Print ISSN: 2321-6379
Online ISSN: 2321-595X

Original Article

A Cross-Sectional Study of Premenstrual Dysphoric Disorder (PMDD) in Nursing Staff of Tertiary Care Center in One of the Aspirational District of North India and its Relationship with Quality of Life and Self-Esteem

Nikhil Goel[1], Sapna Goel[2]

[1]Assistant Professor, Department of Psychiatry, Shaheed Hasan Khan Mewati Government Medical College, Mewat, Haryana, India,
[2]Assistant Professor, Department Pathology, Faculty of Medicine and Health Sciences, (SGT Medical College) Under SGT University, Gurugram, Haryana, India

Abstract

Introduction: Menstruation is a physiological process. Premenstrual dysphoric disorder (PMDD) is a hormone-based mood disorder causing a severe and debilitating form of premenstrual syndrome. The diagnosis of PMDD is considered as per the Diagnostic and Statistical Manual of Mental Disorder – fourth edition (DSM-IV).

Aims and Objectives: The aim of the study was to study premenopausal dysphoric disorder in nursing staff of tertiary care center in one of the aspirational district of North India and its relationship with quality of life (QOL) and self-esteem.

Materials and Methods: A cross-sectional study was done among 150 female nursing staff (of menstrual age) working in the medical college and hospital. Premenstrual symptoms screening tool, Rosenberg self-esteem scale, the women's QOL questionnaire were used. A proper performance was given to each subject. The questioner was based on DSM-IV criteria. The subject had to answer "yes" or "no." The subjects were classified according to the presence of symptoms. The presence or absence of depressive symptoms was assessed using Hamilton Depression Rating Scale.

Results: As per DSM-IV criteria for the diagnosis of PMDD, in our study out of a total of 150 subjects, 13 suffered from PMDD. Our prevalence rate came out to be 8.67%.

Conclusion: The study of PMDD is highly useful because it makes us realize that the suffering of women having PMDD is genuine and we cannot ignore these symptoms. We have to be very considerate to them, and all modalities of treatment should be given to relieve the women of their sufferings and to reduce the physical and psychological distress. The need of the hour is that both gynecologist and psychiatrist work in cooperation to reduce the problems caused by PMDD.

Key words: Cross-sectional, Depression, Dysphoric, Irritability, Premenstrual, Self-esteem

INTRODUCTION

Menstruation is a physiological process. It is the endpoint in the cascade of events starting at the hypothalamus and ending in the uterus.[1] Many women complain of premenstrual symptoms, for example, nausea, headache, abdominal distention, and breast tenderness. In most of the cases, symptoms are usually mild and no treatment is required. However, in about 30% cases, the symptoms are severe, known as premenstrual syndrome (PMS). PMS is comparatively a mild condition than a premenstrual dysphoric disorder (PMDD) as the PMS usually not interfere with daily activities, and the symptoms experienced are in mild form. These may be physical symptoms or many emotional symptoms, for example, anxiety, depression, irritability, and lack of concentration. In about 9% of

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Month of Submission : 05-0000
Month of Peer Review : 06-0000
Month of Acceptance : 07-0000
Month of Publishing : 07-0000

Corresponding Author: Dr. Sapna Goel, House No 25/6, Opposite Bal Bhawan, Gandhi Nagar, Scheme No 6, Jind, Haryana - 126 102, India.

women, the symptoms of PMS, cause severe disability and are categorized as PMDD.[2] PMDD is hormone-based mood disorder causing severe and debilitating form of PMS. Probably the women with PMDD are more sensitive to normal levels of estrogen and progesterone fluctuation. Certain risk factors have been assigned for this disorder. These risk factors are stress, history of interpersonal trauma, seasonal changes, and heritability. Women using oral contraceptives have less chances of PMDD than women who do not use oral contraceptives. As per study in the American Journal of Psychiatry, PMDD usually occurs in women at about 26 years of age though it may arise at any time during reproductive life. Most women with postmenstrual syndrome are able to perform daily activities without much distress. However, women with PMDD with psychological symptoms are not able to perform their routine daily activities. The psychological symptoms may be anxiety, irritability, depression, tension, and suicidal thoughts. These symptoms are usually present in most of the cycles, but not in all. The symptoms of PMDD start about a week before the start of menstruation and end after the start of the menstruation. To diagnose women suffering from PMDD, the women should have had experienced the symptoms of PMDD in most of the menstrual cycles of the previous year. It is pertinent to tell that the presence of behavioral or physical symptoms in the absence of mood and/or anxious symptoms is not sufficient for diagnosis. In most of the cases, at least five of the following symptoms must be present in PMDD.

- Mood swings (depression, feeling of hopelessness)
- Irritability, anger, increased interpersonal conflicts
- Anxiety, tension
- Loss of interest in routine activities
- Lack of concentration
- Lack of energy
- Change in appetite
- Sleep disturbance
- Sense of being overwhelmed or out of control
- Physical symptoms such as tenderness of breast, swelling of breast, muscle of joint pain, bloating sensation, or weight gain.

Out of these five symptoms, one should be related to mood and it should be severe in nature and other four symptoms should be moderate to severe in nature.

We have to be sure that the symptoms are not a severe form of another disorder such as panic disorder or depression and there is a history of symptomatic cycles.[3]

The severity of symptoms vary among different women.[4] In some women, the symptoms are more severe toward menopause. PMDD does not occur during pregnancy and after menopause. The PMDD is quite common problem. It impairs mental health of the patient. It impairs the quality of life (QOL) of the patients. Patients have difficulty in adjustment and relations. They have disturbed social life. There are studies that work efficiency and productivity are decreased. There is a need to identify this disorder and proper treatment should be done. This will decrease the sufferings of the patients. This will have a bearing on the family life, social life, community life, and economical life of patients.

MATERIALS AND METHODS

A cross-sectional study was done among female nursing staff (of menstrual age) working in the medical college and hospital. The study was conducted from February 2018 to January 2019.

The sample consisted of 150 females having regular menstrual cycles (21–35 days) and willing to give written informed consent was encouraged to participate in the study. Those who did not give written informed consent and those who were having medical and gynecological illnesses such as anemia, diabetes, hypothyroidism, asthma, migraine, epilepsy, pelvic inflammatory diseases (PIDs), endometriosis, and amenorrhea were excluded.

The case record form included socio-demographic data of participants, menstrual history, premenstrual family history of PMS in first degree relatives, and premenstrual symptoms screening tool (PMSST).

PMSST

It is the screening tool developed by Steiner *et al.,* which reflects and "translates" categorical Diagnostic and Statistical Manual Mental Disorder – fourth edition (DSM-IV)-Text Revision (TR) criteria into a rating scale with degrees of severity. It includes 14 items assessing premenstrual symptoms of mood, anxiety, sleep, appetite, and physical symptoms. It also includes functional impairment items of five different domains. Participants rated their experience of each symptom and functional impairment item on four-point Likert scale as "not at all," "mild," "moderate," or "severe" in past 12 months duration during most of the cycles. "PMDD," "moderate to severe PMS," and "no/mild PMS" subjects were identified using PSST scoring criteria.

Rosenberg self-esteem scale (RSES)

Self-esteem is a judgment of oneself or one's attitude toward himself/herself. It is an overall subjective emotional estimation of one's worth. The RSES is widely used self-reporting instrument for evaluating self-esteem. It is a 10-item scale; with items to be answered on a four-point scale – from strongly agree to strongly disagree. It uses a scale of 0–30 where a score of <15 may show problematic low

self-esteem. This scale measures the state of self-esteem by asking the participant to rate their current mood, i.e., mood during participants premenstrual phase.

The women's QOL questionnaire (WOMQOL): QOL is a multi-dimensional construct and defined subjectively. The WOMQOL was developed as part of a community-based study of women's health, including mental health through the menstrual cycle with no known pathology. A generic conceptualization of QOL was used in the construction of the measure that weighted health and non-health factors to ensure the representation of the life experiences of a broad range of women in the community-based Women Wellness study.The participants were asked to answer "yes," "no," or "not applicable" to the 40 questions in the WOMQOL based on how they have felt in the last week of their life.

A proper performance was given to each subject. This included socio-economic data and specifically designed questions for the diagnosis of PMDD. The questioner was based on DSM-IV criteria. The subject had to answer "yes" or "no." The subjects were classified according to the presence of symptoms. The presence or absence of depressive symptoms was assessed using Hamilton Depression Rating Scale (HDRS). Out of theses 9 items is scored on a scale of 0–2 and others on a scale of 0–4, making the possible score range 0–50. The cutoff score for depression on HDRS was 14.

Ethical considerations

The Institutional Ethics Committee's approval for Research on Human Subjects was taken. Throughout the study, strict ethical norms were maintained. Written informed consent was taken from patient in their local language (mother tongue).

Statistical methods in methodology

The data were collected properly, and entries were made, and statistical analysis was carried out using simple mathematical expressions like percentage. The data were subjected to the appropriate statistical test wherever applicable. Statistical analysis was carried out using statistical SPSS version 23 software.

For diagnosis of PMDD, the criteria listed in the DSM-IV were taken [Table 1]. The subjects were explained the purpose of the study and a brief summary of PMDD was told. Some subjects refused as they felt embraced.

RESULTS

This cross-sectional study was conducted on female nursing staff (of menstrual age) working in the medical college and hospital. The study was conducted from February 2018 to January 2019. The study was conducted on 150 females. Those who were having medical and gynecological illnesses such as anemia, diabetes, hypothyroidism, asthma, migraine, epilepsy, PIDs, endometriosis, and amenorrhea were excluded from the study.

The subjects were of age ranging from 21 to 40 years with mean age 32.8 years. Height ranged from 1.55 to 1.74 m with a mean height of 1.59 m. The weight of the subjects varied from 48 to 70 kg with a mean weight of 57.3 kg [Table 2]. The number of days of menstruation of the subjects varied from 4 to 8 days with a mean of 5.8 days. Duration of menstrual cycle ranged from 25 to 34 days with a mean of 28.7 days [Table 3]. The menstruation was normal in frequency in 111 (74%) subjects and there was an increased frequency of menstruation in 39 (26%) subjects [Table 4]. The menstrual flow was normal in 84 (56%), heavy in 42 (28%), and less in 24 (16%) subjects. Pain killer was used in 105 (70%) and not used in 45 (30%) subjects [Table 5]. The most frequent affective symptom was persistent irritability, found in 16 (10.67%) subjects. This was followed by depression, angry outburst, anxiety, inability to concentrate, loss of interest, and sleep disturbance. Most frequent somatic symptom was weakness, followed by breast tenderness, lethargy, abdominal bloating, headache, and swelling of extremities [Table 6]. Social life was affected by 28 (18.67%) subjects. There was no effect on social life

Table 1: DSM-IV (Diagnostic and Statistical Manual of Mental Disorder - Fourth Edition) criteria for the diagnosis of PMDD (Premenstrual Dysphoric Disorder)

Characteristic features
Depressed mood, feeling of helplessness or self-depreciation thoughts
Intense anxiety, tension or feeling "pushed to the limit"
Intense affective instability
Anger or severe irritability, or significant increase of personal conflicts
Decrease interest in usual activities
Concentration difficulties
Lethargy, marked fatigue, lack of usual energy
Marked change in appetite, both decrease or increase of appetite
Significant increase of reduction of sleep
Feeling overwhelmed
Physical symptoms, such as headache, muscle or articular pain, weight gain

DSM-IV: Diagnostic and Statistical Manual of Mental Disorder – fourth edition

Table 2: Different characteristics, i.e., age, height, and weight of the subjects

Characteristics	Range	Mean
Age	21–40 years	32.8 years
Height	1.55–1.74 m	1.59 m
Weight	48–70 kg	57.3 kg

Table 3: Menstrual characteristic

Characteristics	Range	Mean
No. of days of menstruation	4–8 days	5.8 days
Duration of cycle	25–34 days	28.7 days

Table 4: Menstrual characteristic continued

Frequency of menstruation	Number of subjects	Percentage (%) of subjects
Normal	111	74%
Increased	39	26%

Table 5: Menstrual characteristics continued

Characteristics	Normal	Heavy	Less
Menstrual flow	84 (56%)	42 (28%)	24 (16%)
Pain killer used	Yes, 105 (70%)	No, 45 (30%)	

Table 6: Symptoms of premenstrual syndrome

Symptoms	*n* (%)
Persistent irritability	16 (10.67)
Depression	15 (10.00)
Angry outbursts	13 (8.67)
Anxiety	12 (8.00)
Lethargy	24 (16.00)
Weakness	28 (18.67)
Breast tenderness	26 (17.33)
Abdominal Bloating	22 (14.67)
Headache	13 (8.67)
Sleep disturbance	9 (6.00)
Swelling of extremities	8 (5.33)
Loss of interest	10 (6.60)
Inability to concentrate	11 (7.33)

in 122 (81.33%) subjects [Table 7]. As per DSM-IV criteria for the diagnosis of PMDD, in our study out of a total of 150 subjects, 13 suffered from PMDD. Our prevalence rate came out to be 8.67% [Table 8].

DISCUSSION

The purpose of this cross-sectional study of PMDD was to find the extent and severity of the premenopausal symptom and PMDD among nursing staff of tertiary care center in one of the aspirational district of North India.

Premenstrual symptoms occur during the luteal phase of the menstrual cycle. These affect the routine activities and performance of the women. Most of the women suffer from one or more premenstrual symptoms. Usually, no treatment is required.[5]

As per DSM-IV criteria for the diagnosis of PMDD, it has been found that about 70–75% of women have mild

Table 7: Effects on social life

Effects present/ not present	*n* (%)
Effects present	28 (18.67)
Effects not present	122 (81.33)

Table 8: Prevalence rate of premenstrual dysphoric disorder in our study

Total number of subjects	Subjects having premenstrual dysphoric disorder	Prevalence rate
150	13	8.67

Table 9: Prevalence rate of premenstrual dysphoric disorder in different study

Studies	Prevalence rate
Rivera-Tovar and Frank[8]	4.60
Cohen *et al*.[9]	6.40
Banerjee *et al*.[10]	6.40
Steiner *et al*.[11]	8.30
Tabassum *et al*.[12]	18.20

premenstrual symptoms, about 25–30% have moderate symptoms and 5–10% women have severe symptoms, and as per DSM-IV criteria they fall in PMDD. This has been advocated in studies by Johnson (1987)[6] and Lolas (1993).[7] The prevalence rate in our study is 8.67%. The prevalence rate of Rivera-Tovar and Frank (1990)[8] is 4.6%, Cohen *et al*. (2002)[9] is 6.4%, Banerjee *et al*. (2000)[10] is 6.4%, and Steiner *et al*. (2011)[11] is 8.3%. Tabassum *et al*. (2005)[12] is 18.2% [Table 9]. In these studies, mostly the prevalence rate is 4.6–8.3%. Our study has shown a higher prevalence rate, which may be due to lack of awareness preventing the patients to get treatment benefits.

So far, etiology is concerned, many factors such as psychologic, biologic, social factors, genetic factors, and environmental factors play a part. Hormone imbalances, vitamin deficiency, imbalance of estrogen and progesterone, imbalances of neurotransmitters and retention of sodium, all have been implicated.

So far, as treatment is concerned, to reduce symptoms and improve the quality of social and occupational health. For these two aims, we have found that the changes in lifestyle are very valuable. Regular exercise, decrease coffee intake (will decrease anxiety and irritability), and decrease in sodium intake, which will reduce edema and bloating. Alcohol should be restricted. Regular sleep should be taken, and regular small frequent balanced meals should be taken. Vitamin, calcium, magnesium, and tryptophan supplement

should be taken. The patient should be counseled about the cause, diagnosis, and the treatment of this condition. The training which will reduce stress, manage anger, and interpersonal conflicts should be given by the psychiatrists. Cognitive behavioral should be given to the women having negative thoughts. Alprazolam and/or symptomatic focused therapy may be given. In selected cases, GnRH agonist or danazol for two or three cycles may be given. These women with premenopausal syndrome or premenopausal dysphoric disorder suffer from severe social and family issues, and if due care is taken there, problem will subside. Moreover, their QOL and efficiency at workplace will improve and they will get rid of their symptoms.

CONCLUSION

The study of PMDD is highly useful because it makes us realize that the suffering of women having PMDD is genuine and we cannot ignore these symptoms. We have to be very considerate to them and all modalities of treatment should be given to relieve the women of their sufferings and to reduce the physical and psychological distress. The purpose of this study is to reduce symptoms and improve the quality of women's social and occupational health. Their QOL and work efficiency will increase with proper guidance and treatment, and their self-esteem will be high. More research should be conducted. The need of the hour is that both gynecologist and psychiatrist work in cooperation to reduce the problems caused by PMDD.

ACKNOWLEDGMENTS

I would like to acknowledge the book, Howkins and Bourne Shaw's Textbook of Gynaecology; 15th edition, Editors: V. G. Padubidri Shirish Daftary, Imprint: Elsevier India.

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How to cite this article: Goel N, Goel S. A Cross-Sectional Study of Premenstrual Dysphoric Disorder (PMDD) in Nursing Staff of Tertiary Care Center in One of the Aspirational District of North India and its Relationship with Quality of Life and Self-Esteem. Int J Sci Stud 2019;7(4):22-26.

Source of Support: Nil, **Conflict of Interest:** None declared.