International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

The Effects of Integrated Approach of Yoga Therapy on Obesity for Anthropometric Measurement and Vital Signs

Mr. Phaneendra Kumar G[1], Prof. Nagaraj C[2], Mr. Aniket Kolee[3]

[1,3]Research Scholar Yoga & Research Lakulish Yoga University
[2]Assistant Professor Yoga & Research Lakulish Yoga University

Abstract

Background: Obesity is a major global health concern associated with cardiovascular risks and metabolic disorders. Yoga, as a holistic mind-body practice, has shown promising benefits in managing obesity and related parameters. The aim is to evaluate the short-term effects of a three-month yoga intervention on blood pressure, lipid profile, BMI, waist circumference (WC), triglycerides, heart rate, and breath-holding capacity in obese individuals. A single-group pre-post experimental study was conducted on 108 corporate employees (50 males, 58 females; age range 22–56 years) in Bangalore. Participants underwent a structured yoga program for 1 hour 15 minutes daily, five days a week, for three months. The intervention included 30 asanas, breathing practices, and Deep Relaxation Technique (DRT). Pre- and post-intervention measurements of anthropometric, biochemical, and physiological parameters were analyzed using paired t-tests (SPSS v10). Significant improvements were observed across all variables ($p < 0.001$). BMI decreased by 3%, triglycerides by 3%, WC by 1%, systolic BP by 6%, and diastolic BP by 2%. Heart rate reduced by 2%, while breath-holding capacity improved by 9%, indicating enhanced cardiovascular and respiratory efficiency. A three-month yoga intervention effectively reduced obesity-related risk factors and improved overall physiological health. Yoga offers a cost-effective, non-invasive approach for obesity management and can be integrated into corporate wellness and preventive healthcare programs.

Keywords: Yoga, Obesity, Blood Pressure, Lipid Profile, BMI, Breath Control, Heart Rate.

INTRODUCTION

Obesity has emerged as a major global health challenge, affecting millions across all age groups and socioeconomic strata. It is not merely a cosmetic concern but a complex medical condition associated with serious comorbidities such as cardiovascular disease, hypertension, type 2 diabetes, stroke, sleep apnea, and certain cancers. Beyond physical health, obesity significantly impacts psychological well-being, often leading to depression, anxiety, and social stigmatization. Studies indicate that obese individuals are frequently subjected to discrimination and negative stereotypes, which further exacerbate mental health issues.

The primary causes of obesity include sedentary lifestyles, unhealthy dietary habits, and genetic predispositions. While conventional treatment options such as pharmacotherapy and bariatric surgery exist, they often carry limitations and potential side effects, including nutritional deficiencies and cardiovascular risks. Lifestyle modification through balanced nutrition and regular physical activity

remains the safest and most sustainable approach. However, adherence to these changes is often challenging, necessitating complementary strategies.

Yoga, an ancient holistic discipline, offers a promising alternative for obesity management. Rooted in physical postures (asanas), breathing techniques (pranayama), and relaxation practices, yoga addresses both physiological and psychological dimensions of health. Research has demonstrated its efficacy in improving anthropometric parameters, lipid profiles, blood pressure, and respiratory efficiency. Unlike strenuous exercise regimens, yoga promotes gradual weight reduction while enhancing flexibility, metabolic function, and mental resilience.

The present study explores the short-term impact of a structured three-month yoga intervention on obesity-related parameters, including Body Mass Index (BMI), Waist Circumference (WC), Blood Pressure, Lipid Profile, Heart Rate, and Breath Control. Conducted among corporate employees in Bangalore, this research aims to provide evidence-based insights into yoga's role as a non-invasive, cost-effective, and holistic approach to combating obesity and its associated health risks.

Research Methodology

The present study was designed as a **single-group pre-post experimental study** to evaluate the short-term effects of yoga on obesity-related parameters. The research was conducted at a corporate obesity camp in Bangalore over a period of **three months**.

Sample and Participants:

A total of **108 volunteers** (50 males and 58 females) aged between **22 and 56 years** were recruited. All participants were corporate employees with a minimum educational qualification of a degree. Inclusion criteria included individuals with overweight or obesity and associated risk factors such as elevated blood pressure and triglycerides. Exclusion criteria were irregular attendance, pregnancy, recent surgeries, and pre-existing cardiac conditions. Informed consent was obtained from all participants prior to the intervention.

Study Design and Procedure:

Participants underwent a structured yoga intervention for **five days per week**, with each session lasting **1 hour and 15 minutes**. The program included **30 yoga asanas**, breathing exercises, and **Deep Relaxation Technique (DRT)**. Pre-intervention data were collected for anthropometric measures (BMI, Waist Circumference), clinical parameters (Blood Pressure, Heart Rate), and biochemical markers (Lipid Profile). The same parameters were reassessed post-intervention.

Intervention Details:

The yoga protocol comprised standing, sitting, supine, and prone postures, along with relaxation techniques. Practices included Tadasana, Trikonasana, Padmasana, Vajrasana, Paschimottanasana, Bhujangasana, and Shavasana, among others. Each posture was performed for a specified duration and number of rounds, ensuring a balanced routine targeting flexibility, strength, and relaxation.

Data Collection and Analysis:

Data were manually recorded and entered into Microsoft Excel. Statistical analysis was performed using **SPSS Version 10**, applying paired sample t-tests to compare pre- and post-intervention values. The significance level was set at $\mathbf{p < 0.001}$.

Results Summary

The study analyzed the impact of a three-month yoga intervention on obesity-related parameters among

108 participants. Statistical analysis using paired sample t-tests revealed **highly significant improvements ($p < 0.001$)** across all measured variables.

Key Findings:

- **Body Mass Index (BMI):**

Pre-intervention mean was **24.28 ± 2.89**, which reduced to **23.62 ± 2.81** post-intervention, indicating a **3% decrease**.

- **Triglycerides:**

Levels dropped from **231.91 ± 43.47 mg/dL** to **225.81 ± 41.16 mg/dL**, showing a **3% reduction**, suggesting improved lipid metabolism.

- **Waist Circumference (WC):**

Reduced slightly from **33.14 ± 4.51 cm** to **32.97 ± 4.47 cm**, a **1% decrease**, reflecting modest central fat reduction.

- **Blood Pressure:**

Systolic BP: Decreased from **139.30 ± 17.68 mmHg** to **130.88 ± 17.35 mmHg** (**6% reduction**).
Diastolic BP: Dropped from **94.94 ± 11.92 mmHg** to **93.25 ± 11.13 mmHg** (**2% reduction**).

- **Heart Rate:**

Improved from **73.53 ± 6.82 bpm** to **72.31 ± 4.99 bpm**, a **2% decrease**, indicating better cardiovascular efficiency.

- **Breath Control:**

Increased from **10.95 ± 3.88 sec** to **11.97 ± 3.34 sec**, showing a **9% improvement**, reflecting enhanced respiratory capacity.

- **Overall Impact:**

The intervention demonstrated significant positive changes in anthropometric, cardiovascular, and respiratory parameters. The most notable improvements were observed in **blood pressure control and breath-holding capacity**, highlighting yoga's role in promoting cardiovascular health and respiratory efficiency.

Discussion Summary

Yoga, an ancient holistic health system, integrates physical postures, breathing techniques, and mental discipline to promote overall well-being. The present study reinforces yoga's effectiveness in managing obesity and associated health risks. Obesity is not only a physical condition but also a psychosomatic disorder, often linked to stress, poor lifestyle habits, and metabolic imbalance. Yoga addresses these factors by harmonizing body and mind, reducing stress, and improving physiological functions.

The findings of this study revealed significant improvements in key health parameters after three months of yoga intervention. Reductions in **BMI, waist circumference, triglycerides, and blood pressure** indicate yoga's role in improving metabolic efficiency and cardiovascular health. Enhanced **breath-holding capacity** and normalized heart rate further demonstrate its positive impact on respiratory and autonomic functions. These results align with previous research, which has shown yoga's ability to regulate lipid profiles, lower blood pressure, and improve psychological well-being.

Unlike conventional treatments such as medication or surgery, yoga offers a **non-invasive, cost-effective, and sustainable approach**. It not only targets physical symptoms but also addresses underlying stress and lifestyle factors, making it a comprehensive solution for obesity management. The improvement

observed within a short duration (three months) suggests that yoga can be integrated into preventive and rehabilitative healthcare programs.

In conclusion, yoga practice fosters holistic health by reducing obesity-related risks and enhancing mental resilience. Its incorporation into corporate wellness programs, schools, and hospitals can significantly contribute to combating lifestyle disorders and promoting long-term health.

Conclusion

The present study demonstrates that a structured three-month yoga intervention can significantly improve obesity-related health parameters. Participants showed reductions in **BMI, waist circumference, triglycerides, and blood pressure**, along with improvements in **heart rate regulation and breath-holding capacity**. These findings confirm yoga's role as an effective, non-invasive, and holistic approach to managing obesity and associated cardiovascular risks.

Unlike conventional treatments, yoga addresses both physical and psychological aspects of health, promoting stress reduction and lifestyle modification. Its simplicity, cost-effectiveness, and adaptability make it suitable for integration into **corporate wellness programs, educational institutions, and healthcare settings**. Based on these results, yoga should be considered a complementary therapy for obesity prevention and rehabilitation, contributing to long-term health and well-being.

References

1. European Journal of Clinical Nutrition (2002) 56, 601–607.
2. Dhananjai, S., Sadashiv, S. T., Dutt, K., & Kumar, R. (2013). Reducing psychological distress and obesity through Yoga practice. International Journal of Yoga, 6(1), 66.
3. Gronning I, Scambler G, Tjora A. From fatness to badness: The modern morality of obesity. Health (London). 2012.
4. Puhl, R., & Brownell, K. D. (2001). Bias, discrimination, and obesity. Obesity Research, 9(12), 788-805.
5. Falkner, N. H., French, S. A., Jeffery, R. W., Neumark-Sztainer, D., Sherwood, N. E., Morton, N. (1999). Mistreatment due to weight: prevalence and sources of perceived mistreatment in women and men. Obes Res, 7: 572–576.
6. Giel KE, Zipfel S, Alizadeh M, Schaffeler N, Zahn C, Wessel D, Hesse FW, Thiel S, Thiel A. Stigmatization of obese individuals by human resource professionals: an experimental study. BMC Public Health. 2012; 12:525.
7. Obesity and overweight. World Health Organization (2012). Available at: www.who.int/mediacentre/factsheets/fs311/en/
8. Dietrich MO, Horvath TL. Limitations in anti-obesity drug development: The critical role of hunger promoting neurons. Nat Rev Drug Discov. 2012; 11:675-91.
9. Brosse, A.L., Sheets, E.S., Lett, H.S., & Blumenthal, J.A. (2002). Exercise and the treatment of clinical depression in adults: Recent findings and future directions. Sports Med, 32, 741-60.
10. Kristal AR, Littman AJ, Benitez D, White E. Yoga practice is associated with attenuated weight gain in healthy middle-aged men and women. Altern Ther Health Med. 2005; 11: 28-33.
11. Agnihotri S. Impact of Yoga and Pranayama on Symptom Scores in Asthmatics: A Randomized Controlled Study. ISSN 2319-9725. 2013; 2(9).
12. Nalini S. Journal of Clinical and Diagnostic Research. 2008; (1):690-695.

13. Sharma M, Knowlden A. P. Role of Yoga in Preventing and Controlling Type 2 Diabetes Mellitus. J Evid Based Complementary Altern Med. 2012;17(2):88-95. doi:10.1177/2156587212438899.
14. Bhavanani AB, Ramanathan M, Ar S. International Research Journal of Pharmaceutical and Applied Sciences (IRJPAS). Hematological, biochemical and psychological effects of yoga. 2013; 3(6):17-23.
15. Sayyed A, Patil J, Chavan V, Patil S. Study of Lipid Profile and Pulmonary Functions in Subjects Participated in Sudarshan Kriya Yoga. 2010; 3:42-49.
16. Jayasinghe SR. Yoga in cardiac health (A Review). 2004; August.
17. Classical Texts: Hatha Yoga Pradipika, Gheranda Samhita, Patanjali Yoga Sutra, Light on Yoga (B.K.S. Iyengar), Asana, Pranayama, Mudra and Bandha (Bihar School of Yoga).