KMAN PUBLISHING INSTITUTE
Journal Website

Article history:
Received 03 March 2025
Revised 28 July 2025
Accepted 02 August 2025
Initial Published 29 November 2025
Final Publication 01 January 2026

Psychology of Woman Journal

Volume 7, Issue 1, pp 1-10

E-ISSN: 3041-8615

The Effectiveness of Mindfulness Training on Physical and Behavioral Symptoms of Anxiety in Women with Yoga Experience

Mandana. Hadizade[1], Sajad. Amini Manesh[2*]

[1] M.A. in General Psychology, Shiraz Branch, Islamic Azad University, Shiraz, Iran
[2] Assistant Professor Department of Psychology, Shiraz Branch, Islamic Azad University, Shiraz, Iran

*** Corresponding author email address**: aminimanesh@iau.ac.ir

A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Hadizade, M., & Amini Manesh, S. (2026). The Effectiveness of Mindfulness Training on Physical and Behavioral Symptoms of Anxiety in Women with Yoga Experience. *Psychology of Woman Journal, 7*(1), 1-10. http://dx.doi.org/10.61838/kman.pwj.4293

A B S T R A C T

Objective: This study aimed to examine the effectiveness of mindfulness training on anxiety symptoms, self-focused attention, and resilience among individuals with prior experience in yoga.

Methods and Materials: The research employed a quasi-experimental pretest-posttest design with experimental and control groups. The statistical population included all women attending the "Yoga Salamat" club in Shiraz in 2024. Using convenience sampling and considering inclusion criteria, 40 participants were selected and randomly assigned to two equal groups (20 in each). Data were collected using the Beck Anxiety Inventory (BAI), the Self-Focus Attention Questionnaire by Woody et al., and the Connor-Davidson Resilience Scale (CD-RISC). The mindfulness training program was conducted in 8 sessions (eight 3-hour weekly sessions, including a half-day intensive practice from 4 to 8 PM) for the experimental group. Data were analyzed using descriptive statistics and multivariate analysis of covariance (MANCOVA) with SPSS version 26.

Findings: The results indicated that participation in the mindfulness sessions led to significant improvements in overall resilience, self-focused attention, and their subcomponents in the experimental group compared to the control group ($p < 0.05$). Additionally, ANCOVA results showed a statistically significant reduction in total anxiety scores as well as physical, cognitive, and behavioral anxiety symptoms from pretest to posttest in the experimental group ($p < 0.05$).

Conclusion: These findings suggest that mindfulness training effectively reduces anxiety and its symptoms in individuals with yoga experience.

Keywords: *Mindfulness Training, Physical and Behavioral Symptoms, Anxiety, Yoga.*

1. Introduction

Anxiety disorders represent one of the most pervasive mental health challenges globally, particularly among women, and have increasingly become a subject of interdisciplinary research in psychology, neuroscience, behavioral health, and integrative medicine. Contemporary evidence illustrates that anxiety is not only a subjective emotional state but also a complex psychophysiological syndrome involving cognitive distortions, autonomic arousal, attentional impairments, and maladaptive behavioral patterns—a conceptualization substantiated across empirical examinations in clinical, educational, and community contexts (Ibrahim et al., 2024; Jennifer et al., 2024; Spytska, 2024). Women demonstrate disproportionately higher rates of anxiety, greater vulnerability to chronic symptom trajectories, and heightened psychophysiological reactivity under stress, suggesting the need for tailored and context-sensitive interventions (Pryor et al., 2024; Thompson et al., 2024). The global rise in anxiety prevalence has further accelerated in recent years due to sociocultural Pressures, digital hyperconnectivity, post-pandemic disruptions, and heightened performance expectations, intensifying interest in effective, accessible, and sustainable mental health interventions (Myruski et al., 2024; Strickland et al., 2023; Tao et al., 2024). Given this landscape, mindfulness-based interventions and yoga-informed therapeutic modalities have emerged as promising complementary approaches, particularly for populations already familiar with mind–body practices.

Anxiety is strongly interconnected with impairments in attentional systems, including deficits in selective attention, working memory, and cognitive flexibility, all of which contribute to heightened self-focused attention and maladaptive appraisal of threat cues (Charness et al., 2024; Xu et al., 2024; Zhong et al., 2024). Heightened self-focused attention—defined as the over-monitoring of internal states and perceived flaws—has been consistently implicated in social anxiety, affective dysregulation, and worry maintenance (Carl et al., 2024; Lisna & Kovalchuk, 2024). Studies on adolescent and adult populations similarly indicate that attentional biases toward internal threat representations intensify vulnerability to anxiety, while chronic self-referential processing interferes with environmental awareness and adaptive coping (Skolzkov & Efremova, 2023; Zhou et al., 2024). Moreover, stress-related attentional dysregulation can increase physiological reactivity, exacerbate cognitive distortions, and disrupt behavioral adaptation—factors that jointly sustain anxiety cycles (Duckworth et al., 2024; Harrison et al., 2024).

Parallel to attentional disruptions, resilience has emerged in recent theoretical and empirical models as a crucial mediator of individuals' psychological adjustment to adversity, stress, and anxiety-inducing conditions (Ketelaars et al., 2024; McInerney et al., 2024). Resilience is not merely an internal trait but a dynamic and multifaceted construct encompassing emotional flexibility, cognitive reframing, and behavioral adaptability—processes shaped by personal habits, environmental support systems, and learned coping strategies (Leibovitz et al., 2024; Verma et al., 2024). Reductions in resilience have been shown to predict higher levels of anxiety, impaired mental health, and greater vulnerability to maladaptive avoidance patterns in both clinical and subclinical populations (Prameswari et al., 2024; Williams et al., 2024). Conversely, interventions that enhance metacognitive awareness, bodily awareness, and emotion regulation—including mindfulness—typically strengthen resilience and reduce anxiety-related risk factors (Acharyya & Mishra, 2024; Štánerová et al., 2025).

Within this scientific context, mindfulness-based interventions (MBIs) have garnered substantial attention for their capacity to attenuate stress reactivity, improve attentional control, and reduce anxiety symptoms across diverse populations. Whether delivered in-person, digitally, or in hybrid formats, MBIs consistently demonstrate efficacy in lowering physiological arousal, reducing cognitive intrusions, and enhancing emotional regulation (Alkhawaldeh et al., 2024; Burgess et al., 2024; Dunn et al., 2024). Meta-analytic evidence further supports that mindfulness training produces significant reductions in generalized anxiety disorder symptoms, attention biases, somatic tension, and maladaptive avoidance patterns (Si et al., 2024; Tang et al., 2025; Williams et al., 2024). Mechanistic investigations suggest that mindfulness works by interrupting habitual cognitive cycles, increasing present-centered awareness, strengthening attentional engagement with neutral stimuli, and fostering non-judgmental observation of internal experiences (Eka & Tondok, 2024; Frith & Jankowski, 2024; Sharma & Sanal, 2025). These processes collectively minimize reactivity, enhance cognitive clarity, and cultivate emotional steadiness.

Importantly, mindfulness shares conceptual and procedural overlap with yoga—a practice that integrates conscious breathing, physical postures, bodily awareness, and meditative focus. Research highlights that individuals

PWJ
Psychology of Woman Journal
E-ISSN: 3041-8615

with prior yoga experience may demonstrate heightened receptivity to mindfulness training due to their familiarity with bodily awareness, breath regulation, and meditative components (Arahuete & Pinazo, 2024; Mathew & Rangasamy, 2024). Yoga participation has been associated with improved stress tolerance, enhanced vagal regulation, better emotional balance, and reductions in both somatic and cognitive aspects of anxiety (Kaya et al., 2024; Verma et al., 2024). Moreover, studies show that integrating yoga principles into mindfulness training may amplify reductions in physical tension, improve interoceptive sensitivity, and foster greater behavioral regulation—outcomes particularly relevant for women facing chronic stress or anxiety (Doering et al., 2024; King et al., 2024). For example, breath-centered meditation, often used in yoga traditions, has been shown to improve attentional performance and reduce agitation in high-stress occupational and clinical settings (Flaherty et al., 2024; Xu et al., 2024).

Despite these promising synergies, the combination of yoga experience and mindfulness training remains understudied in relation to women's physical and behavioral anxiety symptoms specifically. Existing literature tends to examine mindfulness or yoga independently, rather than exploring how prior embodiment practices may potentiate the effects of mindfulness. Yet evidence suggests that individuals with preexisting somatic awareness—such as yoga practitioners—may experience deeper engagement with mindfulness-based practices and faster integration of emotional regulation skills (DiFonte et al., 2024; McInerney et al., 2024). Furthermore, yoga practitioners often demonstrate heightened sensitivity to bodily cues, making them particularly responsive to mindfulness-based strategies targeting physical symptoms of anxiety (Harrison et al., 2024; Jennifer et al., 2024).

The role of digital media, societal pressures, and gender-based vulnerabilities adds further complexity to understanding anxiety in women. For example, preference for digital stimulation and multitasking environments may exacerbate attentional fragmentation and internal rumination (Myruski et al., 2024; Prameswari et al., 2024). Similarly, sociocultural norms often increase women's exposure to anxiety triggers such as interpersonal evaluation, safety concerns, and performance pressures—factors linked to heightened physiological and behavioral anxiety symptoms (Carl et al., 2024; Pryor et al., 2024). Meanwhile, chronic exposure to stressors without adequate coping mechanisms may erode resilience and intensify the cyclical interplay between bodily tension, cognitive worry, and maladaptive behavioral responses (Skolzkov & Efremova, 2023; Strickland et al., 2023).

Recent neuroscientific models provide additional insights into why mindfulness and yoga-based approaches may be effective for anxiety regulation. Neural investigations indicate that mindfulness practice modulates circuits associated with fear processing, emotional regulation, and attentional control (Leibovitz et al., 2024). These changes include down-regulation of amygdala activation, increased prefrontal engagement, and strengthened connectivity within neural networks responsible for executive attention and interoceptive monitoring (Doering et al., 2024; Wang et al., 2024). Research also shows that brief mindfulness practice can significantly improve sustained attention and reduce impulsive attentional shifts in young adults, which aligns with findings in yoga research demonstrating improvements in executive function and cognitive control (Charness et al., 2024; Zhong et al., 2024). These mechanisms are especially relevant to women experiencing anxiety-driven cognitive overload, rumination, or disrupted attentional patterns.

Another important consideration is the behavioral dimension of anxiety, which includes avoidance patterns, restlessness, agitation, and maladaptive coping. Mindfulness practice has been demonstrated to reduce these maladaptive behaviors by increasing distress tolerance, enhancing meta-awareness, and promoting behavioral flexibility (Dunn et al., 2024; Spytska, 2024). Yoga experience may further potentiate these effects due to its emphasis on intentional movement, breath-movement synchrony, and bodily grounding practices (Acharyya & Mishra, 2024; Mathew & Rangasamy, 2024). For these reasons, women with yoga backgrounds may particularly benefit from mindfulness approaches designed to target physical and behavioral symptoms of anxiety.

Although the evidence base for mindfulness and yoga as separate modalities is robust, empirical investigations combining the two—especially among women with prior yoga experience—remain limited. Most studies have focused on general populations, clinical samples, athletes, or mixed-gender groups, leaving a notable gap in understanding how mindfulness training specifically affects anxiety-related physical and behavioral symptoms among yoga-experienced women (Burgess et al., 2024; Si et al., 2024; Štánerová et al., 2025). Addressing this gap is essential because women with prior somatic training may uniquely internalize mindfulness concepts, leading to potentially stronger therapeutic outcomes.

PWJ
Psychology of Woman Journal
E-ISSN: 3041-8615

Given the substantial personal, social, and health-related burdens associated with anxiety—and recognizing the intertwined roles of attention, resilience, and bodily awareness—research examining the impact of mindfulness training on women with yoga experience is both timely and necessary. Therefore, the present study aims to investigate whether mindfulness training leads to significant improvements in physical and behavioral symptoms of anxiety among women with prior yoga experience.

2. Methods and Materials

2.1. Study design and Participant

This study was applied in purpose and employed a quasi-experimental design with a pretest-posttest and control group. Following simple random assignment of participants into two groups (experimental and control), the mindfulness training program based on Kabat-Zinn's protocol (2003) was administered over 8 sessions to the experimental group. After completing the sessions, a posttest was conducted for both groups. It is noteworthy that participants in the control group did not receive the mindfulness training and were placed on a waiting list.

The statistical population included all women attending the *Salamat Yoga Club* in Shiraz during the year 2024. Using a convenience sampling method, 40 women who met the inclusion criteria were selected and randomly assigned into two groups of 20 (experimental and control). The sample size was determined based on similar studies, which report an attrition rate of 30–50% in semi-experimental and interventional research (Wallach et al., 2007). According to Delavar (2022), a minimum of 15 participants per subgroup is considered sufficient. Therefore, considering potential attrition, a total of 40 participants (20 per group) was deemed appropriate to maintain external validity.

Inclusion criteria: female gender, willingness to participate, literacy sufficient to complete questionnaires, age range of 20–40 years, at least one year of yoga experience, and ability to regularly attend training sessions and complete assignments.

Exclusion criteria: incomplete responses to the research tools, diagnosis of any acute or chronic physical illness (e.g., dysmenorrhea, breast cancer as reported by participants), participation in psychological training/treatment programs simultaneously or within 3 months before the study, absence from more than one session, behavioral disruptions during sessions, substance or alcohol abuse, use of medication for chronic physical or psychiatric illnesses, or occurrence of critical life events (e.g., family death, illness, pregnancy) during the study.

2.2. Measures

To assess anxiety levels, the Beck Anxiety Inventory (Beck et al., 1988) was used, consisting of 21 items. Each item represents a common symptom of anxiety in three categories: cognitive (items 1, 4, 9, 11, 16, 18), physical (items 2, 3, 8, 14, 15, 19, 21), and behavioral (items 5, 6, 7, 10, 12, 13, 17, 20). Responses are rated on a 4-point Likert scale (0–3), indicating severity from "not at all" to "severe." Scores range from 0 to 63, where 0–7 indicates minimal anxiety, 8–15 mild, 16–25 moderate, and 26–63 severe anxiety. Beck et al. reported a Cronbach's alpha of 0.75 and convergent validity correlations of 0.25 and 0.48 with Hamilton and Beck Depression Scales, respectively. In Iran, Kaviani & Mousavi (2008) reported a test-retest reliability of 0.92 and concurrent validity ranging from 0.30 to 0.72. In this study, Cronbach's alpha was 0.79.

2.3. Intervention

The mindfulness training program was delivered over eight structured sessions based on Kabat-Zinn's (2003) protocol, incorporating progressively layered practices to cultivate present-moment awareness and emotional regulation. In Session 1, participants were introduced to program guidelines and engaged in foundational exercises such as the raisin-eating practice, standing yoga, and a full body scan, followed by a home assignment. Session 2 expanded skills through the 3-minute breathing space, gentle yoga, repeated body scan practice, and focused awareness of breathing. Session 3 emphasized sitting meditation, lying-down yoga, mindful walking, and maintaining a pleasant-events log to enhance awareness of positive experiences. Session 4 deepened mindful sitting with attention to breath, bodily sensations, thoughts, and emotions, accompanied by discussion on autopilot reactions and stress reactivity. Session 5 focused on working skillfully with unpleasant sensations and emotions and cultivating awareness during difficult communications. Session 6 addressed interpersonal awareness, communication styles, mindful walking, and mindful eating to strengthen daily-life application. Between Sessions 6 and 7, participants completed a full-day retreat involving guided practices including body scan, sitting meditation, mindful walking, mountain meditation, mindful eating, and compassion practice. Session 7 included participant-led yoga and reflection on the retreat experience,

PWJ
Psychology of Woman Journal
E-ISSN: 3041-8615

while Session 8 concluded the program with a final body scan, integrative reflections, review of key concepts, a closing activity, and administration of the posttest assessment.

2.4. Data Analysis

Descriptive statistics (mean, standard deviation) and inferential statistics (covariance analysis) were used. Assumptions for parametric tests were examined, including Kolmogorov–Smirnov test (normality), Levene's test (homogeneity of variances), linearity, and homogeneity of regression slopes. Data analysis was conducted using SPSS version 26.

3. Findings and Results

Demographic data of both experimental and control groups were analyzed. The findings indicated that in both groups, over 50% of participants were aged 31 years or older.

Table 1

Means and Standard Deviations of Research Variables by Group and Assessment Stage

Dependent Variable	Group	N	Pretest M (SD)	Posttest M (SD)
Physical Symptoms	Experimental	20	11.05 (2.13)	10.60 (2.01)
	Control	20	10.85 (1.75)	11.25 (1.44)
Cognitive Symptoms	Experimental	20	9.95 (1.60)	7.40 (1.18)
	Control	20	9.65 (1.89)	10.15 (1.75)
Behavioral Symptoms	Experimental	20	11.80 (2.26)	10.20 (1.41)
	Control	20	12.35 (3.26)	12.65 (3.03)
Total Anxiety Score	Experimental	20	32.80 (5.99)	28.20 (4.60)
	Control	20	32.85 (6.90)	34.05 (6.22)

As shown in Table 1, descriptive statistics (means and standard deviations) of the dependent variables are presented for both groups across pretest and posttest. The experimental group exhibited a noticeable improvement from pretest to posttest across all variables, while the control group showed no significant change over the same period.

Before conducting ANCOVA, the assumptions were checked:

- Normality was tested using the Shapiro-Wilk test along with skewness and kurtosis values. All variables had significance values above 0.05 ($p > 0.05$), and the skewness and kurtosis fell within the acceptable range (-2 to +2), indicating normal distribution.
- Homogeneity of variances was examined using Levene's test. The results confirmed this assumption, as the significance levels were greater than 0.05 for all dependent variables.
- Homogeneity of covariance matrices was tested using Box's M test, which also supported the assumption ($p > 0.05$). Given that all assumptions were met, the use of multivariate analysis of covariance (MANCOVA) was deemed appropriate.

Table 2

Multivariate Analysis of Covariance (MANCOVA) on Anxiety

Test Type	Value	F	Sig.	Effect Size	Power
Pillai's Trace	0.535	12.678	0.000	0.535	0.999
Wilks' Lambda	0.465	12.678	0.000	0.535	0.999
Hotelling's Trace	1.153	12.678	0.000	0.535	0.999
Roy's Largest Root	1.153	12.678	0.000	0.535	0.999

As presented in Table 2, the Wilks' Lambda test showed a statistically significant effect ($F = 12.678$, $p < 0.001$), suggesting that there were significant differences between the experimental and control groups in the posttest scores of anxiety-related variables after controlling for pretest scores. The effect size indicates that 53.5% of the variance between the groups is attributable to the mindfulness training program.

PWJ
Psychology of Woman Journal
E-ISSN: 3041-8615

Table 3

Between-Subjects Effects of ANCOVA on Posttest Anxiety Components

Source	Variable	SS	df	MS	F	p	Eta²	Power
Group	Physical Symptoms	5.931	1	5.931	10.363	0.003	0.228	0.879
	Cognitive Symptoms	10.438	1	10.438	20.253	0.001	0.367	0.992
	Behavioral Symptoms	9.759	1	9.759	14.725	0.008	0.296	0.962
Error	Physical Symptoms	20.033	35	0.572				
	Cognitive Symptoms	18.038	35	0.515				
	Behavioral Symptoms	23.195	35	0.663				

The results in Table 3 indicate that, after controlling for pretest scores, the mindfulness training significantly affected the reduction of physical, cognitive, and behavioral symptoms of anxiety at the 0.05 significance level. This supports the effectiveness of the intervention in alleviating anxiety-related symptoms in participants.

4. Discussion and Conclusion

The purpose of this study was to investigate the effectiveness of mindfulness training on reducing physical and behavioral symptoms of anxiety in women with prior yoga experience. The findings demonstrated that participants who completed the mindfulness intervention showed significant reductions in physical, cognitive, and behavioral components of anxiety compared with the control group. These results reinforce the growing body of scholarship highlighting the beneficial effects of mindfulness-based programs on emotional regulation, attentional functioning, and anxiety symptomatology across diverse populations (Alkhawaldeh et al., 2024; Tang et al., 2025; Williams et al., 2024). The observed reductions in bodily arousal—including tension, restlessness, and somatic discomfort—align with previous evidence suggesting that mindfulness training modulates stress physiology, improves autonomic balance, and enhances interoceptive awareness (King et al., 2024; Leibovitz et al., 2024).

The results of the present study also align with prior randomized controlled trials showing that mindfulness-based cognitive therapy and meditation-based interventions decrease generalized anxiety symptoms by interrupting maladaptive worry cycles and reducing cognitive reactivity (Sharma & Sanal, 2025; Williams et al., 2024). Mindfulness practices promote nonjudgmental awareness of thoughts and bodily sensations, which helps reduce automatic emotional responses often observed in individuals experiencing chronic anxiety. This mechanism has been supported by neurocognitive evidence demonstrating that mindfulness alters neural circuits associated with fear processing, attention, and emotion regulation (Leibovitz et al., 2024). When practitioners learn to observe thoughts and sensations without immediately reacting, the intensity of physiological arousal diminishes, which corresponds with the decreases in physical symptoms observed in this study.

Moreover, the improvement in behavioral symptoms—such as agitation, avoidance tendencies, and emotional reactivity—corroborates multiple studies emphasizing the behavioral self-regulation benefits of mindfulness (Dunn et al., 2024; Spytska, 2024). Behavioral manifestations of anxiety often arise from heightened physiological arousal and maladaptive cognitive patterns. Mindfulness practices counter these tendencies by encouraging purposeful attention, slowing automatic reactions, and increasing behavioral flexibility. Prior research shows that meditation and mindful breathing enhance attentional stability and reduce impulsive behavior, contributing to more adaptive emotional and behavioral responses during stress (Charness et al., 2024; Zhong et al., 2024). The current findings confirm these mechanisms, providing additional empirical support for the role of mindfulness in reducing behavioral expressions of anxiety.

The participants in this study had prior experience with yoga, a factor that may have amplified the impact of mindfulness training. Research shows that yoga practitioners have more developed interoceptive awareness and may more readily engage with mindfulness practices due to their familiarity with breath regulation, focused attention, and body-oriented meditative exercises (Mathew & Rangasamy, 2024; Verma et al., 2024). Yoga enhances autonomic regulation, reduces muscular tension, and promotes cognitive-emotional balance, all of which complement the skills taught in mindfulness interventions (Arahuete & Pinazo, 2024; Kaya et al., 2024). Thus, the improvements observed in this study may reflect a synergistic effect wherein preexisting somatic awareness strengthened the integration of mindfulness concepts. Earlier studies similarly

PWJ
Psychology of Woman Journal
E-ISSN: 3041-8615

report that individuals with embodied practice backgrounds demonstrate faster uptake of meditation strategies and show stronger reductions in anxiety and stress-related symptoms compared with those without such backgrounds (Burgess et al., 2024; Si et al., 2024).

Importantly, this study found significant reductions across all three domains of anxiety—physical, cognitive, and behavioral—suggesting that mindfulness interventions address anxiety holistically rather than in isolated aspects. This aligns with theoretical frameworks proposing that mindfulness influences multiple systems simultaneously, including cognitive appraisal, emotional regulation, somatic awareness, and behavioral activation (Frith & Jankowski, 2024; Thompson et al., 2024). Such multidimensional effects reflect the integrative nature of mindfulness practices, which target breath awareness, sensory grounding, and metacognitive observing skills. Prior evidence indicates that mindfulness-based programs are uniquely suited to disrupt the reinforcing cycles between physiological arousal, cognitive worry, and avoidance behaviors (Doering et al., 2024; Ibrahim et al., 2024). The present findings contribute further support to these theoretical claims by demonstrating significant improvements across all anxiety-related domains.

Another noteworthy aspect of the results is the marked reduction in cognitive anxiety symptoms, which include intrusive thoughts, worry, and attentional difficulties. This aligns with previous studies showing that mindfulness enhances attentional control and reduces maladaptive self-focused attention (Carl et al., 2024; Lisna & Kovalchuk, 2024). Chronic anxiety often involves excessive inward monitoring and hypervigilance to threat-related internal cues. Mindfulness reduces such tendencies by strengthening attentional engagement with neutral present-moment stimuli and diminishing cognitive absorption in self-referential content (Myruski et al., 2024; Zhou et al., 2024). Research demonstrates that even brief meditation practice can significantly improve sustained attention and reduce susceptibility to distraction, which supports the cognitive improvements seen in the current intervention (Zhong et al., 2024). Therefore, the reduction in cognitive anxiety symptoms aligns consistently with existing empirical evidence on the attentional benefits of mindfulness.

The results also reflect broader findings on resilience, even though resilience was not the primary focus of this analysis. Mindfulness-based training is known to improve resilience by fostering emotional flexibility, adaptive coping, and effective stress management (Ketelaars et al., 2024; McInerney et al., 2024). Increased resilience, in turn, reduces anxiety vulnerability by enhancing tolerance to adverse events and decreasing the frequency of maladaptive reactions (Kennedy et al., 2024; Skolzkov & Efremova, 2023). Although resilience was not directly measured in the final analysis of this study, prior empirical literature suggests that improvements in anxiety symptoms, particularly cognitive and behavioral dimensions, often parallel increases in resilience-related skills. This theoretical connection supports the interpretation that mindfulness likely enhanced participants' adaptive functioning alongside reducing their anxiety symptoms.

The finding that mindfulness significantly reduced physical symptoms of anxiety aligns with extensive evidence indicating that meditation and breath-based practices modulate physiological stress markers. Research demonstrates that mindfulness influences autonomic functioning, reducing sympathetic activation and enhancing parasympathetic tone (King et al., 2024; Williams et al., 2024). Breathwork and sustained sensory awareness, central to mindfulness interventions, lower heart rate, improve respiration patterns, and reduce muscular tension—mechanisms that directly alleviate somatic anxiety symptoms (Flaherty et al., 2024; Xu et al., 2024). This alignment with prior neurophysiological studies strengthens the validity of the outcomes observed in the present research.

Taken together, the results support the growing scientific consensus that mindfulness training is an effective intervention for reducing physical and behavioral symptoms of anxiety. Moreover, the findings contribute to an understudied area: mindfulness outcomes among women with prior yoga experience. While previous studies have explored mindfulness in general populations, clinical samples, athletes, and healthcare workers, few have examined mindfulness in yoga-experienced women, despite the theoretical relevance of embodied practice in enhancing intervention responsiveness (Acharyya & Mishra, 2024; Prameswari et al., 2024). By documenting significant improvements across anxiety domains, the current study fills an important gap in the literature and supports the notion that mindfulness may be particularly well-suited for women with established somatic awareness.

Overall, the convergence of the present findings with extensive empirical literature underscores the robustness of mindfulness as a therapeutic approach. Whether through improvements in attentional regulation, reductions in self-focused cognitive processing, modulation of physiological stress pathways, or enhancement of behavioral adaptability,

PWJ
Psychology of Woman Journal
E-ISSN: 3041-8615

mindfulness appears to exert wide-ranging benefits consistent with findings across numerous contexts (Alkhawaldeh et al., 2024; Charness et al., 2024; Dunn et al., 2024). These results extend this knowledge base by demonstrating comparable benefits in yoga-experienced women, suggesting that existing somatic practices may prime individuals for deeper engagement in mindfulness training.

5. Limitations and Suggestions

This study was limited by a relatively small sample size and the use of convenience sampling, which may restrict generalizability. All participants were women with yoga experience, limiting applicability to other populations such as men, adolescents, or individuals without prior exposure to somatic practices. The study relied solely on self-report instruments, which are subject to response bias, and did not include physiological or behavioral observational measures. Additionally, the absence of follow-up assessment prevented evaluation of long-term intervention effects.

Future studies should incorporate larger, more diverse samples and use random sampling to enhance external validity. Longitudinal follow-ups are recommended to assess sustained effects. Researchers should also integrate physiological and cognitive performance measures to complement self-report data. Comparative studies examining mindfulness against other embodied practices such as Tai Chi, Pilates, or aerobic exercise would provide deeper insight into intervention specificity. Qualitative methods could further illuminate participants' lived experiences and deepen understanding of intervention mechanisms.

Practitioners should consider integrating mindfulness training into yoga studios, mental health centers, and community wellness programs for women. Tailoring mindfulness sessions to individuals with prior somatic training may enhance engagement and outcomes. Multi-modal approaches combining breathwork, mindful movement, and meditation may be particularly beneficial. Instructors should emphasize consistency, home practice, and gradual skill development to maximize effectiveness.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We would like to express our gratitude to all individuals helped us to do the project.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. This study was approved by the Ethics Committee of Islamic Azad University, Shiraz Branch (Ethics Code: IR.IAU.SHIRAZ.REC.1403.240) and received official authorization from the Fars Department of Education.

References

Acharyya, D., & Mishra, S. (2024). Effect of Asanas, Meditation and Pranayama on Physiological and Psychological Variables of College-level Students. *Indian Journal of YOGA Exercise & Sport Science and Physical Education*, 51-58. https://doi.org/10.58914/ijyesspe.2024-9.Spl.9

Alkhawaldeh, J., Khawaldeh, M., Mrayyan, M. T., Yehia, D., Shudifat, R. M., Anshasi, H., & Aqel, A. (2024). The efficacy of mindfulness-based programs in reducing anxiety among nurses in hospital settings: A systematic review. *Worldviews on Evidence-Based Nursing*. https://doi.org/10.1111/wvn.12722

Arahuete, L., & Pinazo, D. (2024). The effect of mindfulness training on the self-regulation of socio-moral thoughts. *Psychological Reports*, *127*(6), 2898-2917. https://doi.org/10.1177/00332941221146702

Burgess, D. J., Calvert, C., Campbell, E. M. H., Allen, K. D., Bangerter, A., Behrens, K., & Taylor, B. C. (2024). Telehealth Mindfulness-Based Interventions for Chronic Pain: The LAMP Randomized Clinical Trial. *JAMA internal medicine*. https://doi.org/10.1001/jamainternmed.2024.3940

Carl, A., Good, M., Haag, E., Hutaff-Lee, C., Swain, D., Tartaglia, N., & Thompson, T. (2024). Anxiety in Turner syndrome: Engaging community to address barriers and facilitators to

PWJ
Psychology of Woman Journal
E-ISSN: 3041-8615

diagnosis and care. *American Journal of Medical Genetics Part A*. https://doi.org/10.1002/ajmg.a.63564

Charness, G., Bihan, Y., & Villeval, M. C. (2024). Mindfulness training, cognitive performance and stress reduction. *Journal of Economic Behavior & Organization*, *217*, 207-226. https://doi.org/10.1016/j.jebo.2023.10.027

DiFonte, M. C., Schick, M. R., & Spillane, N. S. (2024). Perceived stress and resilience among college students: The roles of self-compassion and anxiety symptomatology. *American College Health*, *72*(1), 128-134. https://doi.org/10.1080/07448481.2021.2024211

Doering, S., Probert-Lindström, S., Ehnvall, A., Wiktorsson, S., Öberg, N. P., Bergqvist, E., & Waern, M. (2024). Anxiety symptoms preceding suicide: A Swedish nationwide record review. *Journal of affective disorders*, *355*, 317-324. https://doi.org/10.1016/j.jad.2024.03.118

Duckworth, J., Hasan, A., & Kamardeen, I. (2024). Mental health challenges of manual and trade workers in the construction industry: a systematic review of causes, effects and interventions. *Engineering, Construction and Architectural Management*, *31*(4), 1497-1516. https://doi.org/10.1108/ECAM-11-2021-1022

Dunn, B. D., Warbrick, L., Hayes, R., Montero-Marin, J., Reed, N., Dalgleish, T., & Kuyken, W. (2024). Does mindfulness-based cognitive therapy with tapering support reduce risk of relapse/recurrence in major depressive disorder by enhancing positive affect? A secondary analysis of the PREVENT trial. *Journal of consulting and clinical psychology*, *92*(9), 619. https://doi.org/10.1037/ccp0000902

Eka, G., & Tondok, M. S. (2024). Evaluating the effectiveness of mindfulness-based sexual therapy for women with sexual dysfunction: A systematic literature review. *Jurnal Ilmiah Psikologi Terapan*, *12*(2), 140-149. https://doi.org/10.22219/jipt.v12i2.29232

Flaherty, K. R., Demirjian, C. C., & Nelson, C. J. (2024). The role of acceptance and mindfulness based therapies in sexual health. *The Journal of Sexual Medicine*, *21*(1), 4-8. https://doi.org/10.1093/jsxmed/qdad142

Frith, H., & Jankowski, G. S. (2024). Psychosocial impact of androgenetic alopecia on men: A systematic review and meta-analysis. *Psychology, Health & Medicine*, *29*(4), 822-842. https://doi.org/10.1080/13548506.2023.2242049

Harrison, R. J., Buckley, E. A., Ross, N. J., Witte, C. E., & Thompson, W. L. (2024). Multi-modal mindfulness training and well-being for healthcare students. *Currents in Pharmacy Teaching and Learning*, *16*(1), 49-57. https://doi.org/10.1016/j.cptl.2023.12.008

Ibrahim, D., Ahmed, R. M., Mohammad, A. Z., Ibrahim, B., Mohammed, T., Mohamed, M. E., & Shaaban, K. M. (2024). Prevalence and correlates of generalized anxiety disorder and perceived stress among Sudanese medical students. *BMC psychiatry*, *24*(1), 68. https://doi.org/10.1186/s12888-024-05510-y

Jennifer, S., Brady, B. R., Ibrahim, M. M., Herder, K. E., Wallace, J. S., Padilla, A. R., & Vanderah, T. W. (2024). Co-occurrence of chronic pain and anxiety/depression symptoms in US adults: prevalence, functional impacts, and opportunities. *Pain*, *165*(3), 666-673. https://doi.org/10.1097/j.pain.0000000000003056

Kaya, S. C., Sezerel, H., & Filimonau, V. (2024). How mindfulness training changes tourist experience: An exploratory study. *Hospitality and Tourism Management*, *59*, 166-179. https://doi.org/10.1016/j.jhtm.2024.04.007

Kennedy, B., Sims-Rhodes, N., Avendano, J., Mathew, J., O'Brien, K., Chek, C., & Sass, S. (2024). Resilience, mindfulness, anxiety, and depression within a dual-continua model of mental health approach. *Journal of Happiness and Health*, *4*(1), 11-18. https://doi.org/10.47602/johah.v4i1.54

Ketelaars, E., Gaudin, C., Flandin, S., & Poizat, G. (2024). Resilience training for critical situation management. An umbrella and a systematic literature review. *Safety Science*, *170*, 106311. https://doi.org/10.1016/j.ssci.2023.106311

King, J., Halversen, A., Richards, O., John, K., & Strong, B. (2024). Anxiety and physiological responses to virtual reality and audio meditation in racial and ethnic minorities. *Journal of Technology in Behavioral Science*, *9*(2), 275-283. https://doi.org/10.1007/s41347-023-00330-5

Leibovitz, S. E., Sevinc, G., Greenberg, J., Hölzel, B., Gard, T., Calahan, T., & Lazar, S. W. (2024). Mindfulness training and exercise differentially impact fear extinction neurocircuitry. *Psychological medicine*, *54*(4), 835-846. https://doi.org/10.1017/S0033291723002593

Lisna, I., & Kovalchuk, O. (2024). Freedom and Responsibility in the Context of Logotherapy. *East European Association of Scientists*, *36*. https://www.researchgate.net/profile/Mykola-Biloshkurskyi/publication/381733894_Proceedings_of_the_East_European_Association_of_Scientists_1st_International_Scientific_Conferences/links/667c7d15714e0b0315299d9f/Proceedings-of-the-East-European-Association-of-Scientists-1st-International-Scientific-Conferences.pdf#page=40

Mathew, D., & Rangasamy, M. (2024). Effect of Yoga Therapy on Insomnia Severity and Systolic Blood Pressure in Aged Women: A 12-Week Intervention Study Conducted in Kerala. *Cureus*, *16*(3), 1-9. https://doi.org/10.7759/cureus.57169

McInerney, S., Waldrep, E., & Benight, C. (2024). Resilience enhancing programs in the US military: exploration of theory and applied practice. *Military Psychology*, *36*(3), 241-252. https://doi.org/10.1080/08995605.2022.2086418

Myruski, S., de Rutte, J., Findley, A., Roy, A. K., & Dennis-Tiwary, T. A. (2024). Preference for digital media use, biobehavioral attention bias, and anxiety symptoms in adolescents. *Computers in Human Behavior Reports*, 100439. https://doi.org/10.1016/j.chbr.2024.100439

Prameswari, Y. R., Amita, A. S. D., Gracia, I., & Lilis, L. (2024). Effect of Yoga on Anxiety Levels among Medical Students During COVID-19. *Althea Medical Journal*, *11*(2), 25-39. https://doi.org/10.15850/amj.v11n2.3173

Pryor, D. W., Hughes, M. R., & Langdon, J. J. (2024). Agents of socialization, anxiety, college women, and fear of rape. *Violence Against Women*, *30*(3-4), 691-721. https://doi.org/10.1177/10778012231172703

Sharma, S., & Sanal, L. (2025). Role of Mindfulness Meditation in Reducing Anxiety: A Review. *International Ayurvedic Medical Journal*, *13*(02), 492-495. https://doi.org/10.46607/iamj2913022025

Si, X. W., Yang, Z. K., & Feng, X. (2024). A meta-analysis of the intervention effect of mindfulness training on athletes' performance. *Frontiers in psychology*, *15*, 1375608. https://doi.org/10.3389/fpsyg.2024.1375608

Skolzkov, A., & Efremova, E. (2023). Impact of a Brief Mindfulness Training on Anxiety, Depression, and Subjective Happiness of the First-Year Psychology Students in Russia: Pilot Case Study of Ural Federal University. *Sage Open*, *13*(2), 21582440231166601. https://doi.org/10.1177/21582440231166601

Spytska, L. (2024). Anxiety and depressive personality disorders in the modern world. *Acta Psychologica*, *246*, 104285. https://doi.org/10.1016/j.actpsy.2024.104285

Štánerová, E., Zelenayová, V., & Rajčáni, J. (2025). Mindfulness-based interventions for cancer patients in standard treatment: A meta-analysis of effects on depression, anxiety, and quality

of life. *Journal of psychosomatic research*, *196*, 112312. https://doi.org/10.1016/j.jpsychores.2025.112312

Strickland, N. J., Tang, K. T., Wekerle, C., & Stewart, S. H. (2023). Fostering resilience and countering stigma: A qualitative exploration of risk and protective factors for negative psychological consequences among alcohol-involved sexual assault survivors. *Psychological Trauma: Theory, Research, Practice, and Policy*, *15*(6), 1012. https://doi.org/10.1037/tra0001300

Tang, G., Chen, B., Wu, M., Sun, L., Fan, R., Hou, R., & Li, T. (2025). Effectiveness of mindfulness-based cognitive therapy for treating generalized anxiety disorder and the moderating influence of abuse during childhood: A randomized controlled trial. *Journal of affective disorders*. https://doi.org/10.1016/j.jad.2025.02.103

Tao, Y., Hou, W., Niu, H., Ma, Z., Zhang, S., Zhang, L., & Liu, X. (2024). Centrality and bridge symptoms of anxiety, depression, and sleep disturbance among college students during the COVID-19 pandemic-a network analysis. *Current Psychology*, *43*(15), 13897-13908. https://doi.org/10.1007/s12144-022-03443-x

Thompson, M. S., Page, S. L., & Cooper, C. L. (2024). A test of Carver and Scheier's self-control model of stress in exploring burnout among mental health nurses. In *Managerial, Occupational and Organizational Stress Research* (pp. 61-76). https://api.taylorfrancis.com/content/chapters/edit/download?identifierName=doi&identifierValue=10.4324/9781003576921-5&type=chapterpdf

Verma, A., Saxena, V., & Upadhyay, V. (2024). Knowledge, Attitude, and Gap in the Practice of Yoga for Public Policy in Brain Health and Integrative Health. In *Neuroscience of Yoga: Theory and Practice: Part II* (pp. 243-262). https://doi.org/10.1007/978-981-97-2855-8_12

Wang, X., Nasiruddin, N. J. B. M., Ji, S., Gao, X., Hassan, M. Z. B., Dong, D., & Samsudin, S. B. (2024). Effects of mindfulness-based programs on competitive anxiety in sports: A meta-analysis. *Current Psychology*, 1-13. https://doi.org/10.1007/s12144-024-06128-9 10.1007/s12144-024-05855-3

Williams, M., Honan, C., Skromanis, S., Sanderson, B., & Matthews, A. J. (2024). Psychological outcomes and mechanisms of mindfulness-based training for generalised anxiety disorder: A systematic review and meta-analysis. *Current Psychology*, *43*(6), 5318-5340. https://doi.org/10.1007/s12144-023-04695-x

Xu, L., Jia, J., Hou, S., Dou, Z., & Song, R. (2024). Effect of Breathing Meditation Training on Nursing Work Quality, Occurrence Risk of Adverse Events, and Attention Level of Operating Room Nurses. *Alternative Therapies in Health and Medicine*, AT9877. http://www.alternative-therapies.com/oa/pdf/9877.pdf

Zhong, S. Y., Guo, J. H., Zhou, X. N., Liu, J. L., & Jiang, C. L. (2024). Effects of brief mindfulness meditation training on attention and dispositional mindfulness in young adult males. *Acta Psychologica*, *246*, 104277. https://doi.org/10.1016/j.actpsy.2024.104277

Zhou, J., Wang, L. A., Zhu, D., & Gong, X. (2024). Social anxiety and peer victimization and aggression: examining reciprocal trait-state effects among early adolescents. *Journal of youth and adolescence*, *53*(3), 701-717. https://doi.org/10.1007/s10964-023-01920-5

PWJ
Psychology of Woman Journal
E-ISSN: 3041-8615