

Premenstrual syndrome (PMS) and premenstrual dysphoric disorder (PMDD) in Indonesian women

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ABSTRACT

Ova Emilia - *Premenstrual syndrome (PMS) and premenstrual dysphoric disorder (PMDD) in Indonesian women*

Background: Data from epidemiologic surveys showed that the burden of illness caused by premenstrual syndrome could not be underestimated. It has been estimated that the frequency of premenstrual symptoms was quite high (80–90%), and in some women, the symptoms were so severe that they might interfere with daily activities. Most epidemiological studies of PMS were conducted in Western women, though a few small sample-size studies of Chinese and Japanese women indicated that they were affected by PMS.

Objective: To find out the characteristic features of premenstrual symptoms in Indonesian women.

Methods: Four hundred and sixty women aged between 20 and 49 yrs. with regular menstrual cycles, who were seen at a Women Health Clinic, were assessed regarding their premenstrual symptoms using the Premenstrual Symptoms Screening Tool (PSST). They were able to provide informed consent. The study was conducted in July 2007 until January 2008.

Results: As many as 95% of these women were found to have at least premenstrual symptoms. The rates of prevalence of moderate to severe PMS and PMDD in this study were 3.9% and 1.1%, respectively, which were lower than those in Western or Chinese and Japanese women. Only 5 women with moderate to severe PMS and PMDD were treated and 10.5% women seek herbal medicine to reduce premenstrual symptoms.

Conclusion: Severe to moderate premenstrual symptoms and PMDD were suffered by 5% women and mostly affected 20-29 year old women. Medical treatment was rarely sought, but herbal medicine was often used to relieve premenstrual symptoms.

Key words: PMS - PMDD - Indonesian women

ABSTRAK

Ova Emilia: *Sindrom premenstruasi (PMS) dan gangguan disforik premenstruasi (PMDD) pada perempuan Indonesia*

Latar belakang: Data survei epidemiologik menunjukkan bahwa beban sakit karena sindrom premenstruasi cukup besar. Diperkirakan frekuensi gejala premenstruasi (cukup tinggi (80–90%)), dan kadang-kadang gejala tersebut sangat berat dan mengganggu kegiatan sehari-hari. Sebagian besar studi epidemiologik PMS dilakukan pada wanita Barat, namun beberapa studi skala kecil pada perempuan Cina dan Jepang menunjukkan bahwa PMS juga berpengaruh.

Tujuan: Mengetahui karakteristik gejala premenstruasi pada perempuan Indonesia.

Metode: Sebanyak 460 perempuan antara usia 20 hingga 49 tahun dengan siklus menstruasi teratur, yang berkunjung ke klinik kesehatan perempuan, dinilai gejala premenstruasinya dengan menggunakan instrumen *Premenstrual Symptoms Screening Tool* (PSST). Mereka mampu menyatakan *informed consent*. Penelitian dilakukan pada bulan Juli 2007 sampai Januari 2008.

Hasil: Sebanyak 95% perempuan mengalami gejala premenstruasi. PMS sedang hingga berat diderita berturut-turut oleh 3,9% dan 1,1%, angka tersebut lebih rendah dibanding perempuan Barat, Cina ataupun Jepang. Hanya 5% perempuan yang menderita PMS sedang atau berat dan PMDD yang mencari pengobatan, dan 10,5% perempuan menggunakan terapi herbal untuk mengurangi gejala premenstruasi.

Simpulan: Gejala premenstruasi sedang hingga berat dan PMDD diderita oleh 5% perempuan, dan terutama mengenai usia 20-29 tahun. Pengobatan tidak lazim digunakan, tetapi terapi herbal untuk mengurangi gejala premenstrual banyak digunakan.

INTRODUCTION

Premenstrual syndrome (PMS) is currently understood to be a psychological and somatic disorder of unknown aetiology. The definition of PMS has varied over the years and it remains a condition that is not completely understood or accepted by all medical professionals. A woman is said to have PMS if she complains of recurrent physiological and/or somatic symptoms, specifically during the luteal phase of the cycle, and resolving by the end of menstruation (TABLE 1). These symptoms should be of sufficient severity to disrupt the patient's normal functioning, quality of life, and

interpersonal relationships. The symptoms must not be an exacerbation of a psychiatric disorder such as depression, a panic disorder, or personality disorder. If the syndrome is very severe and the symptoms are mainly psychological, it is classified as premenstrual dysphoric disorder (PMDD), which is the extreme psychological end of the PMS spectrum. To be diagnosed with PMDD, specific diagnostic criteria outlined in the *Fourth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM IV)* must be met (TABLE 2). It should be noted that these are research rather than clinical diagnostic criteria.

TABLE 1. Diagnostic criteria for Premenstrual Syndrome¹

At least one of the following affective and somatic symptoms during the 5 days before menses in each of the three prior menstrual cycle	
Affective	
<ul style="list-style-type: none"> • Depression • Angry outburst • Irritability • Anxiety • Confusion • Social withdrawal 	
Somatic	
<ul style="list-style-type: none"> • Breast tenderness • Abdominal bloating • Headache • Swelling of extremities 	

Epidemiologic surveys had estimated that the frequency of premenstrual symptoms was quite high (80–90%),² and that in about 5% of women, the symptoms were so severe that they interfered with personal or social relationships or work, and in many cases, they required pharmacological management.³ Such severe subtype of PMS is classified as premenstrual dysphoric disorder (PMDD) according to the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-

IV).^{4,5} The causes of PMS have not been clearly elucidated, but have been suggested to include hormonal changes, neurotransmitters, diet, stress and lifestyle.⁶

Over the years, many hypotheses have been proposed for the aetiology of PMS, based mainly on possible deficiencies of certain hormones such as progesterone, and neurotransmitters such as serotonin, allopregnanolone and α -amino butyric acid.⁷ Several lines of research have been carried

out to determine the pathogenesis of PMS, but a definitive aetiology has yet to be established. The syndrome is only seen in women of reproductive age and is not present before puberty, during pregnancy or after the menopause. Women with PMS appear to have an exaggerated form of the normal or physiological premenstrual symptoms, making the hypothesis plausible that affected women are hypersensitive to their own endogenous normal progesterone level. This enhanced sensitivity to progesterone is thought to have a neurotransmitter basis, possibly via serotonin 'deficiency'. No associations have been found between PMS and parity, employment, education, or income, but

associations between the use of an intrauterine contraceptive device, and having long menstrual cycles, and a heavy menstrual flow have been noted. Genetic factors are also pertinent; twin and family studies showed a high correlation between mothers and daughters and between mono- and dizygotic twins. Moreover, a similarity of PMS/PMDD subtypes has also been noted between mothers and daughters. Therefore, the assumption that PMS is resulted from an isolated neurotransmitter or hormonal disorder may be too simplistic, and that it is secondary to a combination of aetiological factors may be more realistic.

TABLE 2. Criteria for Premenstrual Dysphoric Disorder⁴

In most menstrual cycles of the past years, 5 or more of the following symptoms were present most of the time and absent in the week post menses.

1. Markedly depressed mood; hopelessness, self-deprecating thoughts
 2. Marked anxiety, tension, feeling "keyed up" or "on edge"
 3. Marked affective lability (feeling suddenly sad or tearful; increased sensitivity to rejection)
 4. Persistent and marked anger, irritability or increased interpersonal conflicts
 5. Decreased interest in usual activities
 6. Difficulty in concentrating
 7. Lethargy, easy fatigability, or marked lack of energy
 8. Marked change in appetite, overeating or specific food cravings
 9. Hypersomnia or insomnia
 10. Sense of being overwhelmed or out of control
 11. Physical symptoms such as breast tenderness or swelling, headache, joint or muscle pain, bloating, weight gain
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Most epidemiological studies of PMS were conducted in Western women. Prevalence study in Asia population showed contradictory results. A few small sample-size studies of Chinese women indicated that women are affected by PMS irrespective of race,⁸ however, they concluded that PMS was influenced by race and ethnicity.⁹ A study about PMS in low-income countries like Indonesia is scarce. Perhaps because premenstrual disorders are not recognized as a health concern in Indonesia and few surveys have been conducted concerning PMS and PMDD in Indonesian women after DSM-IV diagnostic criteria were proposed. This study was carried out to find out the prevalence of PMS and PMDD in a sample of Indonesian women using a simple screening tool to identify women who suffer from premenstrual disorders.

METHODS

The study was conducted from July 2007 to January 2008 using a sample of Indonesian women aged between 20 and 49 years who were seen at a women health clinic in Yogyakarta city, a highly multicultural city in Indonesia. The women who were recruited were those with regular menstrual cycles and were able to provide informed consent.

The study used the Premenstrual Symptoms Screening Tool (PSST)¹⁰ which translated DSM-IV criteria into a rating scale with degrees of severity described in Indonesian. The PSST asked, "Within the last three months, have you experienced the following premenstrual symptoms starting during the week before menses and remitting a few days after the onset of menses?" The premenstrual

symptoms listed on the PSST are ‘Depressed mood’, ‘Anxiety or tension’, ‘Tearful’, ‘Anger or irritability’, ‘Decreased interest in work, home or social activities’, ‘Difficulty in concentrating’, ‘Fatigue or lack of energy’, ‘Overeating or food cravings’, ‘Insomnia or hypersomnia’, ‘Feeling overwhelmed’ and ‘Physical symptoms such as tender breasts, feeling of bloating, headache, joint or muscle pain, weight gain’. The PSST also asked whether such premenstrual symptoms interfered with ‘Work efficiency or productivity, home responsibility’, ‘Social life activities’ or ‘Relationships with co-workers or family’. Though the original DSM-IV diagnostic criteria for PMDD do not check the degree of severity, the PSST asked women to rate the severity of premenstrual symptoms as ‘not at all’, ‘mild’, ‘moderate’ or ‘severe’. We also collected additional information about the age, and treatment for premenstrual symptoms.

RESULTS

A total of 460 women completed the PSST. Two were dropped from the analysis because of incomplete data. We analyzed the data of 458 women aged 20 to 49 years old (median, 33 years old). Among them, 61.2 percent were married, 36.5 percent were part-time or full-time workers, and 50.3 percent had at least one child.

The percentage of each premenstrual symptom (classified according to severity) is shown in TABLE 3. The most prevalent symptoms among the respondents were ‘Anger or irritability’ (80.9%) and nearly two-thirds of women reported ‘Anxiety or tension’ (66.1%). ‘Physical symptoms’ (79.2%) were very common complaint said by the women. These symptoms influenced ‘Work efficiency or productivity, home responsibility’ for nearly half of the respondents (43.9%).

TABLE 3. Premenstrual symptoms according to the severity (n= 458)

Symptoms	Not at all	Mild	Moderate	Severe
Depressed mood	348 (76.1)	84 (18.3)	19 (4.2)	7 (1.4)
Anxiety or tension	155 (33.9)	184 (40.2)	96 (21.0)	23 (4.9)
Tearful	323 (70.6)	93 (20.4)	31 (6.8)	11 (2.2)
Anger or irritability	87 (19.1)	233 (50.9)	107 (23.5)	31 (6.5)
Decreased interest in work, home or social activities	336 (73.4)	76 (16.7)	37 (8.2)	9 (1.7)
Difficulty in concentrating	250 (54.6)	179 (39.1)	23 (5.2)	6 (1.1)
Fatigue or lack of energy	270 (59.1)	141 (30.9)	38 (8.3)	9 (1.7)
Overeating or food cravings	309 (67.5)	85 (18.6)	49 (10.7)	15 (3.2)
Hypersomnia or insomnia	298 (65.1)	143 (31.3)	11 (2.5)	6 (1.1)
Feeling overwhelmed	330 (72.2)	109 (23.7)	19 (4.1)	0
Physical symptoms	95 (20.8)	247 (53.9)	104 (22.7)	12 (2.6)

In some women, ‘Social life activities’ (29.4%) and ‘Relationships with coworkers or family’

(18.7%) could also be affected during the presence of symptoms (TABLE 4).

TABLE 4. Work, activities or relationships according to premenstrual symptoms

	Premenstrual symptoms (n, %)			
	Not at all	Mild	Moderate	Severe
Work efficiency or productivity, home responsibility	257 (56.1)	186 (40.7)	13 (3.0)	2 (0.2)
Social life activities	323 (70.6)	116 (25.4)	14 (3.2)	5 (0.8)
Relationships with co-workers or family	372 (81.3)	72 (15.8)	12 (2.7)	2 (0.2)

For further analysis the premenstrual symptoms were divided into three groups: 'PMDD', 'Moderate to Severe PMS' and 'No or Mild PMS'. The 'PMDD' group met DSM-IV criteria for the diagnosis of PMDD. Based on criteria, the 'PMDD' women were women who reported the four core symptoms as moderate or severe ('Depressed mood', 'Anxiety or tension', 'Tearful', 'Anger or irritability') and at least one additional moderate to severe symptoms (for a total of five).¹⁰ They also had to report that their symptoms interfered severely with their ability to function in at least one of three domains ('Work efficiency or productivity, home responsibility', 'Social life activities', 'Relationships with coworkers or

family'). The 'Moderate to Severe PMS' group who marginally missed fulfilling the DSM-IV criteria for the diagnosis of PMDD and seemed to be 'subsyndromal PMDD' was also identified according to Steiner's criteria. These women reported at least one of the four core symptoms as moderate to severe and at least four additional symptoms as moderate to severe. They also reported that their symptoms interfered moderately to severely with their ability to function in at least one of the three domains listed above. The 'PMDD' group consisted of 5 women (1.1%), the 'Moderate to Severe PMS' group 18 women (3.9%) and the 'No/Mild PMS' group 435 women (95%) (TABLE 5).

TABLE 5. Premenstrual symptoms and PMDD according to age

Age	No/mild PMS N (%)	Moderate to severe PMS N (%)	PMDD N (%)
20-29 years old	32 (88.9)	3 (8.3)	1 (2.7)
30-39 years old	279 (95.2)	11 (3.9)	3 (0.9)
40-49 years old	124 (96.1)	4 (3.1)	1 (0.8)
	435 (95)	18 (3.9)	5 (1.1)

The proportion of PMDD and moderate to severe PMS were slightly reduced in older group. Women aged 20-29 years old had higher proportion of suffering from PMDD and moderate to severe PMS. In a previous report about the Canadian population, the 'PMDD' group consisted of 26 women (5.1%), the 'Moderate to Severe PMS' group 105 women (20.7%) and the 'No/Mild PMS' group 377 women (74.2%).¹⁰ The rates of PMDD and moderate to severe PMS in this study were significantly lower than those in the Canadian population ($P < 0.0001$ by Mann-Whitney's U test) and not significantly lower compared to Japanese women.⁹

The 'PMDD' group and the 'Moderate to Severe PMS' group were likely to benefit from treatment. Only five women in our study population reported that they were in therapy for premenstrual symptoms. Three of these women were in the 'Moderate to Severe PMS' group and the other two were in the 'PMDD' group. Traditional herbal medicine was used by 48 women (10.5%) in these three groups of symptoms.

DISCUSSION

The report about the features of premenstrual symptoms in Indonesian women since the DMS-IV diagnostic criteria has been scarce. As shown in TABLE 3, many of these women experience premenstrual symptoms and about 95% of them experience more than one symptom. This result was in line with the previous report in Western women.¹ The rates of PMDD and moderate to severe PMS in this study were lower than those in a Western and Japanese or Chinese population.^{8,9} The causes of PMDD and PMS have not been clearly elucidated, but have been suggested to include hormonal changes, serotonin dysregulation, diet, drugs, and lifestyle.⁶ The precise causes of the difference in the prevalence of PMDD and moderate to severe PMS among the studies were unknown, however there are several possible explanations. Because assessment of psychiatric disorders was based on respondent reporting, the assessed symptom was affected by cultural differences.¹¹ Strong religious and traditional belief may affect the recognition of premenstrual

symptoms. Religious women do a lot of meditation which may control their psychological well-being. Whereas according to traditional practice, women usually suppress their premenstrual symptom discomfort and perceive it as normal function of the body. Maturity of women is correlated with these behaviors. These were also supported with the finding that the older the women, the lesser the premenstrual symptoms were. More deep qualitative study is needed to explore this phenomenon. Other factor that may affect the premenstrual symptoms is low fat diet taken by most Indonesian women. High intake of fats might be associated with premenstrual symptoms.^{12,13} The lower fat intake of Indonesian women may contribute to the low rate of prevalence of PMDD and moderate to severe PMS.

One major limitation of this study was that it screened PMDD by retrospective self-report. The diagnosis of PMDD by the DSM-IV criteria requires the prospective daily charting which has to be completed over a period of two consecutive symptomatic cycles. In a retrospective design of PMDD, women are likely to recall the worst episode in the past, so our questionnaire may select a broader group of women and have overestimated PMDD frequency. However, the prospective daily charting is difficult for large samples. Daily rating may also be an impediment to study involvement. It had been reported that in an epidemiological study, 30% of women refused to participate in data collection and only 50% of the women enrolled completed two cycles of daily ratings.¹⁴ Retrospective screening of PMDD research should be considered as a useful technique to screen PMDD women.¹⁰ In the current study, another limitation was acknowledged as it did not assess possible concurrent psychiatric diagnoses which may interfere the diagnosis of PMDD. According to the prevalence of PMDD and moderate to severe PMS estimated in this study (5%), it is estimated that about 2.400.000 Indonesian women aged 20 to 49 years currently suffer from premenstrual disorders.

CONCLUSION

Treatment was not the first priority in our respondent. This was showed by low number of

respondents who sought medical treatment. Interestingly, more than 10% women took herbal medicine for reducing the premenstrual symptoms. Further study to explore types of herbal medicine and health seeking behavior pattern for premenstrual symptoms is needed.

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