PMS questionnaire was received & provided to all participants via communication.

Self-reported questionnaire was used which include the basic demographic and menstrual information of the participants, including all the PMS symptoms. The diagnosis of PMS was based on criteria listed by American College of Obstetrics and Gynecology (ACOG). PMS was diagnosed if even one of the 6 affective (depression, angry outbursts, irritability, anxiety, confusion, social withdrawal) and one of the somatic symptoms (abdominal bloating, breast tenderness, headache, Joint or muscle pain, swelling of extremities, weight gain) described five days before menses in the three prior menstrual cycles and stopped within four days of onset of menses.

Quantitative data was expressed as mean plus or minus standard deviation. Categorical variables are expressed as frequencies and percentages. Descriptive analysis was done, appropriate test of significance was used and p value of less than 0.05 interpreted as level of significance using SPSS version 25.

RESULTS

The mean age of the participants was 19 years with a minimum of 18years and maximum being 29 years. Out of total 82 participants 79 were unmarried and 3 are married (Fig. 1).

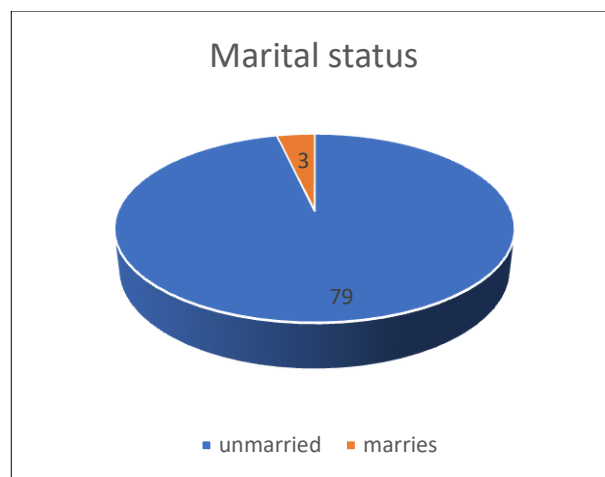


Figure 1: Marital status of the participants

74 (90.2%) participants reported having regular menses, 59 (71.9%) experienced prior premenstrual symptoms. 31 (37.8%) gave prior history of PMS. Out of total participants 68 (82.9%), reported pain during menses, 67 (81.7%) participants experienced irritability. Of them 48 (58.53%) had mild, 13 (90.2%) had moderate and 6 (7.3%) had severe irritability. The emotional symptoms like irritability seen in 67 (81.7%), mood swings in 66 (80.3%), anxiety in 64 (77.5%), depression in 38 (46.5%), confusion in 16 (19.4%), Crying in 17 (20.8%), insomnia in 33 (40.3%), and increase in appetite is seen in 43 (52.3%) participants.

The somatic symptoms experienced were like backache in 60 (73.2%) and fatigue in 62 (74.8%) participants, abdominal bloating in 43 (52.0%) breast tenderness in 39 (47.3%), headache in 30 (36.7%), Joint or muscle pain in 69 (83.9%), swollen extremities in 8 (10.3%), weight gain in 15 (18.6%) (Fig. 2).

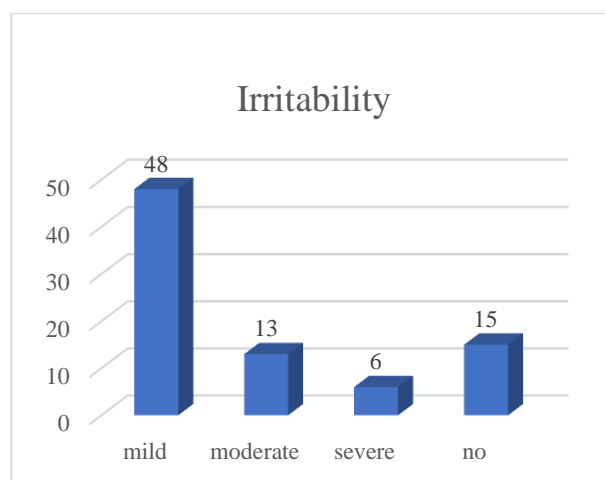


Figure 2: Severity of PMS of the participants

52(62.9%) had acne, 18 (21.7%) experienced rash, 58(71%) experienced weakness, menstrual cramps

in 50 (60.9%) participants and 67 (81.4%) students had menstrual backpain.

P value was calculated using data. No significant differences were observed between P (probability) values of the PMS (+) group and those without PMS (-) in age at menarche ($p= 0.931$), menstrual pain ($p= 0.377$) family history ($p=0.69$) history of premenstrual symptoms ($p=0.83$) menstrual flow duration ($p=0.736$).

The association of having PMS symptoms and variables like age at menarche and regularity of menses was not statistically significant.

DISCUSSION

The present study is meant at assessing the prevalence, symptoms and the predictors of premenstrual symptoms in nursing students studying in a tertiary health care institution. With PMS questionnaire, we tried to find out prevalence of PMS in nursing students and their understanding of its symptomatology and studied association with any risk factors

In our study we found that prevalence of PMS is 81.9%. Irritability is the most common symptom experienced by the participants. It can be concluded that PMS is experienced by majority of nursing students in tertiary care institution. The increase in prevalence could be because of knowledge and awareness about PMS which can be the main factor in reporting of symptoms.

In study by Bhandari *et al.*, the prevalence of PMS was shown to be 73.45% Out of which, 67.46% showed mild PMS while moderate PMS was seen in 32.53 % participants.

In Rafique and Al-Sheikh (2018). study it was concluded that premenstrual symptoms were seen in 46.7% students and high perceived stress (HPS) was known in 39% students. Also, a significant positive correlation was found between HPS and menstrual problems indicating that students with HPS had 2.8 times increased odds ratio for suffering from premenstrual syndrome symptoms that was found to be statistically significant with $p<0.05$.

Rasheed and Al-Sowielem (2003) study showed that prevalence of having premenstrual symptom was significantly associated with a maternal history of premenstrual syndrome, self-perception of mental stress, physical activity, consumption of beverages and junk foods. In Singh *et al.*(2022) study it was showed that the mean age of menarche was 12.65 ± 1.24 years among the medical students and 13.69 ± 1.38 years among the nursing students ($P < 0.05$). Totally, the common menstrual abnormalities seen were dysmenorrhea seen in

(71.2%) and premenstrual syndrome seen in (70.2%) followed by menstrual irregularity in (14.8%). On correlating lifestyle with menstrual abnormalities seen in students it was seen that no significant association was noted.

In Chougule *et al.* (2017) study, Prevalence of premenstrual symptoms was 97.10% and prevalence of PMS was diagnosed in 76.83% of cases. The severity of premenstrual symptoms calculated as 89.21% mild, 10.04% moderate and 0.75% severe case. The most frequent psychological symptom was irritability and in somatic symptom it was abdominal bloating. Chi square test of significance revealed that PMS was significantly associated with, age of menarche at 12 or more years, 3 - 6 days of menstrual bleeding and development of premenstrual syndrome. There was no significant association between the prevalence of PMS and age and regularity of menstrual cycle.

In Aryal *et al.* (2018) study out of 382 participants 113 (61.1%) medical and 126 (64%) nursing students met the ACOG criteria for PMS. PMDD was diagnosed in 78 (39.6%) nursing students and 72 (38.9%) medical students. The most common somatic symptom was headache 256 (77%) and behavioral symptom was irritability 310 (81.2%). Students. In Sarkar and Bhattacharyya (2021) study participants age was between 16 to 26 years, with the mean age of 20 years. Nearly 44.74% of the respondents were found having moderate symptoms of PMS and 1.05% had severe symptoms of PMS.

CONCLUSION

PMS is experienced by majority of nursing students studying in tertiary care institution. The knowledge and awareness about PMS may be the major factor in reporting of symptoms. The health education, appropriate medical treatment and counseling services, should be provided to these students.

REFERENCES

- Ashraf D.M., Kouros S., Ali D. and Satar K., 2014. Epidemiology of Premenstrual Syndrome (PMS)-A Systematic Review and Meta-Analysis Study. *J. Clin. Diagn. Res.*, **8**(2):106-109. doi: 10.7860/JCDR/2014/8024.4021. Epub 2014 Feb 3. Erratum in: *J Clin Diagn Res.* 2015 Jul;9(7): ZZ05.
- Aryal S., Thapa B. and Pant S.B., 2018. Premenstrual Syndrome and Premenstrual Dysphoric Disorder in Medical and Nursing Students of a Tertiary Care Teaching Hospital in Nepal Nepal Journal of Obstetrics and Gynaecology, **12**(1):12.

- Bhandari S., Dwa Y., Maharjan M., Maskey S., Thakur M. and Sharma S., 2023. Premenstrual Syndrome among Medical Students of a Medical College: A Descriptive Cross-sectional Study. *J. Nepal Med. Assoc.*, **61**(260): 347-350.
- Chougule K.N., Chougule N.P., Satyanarayana M.T. and Behere P.B., 2017. A phenomenological study of premenstrual symptoms in medical and nursing students *J. Evolution Med. Dent. Sci.*, **6**(46): 3576-3581.
- Dutta A. and Sharma A., 2021. Prevalence of premenstrual syndrome and premenstrual dysphoric disorder in India: A systematic review and meta-analysis. *Health Promot. Perspect.*, **11**(2):161-170.
- Geta T.G., Woldeamanuel G.G. and Dassa T.T., 2020. Prevalence and associated factors of premenstrual syndrome among women of the reproductive age group in Ethiopia: Systematic review and meta-analysis. *PLoS ONE*, **15**(11): e0241702.
- Gudipally P.R. and Sharma G.K., 2023. Premenstrual Syndrome. [Updated 2023 Jul 17]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-.
- Iman M.W.S., Mashael Y.A. and Manal A.M., 2020. Predictors of Premenstrual Syndrome among Female Students at Governmental Secondary Schools in Jeddah, Saudi Arabia: A Cross-sectional Study, *The Egyptian Journal of Hospital Medicine*, **78**(2): 337-347.
- Raval C.M., Panchal B.N., Tiwari D.S., Vala A.U. and Bhatt R.B., 2016. Prevalence of premenstrual syndrome and premenstrual dysphoric disorder among college students of Bhavnagar, Gujarat. *Indian J. Psychiatry*, **58**(2):164-70.
- Rafique N. and Al-Sheikh M.H., 2018. Prevalence of menstrual problems and their association with psychological stress in young female students studying health sciences. *Saudi Med. J.*, **39**(1):67-73.
- Rasheed P. and Al-Sowielem L.S., 2003. Prevalence and predictors of premenstrual syndrome among college-aged women in Saudi Arabia. *Ann Saudi Med.*, **23**(6):381-7.
- Sarkar B. and Bhattacharyya S., 2021. A cross sectional study on the prevalence of premenstrual syndrome among nursing school and college students of Kalyani, Nadia, West Bengal, India. *International Journal of Health and Clinical Research*, **4**(6): 132–139.
- Singh P., Sharma C., Krishna S., Mishra V., Yadav G., Patwa P., Gothwal M. and Jhirwal M., 2022. Lifestyle and Prevalence of Menstrual Disorders among Undergraduate Medical and Nursing Students: Can We Bring a Change? *J. Obstet Gynaecol India*, **72**(Suppl 1):326-333.