

Rehabilitating Psychological Well-being in the Postpartum Phase: The Impact of Yoga Therapy and Overcoming Challenges

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Abstract

Purpose. The study aimed to promote, foster, and cultivate psychological well-being among women during their postpartum phase and devise yoga-based interventions that enhance the psychological well-being of postpartum women.

Material & Methods. A 'mood and self-esteem measure' was employed to evaluate 50 participants who had recently given birth at Annamalai University Hospitals in Chidambaram, Tamil Nadu, India. In the yoga sessions, these individuals were randomly assigned to either a yoga group (n=25) or a control group (n=25) comprising 16 instructional units conducted over eight weeks. Those who completed the postpartum therapy and participated in the study received continuous supervision. The yoga sessions took place in a public setting, and the duration gradually increased from 25 minutes, including setup and conclusion, in the initial four weeks to 35 minutes from the fifth week to the eighth week.

Results. The group participating in yoga demonstrated significantly more pronounced improvements in depression, anger, and tension compared to the control group, indicating moderate to substantial benefits. Yoga therapy groups and control of anger ($t = 44.10$ and $.338$) and the depression ($t = 74.789$ and 1.653), tension ($t = 24.608$ and $.428$). The yoga therapy groups exhibited significant alterations.

Conclusions. The results endorse yoga as a potential complementary therapy for women in the postpartum phase.

Keywords: Yoga Therapy, Postpartum depression, anger, tension, Randomized controlled trial.

Introduction

The postpartum period, a critical phase in a woman's life, is marked by significant physiological and psychological changes that can profoundly impact overall well-being. While this time is often associated with joy and the fulfillment of motherhood, it also brings challenges such as postpartum depression (PPD), anxiety, and stress, which can adversely affect both the mother and her infant. Postpartum depression, in particular, is a widespread concern, with prevalence rates ranging from 10% to 20% globally. The consequences of untreated PPD extend beyond the individual, influencing family dynamics, maternal-infant bonding, and the child's long-term development.

Traditional approaches to managing postpartum mental health issues primarily involve pharmacotherapy and psychotherapy. However, these

treatments may not be suitable for all women due to side effects, accessibility issues, or personal preferences for non-pharmacological interventions. In recent years, there has been growing interest in complementary and integrative therapies, such as yoga, for managing mental health during the postpartum period. Yoga, an ancient practice that combines physical postures, breathing exercises, and meditation, has been shown to promote relaxation, reduce stress, and improve mood, making it a promising alternative or adjunct therapy for postpartum women.

The postpartum phase encompasses the period after childbirth until the mother's reproductive organs revert to their pre-pregnancy state (Davis, 2021), encompassing various physiological and anatomical adjustments across multiple organ systems. This phase, termed the puerpe-



rium, typically spans six weeks but is individually experienced by each woman. The puerperium, as currently understood, symbolizes the 45-day duration post-birth, during which the body's tissues, especially in the pelvis, undergo a restoration process to regain their pre-pregnancy normalcy. However, the postpartum period triggers substantial physical, mental, and social transformations, leading to anxiety and mood disorders (International Association of Yoga Therapists, 2020).

The phase of postpartum brings about significant mental and physical changes in women, (Hara & McCabe, 2013) approximately 25% of women experience postpartum depression (PPD) issues following childbirth (Norhayati et al., 2015). The sudden decrease in placental progesterone and estrogen levels following birth is linked to PPD, along with disruptions in the hypothalamus-pituitary-adrenal axis (Skalkidou et al., 2012). During this time, women could undergo several psychological challenges like anxiety, depression, and tension is a severe mental disorder, and its complications extend to both the mother and infant, potentially impacting the emotional bond between them, (Buttner et al., 2015) PPD tends to peak within the initial two weeks after delivery (Cohen et al., 2010).

PPD impacts individuals with symptoms such as disrupted sleep patterns, including insomnia or excessive sleeping, mood swings, and changes in appetite. Those affected may experience fears of causing harm to themselves or their baby, coupled with intense concern and worry about the infant's well-being. Emotional aspects include overwhelming sadness, frequent crying, and pervasive feelings of doubt, guilt, and helplessness. Challenges in concentration and memory, along with a diminished interest in once-enjoyable activities, contribute to the complexity of PPD. Recurrent thoughts of death, potentially leading to suicidal ideation, underscore the seriousness of this condition (Patel et al., 2012). Research suggests that women who are depressed at 4 and 8 weeks postpartum show a less favourable physical and mental health condition than their non-depressed counterparts (Buttner et al., 2015).

In India, approximately 22% of mothers encounter postpartum depression (PPD) A recent World Health Organization (WHO) report underscores the necessity for increased resources to fortify maternal healthcare capacity. "Although experiencing 'baby blues,' a mild form of depression, is typical for many new mothers, postpartum depression (PPD) requires medical attention. If left unaddressed, PPD can significantly impair a woman's capacity to care for both herself and her baby." Medical attention is crucial during the PPD phase, as it not only influences the well-being of the individuals experiencing it but also signifi-

cantly impacts their social and occupational functioning, as well as the well-being of their partners or family (Zuehlke, 2008). Although postpartum psychosis is rare, it necessitates emergency intervention due to its association with the risk of infanticide and suicide (Cohen et al., 2010).

Yoga can be a valuable tool in addressing psychological issues by fostering a mind-body connection and promoting overall mental well-being. Through the practice of yoga, individuals can develop coping mechanisms for stress, anxiety, and depression, as it cultivates a sense of inner calm and resilience. Engaging in yoga exercises has the potential to enhance mood and emotional well-being (Uebelacker et al., 2010). Practicing yoga is the targeted utilization of yoga principles and through practice enhances comprehensive health and wellness in a rehabilitation setting. It encompasses individualized assessments, establishing goals, managing lifestyle factors, and customizing yoga practices for individuals or small groups (Lin et al., 2011). In our fast-paced society, yoga therapy emerges as a foremost drug-free method for stress reduction. Stress has been linked to various conditions such as irritable bowel syndrome, migraines, and serious ailments like diabetes, obesity, heart disease, and osteoporosis. Yoga proves instrumental in surmounting these challenges, particularly in scenarios where persistently elevated levels of the stress hormone Cortisol adversely affect immune function. Yoga has also outperformed control conditions in reducing depression and anxiety (Honarmand, & Hossein, 2013)

Yoga provides psychological advantages that include improved mood, increased subjective well-being, lowered levels of anxiety and depression, reduced aggression, and enhanced cognitive functions such as concentration, memory, attention, and learning effectiveness. Regular practice can also improve sleep quality, enhance concentration, and reduce the physiological markers of stress, contributing to a more balanced and stable mental state. Yoga is one of the recommended exercises for reducing depression (Eustis et al., 2019). Moreover, it fosters a positive attitude, self-actualization, and social integration. Given these benefits, integrating yoga into postpartum depression treatment plans is highly advantageous, given its efficacy in addressing this condition.

While yoga is not a substitute for professional mental health care, it can complement therapeutic interventions and provide individuals with a holistic approach to managing psychological well-being. The present study exclusively delves into the profound essence of motherhood, an unparalleled experience that forms the most profound and unbreakable bond between a mother and her child.

Exploring the question "What Causes Someone to Be the Happiest Person in the Universe?" leads to the recognition that this joyous journey comes hand in hand with significant responsibilities.

This study aims to explore the efficacy of Yoga Therapy in enhancing psychological well-being among postpartum women. By comparing the outcomes of women who participated in regular yoga sessions with those in a control group, this research seeks to provide evidence of yoga's potential to alleviate symptoms of depression, anxiety, and stress during the postpartum period. Furthermore, the study evaluates the impact of yoga on health-related quality of life (HRQOL) and role functioning, contributing to the growing body of literature on non-pharmacological interventions for postpartum mental health. The findings of this study are anticipated to offer valuable insights into the role of yoga as a supplementary therapy, with implications for its integration into postpartum care practices.

Materials and Methods

This study was carried out in Annamalai University Hospitals in Chidambaram, Tamil Nadu, India, with fifty women who had recently given birth (yoga group N=25; Control Group: N=25), Fig. 1 for selection of participants through the study. They were enlisted as participants and willingly agreed to take part in the study. The ratio of women to men within the same age bracket was significantly higher, indicating a greater involvement of females in the research. Throughout the entire three-month period, the subjects who completed the postpartum therapy and were part of the research underwent continuous supervision. The participants were categorized into a control group and a yoga exercise group. Details regarding the experimental techniques, assessments, and yoga routines were thoroughly explained to them beforehand to ensure clarity and understanding.

Yoga Therapy Schedule

Group II served as the control group, receiving no specific therapy, while Group I, the yoga therapy group, engaged in regular yoga practice. The therapy schedule for the experimental groups involved yoga sessions three times a week for a duration for eight weeks. The yoga practices were conducted in a public space, and the duration gradually increased from 35 minutes, without assembly and conclusion, in the first four weeks, to 60 minutes from the fifth week to the eighth week.

Measures

The Brunel Mood Scale (BRUMS)

To assess psychological well-being, specifically focusing on vigour, fatigue, and confusion, this study utilized the Brunel Mood Scale. The BRUMS is a validated 24-item questionnaire, derived from the Profile of Mood States, designed to evaluate mood through clear, concise descriptors. The scale includes multiple subscales, and for this study, three specific subscales were selected: vigour, fatigue, and confusion. The vigour subscale assesses energy and vitality, the fatigue subscale measures feelings of tiredness and low energy, and the confusion subscale captures disorientation and lack of mental clarity. Participants rated their emotional experiences using a 5-point Likert scale, ranging from 0 (Not at all) to 4 (Extremely), with the prompt, "How do you feel right now?" This real-time assessment ensured accurate and relevant mood evaluations. The BRUMS has been widely validated and proven reliable across various studies, making it an ideal tool for measuring the psychological well-being of postpartum women in this research.

Data Collection and Analysis

Collection of data on anxiety, depression, and anger was performed using the "mood and self-esteem". Participants were briefed on the test objectives and instructed to respond promptly and

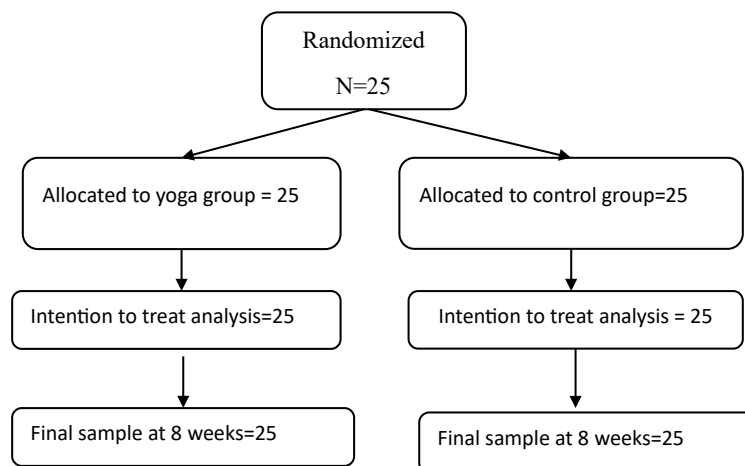


Figure 1. Illustrates the participant flow throughout the trial and provides details.

Table 1. Postpartum Yoga Therapy Schedule (Weeks 5-8)

Day	Duration	Activity	Description
Week 5: Strength and Grounding			
Day 1	25 min	Warrior I Pose (Virabhadrasana I)	Focuses on strength and stability in the legs, while opening the chest.
Day 2	20 min	Cat-Cow Pose with Variations	Add variations like side stretches and wrist stretches to the basic Cat-Cow sequence.
Day 3	30 min	Standing Poses Sequence	Include Mountain Pose (Tadasana), Chair Pose (Utkatasana), and Triangle Pose (Trikonasana).
Day 4	20 min	Bridge Pose (Setu Bandhasana)	Continue with Bridge Pose, adding leg lifts to increase core engagement.
Day 5	25 min	Cobra Pose (Bhujangasana)	Strengthen the back muscles and open the chest. Follow with Child's Pose for relaxation.
Day 6	25 min	Guided Relaxation (Yoga Nidra)	Deep relaxation, focusing on relieving tension and stress.
Day 7	20 min	Mindful Walking Meditation	Practice a slow, mindful walking meditation, focusing on each step and breath.
Week 6: Flexibility and Relaxation			
Day 1	30 min	Sun Salutations (Surya Namaskar)	Practice a gentle sequence of Sun Salutations, focusing on breath and smooth transitions.
Day 2	25 min	Seated Forward Bend & Butterfly Pose (Baddha Konasana)	Deep stretches for the back and inner thighs, promoting flexibility and relaxation.
Day 3	20 min	Supine Twists with Variations	Add arm variations to deepen the twists and relieve back tension.
Day 4	25 min	Legs Up the Wall Pose (Viparita Karani) & Reclining Bound Angle Pose (Supta Baddha Konasana)	Restorative poses to promote circulation and relaxation.
Day 5	30 min	Extended Child's Pose & Gentle Backbends	Hold the Child's Pose longer, adding gentle backbends like the Sphinx Pose (Salamba Bhujangasana).
Day 6	20 min	Guided Meditation	Focus on stress relief and mental clarity through guided meditation.
Day 7	15 min	Breathing Exercises (Pranayama)	Practice Alternate Nostril Breathing (Nadi Shodhana) and calming breaths (Bhramari).
Week 7: Balance and Core Stability			
Day 1	25 min	Tree Pose (Vrksasana) & Warrior III (Virabhadrasana III)	Focus on balance and core stability. Use a wall for support if needed.
Day 2	30 min	Plank Pose (Phalakasana) & Side Plank (Vasisthasana)	Strengthen the core muscles with gentle plank variations.
Day 3	20 min	Eagle Pose (Garudasana)	A balancing pose that also stretches the shoulders and legs.
Day 4	25 min	Low Lunge Pose (Anjaneyasana) & Hamstring Stretch	Open the hips and stretch the hamstrings to relieve lower back tension.
Day 5	20 min	Bridge Pose with Leg Extensions	Add leg extensions to the Bridge Pose to challenge core and leg muscles.
Day 6	30 min	Seated Meditation with Focus on Balance	Sit in a comfortable position and focus on balance, mentally and physically.
Day 7	15 min	Relaxation & Visualization	Use visualization techniques to enhance relaxation and positive thinking.
Week 8: Integration and Energy Flow			
Day 1	30 min	Flowing Sequence	Combine poses from previous weeks into a flowing sequence, focusing on breath and movement.
Day 2	25 min	Pigeon Pose (Eka Pada Rajakapotasana) & Hip Openers	Deep hip openers to release tension and stress.
Day 3	20 min	Twisting Poses Sequence	Include seated and standing twists to detoxify and energize the body.
Day 4	30 min	Sun Salutations with Variations	Add variations to Sun Salutations for a full-body stretch and energy boost.
Day 5	25 min	Chair Pose & Warrior Sequence	Strengthen legs and improve balance with dynamic sequences.
Day 6	20 min	Breathing & Meditation	Practice deep breathing followed by meditation for mental clarity and relaxation.
Day 7	20 min	Restorative Poses & Savasana	End the week with restorative poses and a long Savasana to fully relax and integrate the practice.

honestly to each statement. Response sheets were collected both before the therapy program and after the completion of the eight-week regimen. The examiner emphasized the potential for questions or varied interpretations of the questionnaire. The t-tests were employed to analyze the gathered data, establishing a confidence level to ascertain the significance of the findings.

Result

A Shapiro-Wilk test was conducted to assess the normality of the dependent variables (Anger, Depression, and Tension) for both therapy groups (YT and CG) at pre-test and post-test. The results are summarized in Table 2.

For **Anger**, both the YT group (Pre-test: $p=0.687$, Post-test: $p=0.913$) and the CG group (Pre-test: $p=0.365$; Post-test: $p=0.157$) demonstrated normal distributions, as all p-values were above the significance threshold of $p=0.05$.

For **Depression**, the YT group at both pre-test ($p=0.248$) and post-test ($p = 0.252$) met the assumption of normality. The CG group at pre-test ($p=0.140$) and post-test ($p=0.120$) also met this assumption.

For **Tension**, the YT group (Pre-test: $p=0.683$;

Post-test: $p=0.689$) and the CG group (Pre-test: $p=0.999$ p; Post-test: $p=0.769$) all passed the normality test, indicating that the data for this variable were normally distributed.

In conclusion, the normality assumption was satisfied for all groups and time points, suggesting the data are suitable for parametric analyses.

Table 3 reveals the mean and standard deviation for pre- and post-test anger, depression, and tension. Data was collected from both the experimental group and control groups. The statistical analysis pre-test reveals that in the case of Anger, the mean values and standard deviation for the yoga therapy and control groups are 14.10 (0.18) and 13.63 (0.72) respectively, depression 15 (0.05) and 15.23 (1.16), Tension 12.98 (0.17) and 12.87 (1.38). The post-test mean and standard deviation reveals that Anger for the experiment group and control groups are 12.02 (0.13) and 13.72 (1.41) respectively, depression 13.01 (0.11) and 14.84 (0.0), Tension 10.99 (0.33) and 13 (0.18). These values notably indicate significant differences between the pre-and post-test means and standard deviation for depression, rage, and anxiety.

Table 2. Showing The Shapiro-Wilk P-Values And Whether The Data Meets The Normality Assumption

Dependent Variable	Therapy Group	Time	Mean (M)	SD	Shapiro-Wilk (p-value)	Normality Assumption
Anger	YT	Pre-test	14.10	0.18	0.686	Yes
		Post-test	12.02	0.13	0.913	Yes
	CG	Pre-test	13.63	0.72	0.365	Yes
		Post-test	13.72	1.41	0.156	Yes
Depression	YT	Pre-test	15	0.05	0.248	Yes
		Post-test	13.01	0.11	0.252	Yes
	CG	Pre-test	15.23	1.16	0.140	yes
		Post-test	14.84	0	0.120	Yes
Tension	YT	Pre-test	12.98	0.17	0.687	Yes
		Post-test	10.99	0.33	0.683	Yes
	CG	Pre-test	12.87	1.38	0.999	Yes
		Post-test	13	0.18	0.769	Yes

Table 3. Pre and Post Test; Means (SDs) of dependent variables for the Yoga and Control groups at each assessment

Dependent variable	Therapy Group	Pre-test M (SD)	Post-test M (SD)
Anger	YT	14.10 (.18)	12.02 (.13)
	CG	13.63 (.72)	13.72 (1.41)
Depression	YT	15 (.05)	13.01 (.11)
	CG	15.23 (1.16)	14.84 (.0)
Tension	YT	12.98 (.17)	10.99 (.33)
	CG	12.87 (1.38)	13 (.18)

YT= Yoga Therapy; CG= Control Group.

Table 4. An analysis of the relationship between experimental and control groups' levels of anger, depression and tension

Dependent Variable	Group	t(24)	p	Significance
Anger	Yoga Therapy	44.10	< .001	Significant
	Control	-0.33	.739	Not Significant
Depression	Yoga Therapy	74.79	< .001	Significant
	Control	1.65	.112	Not Significant
Tension	Yoga Therapy	24.61	< .001	Significant
	Control	-0.43	.672	Not Significant

t at 0.05 level of confidence for 24 (df) = 2.06 *Significant.

The findings from Table 4 indicate that static *t* and *p* values for each experiment group and control group. The pre and post-test *t* static and *p*-value of anger 44.10* and .001 and the control group result is -0.33 and .739 respectively. In the case of depression, 74.79* and .001, and the control group results are 1.65 and .112 respectively. The tension result is 24.61* and the .001 control group result is -0.43 and .672 respectively. So, the result indicates that

Anger

The *t*-test revealed a statistically significant reduction in anger levels for the Yoga Therapy Group, $t(24)=44.10$, $p<.001$. However, no significant change was observed for the Control Group, $t(24)=-0.33$, $p=.739$.

Depression

The analysis showed a significant decrease in depression levels for the Yoga Therapy Group, $t(24)=74.79$, $p<.001$. In contrast, the Control Group did not demonstrate a statistically significant change, $t(24)=1.65$, $p=.112$.

Tension

Similarly, the Yoga Therapy Group exper-

rienced a significant reduction in tension levels, $t(24)=24.61$, $p<.001$, whereas no significant change was noted in the Control Group, $t(24)=-0.43$, $p=.672$.

The findings indicate that yoga therapy is an effective intervention for significantly reducing anger, depression, and tension levels in participants. In contrast, the control group did not show any statistically significant changes in these variables, highlighting the potential efficacy of yoga as a therapeutic approach for managing psychological distress.

Discussion

This section covers three major topics depression, rage, and tension. These results align with earlier discoveries made by other researchers. Postpartum depression affects 20% of women, known as PPD. PPD has been linked to anxiety and a diminished quality of life concerning one's health. Effective treatment is crucial, and many PPD patients prefer complementary therapies. Yoga is under investigation as an additional treatment for PPD in the current study, highlighting its potential as an adjunct treatment for PPD (Cohen



Figure 2. The Bar Diagram illustrates the Mean Values for Anger, Depression, and Tension in the Yoga Therapy Group. For the Yoga Therapy Group and Control groups, the graph illustrates exp_anger means yoga therapy group and cont_anger means control group. The X-axis represents the dependent variables categorized by pre-test and post-test, while the Y-axis shows the mean scores.

et al., 2010). Yoga appears promising as a treatment for postpartum depression, showing feasibility, acceptance, patient safety, and early efficacy (Sheffield, & Woods, 2016).

About 38% of adults in the United States utilize complementary and alternative therapies like yoga to alleviate anxiety in pregnant women (Sheffield & Woods, 2016) (Wankhede et al., 2020). Studies consistently demonstrate the benefits of yoga and physical activity for women during the perinatal period, significantly reducing depression (Eustis et al., 2019). Yoga involves the mastery of the mind and central nervous system, offering a unique impact on hormone secretion, physiological variables, and internal brain function. Yoga provides a neutralizing effect, in contrast to other sports based on these aspects, contributing to the regulation of neural signaling (Kmet et al., 2004).

The practice of yoga is shown to enhance the cardiovascular, neurological, and genetic systems. Meditation exercises specifically target inactivity in the peripheral nerve system., stimulate the vague nerve, and reduce the internal allostatic load, ultimately alleviating associated symptoms (Wankhede, 2020, Higgins et al., 2019). Although Pregnant women who practice Hatha Yoga report feeling calmer. At baseline, the mean ratings for depression for the Yoga as well as control groups had respective scores of 5.29 (3.14) and 4.54 (3.43) in the postpartum period, they were 3.92 (2.68) and 6.63 (2.83), respectively., indicating a significant difference ($P < 0.05$) the yoga and control groups had respective scores of 5.29 (3.14) and 4.54 (3.43) (Bershadsky, et al., 2013).

Engaging in yogic exercises has been shown to have a beneficial effect on anxiety and depressive symptoms in expectant mothers suffering from depression, resulting in elevated emotional states (Allasio et al., 2020). A notable decrease in anxiety and depression among pregnant women practicing yoga (Satyapriya et al., 2013). Additionally, yoga reduces the release of the cortisol hormone, an important marker linked to stress in people. Barshefsky et al. (2013) suggest that exercises from yoga can be used as alternative and additional therapies for mental health issues (Streeter et al., 2020). Highlighted the positive effects of yoga for lowering postpartum depression (Cohen et al., 2010). Between the sixth and ninth months of pregnancy, yoga practice resulted in reduced tension and anxiety (Beddoe et al., 2020).

In contrast to the control group, the yoga group demonstrated notably greater advancements in depression, anxiety, and health-related quality of life (HRQOL), indicating benefits that ranged from moderate to substantial. Notably, 78% of women in the yoga group experienced clinically significant changes (Buttner et al.,

2015). Prenatal yoga practice resulted in higher reductions in anger and depression ratings, along with an enhanced quality of life compared to the control group (Cohen et al., 2010).

Yoga has shown efficacy in reducing postpartum rage and tension in healthy pregnant women, advocating for its use as a powerful tool to alleviate negative emotions (Vieten & Astin, 2008). Studies emphasize the accelerated improvement rate of depression, anxiety, and HRQOL in the yoga group compared to controls (Buttner et al., 2015). Studies using SF 36 assessments in depressed postpartum women revealed a negative correlation between depression and role functioning across various domains such as job, family, and relationships (Brown, & Lumley, 2000). Additionally, a majority of women in the yoga group reported clinically meaningful changes, underscoring yoga's effectiveness as a fresh remedy for PPD (Norhayati et al., 2015).

Furthermore, yoga has physiological effects such as increasing heart rate, promoting relaxation responses over stress, and reducing cortisol release rates (Vieten, & Astin, 2008). The practice emphasizes awareness, enabling individuals to observe their emotions without being consumed by them (Kamat, 2019). Findings demonstrated a statistically significant decline in stress and depressive symptoms in postpartum women undergoing yoga interventions (Sengupta, 2012) Yoga has been shown to ameliorate various physical and internal health conditions including anxiety, depression, cancer, and musculoskeletal issues (Timlin, 2017). Studies indicate the positive impact of Dru Yoga on the mental well-being of primiparous women (Woolery et al., 2004). Reports show a reduction in anxiety and despair among individuals engaging in yoga, with sustained improvements observed throughout sessions (Shapiro et al., 2007) Additionally, there was a noticeable decline in morning cortisol levels in the yoga group (Uebelacker et al., 2010).

Conclusion

This study provides compelling evidence for the efficacy of Yoga Therapy in enhancing psychological well-being during the postpartum period. Compared to the control group, participants in the yoga intervention exhibited statistically significant improvements in the reduction of anxiety, anger, and sadness. The effect sizes, which ranged from moderate to substantial, indicate that yoga may play a critical role in mitigating postpartum psychological distress.

The application of the Reliable Change Index (RCI) in analysis revealed clinically meaningful changes, with participants in the yoga group experiencing a significant average decrease in depression, anger, and tension. These findings sug-

gest that yoga can serve as an effective adjunct therapy, potentially addressing the mental health challenges commonly encountered by postpartum women through mechanisms involving mindfulness, relaxation, and physical exercise.

The implications of these results are substantial, as they support the integration of yoga into postpartum care protocols. However, the generalizability of these findings is currently limited. Future research should focus on larger-scale replications with extended intervention durations (e.g., 12 months) to assess the long-term efficacy of yoga therapy. Increasing the sample size and incorporating a more ethnically and culturally diverse population is also crucial to enhancing the external validity of the results. Moreover, the inclusion of additional psychological constructs, such as resilience and social support, along with physiological biomarkers like cortisol levels and heart rate variability, would provide a more comprehensive assessment of the therapeutic potential of yoga during the postpartum period.

In summary, this study introduces yoga as a promising supplementary intervention for postpartum women, potentially improving psychological outcomes significantly. Further research is warranted to establish its efficacy across diverse populations and to explore its integration into standard postpartum care practices.

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Supplementary Information

Article details

The online version available at
[https://doi.org/10.15391/prrht.2024-9\(6\).01](https://doi.org/10.15391/prrht.2024-9(6).01)

Acknowledgements

Authors would like to thank all participants in this study.

Conflict of interest

The author declares that they have no competing interests.

Ethical Clearance: Annamalai University Department of Medicine and Department of Physical Education.

Funding Statement

No funds were available for this study.

Received: September 30, 2024; Accepted: 15 November, 2024
Published: November 30, 2024

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