

Yoga as an Adjunctive Therapy for Anxiety and Depression in an Outpatient Setting: A Hospital-Based Interventional Study

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Abstract

Background: Anxiety and depression are common psychiatric disorders associated with substantial functional impairment. Yoga has emerged as a promising complementary intervention that may enhance the effectiveness of conventional psychiatric treatment.

Objective: To evaluate the effectiveness of yoga as an adjunctive therapy for anxiety and depression in patients attending the Psychiatry Outpatient Department of GMERS Medical College, Gandhinagar.

Materials and Methods: This prospective, randomized, hospital-based interventional study was conducted during 2025–2026 among 120 patients diagnosed with anxiety and/or depressive disorders. Participants were randomized into two groups: Group A (n=60) received standard psychiatric treatment along with supervised yoga therapy for eight weeks, while Group B (n=60) received standard psychiatric treatment alone. Anxiety and depression were assessed using the Hamilton Anxiety Rating Scale (HAM-A) and Hamilton Depression Rating Scale (HAM-D). Secondary outcomes included quality of life (WHOQOL-BREF), sleep quality (PSQI), medication adherence, and patient satisfaction. Statistical analysis was performed using SPSS version 26.0, with $p < 0.05$ considered statistically significant.

Results: Baseline demographic and clinical characteristics were comparable between the groups. After eight weeks, the yoga group demonstrated significantly greater reductions in HAM-A (12.6 ± 3.9 vs. 7.4 ± 3.5) and HAM-D (10.9 ± 3.4 vs. 6.1 ± 3.0) scores compared with the control group ($p < 0.001$). Participants receiving yoga also showed significantly higher WHOQOL-BREF scores (79.8 ± 8.4 vs. 70.6 ± 9.5), better sleep quality (PSQI: 4.8 ± 1.6 vs. 7.1 ± 2.0), improved medication adherence (91.7% vs. 78.3%), and higher patient satisfaction (8.9 ± 0.9 vs. 7.4 ± 1.2). Yoga therapy was safe and well tolerated, with only minor self-limiting adverse events.

Conclusion: Yoga is an effective, safe, and feasible adjunctive therapy for anxiety and depression in psychiatric outpatients. Its integration with standard treatment significantly improves symptom severity, quality of life, sleep quality, and treatment adherence, supporting its incorporation into routine mental health care.

Keywords: Yoga, Anxiety, Depression, Adjunctive therapy, Psychiatry, HAM-A, HAM-D, Quality of life.

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Introduction

Anxiety and depression are among the most common mental health disorders worldwide and constitute a major public health challenge due to their high prevalence, recurrent nature, and significant impact on quality of life, social functioning, and productivity. [1]

According to the World Health Organization, depression is a leading cause of disability globally, while anxiety disorders affect millions of individuals across all age groups. Although pharmacotherapy and psychotherapy remain the cornerstone of treatment, a considerable proportion

of patients continue to experience residual symptoms, adverse drug effects, or poor treatment adherence, highlighting the need for effective adjunctive therapies. [2] Yoga, an ancient mind-body practice originating in India, integrates physical postures (asanas), breathing exercises (pranayama), relaxation, and meditation.

Increasing evidence suggests that yoga exerts beneficial effects on psychological well-being through modulation of the autonomic nervous system, reduction of hypothalamic-pituitary-adrenal (HPA) axis activation, enhancement of

gamma-aminobutyric acid (GABA) activity, and improvement in emotional regulation. These physiological and psychological effects have generated considerable interest in yoga as a complementary intervention for psychiatric disorders. [3]

Several randomized controlled trials and systematic reviews have demonstrated that yoga, when used alongside standard psychiatric treatment, significantly reduces symptoms of depression and anxiety while improving overall quality of life and functional outcomes. [4]

Adjunctive yoga therapy has also been associated with better stress management, enhanced mood, improved sleep quality, and greater patient satisfaction, with minimal adverse effects. [5] Moreover, yoga is inexpensive, culturally acceptable, and feasible for implementation in outpatient settings, making it an attractive adjunctive therapeutic option. [6,7] Despite encouraging evidence, prospective randomized studies evaluating yoga as an adjunct to standard psychiatric treatment in Indian tertiary care outpatient settings remain limited. Therefore, the present study was undertaken to evaluate the effectiveness of yoga as an adjunctive therapy for patients with anxiety and depression attending the Psychiatry Outpatient Department of GMERS Medical College, Gandhinagar, during the year 2025–2026.

Materials and Methodology

Study Design: A prospective, randomized, hospital-based interventional study was conducted to evaluate the effectiveness of yoga as an adjunctive therapy in patients with anxiety and depression.

Study Setting: The study was carried out in the Department of Psychiatry, GMERS Medical College and Civil Hospital, Gandhinagar, Gujarat.

Study Duration: The study was conducted over a period of one year (2025–2026).

Study Population: Adult patients attending the Psychiatry Outpatient Department (OPD) with a diagnosis of anxiety disorder and/or depressive disorder were screened for eligibility.

Sample Size: A total of 120 eligible participants who fulfilled the inclusion criteria during the study period were enrolled in the study.

- **Group A (Intervention Group):** 60 patients receiving standard psychiatric treatment along with supervised yoga therapy.
- **Group B (Control Group):** 60 patients receiving standard psychiatric treatment alone.

Sampling Technique: Eligible participants fulfilling the inclusion criteria were recruited consecutively and randomly allocated into two

groups using a computer-generated randomization sequence.

Inclusion Criteria

- Age between 18 and 65 years.
- Patients diagnosed with anxiety disorder and/or depressive disorder according to DSM-5 diagnostic criteria.
- Mild to moderate severity of illness.
- Patients willing to participate and provide written informed consent.
- Patients receiving stable pharmacological treatment for at least two weeks before enrollment.

Exclusion Criteria

- Severe depression requiring emergency psychiatric intervention.
- Bipolar affective disorder, schizophrenia, or other psychotic disorders.
- Active substance use disorder (except nicotine).
- Severe physical illness limiting participation in yoga.
- Pregnancy.
- Individual's already practicing yoga regularly during the preceding six months.

Intervention

Intervention Group: Participants received standard psychiatric treatment along with a structured yoga program comprising:

- Loosening exercises (10 minutes)
- Asanas (20 minutes)
- Pranayama (15 minutes)
- Meditation and relaxation (15 minutes)

Each session lasted approximately 60 minutes, five days per week, for eight weeks, under the supervision of a certified yoga instructor.

Control Group: Participants continued to receive standard psychiatric treatment, including pharmacotherapy and routine counseling, without structured yoga sessions.

Outcome Measures: Assessments were performed at baseline and after eight weeks.

Primary outcome measures included:

- Hamilton Anxiety Rating Scale (HAM-A)
- Hamilton Depression Rating Scale (HAM-D)
- Secondary outcome measures included:
- WHO Quality of Life-BREF (WHOQOL-BREF)
- Pittsburgh Sleep Quality Index (PSQI)
- Treatment adherence
- Patient satisfaction

Data Collection: Baseline demographic information, socioeconomic status, educational level, duration of illness, psychiatric diagnosis, medical history, medication details, and baseline

psychometric scores were recorded using a predesigned case record form. Follow-up assessments were performed after completion of the eight-week intervention.

Statistical Analysis: Data were entered into Microsoft Excel and analyzed using SPSS version 26.0. Continuous variables were expressed as mean $\pm$ standard deviation (SD), while categorical variables were presented as frequencies and percentages.

Independent Student's t-test was used for comparison between groups, paired t-test for

within-group comparisons, and Chi-square/Fisher's exact test for categorical variables. A p value of <0.05 was considered statistically significant.

Results

A total of 120 patients diagnosed with anxiety and/or depressive disorders were enrolled in the study. Participants were equally allocated into the Yoga + Standard Treatment group (n = 60) and the Standard Treatment Alone group (n = 60). All participants completed the 8-week follow-up and were included in the final analysis.

Table 1: Baseline Demographic and Clinical Characteristics of Study Participants

Variable	Yoga + Standard Treatment (n=60)	Standard Treatment (n=60)	p-value
Age (years), Mean $\pm$ SD	36.8 $\pm$ 10.4	37.6 $\pm$ 9.8	0.66
Male, n (%)	26 (43.3)	24 (40.0)	0.71
Female, n (%)	34 (56.7)	36 (60.0)	
Anxiety Disorder, n (%)	34 (56.7)	33 (55.0)	0.85
Depressive Disorder, n (%)	26 (43.3)	27 (45.0)	
Duration of Illness (months), Mean $\pm$ SD	14.3 $\pm$ 6.8	15.1 $\pm$ 7.1	0.54
Baseline HAM-A Score	23.8 $\pm$ 4.6	24.2 $\pm$ 4.8	0.64
Baseline HAM-D Score	20.5 $\pm$ 3.9	20.9 $\pm$ 4.2	0.58

The two study groups were comparable with respect to age, gender distribution, diagnosis, duration of illness, and baseline anxiety and depression severity. No statistically significant differences were observed between the groups ($p>0.05$), indicating successful randomization.

Table 2: Comparison of HAM-A and HAM-D Scores Before and After 8 Weeks

Outcome Measure	Yoga + Standard Treatment (n=60)	Standard Treatment Alone (n=60)	p-value
HAM-A Baseline	23.8 $\pm$ 4.6	24.2 $\pm$ 4.8	0.64
HAM-A After 8 Weeks	11.2 $\pm$ 3.4	16.8 $\pm$ 4.2	<0.001
Mean Reduction in HAM-A	12.6 $\pm$ 3.9	7.4 $\pm$ 3.5	<0.001
HAM-D Baseline	20.5 $\pm$ 3.9	20.9 $\pm$ 4.2	0.58
HAM-D After 8 Weeks	9.6 $\pm$ 3.1	14.8 $\pm$ 3.8	<0.001
Mean Reduction in HAM-D	10.9 $\pm$ 3.4	6.1 $\pm$ 3.0	<0.001

Both groups demonstrated significant improvement after treatment; however, patients receiving adjunctive yoga experienced significantly greater reductions in both anxiety and depression scores compared with those receiving standard treatment alone ($p<0.001$).

Table 3: Comparison of Secondary Outcome Measures after 8 Weeks

Variable	Yoga + Standard Treatment (n=60)	Standard Treatment Alone (n=60)	p-value
WHOQOL-BREF Score	79.8 $\pm$ 8.4	70.6 $\pm$ 9.5	<0.001
PSQI Score	4.8 $\pm$ 1.6	7.1 $\pm$ 2.0	<0.001
Good Medication Adherence, n (%)	55 (91.7)	47 (78.3)	0.037
Patient Satisfaction (0–10)	8.9 $\pm$ 0.9	7.4 $\pm$ 1.2	<0.001

Participants in the yoga intervention group reported significantly better quality of life, improved sleep quality, higher medication adherence, and greater overall treatment satisfaction compared with the control group.

Table 4: Overall Clinical Response at the End of 8 Weeks

Clinical Outcome	Yoga + Standard Treatment (n=60)	Standard Treatment Alone (n=60)	p-value
Marked Improvement ($>50\%$ reduction in scores), n (%)	42 (70.0)	24 (40.0)	0.001
Moderate Improvement (25–50%), n (%)	14 (23.3)	26 (43.3)	
Minimal/No Improvement ($<25\%$), n (%)	4 (6.7)	10 (16.7)	
Adverse Events Related to Yoga, n (%)	2 (3.3)	0 (0.0)	—
Study Completion Rate, n (%)	60 (100)	60 (100)	—

A significantly higher proportion of patients receiving adjunctive yoga achieved marked clinical improvement compared with the control group (70.0% vs. 40.0%, $p=0.001$). Yoga therapy was well tolerated, with only minor, self-limiting adverse events and excellent treatment adherence throughout the study.

Discussion

The present hospital-based interventional study evaluated the effectiveness of yoga as an adjunctive therapy in patients with anxiety and depression attending the Psychiatry Outpatient Department of GMERS Medical College, Gandhinagar. The findings demonstrated that the addition of structured yoga sessions to standard psychiatric treatment resulted in significantly greater reductions in anxiety and depression scores, along with improvements in quality of life, sleep quality, medication adherence, and overall patient satisfaction compared with standard treatment alone.

The significant reduction in Hamilton Anxiety Rating Scale (HAM-A) and Hamilton Depression Rating Scale (HAM-D) scores observed in the yoga intervention group is consistent with the systematic review and meta-analysis by Brinsley et al. [8], who reported that yoga produced clinically meaningful improvements in depressive symptoms among individuals with mental disorders. Their analysis suggested that yoga could serve as an effective adjunct to conventional psychiatric treatment, particularly in patients with mild-to-moderate depression.

Improvement in sleep quality and psychological well-being observed in the present study is supported by the findings of Pascoe et al. [9], who demonstrated that yoga and mindfulness-based interventions significantly reduced physiological stress markers, including cortisol levels, while improving autonomic balance. These neurophysiological changes may contribute to reduced anxiety and enhanced emotional regulation observed among patients practicing yoga. The beneficial effects of yoga may also be explained by neurobiological mechanisms described by Streeter et al. [10], who proposed that yoga enhances parasympathetic activity and increases central gamma-aminobutyric acid (GABA) levels, thereby reducing sympathetic overactivity and stress responses. Such mechanisms are believed to alleviate symptoms of anxiety and depression and improve resilience to psychological stress.

The observed clinical benefits may be attributed to the combined effects of physical postures, controlled breathing, relaxation, and mindfulness, which together reduce sympathetic activity, improve emotional regulation, and enhance

adaptive coping mechanisms. These integrated effects are likely responsible for the greater improvement in anxiety, depression, sleep quality, and overall quality of life observed in the intervention group.

The high treatment adherence and greater patient satisfaction found in the intervention group are comparable to the observations of Uebelacker et al. [11], who reported that patients with persistent depression considered yoga to be an acceptable, feasible, and enjoyable complementary intervention. Better patient engagement may partly explain the superior clinical outcomes observed in the present study.

The findings of the current study are further supported by the comprehensive review by Field [12], which concluded that regular yoga practice improves mood, decreases anxiety, enhances sleep quality, and promotes overall mental well-being through integrated physical activity, breathing exercises, and meditation.

These benefits make yoga particularly suitable as a low-cost, non-pharmacological adjunct in outpatient psychiatric care. The widespread acceptance and feasibility of yoga in healthcare settings have also been highlighted by Cramer et al. [13], who reported increasing utilization of yoga across diverse populations because of its perceived health benefits and minimal adverse effects. This cultural acceptability, particularly in India, enhances its practicality for incorporation into routine psychiatric management. Although the present study primarily evaluated yoga as an adjunctive intervention, the observed improvements are in agreement with the broader evidence on mindfulness-based therapies summarized by Wielgosz et al. [14]. Mindfulness and meditative practices have consistently demonstrated positive effects on emotional regulation, cognitive functioning, and reduction of anxiety and depressive symptoms through improved attention and adaptive coping mechanisms.

Similarly, Hofmann and Gómez [15] concluded that mindfulness-based interventions significantly reduce symptoms of anxiety and depression across various clinical populations by promoting acceptance, emotional regulation, and stress reduction. Since yoga incorporates mindfulness, controlled breathing, and meditation, its therapeutic benefits are likely mediated through similar psychological and neurobiological pathways.

Limitations:

The present study has certain limitations. It was conducted at a single tertiary care center with a relatively short follow-up period of eight weeks. Long-term adherence to yoga practice and

sustained clinical benefits were not assessed. Additionally, the study did not evaluate biochemical markers or neurophysiological parameters that could further explain the mechanisms underlying symptom improvement. Future multicenter randomized controlled trials with larger sample sizes and longer follow-up durations are recommended to establish long-term efficacy and generalizability.

Overall, the findings indicate that structured yoga therapy is a safe, feasible, and effective adjunct to standard psychiatric treatment, leading to significant improvements in anxiety, depression, sleep quality, quality of life, and patient satisfaction.

Conclusion

Adjunctive yoga therapy significantly improved anxiety and depression symptoms among patients receiving standard psychiatric treatment in an outpatient setting. Participants practicing yoga demonstrated greater reductions in HAM-A and HAM-D scores, improved sleep quality, enhanced quality of life, better medication adherence, and higher patient satisfaction compared with those receiving standard treatment alone. Yoga was well tolerated and feasible to implement within routine psychiatric outpatient services.

Incorporating structured yoga programs into comprehensive mental health care may enhance treatment outcomes and overall patient well-being.

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