

Research Article

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Efficacy of Body-Oriented Psychotherapy in Alleviating Symptoms of Primary Dysmenorrhea and Premenstrual Syndrome

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ABSTRACT

Dysmenorrhea and premenstrual syndrome (PMS) are prevalent among reproductive-aged women, significantly impacting their quality of life and daily functioning. These conditions often result in irritability, anxiety, depression, and decreased productivity. This study evaluates the effectiveness of body-oriented psychotherapy in mitigating the symptoms of PMS and primary dysmenorrhea among women of reproductive age. Sixty women with diagnosed dysmenorrhea or PMS were interviewed as part of a structured survey based on the Menstrual Distress Questionnaire (MDQ) and the Menstrual Distress Inventory (MDI). Following this, the participants underwent a course of body-oriented psychotherapy lasting from 14 days to 2.5 months. Pre- and post-intervention assessments were conducted to evaluate changes in pain levels and emotional well-being. Post-intervention analysis revealed a significant reduction in pain for 96% of participants, with 68.4% reporting improved emotional states and 36.4% experiencing reduced somatic symptoms. Common symptoms like headaches (65%), mastalgia (88%), pelvic and abdominal pain (100%), gastrointestinal disturbances (80%), and eating behavior disorders (93%) showed marked improvement. The results of this study contribute to our understanding of the effectiveness of body-oriented psychotherapy and suggest its potential as a non-pharmacological treatment option for reducing PMS and dysmenorrhea symptoms.

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Introduction

Scientific studies conducted worldwide indicate that up to 73% of women of reproductive age experience premenstrual syndrome (PMS), and up to 90% suffer from symptoms of primary dysmenorrhea. Dysmenorrhea and PMS are among the leading gynecological conditions affecting women of reproductive age [1-3].

This data confirms that the vast majority of women have to deal with monthly issues such as lower abdominal pain, breast tenderness, headaches, and increasing irritability, aggression, anxiety, and fatigue. Symptoms of depression and anxiety often emerge or worsen during this time.

Additionally, constant pain and discomfort frequently negatively impact daily activities, job performance, and family relationships, manifesting in conflicts, avoidance of social interactions, or contact with others.

Taking pain relievers doesn't always provide the desired effect and is a symptomatic treatment, meaning it does not address the underlying cause of the condition. Oral contraceptives, on the other hand, have a more radical impact compared to pain relievers. By literally stopping a woman's menstrual cycle, contraceptives can indeed help alleviate many symptoms. However, this method is not suitable for women planning a pregnancy, and it also has several side effects—both obvious and subtle. Taking pain relievers doesn't always provide the desired effect

and is a symptomatic treatment, meaning it does not address the underlying cause of the condition. Oral contraceptives, on the other hand, have a more radical impact compared to pain relievers. By literally stopping a woman's menstrual cycle, contraceptives can indeed help alleviate many symptoms. However, this method is not suitable for women planning a pregnancy, and it also has several side effects—both obvious and subtle.

Moreover, studies have found that women taking oral contraceptives experience changes in brain structure. Specifically, women using combined oral contraceptives (COCs) show a reduction in the size of the hypothalamus, which plays a crucial role in regulating many physiological processes, including heart rate, appetite, sleep, sexual desire, mood, and more [4].

Women's sexuality also changes: a 2012 study confirms that women taking oral contraceptives tend to choose men with more physical traits associated with lower testosterone levels. In contrast, women not using oral contraceptives are more likely to choose men with higher testosterone levels [5].

As a result, a woman seeking relief from the neuropsychological and somatic symptoms of dysmenorrhea and premenstrual syndrome is often forced to use pharmacological treatments that interfere with her nervous and hormonal systems, affecting her mood, sexuality, and overall health.

All of this highlights the insufficient research on the subject, the gaps in understanding the etiology of the condition, and the need for the development of safe and effective treatment methods.

The etiology of dysmenorrhea and premenstrual syndrome remains completely unclear. Several theories attempt to explain the cause of these conditions.

Some scientists propose a genetic theory for the development of dysmenorrhea and premenstrual syndrome. The available evidence indicates that estrogen gene polymorphism may be a cause of these disorders [6,7].

A number of researchers believe that the decrease in progesterone levels in the late luteal phase is associated with a reduction in GABA levels. However, this theory does not explain cases where PMS symptoms occur in some women during the middle of the luteal phase, when progesterone levels are highest [8].

An alternative hypothesis explains the manifestation of premenstrual symptoms as due to the preovulatory peak of estradiol, the postovulatory peak of progesterone, or both phenomena occurring simultaneously. However, this theory does not account for why some women experience PMS symptoms immediately after ovulation, while others develop similar symptoms at the end of the luteal phase [9].

Currently, many researchers link the occurrence of primary dysmenorrhea with high levels of prostaglandins (PG) F2 α and E2 in the menstrual endometrium, which are powerful stimulators of myometrial contractions. Elevated prostaglandin concentrations cause dysmenorrhea [10].

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Experiencing stressful life events is also a risk factor for developing dysmenorrhea. Furthermore, there is a correlation between dysmenorrhea and depression. [13,14].

Thus, despite the limited research in this area, it is evident that addressing psycho-emotional states and psychogenic causes of the condition may be an important component of comprehensive therapeutic work for dysmenorrhea and PMS.

Most scientists argue that prolonged uncontrolled stress is a primary cause of psychosomatic disorders. While experiencing short-term stressful events with high self-regulation abilities and a supportive environment is often safe and even beneficial, chronic stress or severe emotional trauma can have serious consequences for both psychological and physical health [15].

Since the main function of stress is self-protection, psychosomatic manifestations of emotional trauma are often viewed as dysfunctional mechanisms of mental defense. Typical manifestations of somatized stress include pains of unclear etiology, headaches, insomnia, vaginismus, and so on.

A 2003 study found an abnormal ratio of lymphocytes CD45RA and CD45RO in women who had experienced incest in childhood, compared to a control group. Such indicators suggest that the immune system becomes excessively sensitive to threats and prone

to activating a defensive response even when not needed, which is a major factor in the development of autoimmune diseases [16].

Many psychotherapists consider PTSD to be one of the causes of obesity, especially among women who have experienced sexual violence. In this case, excess weight becomes a form of protection from potentially dangerous male attention [17,18].

It is proposed that dysmenorrhoea and premenstrual syndrome (PMS) should be investigated as potential symptoms of emotional trauma and somatized stress. In this context, it may be beneficial to consider the efficacy of treatments that have been demonstrated to be effective in treating somatic disorders associated with chronic stress, post-traumatic stress disorder (PTSD) and complex PTSD. These treatments may also have the potential to alleviate the symptoms of dysmenorrhoea and PMS. It is worth noting that ignoring the psychological causes of dysmenorrhea and PMS can lead to undesirable consequences. For example, there have been cases where patients suffering from obesity due to psychological distress, after weight loss (particularly through bariatric surgery), developed other stress compensation mechanisms, such as self-harm. This highlights the potential danger of pharmacological treatment of psychosomatic disorders without psychotherapeutic work, as such an approach may lead to the development of other, sometimes more dangerous symptoms. If dysmenorrhea and PMS are somatized manifestations of the body's protective response, then treating these disorders with oral contraceptives without considering psychological causes and without psychotherapeutic intervention may pose a threat to the patient's health [19].

Symptoms of chronic stress and PTSD, including somatic and neuropsychological manifestations such as anger outbursts, anxiety, attention deficit, sleep disturbances, and compulsive behavior, often do not occur constantly. These symptoms are most likely to appear during periods of particular vulnerability—when facing difficulties at home or work, during illnesses, and when the body is weakened. By this analogy, it can be hypothesized that a woman's vulnerable state in the last days of the menstrual cycle, as well as during menstruation, creates conditions conducive to the manifestation of somatized stress or psychophysiological trauma symptoms, including somatic (pain) and neuropsychological (irritability, anxiety, tearfulness). These further underscore the importance of analyzing the psychological profile of women with diagnosed dysmenorrhea and PMS [20].

The Use of Body-Oriented Psychotherapy in Working with Somatized Stress

When dealing with somatized stress, body-oriented psychotherapy tools are often used. Today, there are many different methods of body-oriented psychotherapy, but they often share key elements: self-acceptance, body awareness, breathing exercises, and the integration of relaxation exercises with exercises aimed at developing muscular strength.

Previous global research has confirmed the direct impact of self-acceptance on overall well-being. A meta-analysis of 136 studies confirmed a positive relationship between self-acceptance and adaptive coping behavior. Research shows that self-compassion fosters resilience in the face of a wide range of life challenges, including divorce, domestic violence, sexual assault, natural disasters, raising a child with special needs, or discrimination. Studies indicate that self-compassion helps trauma survivors to grow and learn from their experiences after a traumatic event, reducing symptoms of post-traumatic stress disorder (PTSD) [21].

Mindfulness or meditation is effective in reducing sympathetic activity, lowering cortisol levels through modulation of the hypothalamic-pituitary-adrenal axis, and decreasing negative behavioral activity. A study published in 2002 in the journal Cognitive Brain Research confirmed increased endogenous dopamine production in the ventral striatum during certain meditation practices. Longitudinal research published in 2010 in Psychiatry Research confirms the positive impact of MBSR (Mindfulness-Based Stress Reduction) practice on increasing gray matter density in brain areas associated with stress regulation, learning, memory, empathy, compassion, and prediction, positively affecting many cognitive functions. There is evidence that regular meditation practice leads to a reduction in symptoms of depression and PTSD [22-24].

Breathing practices play an important role in various psychotherapeutic techniques. In a study published in Hypertension Research, scientists found that in individuals with mildly elevated blood pressure, reducing the breathing rate from 16 ± 3 breaths per minute to 5.5 ± 1.8 breaths per minute for 15 minutes reduced sympathetic nervous system activity [25].

Previous research confirms the effectiveness of physical exercises, such as yoga, in reducing PTSD symptoms, including somatized stress [26].

While relaxation techniques are effective for reducing emotional tension, several articles confirm that some individuals experience increased anxiety during relaxation training. Muscle tension helps many people alleviate unpleasant PTSD symptoms [27-29].

By integrating the aforementioned tools, we developed an original body-oriented psychotherapy method called Woman’s Mainstay. The hypothesis of this study is that the application of this method will be effective in reducing the symptoms of dysmenorrhea and premenstrual syndrome (PMS).

Materials and Methods

Sixty women diagnosed with dysmenorrhea were invited to participate in the study. All women participated voluntarily and provided written consent. The average age of the participants was 36 years. At the beginning of the study, all participants underwent testing to assess the severity of symptoms. The questionnaires used included the Menstrual Distress Questionnaire by Rudolf Musa and the Menstrual Distress MEDI-Q Questionnaire.

Following the initial diagnosis, the participants underwent a course of body-oriented psychotherapy using remote technologies. The original method, Woman’s Mainstay, was implemented during the course of two months, with sessions conducted five days per week. Each session lasted 40 minutes. Upon completion of the course, a follow-up diagnosis was conducted. Survey results were processed using the IBM SPSS Statistics software package, version 27.1.

Based on global practice, we developed the Woman’s Mainstay method, integrating fundamental principles of body-oriented psychotherapy.

The core of the developed method is the mood of self-acceptance, which is cultivated during the sessions. Before each session, the instructor emphasizes the importance of gentle care for one’s body, attentiveness to one’s sensations, avoidance of pain during exercises, and a mindset of self-care.

The second important component of the proposed method is mindfulness or meditation. The practice begins with observing the breath and bodily sensations. During the exercises, the instructor regularly reminds participants of the importance of observing their sensations and staying in the present moment.

The third component of the proposed method is conscious “diaphragmatic” breathing. During the practice, participants learn to be aware of their breathing, making it deeper and slower.

Other important components of the practice include various exercises aimed at muscle relaxation, muscle tone development, and joint mobility. We use a combination of different types of exercises, alternating between relaxation and tension. Special attention is given to the pelvic muscles, pelvic floor, and lower abdominal muscles, as this area is where pain is most often concentrated during menstruation.

An additional tool in the developed method includes various cyclic movements that have previously proven effective in different body-oriented therapy systems. This includes several exercises from the Key method by Hasaya Aliev, as well as wave-like movements.

Results

Analysis of Differences in the Proportion of Expression (Never, Sometimes, and Often) of Symptoms of Dysmenorrhea and Premenstrual Syndrome was conducted using the nonparametric Sign Test for related samples due to the qualitative measurement scale of the variables (see application 1).

Table: Analysis of Differences in the Proportion of Expression of Dysmenorrhea and Premenstrual Syndrome Symptoms (Never, Sometimes, and Often) Before and After Body-Oriented Training

during menstruation and/ or 5 days before the onset of menstruation?	Never		Sometimes		Often		p value Sign Test
	BEFORE	AFTER	BEFORE	AFTER	AFTER	НОЧЛЕ	
Searching for ways to reduce pain	6,7% (4)	76,7% (46)	38,3% (23)	23,3% (14)	55% (33)	0% (0)	<0,01**
Pain during daily activities and/ or work	0% (0)	81,7% (49)	46,7% (28)	18,3% (11)	53,3% (32)	0% (0)	<0,01**
Abdominal pain	0% (0)	56,7% (34)	28,3% (17)	43,3% (26)	71,7% (43)	0% (0)	<0,01**
Swelling and painful sensations in the breasts	11,7% (7)	41,7% (25)	33,3% (20)	56,7% (34)	55% (33)	1,7% (1)	<0,01**
Headaches	35% (21)	76,7% (46)	43,3% (26)	21,7% (13)	21,7% (13)	1,7% (1)	<0,01**
Excessive sadness	5% (3)	58,3% (35)	31,7% (19)	41,7% (25)	63,3% (38)	0% (0)	<0,01**

Emotional instability	6,7% (4)	48,3% (29)	18,3% (11)	51,7% (31)	75% (45)	0% (0)	<0,01**
Experiencing excessive irritability or anger	5% (3)	48,3% (29)	31,7% (19)	51,7% (31)	63,3% (38)	0% (0)	<0,01**
Experiencing anxiety	25% (15)	80% (48)	43,3% (26)	20% (12)	31,7% (19)	0% (0)	<0,01**
Suffering from insomnia	58,3% (35)	85% (51)	31,7% (19)	13,3% (8)	10% (6)	1,7% (1)	<0,01**
Experiencing excessive drowsiness	13,3% (8)	65% (39)	53,3% (32)	31,7% (19)	33,3% (20)	3,3% (2)	<0,01**
Excessive fatigue	5% (3)	53,3% (32)	38,3% (23)	43,3% (26)	56,7% (34)	3,3% (2)	<0,01**
Excessive hunger, overeating, loss of control over eating behavior	6,7% (4)	46,7% (28)	38,3% (23)	51,7% (31)	55% (33)	1,7% (1)	<0,01**
Digestive problems	20% (12)	61,7% (37)	35% (21)	35% (21)	45% (27)	3,3% (2)	<0,01**

Note: Differences are significant at the level of $p < 0.0$

Statistical Criteria

	Do you often look for ways to reduce pain during menstruation and/or within ±5 days before the onset of menstruation?	Do you experience pain during menstruation and/or within ±5 days before the onset of menstruation in daily activities and/or work?	Do you feel pain in the lower abdomen during menstruation and/or within ±5 days before the onset of menstruation?	Do you experience bloating and painful sensations in the chest during menstruation and/or within ±5 days before the onset of menstruation?	Do you experience headaches during menstruation and/or within ±5 days before the onset of menstruation?	Do you feel extreme sadness during menstruation and/or within ±5 days before the onset of menstruation?	Do you feel emotional instability during menstruation and/or within ±5 days before the onset of menstruation?	Do you feel extreme irritability or anger during menstruation and/or within ±5 days before the onset of menstruation?	Do you feel extreme fatigue during menstruation and/or within ±5 days before the onset of menstruation?	Do you experience extreme hunger, desire to overeat, or loss of control over eating behavior during menstruation and/or within ±5 days before the onset of menstruation?
Z	-6.343b	-6.596b	-6.298b	-5.437c	-4.522b	-6.374c	-6.300b	-6.054c	-6.067b	-5.210c
Asymptotic Significance (Two-tailed)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Notes:

- a. Wilcoxon signed-rank test.
- b. Based on positive ranks.
- c. Based on negative ranks.

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
СПДМипМСС_ДО	,125	60	,021	,955	60	,027

a. Lilliefors Significance Correction

	Symptoms of dysmenorrhea and premenstrual syndrome BEFORE undergoing somatic therapy training	Symptoms of dysmenorrhea and premenstrual syndrome AFTER undergoing somatic therapy training
N	Valid 60 Missing 0	Valid 60 Missing 0
Mean	32,9167	19,3667
Median	33,0000	19,0000
Std. Deviation	4,11814	3,37973
Minimum	21,00	14,00
Maximum	41,00	30,00
Percentiles		
	25 31,0000	17,0000
	50 33,0000	19,0000
	75 35,7500	21,0000

Significant differences were found in the prevalence (never, sometimes, and often) of all 14 studied symptoms of dysmenorrhea and premenstrual syndrome ($p < 0.01$). The specific nature of these differences is shown in the figure.

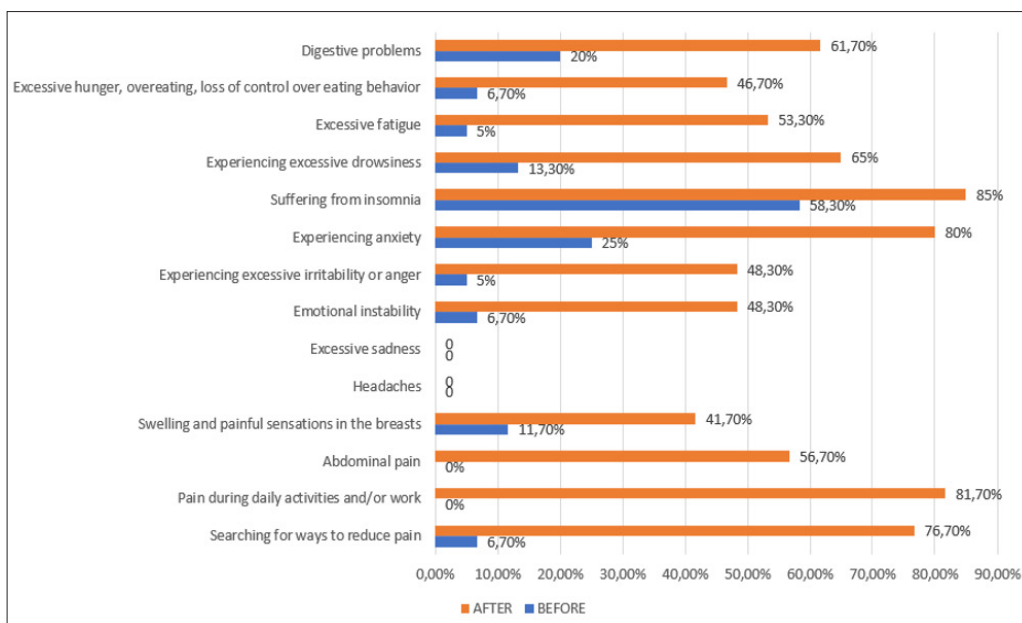


Figure 1: Significant Changes in the Proportion (%) of Absence of Dysmenorrhea and Premenstrual Syndrome Symptoms

After completing the body-oriented training, a significantly higher proportion of women responded with “never,” indicating the absence of the following symptoms: searching for ways to reduce pain – 76.7% (previously 6.7%), pain in daily activities – 81.7% (previously 0%), lower abdominal pain – 56.7% (previously 0%), bloating and painful sensations in the chest – 41.7% (previously 11.7%), headaches – 76.7% (previously 35%), extreme sadness – 58.3% (previously 5%), emotional instability – 48.3% (previously 6.7%), extreme irritability – 48.3% (previously 5%), anxiety – 80% (previously 25%), insomnia – 85% (previously 58.3%), excessive drowsiness – 65% (previously 13%), extreme fatigue – 53.3% (previously 5%), extreme hunger – 46.7% (previously 6.7%), and digestive problems – 61.7% (previously 20%).

The questionnaire assessing the severity of dysmenorrhea and premenstrual syndrome symptoms included 14 questions with the following response options: never, sometimes, often. The responses were coded as never – 1 point, sometimes – 2 points, often – 3 points.

Due to the author’s creation of the set of questions for the dysmenorrhea and premenstrual syndrome symptom questionnaire, a consistency check (internal validity) of the questions was conducted using Cronbach’s Alpha reliability coefficient (see table 1).

Table 1: Internal Consistency Check of Questions for Assessing the Reliability of the Composite Variable of Dysmenorrhea and Premenstrual Syndrome Symptom Severity

Questions	Cronbach’s Alpha Values	Reliability Assessment
14 Questions on Dysmenorrhea and Premenstrual Syndrome Symptoms BEFORE the Body-Oriented Therapy Training	0,712	sufficient
14 Questions on Dysmenorrhea and Premenstrual Syndrome Symptoms AFTER the Body-Oriented Therapy Training	0,755	sufficient

Given the sufficient reliability, it is appropriate to conduct further evaluation and comparative analysis of the new variables, symptoms of dysmenorrhea and premenstrual syndrome, before and after the training, based on the total scores of 14 symptoms.

Accordingly, the coding yielded a minimum score of 14 points on the questionnaire, an average score of 28 points, and a maximum score of 42 points.

The analysis of the differences in the severity of dysmenorrhea symptoms before and after the body-oriented training was conducted using the non-parametric Wilcoxon test due to the data distribution not meeting the normality assumption (see table 2).

Table 2: Analysis of the Differences in the Severity of Dysmenorrhea and Premenstrual Syndrome Symptoms Before and After Body-Oriented Therapy Training

	Me [Q1 – Q3] (Min – Max)		p – value Wilcoxon
	BEFORE undergoing body-oriented therapy training	AFTER undergoing body-oriented therapy training	
Symptoms of Dysmenorrhea and Premenstrual Syndrome	33 [31 – 35,75] (21 – 41)	19 [17 – 21] (14 – 30)	<0,001**

Note: Me – median; Q1 – lower quartile; Q3 – upper quartile; Min – minimum value; Max – maximum value; ** Differences are significant at $p < 0.01$

Significant differences were found in the median severity scores of dysmenorrhea and premenstrual syndrome symptoms before and after undergoing body-oriented therapy ($p < 0.01$).

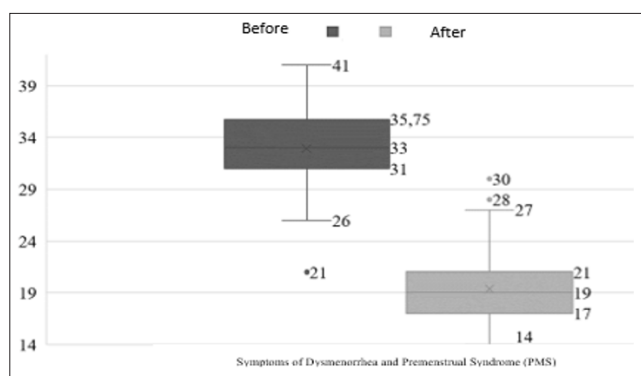


Figure 2: Significant Differences in the Median and Spread of Data on the Severity of Dysmenorrhea and Premenstrual Syndrome Symptoms Before and After Body-Oriented Therapy Training

After the training, women showed a significant decrease in the median severity scores of dysmenorrhea and premenstrual syndrome symptoms to 19 [17–21] (14–30), compared to the pre-training scores of 33 [31–35.75] (21–41).

Conclusions

The use of body-oriented psychotherapy has been substantiated as an effective approach to reducing symptoms of premenstrual syndrome and dysmenorrhea. The obtained results support the recommendation of body-oriented therapy practices as a beneficial method for alleviating pain and improving the overall emotional well-being of women of reproductive age.

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