

COMPLEMENTARY STRATEGIES FOR PREMENSTRUAL SYNDROME: THE ROLE OF HERBAL AND MODERN MEDICINE

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ABSTRACT

Premenstrual Syndrome (PMS) is a common condition affecting women of reproductive age, characterized by a spectrum of physical, emotional, and behavioral symptoms that typically occur during the luteal phase of the menstrual cycle. Symptoms range from mild discomfort to severe disruptions in daily life, including bloating, mood swings, fatigue, and headaches. The etiology of PMS is complex, involving hormonal fluctuations, neurotransmitter imbalances, genetic factors, and stress. Despite significant advancements in recognizing and understanding PMS, the exact mechanisms underlying the condition remain unclear. PMS has gradually gained recognition as a unique medical disease. Historically, women's health issues, particularly those involving menstruation, were frequently neglected or misunderstood. It was not until the mid-twentieth century that PMS became more extensively recognized and investigated. PMS is now recognized as a complex disease having physiological bases, rather than a purely psychological condition. This revolution in thinking has resulted in more comprehensive approaches to diagnosis, treatment, and care, to improve the quality of life for people affected. Effective management of PMS requires a holistic approach, encompassing lifestyle modifications, dietary changes, and, in some cases, medical interventions. Continued research is essential to further elucidate the causes of PMS and develop more targeted treatment options to improve the quality of life for affected women. This article explores the symptoms, potential causes, and various approaches to managing PMS.

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INTRODUCTION

Menstruation is a physiological phenomenon in which many women experience premenstrual symptoms such as breast tenderness, abdominal bloating, nausea, and headache. These symptoms are usually mild and do not require special treatment in most cases; however, 20-40% of women experience severe premenstrual symptoms that cause disability (1). These severe symptoms, known as premenstrual syndrome (PMS), include emotional symptoms, including anxiety, mood swings, sadness, depression, poor concentration, and irritability. The emotional symptoms of PMS, which cause severe daily disability in

4-14% of women, are categorized as premenstrual dysphoric disorder (PMDD) (2). Premenstrual Syndrome (PMS) is a common disorder that affects a large number of women during their reproductive years, resulting in a variety of physical, emotional, and behavioral symptoms. These symptoms usually occur during the luteal phase of the menstrual cycle, which lasts from ovulation until the start of menstruation. PMS is a minor inconvenience for some women, but it may be debilitating for others, significantly affecting daily life and general well-being. The diversity of symptoms and their intensity highlight the complexity of PMS, making it a topic of great interest and continuous

research in both the medical and psychiatric sectors (3).

PMS has gradually gained recognition as a unique medical disease. Historically, women's health issues, particularly those involving menstruation, were frequently neglected or misunderstood. It was not until the mid-twentieth century that PMS became more extensively recognized and investigated. PMS is now recognized as a complex disease having physiological bases, rather than a purely psychological condition. This revolution in thinking has resulted in more comprehensive approaches to diagnosis, treatment, and care, to improve the quality of life for people affected (4).

Even while our understanding of PMS has advanced, its precise causes are still unknown. The complicated terrain that is created by the interaction of hormone fluctuations, neurotransmitter activity, genetic predisposition, and environmental influences presents difficulties for both researchers and medical professionals (5).

Predisposing Factors

There are some predisposing factors such as age, marital status, and stress that were found to enhance the symptoms of premenstrual syndrome like irritability, anxiety, abdominal bloating, depression, and breast tenderness in several studies (6). Today, health of the women is one of the main focuses and it emphasizes social as well as economic growth and development. During the reproductive age, many women may suffer from mental physical and behavioral changes repeatedly (7). these cyclical changes may start from 6-12 days before initiation of menstrual cycle and last for up to 4 days after menstruation (8).

In 1931 an American physician, Robert Frank from the New York Academy of Medicine, stated that premenstrual syndrome occurred due to ovarian dysfunction, he used the terms premenstrual

tension and luteal action for premenstrual syndrome.

In the same year based on psychoanalysis another physician Karen Horney said that this syndrome occurred as a result of sexual desire (9) and he used the term premenstrual syndrome (PMS) to explain it (10). for the first time, Hypocrites describes a set of psychological and physical changes in his writing. Premenstrual dysphoric disorder (PMDD) term used for PMS in the mid-1980s

The beginning of menstruation function is an important event in women's life. The age of menarche depends on the diet of females as well as their socioeconomic status, environmental condition, and their physical health.

Clinical Presentation Premenstrual Syndrome

Menstrual problems commonly disturb the standard of life of both young and mature adult students and can be a level of serious fundamental issues (11). Menarche is common in females of 12 years of age but in the Indian population mean age of menarche is between 12.8 and 13.2 (12).

Reproductive health problems, menstrual irregularities and premenstrual symptoms such as irritability, anxiety, abdominal bloating, depression, breast tenderness, and sleep changes are common in adult students. The females of growing age also have some issues (like shame) to discuss their menstrual problems with their parents and colleagues.

Menstrual discomfort such as abdominal pain, and irritability are common causes of absence from the university every month which disturbs their studies and their normal work routine during peak years of their life. Symptoms like abnormal uterine bleeding, abdominal bloating, and irritability may be symptoms of other gynecological, reproductive, or systemic morbidities but in the last few years, several studies from

developing countries have assessed that menstrual symptoms are key for other reproductive morbidities (13).

Unluckily, the prevalence of dysmenorrhea, abdominal bloating, breast tenderness, sleep changes, irritability, and mood swings is high in adult female students who also have inadequate and improper knowledge about premenstrual symptoms (14).

Premenstrual symptoms some sometimes related to maternal history of premenstrual syndrome, and parity but there is no relation between caffeine intake with premenstrual syndrome (15). The reoccurring premenstrual syndrome like irritability, abdominal bloating, and breast tenderness after menarche is common in students of reproductive age and gradual decrease in cycle length before menopause (16).

There are many definitions of the premenstrual syndrome but it is accepted that premenstrual syndrome is associated with several physical and psychological symptoms that repeatedly occur in the luteal phase of the menstrual cycle, in the follicular phase it remits for at least 1 week, leading to the distress and functional disturbance in the luteal phase of menstrual flow, premenstrual syndrome is the cyclic regularity of actual and effective symptoms and 1-3 days of the next follicular phase (17). Before the onset of menstruation, the majority of females of child-bearing age suffer from emotional and physical symptoms. Some women are severely affected by premenstrual syndrome and it mostly affects their studies, mental health, and relationships. The incidence of premenstrual syndrome (PMS) is high in unmarried females and mostly it occurs under 35-44 years women these women mostly belong to low socioeconomic status as well as rural areas (18).

There are some risk factors like stress, age, marital status, and body mass index that were found to aggravate the symptoms of premenstrual syndrome in several studies.

Premenstrual syndrome was also found to be associated with the low parity group. It was also found that this syndrome is considerably associated with maternal history. While caffeine intake was not associated with it. All these factors show an important correlation with premenstrual syndrome (19).

According to the study conducted by Pal et al. on Pakistani women narrates that the most prominent physical symptoms like agitation, mood swings, cramps, and abdominal bloating had been experienced by the women which is commonly associated with premenstrual syndrome.

Some other symptoms like joint and muscle pain, breast tenderness, and back pain were considered as most prevalent symptoms (20). The most frequently reported symptoms by the authors included anxiety, depression, anger, and fatigue (21). Some skin disorders, and gastrointestinal symptoms such as decreased appetite, headache, and swelling of arms, and legs (extremities) are also experienced by women with premenstrual syndrome (22).

It was also found that some women use self-medications such as taking painkillers, increasing hot fluid intake, use of warm clothes and preferring to lie down on their abdomen during menstruation to alleviate the symptoms while the majority of women mostly avoid these self-treatment strategies (23). The more serious condition known as premenstrual dysphoric disorder has less clinical significance than premenstrual syndrome.

This disorder is associated with behavioral symptoms that occur during the ovulatory cycle of the luteal phase. A small number of women are reported to experience these premenstrual dysphoric disorders (24).

Previously no study has been investigated in Pakistan based on the comparison of females suffering from PMS to those who

think they have the syndrome but don't fulfill the clinical criteria.

It has been discovered that Maximum girls with proficient degrees report more extreme premenstrual side effects than those with less conventional instruction (ie, no tutoring at center school) (25).

On the other hand, going to a college and being in an expert situation may make girls progressively mindful of the presence of premenstrual indications as a result of more extensive presentation.

Another chance is that proficient girls have more access to specific media, including that of different nations, as might be the situation of the North American models of PMS.

Hence, self-announced symptomatology might be influenced by a girl's thoughts regarding the manifestations she should encounter (26).

Etiology of Premenstrual Syndrome

causes of premenstrual syndrome are not clear because the premenstrual syndrome is related to the luteal phase, but many factors are linked with premenstrual syndrome.

Chemical changes in the brain and psychological changes such as anxiety, depression, mood swings, and sleep changes do not directly cause premenstrual syndrome but they can worsen premenstrual syndrome symptoms, while changes in hormones are more common in several female students.

Low food intake, appetite changes, and low water and mineral use can cause anemia and abdominal changes which may worsen the symptoms of premenstrual syndrome symptoms can be increased by higher sodium, alcohol, and caffeine intake and cigarette smoking.

Salt intake, alcohol, caffeine, and cigarette smoking are restricted in premenstrual syndrome, and excessive exercise with a balanced diet is recommended in patients with premenstrual syndrome (27). Then again, an absence of information can add to

an assortment of reactions including uneasiness and self-care shortage.

The symptoms reappear every month and in the maximum reproductive year, these symptoms last for 6 days per year. It has been determined that influenced women experience right around 3000 days of serious symptoms during the reproductive years.

In differentiation, a few specialists have recommended that lower financial status is related to a higher prevalence of PMS. It is conceivable that the familiarity with PMS will be higher in women from higher financial status while the nearness of different factors, for example, social propensities and living conditions may clarify the higher prevalence in women from lower financial status (31).

In the previous decade, premenstrual syndrome (PMS) has become the subject of logical examination. Accordingly, demonstrative criteria have been created, and the pathophysiology of the disorder explained. The dominance of proof recommends that the confusion is the effect of the result of cyclic changes in estrogen and progesterone with important neurotransmitters. Serotonin and gamma-aminobutyric acid (GABA) give off an impression of being particularly significant right now. Expanded comprehension of PMS has empowered the advancement of explicit treatment modalities that, in contrast to experience, have shown adequacy in thorough and reproducible investigations. The suggestion is that ovulation, or ovulation-related forms, are a significant factor in the pathophysiology of PMS. Menstrual-related clutters influence several women of regenerative age.

Management and Treatment of PMS

Managing PMS involves a combination of lifestyle changes, dietary adjustments, and, in some cases, medical treatment. The goal is to alleviate symptoms and improve overall well-being.

Lifestyle Modifications:

Regular physical activity, such as aerobics, yoga, or walking, can improve mood, reduce stress, and promote better sleep. Meditation, deep breathing exercises, and mindfulness can help manage stress and alleviate emotional symptoms of PMS. Consistent and restful sleep can help mitigate fatigue and improve mood during the premenstrual period.

Dietary Changes

Eating a well-balanced diet with whole grains, fruits, vegetables, and lean proteins can help stabilize blood sugar levels and reduce cravings. Limiting caffeine and sugary foods can reduce mood swings and irritability. Calcium and magnesium-rich foods, such as dairy products and nuts, may help reduce symptoms like bloating, mood swings, and headaches. Drinking plenty of water can also help alleviate bloating and reduce water retention.

Medical Treatments

Nonsteroidal anti-inflammatory drugs (NSAIDs) like ibuprofen can help relieve physical symptoms such as cramps, headaches, and joint pain. In some cases, hormonal treatments like birth control pills may be prescribed to regulate menstrual cycles and reduce PMS symptoms. For severe PMS, particularly when mood-related symptoms are predominant, selective serotonin reuptake inhibitors (SSRIs) may be prescribed to help manage depression and anxiety (28).

Medicinal Plants for Premenstrual Syndrome

***Hypericum perforatum* L.**

To relieve the effects of premenstrual syndrome, conventional evidence suggests that Hypericum is useful. Double-blind, randomized placebo control A study was performed to compare the effectiveness of Hypericum with placebo in relieving premenstrual syndrome symptoms. For a period of two periods, 70 Tehran University

participants with PMS and in good mental and physical health were included in the study. In symptoms, the average decrease in Hypericum was 46.45 and placebo was 18.1%. All symptoms between the two groups were substantially reduced. ($p=0.000$). Hypericum has not been withdrawn or difficult and therapy was well tolerated. Hypericum prevents premenstrual syndrome and provides luteal treatment for two or more periods (29).

Matricaria chamomila

A study was conducted to measure the effects of chamomile extract and mefenamic acid (MA) on premenstrual syndrome (PMS) symptom severity. The study was a scientifically randomized, double-blind study performed on 90 students who live in Iranian hostels. For two consecutive months, participants completed regular PMS strength forms. Two groups were made following the final diagnosis of PMS, each of which obtained 100 mg of capsules of chamomile or 250 mg of MA thrice a day. There was no substantial difference between the groups in the reduction in the severity of physical symptoms ($p>0.05$). In relieving the severity of symptomatic mental pain associated with PMS, ingestion of chamomile tends to be more effective than MA (30).

Artemisia vulgaris

Mugwort has many typical uses across the globe. It is used by California Chumash Indians to treat imbalances in women, such as premenstrual syndrome, dysmenorrhea, and symptoms of menopause. The plant has sesquiterpenes that seem to function and may benefit women via a serotonergic process. Moustache therapy is safer for menopausal women than hormone replacement. Care with Mugwort supports kids disabled by hyperactivity disorder (31).

Elsholtzia splendens* and *Cirsium japonicum

In premenstrual, the effects of aromatic edible *Elsholtziasplendens* and *Circium japonicum* in 30 female participants in their 20s were examined for 30 months. In the group treated with *Elsholtzia splendens*, the levels of depression and anxiety were substantially lower than in the group treated with *Circium japonicum* capsules. Additionally, in the group treated with *Elsholtziasplendens* tablets, pre-menstrual appraisal volatility was substantially reduced. The results indicate that in alleviating the symptoms of PMS, *Elsholtzia splendens* may be an efficient botanical material (32).

wheat germ extract

The research studied the properties of the wheat germ and, as a result of the effects of wheat germ extract, determined the symptoms of premenstrual syndrome. This triple-blind clinical trial was conducted at Hamadan University in 84 women's hospitals. The subjects filled out a daily registry of symptoms for two consecutive months. After the definitive diagnosis of premenstrual syndrome, they were randomly split into two groups of 50 individuals. Then, for two consecutive months, 400 mg tablets were used three times daily from day 16 to day 5 of the next menstrual cycle, three times a day. Wheat germ has substantially decreased physical symptoms (63.56%), mental symptoms (66.30%), and overall score (64.99%). In both groups, the severity of the symptoms was decreased, but this decrease was more pronounced in the wheat germ extract group ($p < 0.001$). Physical effects, on the other hand, were only decreased in the wheat germ extract ($p < 0.001$) and no substantial difference was seen in the placebo community. At every party, no side effects were seen. It appears that the use of wheat germ extract reduces physical general and psychological symptoms (33).

Nardostachys jatamansi

The study on the *Nardostachys jatamansi* the efficacy and safety in decreasing PMS symptoms in people who were otherwise healthy was evaluated. 60 females aged 18 to 45 were studied in this single-blind, randomized, placebo-controlled sample. A total of 4 g of N is randomly distributed to participants. Jatamansi (2 capsules 3 times a day) or placebo for a 15-day duration before menstruation for 2 consecutive menstrual cycles. The scores for premenstrual observation scale tension syndrome (PMTS-O), self-scale premenstrual tension syndrome (PMTS-SR), and visual analog scale (VAS) were reported both at the baseline level and after the first and second periods of treatment. Further follow-up with patients was performed one month after the end of therapy. The mean PMTS-O and PMTS-SR scores for n were significantly reduced statistically after two months of therapy (34).

***Melissa officinalis* (M. officinalis)**

Mirghafourvand et al. evaluated the impact of *M. officinalis* on PMS in children in high school. A double-blind, randomized placebo-controlled experiment was performed by 100 high school girls from 2013 to 2014. The intervention group gained 1200 mg of M ($n = 50$). *Officinalis* is used every day from the first day to the last day of the menstrual cycle for three successive periods. The second group was given a Placebo ($n = 50$). The premenstrual symptoms screening procedure was used in both groups before and one, 2, and 3 months after surgery to assess the severity of symptoms of PMS. A t-test together with repeated variance measurement analysis was used to evaluate the results. The outcome demonstrated that *M. Officinalis* Capsules have been effective in reducing PMS symptoms. For the implementation of this medication, however, further studies are needed (35, 36).

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