

Quality of Life and Depression in Premenstrual Dysphoric Disorder and Premenstrual Syndrome Among College Students

Vijendra Nath Pathak¹ and KM Anjalee[#]

^{*1}Department of Psychology, School of Social Science and Language, Lovely Professional University, Punjab - 144 411, India

[#]Department of Psychology, Gurukul Kangri University, Haridwar - 249 404, Uttarakhand, India

*E-mail: Vijendra.26172@lpu.co.in

ABSTRACT

The symptoms before a woman's period, Premenstrual Syndrome (PMS) and Premenstrual Dysphoric Disorder (PMDD) involve physical and emotional aspects. PMS and PMDD differ in symptom severity. Thus, the psychological effects are considerable and affect the individual's physical state. The present study aims to investigate the quality of life and depression among college students with PMS and PMDD. Forty clinically diagnosed females with Premenstrual Dysphoric Disorder and 40 females with Premenstrual syndromes were sampled through purposive sampling method, the age range of 16 to 21 (Mean age 18.37, SD 1.63) years from Kapurthala, Punjab. WHO Quality of Life -BREF Hindi and Beck Depression Inventory-II were individually administered to both groups. The statistical analysis of descriptive and t-tests revealed that premenstrual dysphoric disorder exhibits a significantly low level of quality of life as compared to premenstrual syndrome. Premenstrual dysphoric disorder revealed significantly higher levels of depression as compared to premenstrual syndrome. The significant finding of the study is that adolescents with Premenstrual dysphoric disorder suffer from poor quality of life and Well-being. Study supporting female adolescents, especially those with severe Premenstrual dysphoric disorder, can enhance their quality of life and well-being through counseling, education, and lifestyle changes.

Keywords: Premenstrual syndrome; Premenstrual dysphoric disorder; Quality of life: Depression

1. INTRODUCTION

Females possess equivalent mental capacities and are companions to men, constituting half of the global population. They have assumed diverse societal roles, and enhancing female health is crucial for overall community well-being. Premenstrual disorders, such as Premenstrual Syndrome (PMS) Symptoms include changes in appetite, weight gain, abdominal pain, back pain, low back pain, headache, swelling and tenderness of the breasts, nausea, constipation, anxiety, irritability, anger, fatigue, restlessness, mood swings and crying and Premenstrual Dysphoric Disorder (PMDD), are a set of physical, affective, cognitive, and behavioural symptoms that occur cyclically during the menstrual cycle's luteal phase¹. PMDD symptoms last for 5 to 7 days before menstruation begins, and it is usually resolved once menstruation begins. However, the severity of symptoms varies from person to person². For severe PMS, the American Psychiatric Association (APA) has established diagnostic criteria as well as rigorous treatment. The third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) defined Late Luteal Phase Dysphoric Disorder (LLPDD)³ in 1987, while the DSM-IV added newly recommended

criteria for PMDD more severe than PMS⁴ in 1994. The symptoms of Premenstrual Syndrome and Premenstrual Dysphoric Disorder often overlap, making it challenging to distinguish between the two. However, experts note that the primary difference lies in the severity of the symptoms. PMDD is characterized by symptoms that significantly disrupt daily life, impacting work productivity, relationships, and routine activities⁵.

Premenstrual symptoms, the female's diagnosis of PMS and PMDD is given to females whose lives were seriously impacted by moderate to severe symptoms⁶. Premenstrual disorders are more likely to begin in adolescence, with at least 20 % of teenagers experiencing moderate to severe premenstrual symptoms however, according to their findings, a similar proportion of teenagers match PMS/PMDD's impact, revealing substantial burdens on behaviour and psychological domain influenced by personal factors like socio-economic structure age, education, and health^{7,8}. Another study corroborated these findings, linking moderate/severe PMS or PMDD to diminished quality of life, heightened health anxiety, and anxiety sensitivity⁹. Similarly, premenstrual exacerbation of depressive disorders is common¹⁰. Screening for depressive symptoms throughout the cycle is advisable¹¹.

Received : 28 August 2023, Revised : 13 June 2024

Accepted : 22 July 2024, Online published : 26 September 2024

Premenstrual symptoms can create a variety of issues for females, including physical issues, mental health issues, and severe social or career maladjustment¹². Symptoms in young teens may hurt academic performance and social connections¹³.

Previous studies have consistently found that individuals with premenstrual disorders, like PMDD and PMS, exhibit diminished health-related quality of life. This highlights the importance of addressing these impacts to enhance the overall well-being of affected individuals^{14,15}. Stress, age, BMI, and marital status have all been demonstrated to aggravate PMS symptoms in various studies¹⁶. Another study discovered a link between PMS and parity, which was low in the low parity group¹⁷. The frequency of premenstrual symptoms was likewise linked to a history of PMS in the mother¹⁸. However, another study found that physical issues prevail in females' premenstrual experiences, with cramps, abdominal bloating, irritability, and mood swings being the most common symptoms. According to another study, other symptoms include muscle pain, joint pain, back pain, and breast tenderness¹⁹. Anxiety, despair, weariness, and hostility were the most commonly reported symptoms in several studies²⁰. Skin diseases, swelling of the limbs, gastrointestinal difficulties (such as decreased appetite), and headaches have also been identified as symptoms reported by females prior to menstruation^{21,22}.

Females of all ages are becoming more involved in society, resulting in higher stress and more housework. Other work and stresses during menstruation can create symptoms that are typical of the menopause transitional period in females with PMS. The study examined the prevalence of PMS in women experiencing symptoms related to the menopausal transition period²³. They evaluated behavioral changes like inhibition, anxiety, sadness, and irritability during the menstrual cycle in females with PMDD and healthy counterparts. This association partially influenced behavior inhibition and irritability and entirely mediated depression, while in the follicular phase, they experienced greater PMDD severity, sadness,

and irritability²⁴. The study found impairments across various domains, with work/school efficiency (70.33 %) and social activities (36.23 %) most affected. However, women with PMDD had notably lower quality of life, especially in terms of social relationships²⁵. These studies examined the health-related quality of life (HRQOL) of females with PMS or PMDD and found a notable lack of quality of life in the affected group. Both investigations utilized the SF-36 to assess HRQOL, with a sample that included teenagers^{26,27}.

Every day, cases of PMS and PMDD are increasing, which indicates it is a severe problem in society in which females are suffering in silence. Now it is time to make aware of psychological causes which affect PMS and PMDD. Females can improve their PMS/PMDD psychological, behavioral, and cognitive symptoms through the quality of life, which helps them manage their anxiety, depression, mood swings, stress, and other psychological symptoms¹². Primary studies are focused more on understanding the existence and symptomatology of premenstrual dysphoric disorder and premenstrual syndrome. There is a lack of research on the psychological issues and symptoms in females with PMS and PMDD, as well as limited studies on how psychological factors affect these conditions. The present study aims to investigate the quality of life and depression among college students with Premenstrual Dysphoric Disorder (PMDD) and Premenstrual Syndrome (PMS). The research aims to expand the current literature, reduce depression, and improve the quality of life for women affected by the complex condition of PMDD as per the study.

2. MATERIALS AND METHOD

2.1 Design of the Study

A cross-sectional design was planned for this research.

2.2 Sample

The sample was comprised of 80 females (Mean age 18.37, SD 1.63) (40 with premenstrual dysphoric disorders and 40 with Premenstrual syndrome), ages 16 to 21 years. It was drawn using a purposive sampling technique from Kapurthala, Punjab. Data was normally distributed analysis by QQ plot. The following inclusion and exclusion criteria were adopted to make the group more homogeneous.

2.2.1 Inclusion Criteria

- Patients whom a Gynecologist medical specialist diagnosed as Premenstrual Dysphoric Disorder (PMDD) and premenstrual syndrome.
- Age range between 16 to 21 years.

2.2.2 Exclusion Criteria

Patients with PMDD also have some other chronic illnesses, such as PCOD, Irritable Bowel Syndrome (IBS), migraines, and asthma, among others.

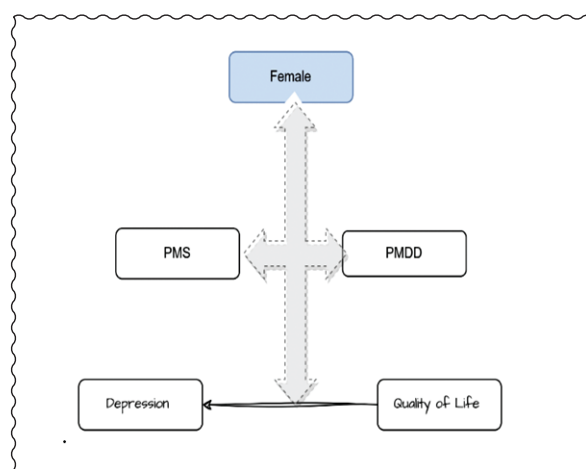


Figure 1. Representative female PMS and PMDD effect on depression and quality of life.

2.3 Tools

2.3.1 Hindi Adaptation of Beck Depression Inventory-II (BDI II)²⁸

Hindi Adaptation of Beck Depression Inventory-II (BDI II)²⁸ is a commonly used instrument for quantifying levels of depression. The BDI test includes a 21-item self-report using a four-point scale ranging from 0 (symptom not present) to 3 (symptom very intense). The test takes approximately 5 to 10 minutes to complete. Beck's study reported a coefficient alpha rating of .92 for outpatients and .93 for college student samples. The reliability of the Hindi version of BDI by the split-half method was found to be 0.84 for males and 0.89 for females, and the total reliability was 0.87.

2.3.2 WHO Quality of Life-BREF²⁹

The WHO devised the WHOQOL-Bref tool to assess a person's quality of life. The WHO Quality of Life English version has been translated into Hindi, consisting of WHOQOL - Bref 26 items. The structure of the four domains has been assessed by confirmatory factor analysis, and utility has been studied using comparative fit indices. This index compares the baseline model to the proposed and observer models. Data from the original pilot, field trial, and the new center were analyzed to accurately represent the observed variables and latent constructs, with data from all sources indicating adequate comparative fit indices. Usually, the comparative fit index value is close to 1. The comparative fit index of the data obtained from the sources is found to be 0.906, 0.903, and 0.87, indicating a good fit. The theoretical consideration is also indexed along with the RMSEA and SRMR for a comprehensive assessment.

2.4 Procedure

The researcher has used a purposive sampling procedure to study the specially selected participants. Consent forms were provided to all participants before administering the test. After this, all the participants were individually instructed and provided with the necessary tools. All the participants were assured of the confidentiality of their responses to the given tool, and their responses would be used only for research. It took about 15 to 20 minutes for the participants to complete the questionnaire, and if they had any doubts, they resolved them. The data were then entered into an Excel worksheet for statistical analysis. The researcher used SPSS 22 software was used to do the statistical analysis to know the meaning of the above data meaningful insight.

2.5 Data analysis

The researcher used SPSS 22 software to collect coding and descriptive data analysis to analyze the obtained data statistically. Student's t-test was used to determine the significance of depression and quality of life of women with PMDD and PMS. We already knew the normal distribution of the data. Therefore, it was appropriate to use the student's

t-test. Data was normally distributed, and an analysis of the Q-Q plot was applied. All 90 students asked to participate in the study agreed to do so. Among them, 80 students returned their completed forms, while the remaining 10(5 PMDD and 5 PMMS) were incomplete.

3. RESULTS

Table 1. Mean, SD, and t-ratio participants with premenstrual dysphoric disorder and premenstrual syndrome in quality of life

Group	N	Mean	SD	t-ratio	p
PMDD	40	65.30	17.93	4.94*	0.01
PMS	40	83.60	15.05		

*Significant at 0.01 levels.

The results found a significant difference in the quality of life between individuals diagnosed with Premenstrual Dysphoric Disorder (PMDD) and those with Premenstrual Syndrome (PMS). Specifically, the mean quality of life score for PMDD (M=65.30, SD =17.93) was notably lower as compared to PMS (M=83.60, SD =15.05), indicating a more significant negative impact on quality of life for individuals with PMDD. The statistical analysis of the t-test ($t=4.94$, $p < 0.001$, $df=78$) revealed a significant difference (0.01) between PMDD and PMS in quality of life.

Table 2. SD, and t-ratio between participants with premenstrual dysphoric disorder and premenstrual syndrome in depression.

Group	N	Mean	SD	t-ratio	p
Premenstrual Dysphoric Disorder (PMDD)	40	15.23	3.91	4.62*	0.01
Premenstrual Syndrome (PMS)	40	10.05	5.90		

*Significant at 0.01 levels.

The results indicated a significant distinction between Premenstrual Dysphoric Disorder (PMDD) and Premenstrual Syndrome (PMS) concerning depression. Specifically, individuals with PMDD exhibited a higher level of depression (M=15.23, SD=3.91) as compared to PMS (M=10.05, SD=5.90), indicating a more pronounced depressive symptomatology among PMDD sufferers. Statistical analysis of the test ($t=4.62$, $p<0.001$, $df=78$) revealed a significant (0.01) difference between PMDD and PMS.

4. DISCUSSION

The study investigated the quality of life and depression among college-going students with Premenstrual Dysphoric Disorder (PMDD) and Premenstrual Syndrome (PMS). A study to find out the difference between the quality of life and depression features of the subject.

Studies revealed that the quality of life of PMDD, is associated with more intense changes in psychological attitudes and behaviours compared to PMS, thereby highlighting the need for tailored behaviour and support for individuals diagnosed with PMDD to address their unique challenges and improve their quality of life¹². This underscores a robust contrast between the two conditions in terms of depressive symptoms. These results suggest that females diagnosed with PMDD experience more significant changes in mood and behaviour compared to those with PMS.

Present study emphasises the need for tailored psychoeducation and support aimed at addressing the heightened depressive symptoms associated with PMDD to improve the well-being of affected individuals. PMDD reported a significantly lower level of quality of life than PMS. The present study has been supported by a few of the earlier research evidence that supported the prevalence of females with Premenstrual Dysphoric Disorder in adolescents and defined the severity of symptoms as related to quality of life and depression^{11,12}. Our study revealed that the female group affected with PMDD had significantly lower levels of quality of life and significantly higher levels of depressive symptoms as compared to the female group affected with PMS.

Very few studies have been conducted on adolescents. Based on the previous results of the study found that college students with PMDD face challenges, including academic performance hurdles due to mood swings, irritability, concentration issues, attendance, time management, and social relationships^{30,31}. Quality of life is affected by depression^{11,12} and anxiety, disrupting the work-life balance. Limited healthcare access and stigma compound Lack of awareness and understanding about PMDD among peers and educators can lead to misconceptions and stigma.

PMS significantly impacts the quality of life and can contribute to depressive symptoms. The depressive symptoms associated with Premenstrual Syndrome (PMS) can disrupt various aspects of life, affecting well-being and potentially leading to depression. These symptoms, like mood swings, irritability, fatigue, and physical discomfort, often occur in the weeks before menstruation. PMS affects physical, social, and emotional well-being, straining daily activities and relationships. This can lead to stress and psychological strain, increasing the risk of depression. PMS-induced emotional turmoil can resemble depression due to hormonal changes.

Managing PMS with lifestyle adjustments, stress relief, and medical help can enhance well-being and alleviate its impact on quality of life and emotional health. Students may hesitate to explain their struggles due to fear of judgment. Social Support Building a support network is crucial for students with PMDD. However, their symptoms might hinder their ability to connect with friends, professors, or counselors who can support them. Some studies determine PMS female's quality of life depends on efficiency in productivity, social activities,

and family relationships.^{32,33}. However, other studies found many maladjustments, including mood liability, anxiety, lack of interest, lack of sleep, Lack of appetite or food cravings, Difficulty in concentration, Irritability, and social adjustment, which is in agreement with many previous studies on PMDD.³⁴⁻³⁹

5. CONCLUSION

The study concludes that college students affected by PMS and PMDD encounter difficulties in academic performance due to mood swings, irritability, and concentration problems. They also face challenges with attendance, time management, and social interaction. The resulting depression disrupts their quality of life and work-life balance. Limited healthcare access and stigma exacerbate these issues, while misunderstandings about PMDD among peers and educators can discourage students from sharing their struggles. Establishing a support system is critical, yet symptoms can make it challenging for students to connect with friends, professors, or counselors who could provide essential support.

Studies consistently indicate symptoms like mood instability, anxiety, sleep disturbances, appetite changes, concentration difficulties, irritability, and social adjustment issues. Addressing these challenges is vital to reducing individual suffering from PMDD/PMS and its broader impact on families, society, and the economy.

6. IMPLICATIONS AND FUTURE RESEARCH

The study evaluated the quality of life and depression levels in college students with PMDD and PMS, highlighting important implications. The study highlights the need for accessible campus mental health services tailored to students' challenges. Timely intervention and counseling can mitigate the impact of symptoms. Educational institutions should run awareness programs and offer flexible academic accommodations. Reducing stigma and improving understanding among peers and educators is crucial. Evaluating interventions like lifestyle adjustments and medical treatments is important. The influence of cultural factors on PMDD and PMS should be considered in future studies. Overall, comprehensive support systems, awareness initiatives, and further research are crucial for students facing these challenges.

7. LIMITATION

Its small sample size hindered the study, which may limit its representation of the wider population affected by PMDD and PMS in India. Future research could consider enlarging the sample size and conducting longitudinal studies to improve applicability and generalizability. While purposive sampling was deliberate, it could introduce selection biases that require attention. Future studies could focus on interventions.

8. DECLARATIONS

Conflict of Interest: The authors have no conflicts of interest in publishing this paper.

REFERENCES

- Braverman, P.K. Premenstrual syndrome and premenstrual dysphoric disorder. *J. Pediatr Adolesc Gynecol.*, 2007, **1**, 3–12.
doi: 10.1016/j.jpag.2006.10.007
- Diagnostic and statistical manual of mental disorders (Third 20 Edition - Revised) APA. Washington, D.C.: A.P.A. 1987. 567p.
doi: 10.1017/s0790966700015767
- American psychiatric association. Diagnostic and statistical manual. APA Press, Washington, DC:, 1980.567p.
doi: 10.1007/978-1-4419-1698-3_1442
- Diagnostic and statistical manual of mental disorders: DSM-IV. APA, Washington, DC, 1994.171p.
doi:10.1176/appi.books.9780890420249
- American psychiatric association. Diagnostic and statistical manual of mental disorders (5th ed.), Washington, DC, 2013.171p.
doi:10.1176/appi.books.9780890425596
- Biggs, W.S.; Demuth, R.H. Premenstrual syndrome and premenstrual dysphoric disorder. *Am Fam Physician*, 2011, **84**, 918-924. PMID: 22010771
- Rizk, D.E.E.; Mosallam, M.; Alyan, S. & Nagelkerke, N. Prevalence and impact of premenstrual syndrome in adolescent schoolgirls in the United Arab Emirates. *Acta Obstet. Gynec Scandi.*, 2006, **85**, (5), 589–598.
doi: 10.1080/00016340600556049
- Borenstein, Jeff E. Health and economic impact of the premenstrual syndrome. *J. Reprod Med.*, 2003, 515-524.
doi: 10.1007/978-0-387-78665-0
- Craner, J.; Sigmon, S.; Martinson, A. & McGillicuddy, M. Perceptions of health and somatic sensations in women reporting premenstrual syndrome and premenstrual dysphoric disorder. *J. Nerv. Ment. Dis.*, 2013, **201**, (9), 780-5.
doi: 10.1097/NMD.0b013e3182a213f1
- Kornstein, S.G.; Harvey, T.; Rush, A.J.; Wisniewski, S.R.; Trivedi, M.H.; Svikis, D.S.; Mckenzie, N.D.; Bryan, C. & R. Harley. Self-reported premenstrual exacerbation of depressive symptoms in patients seeking treatment for major depression. *Psychol. Med.*, 2005, **35**, (5), 683-92.
doi: 10.1017/s0033291704004106
- Kim, C.K.; McGorray, S.P.; Bartholomew, B.A.; Marsh, M.; Dicken, T.; Wassertheil-Smoller S.; Curb, J.D.; Oberman, A.; Hsia, J.; Gardin, J. & Wong, N.D. Depressive symptoms and heart rate variability in postmenopausal women. *Arch. Intern. Med.*, 2005, **165**, (11), 1239-44.
doi: 10.1001/archinte.165.11.1239
- Rapkin A.J. & Winer, S.A. Premenstrual syndrome and premenstrual dysphoric disorder: Quality of Life and burden of illness. *Expert Rev. Pharmacoecon Outcomes Res.*, 2009, **9**, 157-170.
doi: 10.1586/erp.09.14
- Heinemann, L.A.J.; Do Minh, T.; Filonenko, A., & Uhl-Hochgräber, K. Explorative evaluation of the impact of premenstrual disorder on daily functioning and quality of life. *PCORI*, 2010, **3**, (2), 125–132.
doi:10.2165/11533750-000000000-00000
- Hamaideh, S. H.; Al-Ashram, S.A. & Al-Modallal, H. Premenstrual syndrome and premenstrual dysphoric disorder among Jordanian women. *J. Psychiatr Ment. Health Nurs.*, 2013, **21**, (1), 60–68.
doi: 10.1111/jpm.12047
- Purdue-Smithe, A.C.; Manson, J.E.; Hankinson, S.E. & Bertone-Johnson, E.R.A prospective study of caffeine and coffee intake and premenstrual syndrome. *Am. J. Clin. Nutr.*, 2016, **104**, (2), 499–507.
doi: 10.3945/ajcn.115.127027
- Shershah, S.; Morrison, J.J. & Jafarey, S. Prevalence of premenstrual syndrome in Pakistani women. *J. Pak Med. Assoc.*, 1991, **41**, 101-103, PMID: 1861351.
- Dennerstein, L.; Lehert, P. & Heinemann, K. Global epidemiological study of variation of premenstrual symptoms with age and sociodemographic factors. *Menopause Int.*, 2011, **17**, (3), 96–101.
doi: 10.1258/mi.2011.011028
- Pal, S.A.; Dennerstein, L. & Lehert, P. Premenstrual symptoms in Pakistani women and their effect on daily life activities. *J. Pak. Med. Assoc.*, 2011, **61**, 763-68.
doi: 10.3945/ajcn.115.127027
- Silva, C.M.L. da.; Gigante, D.P.; Carret, M.L.V. & Fassa, A.G. Estudopopulacional de síndromepremenstrual. *Revista de Saúde Pública*, 2006, **40**(1), 47–56.
doi: 10.1590/s0034-89102006000100009
- Tabassum, S.; Afridi, B.; Aman, Z.; Tabassum, W. & Durrani, R. Premenstrual syndrome: Frequency and severity in young college girls. *Anxiety*. 2005, **45**(27), 4-5, PMID: 16438276
- Elliott, H. (2002). Premenstrual dysphoric disorder. *N.C. Med. J.*, 2002, **63**, (2), 72–75.
doi: 10.18043/ncm.63.2.72
- Panay, N. Management of premenstrual syndrome: Evidence-based guidelines. *Obstet Gynaecol Reprod. Med.*, 2011, **21**(8), 221–228.
doi: 10.1016/j.ogrm.2011.05.005
- Dennerstein, L.; Lehert, P.; Bäckström, T.C. & Heinemann, K. The effect of premenstrual symptoms on activities of daily life. *Fertil. Steril.*, 2010, **94**(3), 1059–1064.
doi: 10.1016/j.fertnstert.2009.04.023
- American psychiatric association. DSM IV: Diagnostic and statistical manual of mental disorders. 4th ed. american psychiatric association, Washington, DC, 1994.171p.
doi: 10.1002/9780470479216.corpsy0271
- Yen, J.-Y.; Lin, P.-C.; Huang, M.-F.; Chou, W.P.; Long, C.-Y. & Ko, C.-H. Association between generalized anxiety disorder and premenstrual dysphoric disorder in a diagnostic interviewing study. *Int. J. Environ. Res. Public Health.*, 2020, **17**(3), 988.
doi: 10.3390/ijerph17030988

26. Thakrar, P.; Bhukar, K. & Oswal, R. Premenstrual dysphoric disorder: Prevalence, quality of life and disability due to illness among medical and paramedical students. *J. Affect. Disord. Rep.*, 2021, **4**, 100112. doi: 10.1016/j.jadr.2021.100112
27. Delara, M.; Ghofranipour, F.; Azadfallah, P.; Tavafian, S.S.; Kazemnejad, A. & Montazeri, A. (2012). Health-related quality of life among adolescents with premenstrual disorders: a cross-sectional study. *Health Qual. Life Outcomes*, 2012, **10**, (1), 1. doi: 10.1186/1477-7525-10-1
28. N.M. Bakhshani; M.N. Mousavi & G. Khodabandeh. Prevalence and severity of premenstrual symptoms among iranian female university students. *J. Pak. Med. Assoc.*, 2009, **59**, (4) 205-8. PMID: 19402278
29. Beck, A.T.; Steer, R.A. & Brown, G. *Beck Depression Inventory-II (BDI-II)* [Database record]. APA PsycTests.1996. doi: 10.1037/t00742-000
30. WHO Quality of life assessment group. What quality of life?. *World Health Forum*, 1996, **17**, (4), 354-356. <https://apps.who.int/iris/handle/10665/54358>. (Accessed on 12 June 2024)
31. Borenstein, J.E.; Dean, B.B.; Endicott, J.; Wong, J.; Brown, C.; Dickerson, V.; *et al.*, Health and economic impact of the premenstrual syndrome. *J. Reprod Med.*, 2003, **48**, 515-524, PMID: 12953326
32. Steiner, M.; Macdougall, M. & Brown, E.; The premenstrual symptoms screening tool (PSST) for clinicians. *Arch. Womens Ment. Health*, 2003, **6**(3), 203-209. doi: 10.1007/s00737-003-0018-4
33. Dean, B.B. & Borenstein, J.E. A prospective assessment investigating the relationship between work productivity and impairment with premenstrual syndrome. *J. Occup. Environ. Med.*, 2004, **46**, 649-656. <http://www.jstor.org/stable/44997348>. (Accessed on 18 July 2023)
34. Kornstein, S.G.; Harvey, T.; Rush, A.J.; Wisniewski, S.R.; Trivedi, M.H.; Svikis, D.S.; Mckenzie, N.D.; Bryan, C. & R. Harley. Self-reported premenstrual exacerbation of depressive symptoms in patients seeking treatment for major depression. *Psychol Med.*, 2005, **35**(5), 683-92. doi: 10.1017/s0033291704004106
35. Bloch, M.; Schmidt, P.J. & Rubinow, D.R. Premenstrual syndrome: Evidence for symptom stability across cycles. *Am J. Psychiatry.*, 1997, **154**, 1741-1746. doi: 10.1176/ajp.154.12.1741
36. Angst, J.; Sellaro, R.; Merikangas, K.R. & Endicott J. The epidemiology of perimenstrual psychological symptoms. *Acta Psychiatr Scand.* 2001, **104**, 110-116. doi: 10.1034/j.1600-0447.2001.00412.x.
37. Kaur, G.; Gonsalves, L. & Thacker, H.L. Premenstrual dysphoric disorder: A review for the treating practitioner. *Cleveland Clin. J. Med.* 2004, **71**, 303-305. doi: 10.3949/ccjm.71.4.303
38. Pearlstein, T. & Steiner, M. Premenstrual dysphoric disorder: Burden of illness and treatment update. *J. Psychiatry Neurosci.* 2008, **33**, 291-301, PMID: 18592027.
39. Ivezić, S.S.; Jukić, M.K. Tikvica, A. & Baldani, D.P. Diagnostic and therapeutic algorithm for the treatment of premenstrual dysphoric disorder. *Acta Medica Croatica.*, 2010, **64**, 183-190, PMID: 20922861.

CONTRIBUTORS

Dr Vijendra Nath Pathak an Associate Professor in Lovely Professional University's Psychology Department, Punjab, previously served as a Research Associate Fellow at DRDO's Defence Institute of Psychological Research (DIPR) in Delhi. He holds a post-Doctoral Fellowship from the Indian Council of Social Science Research and completed his MPhil and PhD in Psychology from Mahatma Gandhi Kashi Vidyapith. He specializes in health psychology, crafting interventions for healthier lifestyles, psychometrics, and military psychology. For the cureent study, has conceived the topic, collected and compiled the data, data analysed and wrote the manuscript

Ms KM Anjalee is currently pursuing her PhD at Gurukul Kangri University's Psychology Department. She holds a Master's degree in Psychology from Mahatma Gandhi Kashi Vidyapith and a PG Diploma in Counseling and Psychotherapy from BHU. Her research expertise area is health psychology. She has contributed towards literature collection, and manuscript preparation for this study.