Impact of Premenstrual Syndrome on Quality of Life

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Most women who menstruate experience various physical, psychological, and behavioral changes during the period between ovulation and menstruation.

premenstrual syndrome quality of life physical activity

1. Introduction

Most women who menstruate regularly undergo a range of physical, psychological, and behavioral changes during the period between ovulation and menstruation. One of the first descriptions of these changes was presented by Horney in 1931 [1]. Around the same time as Horney's description, another significant paper by Frank is often acknowledged as the first modern clinical account of premenstrual symptoms [2]. Like Horney, Frank also used the term "premenstrual tension" to highlight the cyclical emotional disturbances that occurred during the latter part of the menstrual cycle. Although these two researchers began to focus on menstruation and its associated symptoms during the same historical period, their perspectives on this condition were markedly different. The feminist psychoanalyst Karen Horney described "premenstrual tension" as a psychological response to anxieties and fantasies associated with pregnancy, as well as frustrations resulting from cultural restrictions on the expression of female sexuality, while Robert Frank, the gynecologist often credited with identifying premenstrual tension, attributed the symptoms to accumulations of the female sex hormone estrogen and advocated medical intervention. Frank considered premenstrual tension a dysfunction, Horney argued that it was not a pathological process because mood fluctuations, anxiety and irritability, occurred in otherwise healthy women. Frank's focus shifted increasingly towards a substantial cohort of women facing diverse premenstrual disturbances. It is a well-known fact that ordinary women experience varying levels of discomfort before the onset of menstruation. These minor disruptions encompass heightened fatigue, irritability, diminished concentration, and episodes of pain. However, in a different subset of patients, the reported symptoms were serious enough to necessitate a day or two of bed rest. Among this group, pain takes center stage as the prevailing issue. Yet, another category of patients presented significant systemic disorders during the premenstrual phase. And it is precisely these latter two groups of patients that Frank aimed to shed light on, primarily from a hormonal and clinical perspective, thus laying the groundwork for an in-depth study of these disorders. However, in 1953, Greene and Dalton reasoned that emotional tension was just one of several components of this condition. They suggested that it should be more appropriately named "premenstrual syndrome" [3]. The shift from "premenstrual tension" to "premenstrual syndrome" reflects a transformative evolution in the conceptualization and understanding of the cluster of

symptoms experienced by menstruating women. Originally characterized as “premenstrual tension”, the term emphasized the emotional and psychological aspects of the disturbances occurring in the latter part of the menstrual cycle. However, as subsequent research expanded the scope and recognition of diverse physical, emotional, and behavioral changes during this phase, it became evident that the term “tension” inadequately captured the complexity of the condition. This shift allowed for a more inclusive and comprehensive understanding of the condition, recognizing its multifaceted nature.

2. Definition and Diagnosis

Premenstrual disorders refer to psychiatric or physical symptoms that arise during the luteal phase of the menstrual cycle, affecting the individual’s normal daily functioning, and typically subside shortly after menstruation begins. The luteal phase begins after ovulation and lasts until the onset of menstruation.

It is necessary to make a distinction between premenstrual symptoms (PS), premenstrual syndrome (PMS), and premenstrual dysphoric disorder (PMDD).

Typical PS encompass a variety of physical, emotional and behavioral changes, including feelings of depression, angry outbursts, irritability, crying spells, anxiety, confusion, social withdrawal, poor concentration, sleep disturbances, and alterations in thirst and appetite. Additionally, physical symptoms such as breast tenderness, bloating, weight gain, headaches, swelling of the hands or feet, and aches or pains are commonly experienced [4]. In the two weeks prior to the start of menses, up to 75% of premenopausal women are thought to suffer at least one physical or emotional symptom [5].

Between 50 and 80 percent of women feel menstrual discomfort during this time, while between 30 and 40 percent of women develop PMS [6].

PMS can be diagnosed if woman reports at least one of the affective and somatic symptoms, defined by the American College of Obstetricians and Gynecologists, during the five days before menses in each of the three previous menstrual cycles.

3. Epidemiology and Etiology

During the luteal phase of their menstrual cycle, almost 80% of women report at least one physical or psychological symptom; however, the majority do not report a severe impairment in their everyday lives. Age, educational attainment, or employment status have no bearing on the frequency of PMS. The duration and severity of symptoms can change. Only 36% of women who were given a PMS diagnosis remained to match the criteria a year later, according to one study [7]. Women who gained weight or experienced a stressful incident in the last year are more likely to be diagnosed with PMS. The prevalence of PMDD ranges from 1.3% to 5.3%, and fewer women match the stricter diagnostic standards [8].

In a Japanese study, a significant number of Japanese women between the ages of 20 and 49 years, who attended a clinic for female cancer screening, reported premenstrual symptoms, and the prevalence rates of moderate and severe PMS and PMDD were 5.3% and 1.2%, respectively [9]. The 2007 Swiss Nationwide Health Survey revealed that 91% of Swiss women aged 15–54 years reported experiencing at least one symptom. Among them, 10.3% were diagnosed with PMS, while 3.1% met the criteria for PMDD [10].

The cause of PMS is complex and may be influenced by a combination of hormonal, genetic, environmental, and sociocultural factors. Additionally, other aspects related to the menstrual cycle, such as the age of menarche, menstrual flow, and other menstruation-related disruptions, may also contribute to the development of PMS [11]. The exact cause of premenstrual disorders remains poorly understood. Some research indicates that cyclical changes in estrogen and progesterone levels may trigger the symptoms [12]. Postmenopausal women with a history of PMS experienced recurring psychiatric and physical symptoms when undergoing cyclical progestogen therapy, suggesting a hormonal influence. Suppression of estrogen using gonadotropin-releasing hormone analogues has also shown significant improvement in PMS symptoms [13].

Moreover, the reasons why some women may be more sensitive to hormonal fluctuations are not yet well understood [14].

4. PMS, PMDD, and Quality of Life

A study by Kathleen et al. performed in a sample of young women found that, compared to women with low PMS, women with high PMS reported much more stress and a lower quality of life [15]. According to these findings, various studies show that PMS severely lowers patients' quality of life and places a heavy load on their ability to do their regular daily responsibilities and activities [16]. One study that examined the efficacy of a psycho-educational PMS intervention found that while it reduced the intensity of PMS and its associated somatization, anxiety, and hostility, it had no effect on the degree of sadness or interpersonal sensitivity [17].

PMS can significantly interfere with social life, employment, school, interpersonal relationships, and family [18][19], and is associated with decreased occupational productivity, poorer perceived quality of sleep, and increased healthcare use [20].

PMDD is a severe, sometimes disabling, extension of PMS, causing extreme mood shifts that can disrupt work and damage relationships [21]. In addition, PMS and PMDD may result in anxiety, depressed mood, and greater psychiatric comorbidity, producing both direct and indirect medical costs due to absenteeism and low productivity [22].

Some experts have proposed that a considerable number of women experiencing premenstrual symptoms might not be entirely absent from work; instead, they may choose to reduce their working hours or find their work efficiency to be diminished during this time. This implies that even though they may be physically present at their workplaces, their ability to perform optimally might be affected by the symptoms they are experiencing. It is crucial

to recognize that the impact of premenstrual symptoms on women's work performance can vary widely, and while some may opt for complete absence, others may still be affected to some extent, even when present at work. Therefore, addressing the issue of premenstrual symptoms in the workplace goes beyond just considering the absence of affected women, but also involves understanding the potential productivity challenges they may encounter during this phase of the menstrual cycle. Employers and organizations should be aware of these possibilities and consider providing support and accommodations to ensure the well-being and productivity of their female employees during such times [23].

5. Physical Activity

According to numerous researchers, different physiological systems, including the cardiovascular, central nervous system, endocrine, and female reproductive system, have been linked to PMS symptoms in terms of emotional, physical, cognitive, and behavioral aspects. Various treatment options are recommended for managing PMS symptoms. For instance, both the National Institute for Health and Care Excellence (NICE) and the Royal College of Obstetricians and Gynaecologists (RCOG) advocate exercise as a primary intervention. Additionally, medications like selective serotonin reuptake inhibitors and the combined oral contraceptive pill are also suggested alongside exercise [24]. Nevertheless, physical exercise is recognized for its ability to elevate endorphin levels, regulate the synthesis of progesterone and estrogen, and stimulate the production of naturally occurring anti-inflammatory substances [25]. In addition, exercise offers various other advantages, including enhanced overall fitness, opportunities for social interaction, and the potential to alleviate feelings of depression. These combined benefits may contribute to moderating the range of symptoms experienced in PMS [26]. A recent systematic review screened 15 randomized controlled trials comparing exercise interventions of a minimum of 8-weeks duration with non-exercise comparator groups in women with PMS, and highlighted that exercise may be an effective treatment for PMS [27]. They found that engaging in physical exercise could be beneficial in reducing psychological, physical, and behavioral symptoms linked to PMS, and may aid in managing the overall range of symptoms experienced during this period. These findings are consistent with those from another systematic review that investigated the effects of any form of physical exercise in women with PMS; the studies included effect of exercise such as aerobic exercise, yoga, swimming, and Pilates. Regardless of the specific type of exercise, regular physical activity appears to be effective in alleviating pain, constipation, and breast sensitivity, as well as psychological symptoms such as anxiety and anger, but the most effective type of exercise remains uncertain. As the exercise types seem to have similar effects on symptoms, individuals might be encouraged to choose the type of exercise that suits them best. Furthermore, engaging in long-term regular exercise programs is the crucial factor for a favorable outcome [28].

6. Conclusions

Physical activities are regarded as a beneficial alternative to medications for managing premenstrual symptoms, and they have been associated with promoting well-being during PMS episodes. Engaging in regular physical

activities can potentially improve hormonal balance, reproductive function, menstrual cyclicity, ovulation, and fertility in women of all ages [29].

Moreover, various studies have found that exercises can contribute to enhancing self-esteem, reducing depression, and alleviating anxiety among women experiencing PMS.

Previous reviews in the literature that recommend exercise during PMS have considered a wide range of physical exercises, including yoga, Pilates, and strength and conditioning. While exercises have been shown to be beneficial for managing PMS, there is still uncertainty about the specific type and dosage of therapeutic exercises that are most suitable for females with PMS. Additionally, there is a lack of specific reviews focusing on the impact of aerobic exercise in women of reproductive age with PMS.

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