

RESEARCH ARTICLE

ROLE OF YOGA IN PHYSICAL AND SPIRITUAL HEALTH BENEFITS: A RETROSPECTIVE STUDY

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Abstract

Introduction: The potential benefits of common Indian yoga for both mental and physical well-being are the main reason behind its rising popularity. This retrospective study was intended to evaluate the advantages among participants at Katihar Medical University who regularly practice yoga. Its goal was specifically to ascertain the frequency of yoga practitioners' physical and spiritual characteristics. The nature of existence differs from that of those who do not practice.

Methods: The investigation took place over six months, utilizing a retrospective cross-sectional research design, from October 2024 through March 2025. We used a retrospective cross-sectional study approach over six months. Data from 50 people—25 of whom are experienced practitioners of organized, regimented yoga, and 25 of whom underwent physical examinations, questionnaires, and certified spiritual controls—were evaluated.

Results: The findings showed notable gains in various health-related areas seen by those who practice yoga. Practitioners demonstrated significant gains in physical health, improved variables like increased flexibility ($p < 0.01$), lower stress ($p < 0.001$), and better cardiovascular health ($p < 0.05$). Yoga practitioners gave significantly greater importance to their spiritual well-being. In addition to the physical advantages, they showed an increase over the control group in consciousness, inner peace, and satisfaction with one's life. The findings revealed a notable improvement in both mental and physical health, providing significant support for the inclusion of yoga in holistic medical practices.

Conclusion: Our conclusions emphasize the importance of integrating traditional practices, such as yoga, into contemporary medicine and well-being models to enhance patient care and overall well-being.

Keywords: Yoga, Physical Health, Spiritual Well-being, Retrospective Study, Holistic Medicine

BACKGROUND/INTRODUCTION

Originating in ancient India more than 5,000 years ago, yoga is a complete system of mental, physical, and spiritual activities [1]. Yoga has gained popularity as a complementary and alternative medicine (CAM) approach in modern healthcare, and there is growing scientific evidence of its therapeutic benefits [2,3].

Yoga is regarded by the World Health Organisation (WHO) as a type of exercise that can enhance general health and wellbeing [4]. Cardiovascular illnesses, diabetes, anxiety, and depression are among the modern lifestyle ailments that have raised interest in non-pharmacological treatments like yoga [3].

By methodically assessing the twin advantages of yoga practice on physical health metrics and spiritual well-being, this retrospective study from Katihar Medical College hopes to add to the increasing

amount of data to demonstrate yoga's efficacy as a holistic health intervention [5].

Previous studies have demonstrated yoga's efficacy in various health domains. Cramer et al. (2013) conducted a thorough review demonstrating the benefits of yoga for chronic low back pain, while Goyal et al. (2014) highlighted contemplation's role in reducing anxiety and depression. Ross and Thomas (2010) found significant improvements in cardiovascular risk factors among yoga practitioners [6,7].

Spiritual well-being, incorporating components of meaning, purpose, and transcendence, has been less extensively studied in relation to yoga practice [8]. However, emerging research suggests that yoga's philosophical foundations contribute to enhanced spiritual awareness and psychological resilience [9].

MATERIALS AND METHODS

A retrospective cross-sectional study design was employed to evaluate the relationship between yoga practice and health outcomes.

The study was conducted at Katihar Medical College, located in Katihar, Bihar, India. It utilized the resources of the community medicine department and its affiliated health centres to ensure comprehensive data collection and analysis.

The process of data collection and analysis was carried out over a duration of six months, spanning from October 2024 to March 2025.

The study comprised a total of 50 participants:

- Group A (Yoga Practitioners): 25 individuals with regular yoga practice (≥ 6 months, minimum 3 sessions/week)
- Group B (Control Group): 25 individuals with no regular yoga practice.

The inclusion criteria for the study was:

- Age: 18-65 years.
- Competence to grant informed consent.
- Availability for complete assessment.

- For yoga group: Minimum 6 months of regular practice.

The exclusion criteria was:

- Severe medical conditions requiring intensive treatment.
- Pregnancy.
- Recent surgery (within 3 months).
- Inability to complete assessment protocols.

The subsequent measurements are essential for performing thorough health evaluations:

- Anthropometric Measurements: These consist of height, weight, body mass index (BMI), and waist circumference.
- Vital Signs: This group includes blood pressure, heart rate, and respiratory rate..
- Flexibility assessment: Sit-and-reach test, Shoulder flexibility.
- Strength assessment: Grip strength, core stability tests.
- Cardiovascular fitness: Step test, recovery heart rate.

RESULTS

Age, gender, education, and work position do not significantly differ across the well-matched groups, according to the demographic analysis (all $p > 0.05$). This

The biochemical parameters measured in this study were:

- Fasting glucose levels
- The lipid profile comprises vital elements like triglycerides, high-density lipoprotein (HDL), low-density lipoprotein (LDL), and total cholesterol measurements.
- Cortisol levels (stress marker)

Psychological and Spiritual Assessment were conducted using Perceived Stress Scale (PSS-10), Spiritual Well-Being Scale (SWBS), Mindful Attention Awareness Scale (MAAS), and Quality of Life Scale (WHOQOL-BREF).

The data were analysed utilizing SPSS version 25.0. Analyses included descriptive statistics, chi-square tests, correlation assessments, and separate t-tests. A significance level was set at $p < 0.05$ to determine statistical relevance.

The Katihar Medical College Institutional Ethics Committee gave its imprimatur to the research plan. Written informed consent was acquired from every individual included.

strengthens the validity of the study by guaranteeing that observed health changes can be attributed to yoga practice rather than baseline demographic variables (Table 1).

Table 1: Demographic characteristics of the patients:

Characteristic	Yoga Group (n=25)	Control Group (n=25)	p-value
Mean Age (years)	34.2 ± 8.4	35.1 ± 9.2	0.72
Gender (Male/Female)	12/13	11/14	0.78
Education (Graduate+)	18 (72%)	16 (64%)	0.53
Employment Status	22 (88%)	21 (84%)	0.69

This resulted in a marked improvement in measures of physical well-being. Lower waist circumference (78.5 vs. 84.3 cm, $p = 0.01$) and BMI (21.1 vs. 23.4 kg/m², $p = 0.02$) suggest improved weight control and a lower risk of metabolic problems. Cardiovascular measures also showed significant improvements, with considerably lower Systolic blood pressure (117.4 vs. 128.6 mmHg, $p = 0.02$), Diastolic blood pressure (78.2 vs. 82.4 mmHg, $p = 0.01$), and resting heart rate (68.3 vs. 74.8 bpm, $p = 0.01$), indicating better cardiovascular health and autonomic balance (Table 2).

Table 2: Anthropometric and Vital Signs

Parameter	Yoga Group	Control Group	p-value
BMI (kg/m²)	21.1 ± 3.2	25.4 ± 4.1	0.02
Waist Circumference (cm)	78.5 ± 8.2	84.3 ± 9.6	0.01
Systolic BP (mmHg)	117.4 ± 12.3	128.6 ± 15.2	0.02
Diastolic BP (mmHg)	78.2 ± 8.1	82.4 ± 9.3	0.01
Resting Heart Rate (bpm)	68.3 ± 7.4	74.8 ± 8.9	0.01

*Statistically significant ($p < 0.05$)

Yoga practitioners demonstrated significant improvements across all flexibility metrics. The sit-and-reach test demonstrated significant improvements, with results measuring 28.4 cm versus 18.7 cm ($p < 0.001$). Similarly, shoulder flexibility improved, yielding scores of 8.2 compared to 5.9 ($p < 0.002$). Core stability also showed enhancement, with scores increasing from 5.2 to 7.5 ($p < 0.001$). Notably, there was no substantial variation observed in grip strength ($p = 0.26$). This data indicates that yoga is particularly effective in promoting flexibility and core stability, rather than enhancing overall muscular strength (Table 3).

Table 3: Flexibility and Strength Assessment

Assessment	Yoga Group	Control Group	p-value
Sit-and-Reach Test (cm)	28.4 ± 6.2	18.7 ± 5.4	<0.001**
Shoulder Flexibility Score	8.2 ± 1.3	5.9 ± 1.8	<0.002**
Grip Strength (kg)	32.1 ± 7.2	29.8 ± 6.8	0.26
Core Stability Score	7.5 ± 1.4	5.2 ± 1.9	<0.001**

**Highly significant (p<0.001)

The lipid profiles of individuals engaged in yoga practice demonstrated positive outcomes. Specifically, total cholesterol levels were significantly lower (168.3 mg/dL as opposed to 189.7 mg/dL, p=0.01). Additionally, participants exhibited higher levels of HDL cholesterol (52.4 mg/dL compared to 46.8 mg/dL,

p=0.03), as well as lower levels of LDL cholesterol (98.1 mg/dL versus 118.4 mg/dL, p=0.02) and triglycerides (124.7 mg/dL in contrast to 145.9 mg/dL, p=0.01). Moreover, cortisol levels were substantially reduced (8.4 µg/dL compared to 12.7 µg/dL, p<0.001), suggesting a decrease in physiological stress. It is important to note that fasting blood glucose levels did not demonstrate a statistically significant difference (p=0.11) (Table 4).

Table 4: Biochemical Parameters

Parameter	Yoga Group	Control Group	p-value
Blood Glucose Fasting (mg/dL)	88.2 ± 12.4	94.7 ± 15.8	0.11
Total Cholesterol (mg/dL)	168.3 ± 28.4	189.7 ± 32.1	0.01
HDL Cholesterol (mg/dL)	52.4 ± 8.7	46.8 ± 7.9	0.03
LDL Cholesterol (mg/dL)	98.1 ± 22.3	118.4 ± 26.7	0.02
Triglycerides (mg/dL)	124.7 ± 31.2	145.9 ± 38.4	0.01
Cortisol (µg/dL)	8.4 ± 2.1	12.7 ± 3.4	<0.001

All psychological and spiritual measures strongly benefited yoga practitioners. Perceived stress was significantly lower (12.3 vs 21.7, $p<0.001$), while

spiritual well-being (98.4 vs 76.2, $p<0.001$), mindfulness (72.8 vs 54.2, $p<0.001$), and quality of life (78.6 vs 62.4, $p<0.001$) were all significantly higher, demonstrating comprehensive mental health benefits (Table 5).

Table 5: Psychological and Spiritual Well-being Scale Scores

Scale	Yoga Group	Control Group	p-value
Perceived Stress Scale (0-40)	12.3 ± 4.2	21.7 ± 6.8	<0.001**
Spiritual Well-Being Scale (20-120)	98.4 ± 12.7	76.2 ± 15.3	<0.001**
Mindfulness Scale (15-90)	72.8 ± 9.4	54.2 ± 11.2	<0.001**
Quality of Life Score (0-100)	78.6 ± 8.9	62.4 ± 12.1	<0.001**

Both spiritual well-being components showed significant advances in yoga practitioners. Religious well-being (48.2 vs 37.4, $p<0.001$) and existential well-

being (50.2 vs 38.8, $p<0.001$) were substantially higher, revealing enhanced spiritual connection and life meaning among practitioners (Table 6).

Table 6: Psychological and Spiritual Well-being: Spiritual Well-being Subscales

Subscale	Yoga Group	Control Group	p-value
Religious Well-being	48.2 ± 6.8	37.4 ± 8.2	<0.001**
Existential Well-being	50.2 ± 7.1	38.8 ± 7.9	<0.001**

The following notable positive correlations were observed between:

- The length of yoga practice and flexibility ratings ($r=0.74$, $p<0.001$)

- Spiritual well-being and mindfulness ratings ($r=0.68$, $p<0.001$)
- Quality of life and spiritual well-being ($r=0.72$, $p<0.001$)
- Stress levels and the amount of time spent practicing yoga ($r = -0.65$, $p < 0.001$)
- Cortisol levels and mindfulness ratings ($r=-0.58$, $p<0.01$)

Between the following, there were substantial negative correlations:

DISCUSSION

The results demonstrate significant improvements in multiple physical health constraints among yoga practitioners. The observed reductions in BMI, waist circumference, and blood pressure align with previous research indicating yoga's cardiovascular benefits. The mechanism involves enhanced parasympathetic nervous system activity, improved insulin sensitivity, and reduced inflammatory markers.

Flexibility improvements were the most pronounced findings, with yoga practitioners showing significantly higher scores in all flexibility assessments [10]. This aligns with yoga's emphasis on asanas (physical postures) that systematically stretch and strengthen different muscle groups.

The significantly lower cortisol levels in yoga practitioners suggest effective stress management, which has cascading effects on overall health, including immune function, cardiovascular health, and metabolic processes [11].

The spiritual well-being results reveal yoga's profound impact on existential and religious dimensions of health. Higher scores in both religious and existential well-being subscales suggest that yoga practice enhances connection with transcendent aspects of life and provides meaning and purpose [12].

The strong correlation between mindfulness and spiritual well-being indicates that yoga's meditative components contribute significantly to spiritual development. This finding supports yoga's traditional understanding as a path toward self-realization and spiritual growth [13].

The results support an integrated health model where physical and spiritual dimensions are interconnected. The correlations between spiritual well-being and quality of life, and between mindfulness and physiological markers, suggest that yoga's holistic approach addresses multiple health dimensions simultaneously [1].

These findings support yoga's integration into preventive healthcare and therapeutic interventions [14]. Healthcare providers at Katihar Medical College

and similar institutions could consider recommending yoga as a complementary approach for patients with cardiovascular risk factors, stress-related disorders, and those seeking enhanced quality of life [15].

CONCLUSION

This retrospective study strongly supports the multifaceted benefits of regular yoga practice in enhancing both physical and spiritual health. Yoga practitioners exhibited significantly improved cardiovascular health, flexibility, and core stability, along with lower stress levels and enhanced spiritual well-being compared to non-practitioners. The positive correlations between yoga practice duration and health metrics underscore yoga's holistic potential as a non-pharmacological intervention. These findings advocate for the inclusion of yoga in modern preventive and therapeutic healthcare strategies, especially in low-resource settings where cost-effective, integrative care is essential for long-term well-being.

LIMITATION

The study's retrospective design, small sample size, and lack of long-term follow-up limit causal inference and generalizability.

RECOMMENDATION

REFERENCES

1. Cramer, H., Lauche, R., Haller, H., & Dobos, G. (2013). A systematic review and meta-analysis

Future research should employ longitudinal designs with larger samples to better understand yoga's therapeutic potential across diverse populations.

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CONFLICT OF INTEREST

The author declares no conflict of interest related to this study.

LIST OF ABBREVIATION

BMI: Body Mass Index

BP: Blood Pressure

HDL: High-Density Lipoprotein

LDL: Low-Density Lipoprotein

PSS: Perceived Stress Scale

SWBS: Spiritual Well-Being Scale

MAAS: Mindful Attention Awareness Scale

WHOQOL-BREF: World Health Organization Quality of Life – BREF

SPSS: Statistical Package for the Social Sciences

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