

IMPACT OF INTEGRATED YOGA PROGRAMMES ON BODY MASS INDEX IMPROVEMENT IN WOMEN WITH POLYCYSTIC OVARY SYNDROME (PCOS)

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Abstract

This study aimed to evaluate the impact of an integrated yoga program on body mass index (BMI) in women with polycystic ovary syndrome (PCOS) in Rajasthan, India. A sample of 40 women with PCOS, aged 18-35 years, was divided into an experimental group (n=20) and a control group (n=20). The experimental group participated in a yoga program for 1 hour per day, while the control group engaged in physical exercises such as walking and jogging for 1 hour per day. BMI was measured using the Omron Body Fat Analyzer before and after the 3-month intervention. The results showed that the experimental group had a lower mean BMI (23.5 ± 1.3) compared to the control group (25.2 ± 1.2) post-intervention. The t-test revealed a significant difference between the groups ($t=4.30$, $df=48$). The findings suggest that yoga training sessions can help improve BMI in women with PCOS. This study highlights the potential of yoga as a complementary therapy for managing PCOS-related obesity and its associated health risks. Further research with larger sample sizes and longer follow-up periods is recommended to confirm these findings and assess the long-term effects of yoga on PCOS management.

Keywords: - Yoga, Body Mass Index (BMI), Polycystic Ovary Syndrome (PCOS), Obesity

Introduction

Yoga is a long-standing, diverse discipline that works on the mental, spiritual, and physical levels. It began thousands of years ago in India and has since spread across

cultural boundaries to become a universal phenomenon. Yoga is fundamentally a holistic method of balancing the mind, body, and spirit.

Yoga's physical components include a sequence of poses and motions that

improve balance, flexibility, and strength. These poses are frequently combined with deliberate breathing exercises that help the body relax and become more focused in addition to oxygenating the body. The mental component of yoga focusses on mindfulness and meditation, which aid in mental calmness and inner serenity.

Yoga's Impact on Physical Health

Yoga, a holistic practice combining postures, breathing exercises, and meditation, significantly improves physical health by promoting flexibility, strength, balance, posture, pain management, circulation, respiratory health, stress reduction, weight management, digestive health, immune system, and improved sleep as well as promoting physical health.

Body Mass Index

Body Mass Index (BMI) is a metric used to diagnose overweight and obesity in individuals. Body Mass Index is defined as the ratio of body weight in kilograms and square of the height in meters. **BMI = kg/m²**

Methodology

A sample size of 40 women selected from Sri Ganganagar district of Rajasthan. The subjects were further divided into the experimental and control groups. Half of the sample size was kept in the experimental

group and the other half in the control group.

Sample

To examine whether yoga effects on Body Mass Index Improvement in Women with Polycystic Ovary Syndrome (PCOS). A pre-post phase design was used. Forty human beings in the pre-post stage are exposed to an experimental yoga practice design before as well as after. Only adult women with Poly Cystic Ovary Syndrome between the ages of 18 and 35 years were included in the study.

Data Collection

A feasibility study was carried out to evaluate the study's viability and to determine the statistical analysis plan. Formal permission was obtained from the head of the institution. A pilot study was conducted at two selected engineering colleges. Each group consisted of 10 samples between the age group of 17-19 years using a simple random sampling technique based on the inclusion and exclusion criteria. The participants were asked to respond to a questionnaire that consisted of demographic variable proforma, clinical variable proforma, BMI, waist-hip ratio, hirsutism, and a structured knowledge questionnaire on symptom analysis.

After the pre-test, the investigator explained the steps of the asanas and

demonstrated them in Group I. The participants were instructed to re-demonstrate and perform asanas 1hour per day. In Group II, the participants were instructed to perform physical exercises, such as walking and jogging, for 1 h per day. After three months, the investigator assessed the post-test using the same data collection tool. Data were analysed using descriptive and inferential statistics. The pilot study revealed that it was feasible and practical to continue the main study. The plan for the statistical analysis was determined.

Tool

The researchers have used to measure the BMI “Omron Body Fat Analyzer” will be used for this study.

Objective

To evaluate beforehand and afterwards parameters regarding overall testosterone, anxiety, and body mass index (BMI) in a cohort of women with a condition called polycystic ovarian syndrome.

Analysis of Data

Sample Distribution of BMI Categories in Experimental and Control Groups

Table – 1 (a)

Group	BMI Category	Pre- Intervention (n)	Pre- Intervention (%)	Post- Intervention (n)	Post- Intervention (%)
Experimental Total (n=20)	Low (≤ 18.5)	3	15%	2	10%
	Moderate (18.5-24.9)	8	40%	15	75%
	High (≥ 25)	9	45%	3	15%
Control Total (n=20)	Low (≤ 18.5)	4	20%	5	25%
	Moderate (18.5-24.9)	9	45%	8	40%
	High (≥ 25)	7	35%	7	35%

Table – 1 (a) displays the distribution of participants in the experimental and control groups across different BMI categories (Low, Moderate, High) both before and after the intervention.

Table - 1 (a) Description:

Pre-intervention: In the experimental group, 15% (n=3) of participants had a low BMI, 40% (n=8) had a moderate BMI, and 45% (n=9) were in the high BMI category. Similarly, in the control group, 20% (n=4) were in the low BMI range, 45% (n=9) were in the moderate range, and 35% (n=7) had a high BMI.

Post-intervention: After the yoga program, the experimental group showed an improvement, with 75% (n=15) of participants moving into the moderate BMI category, and only 15% (n=3) remaining in the high BMI category. In contrast, the control group saw no significant change, with 25% (n=5) in the low BMI category, 40% (n=8) in the moderate category, and 35% (n=7) still in the high BMI category.

Pre- and Post-Intervention BMI Scores**Table – 1 (b)**

Group	Phase	Mean BMI	Standard Deviation (S.D.)	Mean Difference	t-test Value	Degrees of Freedom (df)
Experimental	Pre-intervention	25.2	1.2	1.7	4.3	48
	Post-intervention	23.5	1.3			
Control	Pre-intervention	25.1	1.2	0.1		
	Post-intervention	25.2	1.2			

Table - 1 (b) Description:

This table illustrates the mean BMI scores of the experimental and control groups before and after the intervention. The experimental group, which participated in the integrated yoga program, showed a significant reduction in BMI from a pre-intervention mean of 25.2 (± 1.2) to a post-intervention mean of 23.5 (± 1.3). In contrast, the control group, which engaged in physical exercises like walking and jogging, had a

relatively stable BMI with a slight increase from 25.1 (± 1.2) pre-intervention to 25.2 (± 1.2) post-intervention.

Result

The mean difference in BMI between the groups was 1.7, and the t-test value of 4.30 with 48 degrees of freedom indicates that the reduction in BMI in the experimental group was statistically significant. This suggests that the

yoga program had a more pronounced effect on BMI reduction compared to the physical exercises performed by the control group.

Conclusion-

This study was conducted to evaluate the impact of integrated yoga program on Body Mass Index (BMI) in Polycystic Ovary Syndrome women of Rajasthan. Regular yoga reduced BMI more compared to calisthenics (walking/

jogging alone) The research showed that average attending of the yoga significantly reduced BMI. These results suggest that yoga could be a powerful complementary tool for the management of PCOS linked obesity. Future research with large cohorts and long-term studies are warranted to confirm these outcomes and explore the sustained effects of yoga in PCOS management.

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