

Exploring the Impact of Different Yoga Practices on Psychological Resources and Emotional Well-Being: A Single-Session Study

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Abstract

Background: Yoga is a widely practiced mind-body intervention known for its benefits in improving mental and emotional well-being. Its components including physical postures, breathwork, and meditation are believed to enhance psychological resources such as mindfulness and body consciousness, while promoting emotional regulation. However, the immediate effects of different yoga styles on these outcomes, particularly in individuals with minimal prior experience, are not well-understood.

Objective: This study aimed to examine the immediate effects of three yoga styles Hatha, Vinyasa, and Restorative on psychological resources (hope, resilience, efficacy, and optimism) and emotional well-being (positive and negative affect). By evaluating a single yoga session, the study sought to assess how each style influences psychological and emotional outcomes in a short-term context.

Methodology: Ninety participants, aged 18–60 years with limited yoga experience, were randomly assigned to one of the three yoga groups. Each group participated in a 60-minute session specific to their assigned style: Hatha, Vinyasa, or Restorative. Pre- and post-session assessments were conducted using the Psychological Capital Questionnaire (PCQ) for psychological resources and the Positive and Negative Affect Schedule (PANAS) for emotional well-being. Statistical analysis included paired t-tests and one-way ANOVA.

Results: All three yoga styles led to significant improvements in psychological resources. Hatha and Vinyasa yoga showed the most significant gains in hope, resilience, efficacy, and optimism. Restorative yoga resulted in the greatest improvements in emotional well-being, particularly in positive affect (MD = 10.2) and negative affect (MD = -8.7). Hatha and Vinyasa also demonstrated positive effects, though to a lesser extent than Restorative yoga.

Conclusion: This study highlights the differential effects of yoga styles on mental health outcomes. Hatha and Vinyasa yoga were most effective for enhancing psychological resources, while Restorative yoga excelled in improving emotional well-being.

Keywords: Yoga, Mental Health, Psychological Resilience, Emotional Well-Being, Mindfulness

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Introduction

Yoga, a comprehensive mind-body practice, has long been celebrated for its beneficial effects on mental and emotional well-being. Its integration of physical postures, breathwork, and meditation has been shown to positively impact a range of psychological and emotional outcomes. Yoga practice is associated with enhanced psychological resources, such as mindfulness, body consciousness, self-transcendence, spiritual peace, and social connectedness. These psychological mechanisms are believed to mediate yoga's salutary effects on emotional regulation and overall well-being (1). Despite the growing evidence, our understanding of how these mechanisms interact and contribute to emotional benefits remains limited. The therapeutic potential of yoga is underscored by its impact on emotional states, particularly in reducing negative affect and fostering positive emotions. Studies have documented that yoga not only alleviates anxiety and depression but also enhances emotional states like tranquility and engagement. For example, randomized controlled trials (RCTs) have demonstrated that yoga is effective in reducing negative emotions such as anxiety and physical exhaustion while improving positive emotions like revitalization and engagement (2). Even a single session of yoga has been found to induce significant mood improvements, with increased positive emotions and reduced exhaustion reported across various populations (3). These findings align with the broader literature, which suggests that yoga can be an effective intervention for improving emotional well-being, even with brief exposure.

Understanding the mechanisms underlying these effects is essential for optimizing yoga-based interventions. The proposed mechanisms often revolve around yoga's ability to cultivate mindfulness and body consciousness, both of which enhance awareness and acceptance of the present moment. Other pathways include fostering self-transcendence, which provides a sense of unity with the world; spiritual peace, which promotes inner harmony; and social connectedness, which improves interpersonal relationships. These mechanisms are believed to influence emotional outcomes by enhancing psychological resources that aid coping and emotional regulation (1,4). Although there is evidence suggesting that yoga can enhance mindfulness and body consciousness, studies explicitly testing the mechanisms through which yoga exerts its effects are scarce, and findings remain inconsistent (5,6). Furthermore, other proposed mechanisms such as self-transcendence and spiritual peace have received limited empirical attention despite their long-standing connection to yoga practice (7,8).

The variety of yoga styles further contributes to its wide-ranging effects (9). Hatha yoga emphasizes static postures and controlled breathing, fostering stability and mindfulness. Vinyasa yoga involves dynamic sequences that integrate movement with breath, promoting physical engagement and focus. Restorative yoga, in contrast, centers on relaxation and stress relief through passive poses. While these styles vary in their approach, their differential impacts on psychological mechanisms and emotional outcomes remain an area of active investigation. A few studies have suggested that yoga styles may engage different psychological pathways, yet comprehensive studies examining how specific styles affect emotional well-being and psychological resources are limited (10-13).

This study builds on the existing literature by exploring how a single session of yoga affects psychological resources and emotional well-being in individuals with minimal prior experience. Specifically, it examines three styles of yoga Hatha, Vinyasa, and Restorative to determine their immediate effects on hope, resilience, efficacy, and optimism, as well as positive and negative affect. By focusing on the acute impacts of yoga, the study aims to contribute to the growing body of evidence on yoga as a practical, accessible tool for enhancing mental health. Given the differential effects of various yoga styles, understanding their unique contributions could inform targeted interventions that optimize both emotional and psychological outcomes in diverse populations.

Methodology

Study Design

The study employed a single session, randomized controlled design to evaluate the immediate effects of three yoga styles Hatha, Vinyasa, and Restorative on psychological resources and emotional well-being.

Ethics

Ethical approval was secured from the institutional review board of Malir University of Science & Technology. All participants provided written informed consent prior to their inclusion in the study, ensuring compliance with ethical standards.

Setting

The study was conducted at Koochi Goth Hospital, where the sessions were organized in a controlled environment to ensure consistency. Certified yoga instructors facilitated all yoga classes, adhering to standardized protocols specific to each style of yoga.

Participants

A total of 90 participants were recruited and randomized into three groups of 30, each corresponding to one yoga style i.e. Hatha, Vinyasa, or Restorative yoga. Participants were adults aged 18–60 years with minimal prior experience in yoga, defined as no more than five yoga sessions attended in the past year. All participants demonstrated the ability to provide informed consent, follow study instructions, and commit to attending a single yoga session. Participants with severe physical injuries, medical conditions, recent diagnoses of major psychiatric disorders, pregnancy or recent childbirth (within six months), current use of recreational drugs or alcohol, or those participating in other psychological or emotional interventions were excluded from the study.

Procedures

Each participant attended a single 60-minute session of their assigned yoga style. The classes were structured to reflect the distinct characteristics of each yoga form, ensuring consistency and fidelity to the intervention.

- **Hatha Yoga:** This session focused on static physical postures and gentle stretching to promote physical stability and mindfulness. Participants were guided through a series of foundational poses (asanas) such as Mountain Pose, Downward Dog, and Warrior Pose,

with an emphasis on holding each posture for extended periods. The instructor encouraged controlled breathing (pranayama) to enhance body awareness and relaxation.

- **Vinyasa Yoga:** This session emphasized dynamic, flowing sequences of poses linked to breath. Participants engaged in synchronized movements transitioning seamlessly between postures, such as Sun Salutations, Warrior Flows, and Plank-to-Chaturanga-to-Upward Dog sequences. The class was moderately paced to stimulate both physical activation and mental focus, encouraging participants to align their movements with steady inhalations and exhalations.
- **Restorative Yoga:** This session centered on relaxation and stress reduction through prolonged, passive poses supported by props (e.g., bolsters, blankets, and blocks). Participants were guided into deeply restful positions, such as Supported Child's Pose and Reclining Bound Angle Pose, holding each for 5–10 minutes. The instructor created a calming environment using soft lighting and soothing music, promoting mindfulness and release of tension.

Each session concluded with a guided relaxation exercise or a brief meditation to consolidate the benefits of the practice.

Variables

The independent variable was the type of yoga practice (Hatha, Vinyasa, or Restorative). Dependent variables included scores on psychological resources and emotional well-being. Psychological resources were assessed using the Psychological Capital Questionnaire (PCQ), which measures hope, efficacy, resilience, and optimism, while emotional well-being was measured using the Positive and Negative Affect Schedule (PANAS), assessing positive and negative affective states.

Data Sources and Measurements

Data was collected before and immediately after the yoga sessions and documented using a structured proforma. The PCQ, a 24-item scale rated on a 6-point Likert scale, was used to assess psychological resources, with higher scores indicating greater psychological capital. Emotional well-being was measured using the PANAS, a 20-item scale rated on a 5-point Likert scale, where higher scores indicated stronger positive or negative affective states.

Bias

To minimize selection and measurement bias, participants were randomized into groups using a web-based random number generator. Standardized instructions and protocols were followed across all sessions to maintain consistency.

Statistical Methods

The statistical analysis was performed on SPSS 22.0. Within-group differences in pre- and post-session scores were analyzed using paired t-tests. Between-group differences in post-session outcomes were evaluated using one-way ANOVA. A $p < 0.05$ was considered statistically significant.

Results

Psychological Resources (PCQ)

The study revealed significant improvements in psychological resources, including hope, resilience, efficacy, and optimism, across participants practicing Hatha, Vinyasa, and Restorative yoga. Among the three styles, Hatha and Vinyasa yoga demonstrated the most consistent and significant enhancements across multiple dimensions.

Hatha yoga led to substantial gains in hope ($p < 0.01$) and resilience ($p < 0.01$), indicating its strong capacity to enhance traits associated with emotional stability and coping. Similarly, Vinyasa yoga showed pronounced improvements in efficacy ($p < 0.01$) and optimism ($p < 0.01$), suggesting its effectiveness in fostering self-confidence and a positive outlook. Restorative yoga also contributed to improvements, particularly in hope ($p < 0.05$), but its overall impact on resilience, efficacy, and optimism was less pronounced, with several non-significant results.

When considering the total PCQ scores, both Hatha and Vinyasa yoga significantly enhanced overall psychological resources ($p < 0.01$), while Restorative yoga showed a smaller, non-significant increase. These findings highlight the differential benefits of yoga styles, with Hatha and Vinyasa offering more robust effects compared to Restorative yoga, which appeared more modest in its impact.

Table 1: Pre and Post Results of Psychological Resources (PCQ) by Yoga Style

Variable	Yoga Style	Pre-Yoga Mean (SD)	Post-Yoga Mean (SD)	MD	p-value ¹	p-value ²	p-value ³	p-value ⁴
Hope	Hatha	18.0 (4.7)	21.4 (4.2)	3.4	< 0.01			
	Vinyasa	17.5 (4.6)	19.5 (4.3)	2	0.04			
	Restorative	18.2 (4.8)	20.5 (4.0)	2.3	< 0.05			
Resilience	Hatha	17.0 (4.8)	20.0 (4.5)	3	< 0.01			
	Vinyasa	16.5 (4.5)	18.5 (4.4)	2	< 0.05			
	Restorative	17.3 (4.6)	18.0 (4.1)	0.7	ns			
Efficacy	Vinyasa	16.8 (4.4)	19.6 (4.2)	2.8	< 0.01			
	Hatha	16.5 (4.3)	17.5 (4.1)	1	ns			
	Restorative	16.0 (4.5)	17.2 (4.3)	1.2	ns			
Optimism	Vinyasa	17.0 (4.3)	20.2 (4.5)	3.2	< 0.01			
	Hatha	16.7 (4.2)	18.0 (4.4)	1.3	0.02			
	Restorative	17.5 (4.4)	18.5 (4.3)	1	ns			
Total Score	Hatha	17.5 (4.5)	19.6 (4.4)	2.1	< 0.01	ns	ns	ns
	Vinyasa	17.0 (4.5)	19.6 (4.4)	2.6	< 0.01			
	Restorative	17.3 (4.6)	18.8 (4.2)	1.5	ns			

MD-Mean Difference

¹Within Group; ²Between Groups Hatha-Vinyasa; ³Between Groups Hatha-Restorative; ⁴Between Groups Vinyasa-Restorative

Emotional Well-being (PANAS)

The results indicated significant improvements in emotional well-being across all yoga styles, particularly in positive and negative affect.

Positive Affect

Restorative yoga participants experienced the most substantial increase in positive affect, with a mean difference (MD) of 10.2 ($p < 0.001$), followed by Hatha yoga (MD = 6.4, $p < 0.01$) and Vinyasa yoga (MD = 5.7, $p < 0.01$). Restorative yoga's greater improvement in positive affect was statistically significant when compared to both Hatha and Vinyasa, suggesting it may be especially effective in fostering positive emotional states.

Negative Affect

Restorative yoga also demonstrated the most significant reduction in negative affect, with an MD of -8.7 ($p < 0.001$). Both Hatha and Vinyasa yoga showed notable decreases in negative affect, with MDs of -4.8 ($p < 0.01$) and -4.5 ($p < 0.01$), respectively. These findings confirm that all three yoga styles contribute to reducing negative emotions, with Restorative yoga having the most profound effect.

Overall, the results highlight that while all yoga styles positively impacted emotional well-being, Restorative yoga led to the most significant improvements in both positive and negative affect. Hatha and Vinyasa also demonstrated beneficial effects, though to a lesser degree in comparison to Restorative yoga.

Table 2: Pre and Post Results of Emotional Well-being (PANAS) by Yoga Style

Variable	Yoga Style	Pre-Yoga Mean (SD)	Post-Yoga Mean (SD)	MD	p-value ¹	p-value ²	p-value ³	p-value ⁴
Positive Affect	Restorative	24.5 (5.2)	34.7 (4.5)	10.2	< 0.001	ns	0.01	< 0.001
	Hatha	25.1 (5.0)	31.5 (4.8)	6.4	< 0.01			
	Vinyasa	23.8 (5.3)	29.5 (5.1)	5.7	< 0.01			
Negative Affect	Restorative	15.8 (4.9)	7.1 (3.3)	-8.7	< 0.001	ns	< 0.001	< 0.001
	Hatha	16.0 (5.1)	11.2 (4.6)	-4.8	< 0.01			
	Vinyasa	15.5 (5.0)	11.0 (4.5)	-4.5	< 0.01			

MD-Mean Difference

¹Within Group; ²Between Groups Hatha-Vinyasa; ³Between Groups Hatha-Restorative; ⁴Between Groups Vinyasa-Restorative

Discussion

This study aimed to examine the immediate effects of a single session of yoga on psychological resources and emotional well-being, focusing on three yoga styles i.e. Hatha, Vinyasa, and Restorative. The findings revealed that yoga significantly enhances psychological resources, such as hope, resilience, efficacy, and optimism, while also improving emotional well-

being, including both positive and negative affect. These results are consistent with prior research indicating that yoga enhances emotional regulation and psychological resilience (1,2,14). However, while previous studies have reported improvements in psychological resources and emotional states following yoga practice, few have explored multiple potential mediators, allowing for a deeper understanding of how different resources contribute to emotional outcomes (3).

The present findings align with previous research on the acute effects of yoga. Prior studies have demonstrated that yoga improves mood, reduces anxiety, and enhances emotional well-being after a single session (3,15). In this study, both Hatha and Vinyasa yoga significantly improved psychological resources such as hope, resilience, efficacy, and optimism. These results support the work of Park et al. (2020), which also showed that yoga enhances psychological capital, including resilience and optimism. Notably, Vinyasa yoga produced substantial improvements in efficacy and optimism, aligning with studies suggesting that dynamic yoga styles like Vinyasa enhance self-confidence and emotional regulation (16,17).

Restorative yoga, which emphasizes relaxation, showed the most significant improvements in emotional well-being, particularly in reducing negative affect and enhancing positive affect. This finding is consistent with Park et al. (2020), which proposed that different yoga styles affect distinct psychological mechanisms (1). Restorative yoga's focus on relaxation and stress relief likely contributed to its stronger effect on emotional states, reducing anxiety and increasing feelings of tranquility and engagement. The large improvements in both positive (MD = 10.2) and negative affect (MD = -8.7) observed in the Restorative group reinforce the notion that yoga can be an effective intervention for stress reduction and emotional balance, particularly when relaxation is central to the practice (18).

While Hatha and Vinyasa yoga also improved emotional well-being, their effects were less pronounced than Restorative yoga. These findings highlight how different yoga styles target distinct aspects of emotional well-being. Hatha and Vinyasa yoga, with their emphasis on physical activity and dynamic movement, likely promote engagement and revitalization, while Restorative yoga's focus on relaxation is particularly effective in reducing negative affect and fostering tranquility.

Regarding psychological resources, Hatha and Vinyasa yoga showed the most significant improvements, aligning with prior studies that link yoga practice with enhanced psychological resources, such as mindfulness, body consciousness, and self-transcendence (1,19). Vinyasa yoga, in particular, showed the greatest gains in efficacy and optimism, further supporting the idea that more physically demanding practices enhance self-confidence and a positive outlook (2). In contrast, Restorative yoga, with its emphasis on relaxation, produced more modest gains in psychological resources like efficacy and resilience, but it was the most effective in enhancing emotional well-being.

The differential impacts of the three yoga styles underscore the importance of understanding how specific components of yoga such as physical postures, breathwork, and

meditation contribute to its effects on emotional and psychological outcomes. These findings suggest that yoga can influence emotional well-being and psychological resources in different ways, depending on the style practiced. As such, individualized yoga interventions could be tailored to target specific emotional or psychological goals. Future research should explore how different yoga styles influence specific psychological mechanisms, and whether the effects vary based on individual characteristics, such as experience level or baseline emotional state.

However, several limitations must be considered. First, the study focused on a single session of yoga, and while immediate effects were observed, it remains unclear whether these effects are sustained over time. Longitudinal studies are needed to assess the long-term benefits of yoga. Additionally, the sample comprised individuals with minimal prior yoga experience, and the results may differ for experienced practitioners. The study also focused on a limited range of outcomes (emotions), and yoga's effects on other health indicators, such as pain or physical health, were not assessed. Finally, the absence of a control group limits our ability to attribute the observed changes solely to yoga, as other factors, such as group dynamics or expectations, could have influenced the results. Despite these limitations, the study provides valuable insights into the immediate effects of yoga on psychological resources and emotional well-being, suggesting that different yoga styles can have distinct impacts. Future research should aim to replicate these findings and expand the scope of inquiry to explore additional outcomes and long-term effects.

Conclusion

The findings of this study underscore the potential of yoga as an effective intervention for enhancing psychological resources and emotional well-being. While all three yoga styles demonstrated positive effects, Restorative yoga was particularly effective in improving emotional well-being by reducing negative affect and enhancing positive emotions. Hatha and Vinyasa yoga, on the other hand, showed greater benefits in fostering psychological resources like resilience and optimism. These results contribute to the growing body of evidence on yoga's beneficial effects on mental health and highlight the importance of considering the specific components of yoga practice when designing interventions for emotional and psychological enhancement.

Conflicts of Interest

None.

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