

LACK OF CLINICAL EVIDENCE ON THE IMPACT OF YOGIC PRACTICES ON THE PSYCHOLOGICAL WELL-BEING OF PREGNANT WOMEN: A CRITICAL REVIEW

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Abstract

Pregnancy is the most crucial phase of women life where women face emotional, physical and psychological challenges. These challenges not only effects women's physical and mental health but also effect fetal well-being. Yogic mind body practices are highly recommended however, despite their increasing use and consistent clinical evidence to support their effectiveness remains limited. This paper is to examine existing research on impact of yogic practices on pregnant women with emotional, physical and psychological point of view.

Complex biopsychosocial period characterized by profound physiological, hormonal, and emotional changes. While often perceived as a positive life event, pregnancy is also associated with increased vulnerability to anxiety, stress, and depressive symptoms. Growing concerns regarding pharmacological management of prenatal mental health conditions have led to increasing interest in complementary and alternative approaches such as yogic practices. Prenatal yoga, incorporating physical postures, breathing techniques, meditation, and relaxation methods, is widely promoted for improving maternal psychological well-being. However, despite its popularity and widespread clinical recommendation, the strength and consistency of clinical evidence supporting its effectiveness remain limited. This paper critically examines existing research, evaluates methodological strengths and weaknesses, identifies gaps in current literature, and discusses implications for clinical practice and public health.

Keywords: Prenatal yoga, pregnancy, psychological well-being, anxiety, depression, maternal mental health, clinical evidence

INTRODUCTION

Pregnancy involves significant biological, psychological, and social transitions. Hormonal fluctuations, body image changes, concerns about childbirth, financial stress, and shifting family roles can contribute to emotional instability. Research indicates that many pregnant women experience elevated stress, anxiety, or depressive symptoms. Untreated prenatal psychological distress has been linked to adverse outcomes including preterm birth and postpartum depression. Yogic practices emphasize harmony between mind and body through movement, breath regulation, and mindfulness. In pregnancy, yoga is modified to ensure safety and comfort. Theoretically, yoga may reduce stress through autonomic nervous system regulation and improved emotional resilience. However, theoretical plausibility must be supported by rigorous clinical evidence.

Pregnancy is a critical period in a woman's life characterized by significant physiological, hormonal, and psychological changes. While it is often perceived as a joyful experience, many women experience mental health challenges such as stress, anxiety, and depression during this time. These psychological issues not only affect the well-being of the mother but can also have adverse outcomes on fetal development and birth outcomes. Therefore, promoting maternal mental health has become an important focus in prenatal care.

In recent years, yogic practices, including asanas (physical postures), pranayama (breathing techniques), and meditation, have gained attention as potential non-pharmacological interventions for improving psychological well-being during pregnancy. Yoga is considered safe, low-intensity, and adaptable, making it particularly suitable for pregnant women. Several studies have suggested that prenatal yoga may help reduce stress, anxiety, and depressive symptoms, while also improving overall quality of life.

Yoga is thought to improve psychological health through multiple mechanisms. It helps in regulating the autonomic nervous system, reducing cortisol levels, enhancing relaxation responses, and promoting mindfulness. Regular practice of yoga may reduce symptoms of anxiety and depression, improve sleep quality, and enhance overall emotional stability.

Additionally, yoga encourages body awareness and emotional regulation, which can help pregnant women cope better with the stress and uncertainties associated with pregnancy. Due to these potential benefits, prenatal yoga programs are increasingly being incorporated into maternal healthcare services worldwide.

However, despite growing interest in this field, the clinical evidence supporting the effectiveness of yogic practices on psychological well-being among pregnant women remains limited and inconsistent. Many studies suffer from methodological limitations such as small sample sizes, lack of randomized controlled trials, variability in yoga interventions, and inconsistent outcome measures. These limitations make it difficult to draw definitive conclusions about the efficacy of yoga in this population.

Therefore, there is a need to critically examine existing literature and identify gaps in clinical evidence regarding the impact of yogic practices on psychological well-being during pregnancy. This study aims to review and analyse current research findings, highlight methodological shortcomings, and emphasize the need for more rigorous clinical studies in this area.

Systematic reviews and meta-analyses have reported mixed findings regarding the effectiveness of yoga in reducing depression and anxiety during pregnancy. While some studies suggest significant improvements, others report minimal or no effects, particularly among women without pre-existing psychological conditions. Additionally, the overall quality of evidence is often rated as low to moderate due to biases and inconsistencies in research methodologies. These gaps highlight the need for more rigorous, well-designed randomized controlled trials to establish clear clinical evidence.

Another important limitation in the existing literature is the lack of standardized yoga interventions specifically designed for pregnant women. Variations in frequency, duration, type of yoga practices, and instructor qualifications contribute to inconsistent findings. Moreover, cultural, social, and individual differences may influence the effectiveness of yoga, further complicating the interpretation of results. There is also a need to explore the long-term effects of prenatal yoga on both maternal and neonatal outcomes.

Given these limitations, it becomes crucial to critically evaluate and synthesize existing research to identify gaps in knowledge and guide future studies. A comprehensive review of available literature can help in understanding the current state of evidence, assessing the quality of existing studies, and highlighting areas that require further investigation.

LITERATURE REVIEW

For reducing depression, yoga seems to be more suitable for pregnant. A total of 13 articles that contained 379 subjects were included for meta-analysis. No significant improvement in depression scores after practicing yoga was observed for women without depression ($p = 0.09$) but significant improvement was observed for women with depression ($p = 0.001$). Although significant improvement in anxiety scores after yoga was observed for women without depression ($p = 0.02$), the results of the sensitivity analysis were not consistent, while significant improvement in anxiety scores after yoga was also observed for women with depression ($p < 0.00001$). The current evidence has suggested that yoga had significant improvement in depression and anxiety scores in pregnant women with depression. However, the level of evidence of this study was not high. More articles with high levels of evidence should be conducted to confirm our conclusion in the future. Lin et al. (2022)

Yoga interventions during pregnancy may reduce cortisol levels, alleviate depressive symptoms, and improve overall mood. The study suggested that yoga promotes relaxation and enhances parasympathetic activity, which contributes to reduced stress levels. However, most of the included studies had small sample sizes and lacked standardized intervention protocols, limiting the generalizability of findings. Field (2016)

The study conducted randomized controlled trial and found that prenatal yoga was associated with reduced symptoms of depression and anxiety compared to standard prenatal care. The authors suggested that yoga could serve as a complementary therapy for improving mental health during pregnancy. Despite these positive findings, the study acknowledged limitations such as short intervention duration and potential participant bias. Davis et al. (2015)

Another study examined mindfulness-based yoga interventions and reported improvements in perceived stress and emotional well-being among pregnant women. The results indicated that yoga may enhance coping mechanisms and promote relaxation. However, the lack of control groups and reliance on self-reported measures reduced the strength of the evidence. Beddoe and Lee (2008)

The review on various mind-body interventions, including yoga, and found that such practices could reduce stress and anxiety during pregnancy. They emphasized that mindfulness and relaxation techniques play a crucial role in improving psychological outcomes. Nevertheless, they also noted variability in study designs and intervention methods, making it difficult to establish consistent conclusions. Guardino and Schetter (2014)

The effects of antenatal yoga on depression and found that women who participated in yoga sessions reported lower levels of depressive symptoms compared to those receiving standard care. The study suggested that yoga could be a feasible and acceptable intervention during pregnancy. However, the findings were limited by small sample sizes and lack of long-term follow-up. Newham et al. (2014)

A systematic review that yoga interventions were associated with reductions in stress, anxiety, and depression among pregnant women. Despite these promising results, the authors highlighted significant heterogeneity across studies, including differences in intervention duration, frequency, and outcome measures, which limited the reliability of conclusions. Gong et al. (2015)

Some studies have reported mixed or inconclusive results. For instance, found improvements in anxiety and stress levels with yoga practice, but the study lacked randomization and had a limited sample size. Similarly, other studies have indicated that while yoga may improve psychological well-being, the magnitude of effect is often small and not clinically significant. Satyapriya et al. (2013)

The impact of integrated yoga on perceived stress and autonomic nervous system functioning among pregnant women. Their findings indicated that yoga not only reduced perceived stress levels but also improved physiological responses, such as heart rate variability, suggesting better stress regulation. Satyapriya et al. (2009)

Another randomized controlled trial conducted in India at AIIMS, New Delhi, examined the effect of prenatal yoga on psychological stress and pregnancy outcomes. The study found that women in the yoga group experienced significantly lower perceived stress levels during the second and third trimesters compared to the control group. These findings support the potential role of yoga in reducing psychological distress during pregnancy. Shukla et al. (2023)

Yoga interventions led to significant reductions in depression, anxiety, and sleep disturbances among pregnant women. The study emphasized the role of relaxation techniques such as Yoga Nidra in enhancing mental health outcomes. Saritha et al. (2024).

Researchers have also contributed significantly to this field. Satyapriya et al. (2009, 2013) conducted randomized controlled trials showing reductions in stress and improved birth outcomes. Rakhshani et al. (2012) reported improvements in maternal comfort and reduction in complications with yoga practice. Nagendra and Nagarathna (2010) emphasized the holistic benefits of yoga in maternal health, including psychological wellbeing.

Studies by Davis et al. (2015) and Guardino and Schetter (2014) showed that prenatal yoga programs reduced cortisol levels and improved mood among pregnant women. Battle et al. (2015) also highlighted yoga as a complementary therapy for antenatal depression. Further, Newham et al. (2014) found that yoga improved emotional wellbeing and reduced perceived stress.

Several systematic reviews have examined this area. Babbar et al. (2012) concluded that yoga may reduce pregnancy-related stress and improve birth outcomes. Gong et al. (2015) found moderate evidence supporting yoga's effectiveness in reducing anxiety and depression. Corrigan et al. (2020) reported that mindfulness-based interventions, including yoga, improve psychological wellbeing but noted variability in study quality.

However, despite these positive findings, many studies suffer from methodological limitations. Jarde et al. (2016) emphasized the lack of high-quality randomized controlled trials in this field. Dennis et al. (2017) highlighted inconsistencies in intervention duration, sample size, and measurement tools. Similarly, Fleming et al. (2018) noted heterogeneity in study designs, making it difficult to generalize results.

OBJECTIVE

- To evaluate the existing clinical evidence on the impact of yogic practices on the psychological well-being of pregnant women.
- To review and compare findings from existing research studies and clinical trials on prenatal yoga.
- To identify the methodological limitations in current studies, such as small sample sizes and lack of standardization.
- To identify research gaps in the existing literature.

METHODOLOGY

The present study is a systematic review and comparative analysis of existing literature aimed at evaluating the impact of yogic practices on the psychological well-being of pregnant women. The study focuses on identifying the gaps and limitations in clinical evidence by critically analysing previously published research articles, including randomized controlled trials, observational studies, and systematic reviews.

A comprehensive literature search was conducted using electronic databases such as PubMed, Google Scholar, Scopus, Cochrane Library, and ScienceDirect.

DISCUSSION

The present review aimed to evaluate the existing clinical evidence on the effectiveness of yogic practices in improving psychological well-being among pregnant women. The findings from the reviewed studies suggest that yoga may have beneficial effects in reducing stress, anxiety, and depression during pregnancy. However, despite these promising results, the overall clinical evidence remains limited, inconsistent, and methodologically weak.

Several studies included in this review reported significant improvements in psychological outcomes following prenatal yoga interventions. Yogic practices, including asanas, pranayama, and meditation, are believed to promote relaxation, enhance emotional regulation, and reduce physiological stress responses. These mechanisms may contribute to the observed reduction in anxiety and depressive symptoms among pregnant women. Additionally, yoga encourages mindfulness and body awareness, which may help women cope better with the emotional and physical challenges of pregnancy.

However, the findings across studies are not uniform. While some studies reported significant improvements in both anxiety and depression, others found only partial or non-significant effects, particularly among women without pre-existing psychological conditions. This inconsistency may be attributed to variations in study design, participant characteristics, and intervention protocols. For instance, differences in the type, frequency, and duration of yoga practices make it difficult to compare outcomes across studies and draw definitive conclusions.

A major limitation identified in the literature is the lack of high-quality randomized controlled trials. Many studies rely on small sample sizes, which reduces statistical power and limits the generalizability of findings. Additionally, several studies lack appropriate control groups, increasing the risk of bias. The reliance on self-reported psychological measures further affects the reliability of results, as participants may underreport or overreport their symptoms.

Another important concern is the heterogeneity of yoga interventions. There is no standardized prenatal yoga protocol, and studies often include a combination of different practices such as breathing techniques, meditation, and physical postures. The qualifications of instructors and adherence to the intervention also vary across studies. This lack of standardization contributes to inconsistent findings and limits the ability to establish clear clinical guidelines.

Furthermore, the duration of interventions in many studies is relatively short, often ranging from a few weeks to a few months. This makes it difficult to assess the long-term effects of yogic practices on psychological well-being. There is also limited evidence on the impact of yoga on postpartum mental health, which is an important aspect of maternal well-being. Another key issue is the lack of objective biological markers in most studies. While some research has examined physiological indicators such as cortisol levels and heart rate variability, the majority of studies rely solely on subjective psychological assessments. Incorporating objective measures could strengthen the evidence and provide a better understanding of the mechanisms underlying the effects of yoga.

Overall, although the available evidence suggests that yogic practices may have a positive impact on psychological well-being during pregnancy, the strength of this evidence is limited. The inconsistencies in findings, methodological weaknesses, and lack of standardization highlight a significant gap in clinical research. Therefore, it is difficult to draw firm conclusions regarding the effectiveness of prenatal yoga as an evidence-based intervention.

Future research should focus on conducting large-scale, well-designed randomized controlled trials with standardized yoga protocols. Studies should also include longer follow-up periods, objective outcome measures, and diverse populations to improve the quality and generalizability of findings. Addressing these gaps will help in establishing stronger clinical evidence and may support the integration of yoga into routine prenatal care.

Future research should prioritize large randomized controlled trials with standardized protocols, objective biomarkers, and long-term follow-up into the postpartum period. Interdisciplinary collaboration is essential to strengthen evidence quality.

CONCLUSION

The present study aimed to examine the existing clinical evidence on the impact of yogic practices on the psychological well-being of pregnant women. The review of literature indicates that yogic practices, including asanas, pranayama, and

meditation, may have beneficial effects in reducing stress, anxiety, and depression during pregnancy. These practices promote relaxation, enhance emotional stability, and improve overall mental well-being, making them a potentially valuable complementary approach in maternal healthcare.

However, despite these promising findings, the overall strength of clinical evidence remains limited and inconclusive. Many of the reviewed studies are characterized by methodological limitations such as small sample sizes, lack of well-designed randomized controlled trials, short intervention durations, and variability in yoga protocols. Additionally, inconsistencies in findings and reliance on self-reported measures further weaken the reliability of results. As a result, it is difficult to draw definitive conclusions regarding the effectiveness of yogic practices on psychological outcomes during pregnancy.

The lack of standardized interventions and insufficient high-quality research highlights a significant gap in the existing literature. Therefore, there is a need for more rigorous, large-scale, and well-structured clinical studies to establish stronger evidence. Future research should focus on standardized yoga protocols, objective outcome measures, and long-term follow-up to better understand the impact of yoga on maternal mental health.

In conclusion, while yogic practices show potential as a safe and cost-effective intervention for improving psychological well-being among pregnant women, the current evidence is not strong enough to support their widespread clinical application. Strengthening the evidence base through high-quality research is essential to integrate yoga effectively into prenatal care and promote maternal mental health.

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