

Effect of *Baddha Konasana* on Physical and Psychological Health of Women with Pre-Menstrual Dysphoric Disorder (PMDD) - An Experimental Study

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ABSTRACT

Introduction: Premenstrual Dysphoric Disorder (PMDD) is characterized by severe physical and psychological symptoms that occur before menstruation, significantly affecting women's daily lives and relationships. Despite affecting 3-8% of women of reproductive age, PMDD often remains under-recognized and undertreated. While several treatment approaches, including pharmacological and non-pharmacological interventions, have been proposed, there is limited research on the effectiveness of yoga poses, such as *Baddha Konasana*, in managing PMDD symptoms. Therefore, this study aimed to investigate the effect of *Baddha Konasana*, a yoga pose, on the physical and psychological health of women with PMDD.

Methods: An experimental study was conducted with a sample size of 55 women diagnosed with PMDD using the PSST scale. The diagnosed women were instructed to perform *Baddha Konasana* protocol for 7 days a week for 8 weeks. The severity of their physical and psychological symptoms was assessed using the DRSP scale during two consecutive luteal phases of their menstrual cycles. Data analysis was performed to compare the symptom scores between the first and second luteal phases.

Results: The PSST and DRSP scales were used to statistically analyze the effect of *Baddha Konasana* on women with PMDD. The analysis revealed that while there was a decrease in symptom severity from the first to the second luteal phase, the difference was not statistically significant ($p = 0.0747$).

Conclusion: The study did not find a significant effect of *Baddha Konasana* on the physical and psychological health of women with PMDD.

Keywords: Pre-Menstrual Dysphoric Disorder, PMDD, *Baddha Konasana*, Yoga, DRSP scale, PSST scale

INTRODUCTION

The menstrual cycle consists of four phases: menstruation, the follicular phase, ovulation, and the luteal phase. The length

of the menstrual cycle is defined as the number of days between the first day of menstrual bleeding of one cycle to the start of menstruation in the next cycle. It can be

divided into two main phases: the follicular phase, which spans from the beginning of menstruation until ovulation, and the luteal phase, which typically lasts around 14 days in most women. If conception doesn't occur during this time, a drop in progesterone levels triggers menstruation. [1]

In addition to undergoing physical alterations, women encounter both physical and emotional symptoms in the week or two leading up to the onset of their menstrual period. This phenomenon, commonly referred to as "premenstrual syndrome" or "PMS," affects around two-thirds of menstruating women, with mild breast discomfort being a prevalent symptom. Typically, individuals experience one or two symptoms prior to menstruation, which often alleviate as the period commences. The occurrence of PMS in some women is believed to be linked to specific neurotransmitters in the brain and their interactions with the hormone progesterone.[2]

Alongside these physical changes, many women experience psychological and physical symptoms in the days leading up to menstruation. This cluster of symptoms is known as premenstrual syndrome (PMS). While some discomfort before menstruation is common, PMS encompasses more severe symptoms that can significantly impact daily activities and quality of life. [3]

For some women, PMS can escalate into a condition known as premenstrual dysphoric disorder (PMDD) or late luteal dysphoric disorder (LLDD). PMDD is characterized by severe psychological and physical symptoms during the late luteal phase, impairing women's functions and quality of life. It represents the most severe form of PMS, requiring medical attention and management strategies to alleviate symptoms and improve overall well-being. [3]

The symptoms of PMDD, known as "premenstrual dysphoric disorder," can be exceptionally intense at times. PMDD impacts roughly 3% to 8% of women and encompasses both physical and

psychological manifestations that typically subside with the onset of menstruation. This condition may lead to severe mood fluctuations, which can adversely affect work performance and interpersonal relationships. Symptoms such as profound sadness, feelings of hopelessness, anger, or irritability, alongside typical PMS indicators like breast tenderness and bloating, are characteristic of PMDD. [4]

PMDD manifests during the luteal phase of the menstrual cycle, coinciding with ovulation. This phase encompasses the period of rise and subsequent fall post-ovulation, during which PMDD symptoms commonly arise. While any woman can develop PMDD, certain groups may face an elevated risk, including those with a familial history of PMS or PMDD, individuals with personal or familial histories of depression, postpartum depression, or other mood disorders. Additional potential risk factors may include smoking cigarettes. [5]

Baddha Konasana is also known as the Bound Angle Pose or the Butterfly Pose. Baddha Konasana stretches and opens hips. the abdominal region is stimulated by using this asana. It also soothes the menstrual symptoms such as cramps and low back pain, and relieves fatigue. It is speculated to open up the pelvic region and stimulate ovaries.

Many researches have been conducted on yoga poses in general for Menstrual disorders such as pre-menstrual syndrome, but due to low awareness about Pre-menstrual dysphoric disorder (PMDD), not many researches have tackled this topic and even less researches have been conducted on yogasanas that may relieve PMDD. The objective of the study was to diagnose PMDD using PSST (Pre-symptomatic symptom screening tool) and checking the effect of Baddha Konasana on Physical and Psychological health of women with PMDD during Luteal phases of two menstrual cycles using DRSP scale.

Thus, this study has aimed at determining the effect of Baddha Konasana, on Physical

and Psychological health of women with PMDD (Pre-menstrual Dysphoric Disorder).

MATERIALS & METHODS

An Experimental study was conducted in Pune city. The study was approved by the ethical committee. Women from the community were approached. The women included were in the reproductive age (13 - 45 years) with history of menstruation-related mood or behavioral disturbances of at least moderate severity within the last two years of at least six months with symptoms. The subjects who were included were non pregnant females with regular menses (cycle 28 or 30 days). Women on current antidepressant therapy were excluded. Also excluded were women consuming alcohol of magnitude which requires continuous treatment, pregnant or lactating women, women with any neurological disorder, women who exercise or do yoga regularly and women who have: diarrhea, prolapse of pelvic organs, hip or knee injury. [6]

Women were asked about the symptoms of PMDD. Over the course of a year, during most menstrual cycles, 5 or more of the following symptoms must be present: Depressed mood, Anger or irritability, Trouble concentrating, Lack of interest in activities once enjoyed, Moodiness, Increased appetite, Insomnia or the need for more sleep, Feeling overwhelmed or out of control. Other physical symptoms, the most common being belly bloating, breast tenderness, and headache.

Those who presented with positive symptoms were considered for the study. The study was explained to the subjects and the willing were included in the study. A signed consent was taken from the participants. This study was carried out in 55 Women from Pune region (Maharashtra) by using the PSST scale (Pre-menstrual symptom screening tool) for diagnosis of PMDD. A questionnaire used to diagnose PMDD with 19 items that allow the patient to rate the severity of their symptoms. PSST scale was taken just before 1st menstrual period started and PMDD was confirmed.

The severity of symptoms on physical and psychological health of women with PMDD was assessed by using the DRSP scale during the two consecutive luteal phases of their menstrual cycles. The DRSP scale has 24 components to score from with each box having minimum of 1 as a score and maximum of 6. The total score of Luteal phases cannot be more than 144 for one day. It was found that the scores of the Luteal phase of 1st menstrual cycle were higher than the scores of the Luteal Phase of 1st menstrual cycle.

For a 28-day cycle, the scores were recorded starting from the 14th day to the 28th day of menstrual cycle and for the 30-day cycle, the scores were recorded starting from the 15th day to the 30th day of menstrual cycle. These are the Luteal phases of the Menstrual cycle. Based on differences of the two luteal phase scores, the effect of Baddha Konasana on the physical and psychological health of women with PMDD were interpreted. Participants participated in protocol for 7 days a week for 2 months.

Baddha Konasana protocol was given to subject and scores recorded on each day for 14 to 15 days using the DRSP scale.

Patient is asked to start in Staff Pose (Dandasana). Then they are asked to sit directly on top of the sitting bones (ischial tuberosities). Participants are then asked to bend the knees and allow knees to fall open to both the sides. They are instructed to draw the soles of feet together and use hands to open them. Subjects then press shoulder blades against the upper back to lift through the sternum or chest. Clasp the ankles find lift along the torso. Then participant is instructed to lean forward as much as possible by flexing at the hips while keeping a long spine. To exit the pose, ask to gently release the feet and come back to Staff Pose.

The duration: < 7 minutes and there are 3 Sets. The rest is 30 sec between sets and there are 3 repetitions and each rep is held for 30 seconds. A 10 second rest is kept between repetitions.

Asana is practiced on non-slip yoga mat.

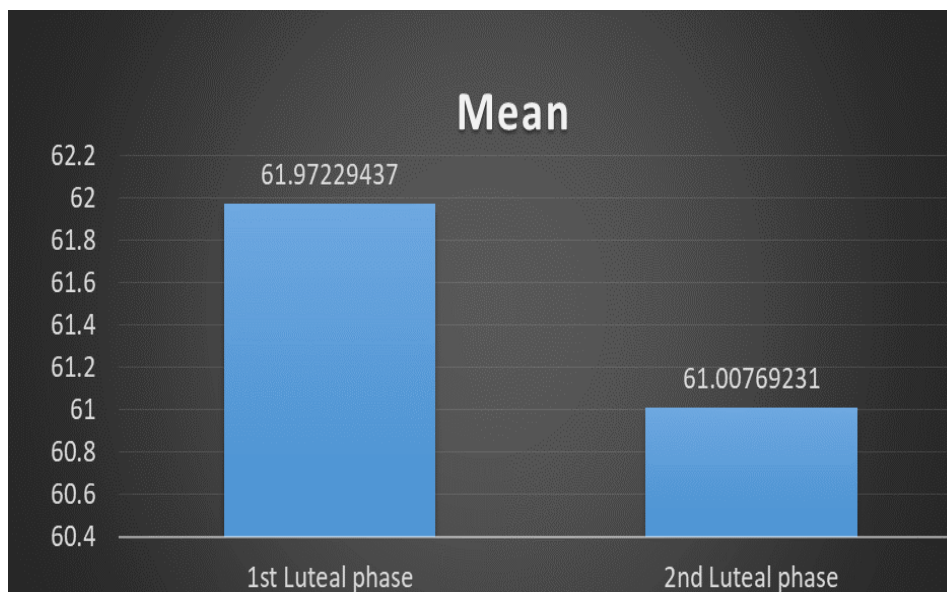


DATA ANALYSIS AND RESULT

This study was carried out in 55 Women from Pune region (Maharashtra) by using the PSST scale (Pre-menstrual symptom

screening tool) for diagnosis of PMDD and DRSP scale is used to record the scores and then used for data analysis.

	1 st Luteal phase	2 nd Luteal phase	T value	P value
Mean	61.9722943724	61.0076923075	1.8172	0.0747
SD Value	3.8691034418	4.6133787330		
SEM	0.5217098017	0.6220678615		
N	55	55		



Analysis of the data showed that the mean symptom score during the luteal phase of the first cycle was 61.972 ± 3.869 while it slightly decreased to 61.007 ± 4.613 during the luteal phase of the second cycle. Although this difference showed a reduced symptom severity in the second phase, it did not reach statistical significance (T value = 1.8172, P value = 0.0747).

DISCUSSION

The study aimed to check the effectiveness of Baddha Konasana on physical and emotional wellbeing of women with PMDD in the Pune region of Maharashtra, India. The study was carried out for two months. The PSST scale was used for diagnosis of PMDD and the DRSP scale was used for analysis of severity of problems. The study

assessed the differences in physical and psychological symptoms of the subjects during two consecutive Luteal phases of the menstrual cycle.

On analysis it was found that the physical and psychological severity of symptoms was higher during the first luteal phase compared to the second luteal phase. This observation is also seen in existing researches, which have often reported that symptoms have increased in the initial days of the luteal phase. The mean values of scores of the symptoms were higher in the first luteal phase compared to the second luteal phase, which indicates that worsening of symptoms is seen during this timeframe.

The difference was not statistically significant ($p = 0.0747$). The lack of statistical significance could be due to various factors, which includes the relatively small sample size of 55 participants and the variability of responses in individuals to the treatment intervention. Along with that, other variables such as lifestyle factors and individual differences in hormonal regulation could have influenced the outcome.

In the present study, the most possible reasons for the reduction in the symptoms could be the Baddha Konasana, which opened up the hips and stimulated the ovaries. It also soothes the abdominal region and may have reduced cramping and lower back pain, which could have relieved fatigue.

While the study provides valuable insights into the variations in symptom severity among women with PMDD, further research may explain the specific mechanisms underlying the observations. Longitudinal studies with larger sample sizes and controlled experimental designs could help confirm these findings and explore the potential role that Baddha Konasana protocol or other interventions could have in effectively managing PMDD symptoms.

Overall, there was a tendency for symptoms to decrease from the first cycle to the second cycle in the luteal phase, the difference was not statistically significant. This indicates

that the Baddha Konasana protocol may not have a sizable impact on reducing PMDD symptoms.

This study had a limitation that the subjects for the study were sometimes getting irritated. As the study required women to record symptoms daily, they started getting uncooperative as they did not have time to fill the scale due to daily schedules and had to be pushed to fill scale daily. The study duration was short, hence a definitive conclusion could not be drawn regarding the effectiveness of Baddha Konasana on women with PMDD.

In future, other asanas to help with PMDD can be incorporated. Further research with larger sample sizes and longer study designs could be done to confirm these findings.

CONCLUSION

From this study we can conclude that there has not been a significant effect on the physical and psychological health of women with PMDD after the implementation of Baddha Konasana in 2 months.

Declaration by Authors

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Conflict of Interest: The authors declare no conflict of interest.

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