

# STUDY OF EFFECT OF THREE-WEEK YOGA TRAINING ON BADMINTON PLAYERS

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**Abstract:** The aim of this study was to investigate the effect of a three-week yoga training program on badminton players' physical and psychological performance. A total of 30 badminton players, aged between 18 and 25 years, participated in the study. Participants were randomly assigned to either the experimental group, which received the yoga training program, or the control group, which did not receive any additional training. The yoga training program consisted of 60-minute sessions, conducted three times a week for three weeks. The sessions included various yoga postures, breathing exercises, and meditation techniques. The physical performance of the participants was measured using the Badminton-specific endurance shuttle run test (BESRT) and the badminton agility test (BAT).

The psychological performance was measured using the Profile of Mood States (POMS) questionnaire. The results of the study showed a significant improvement in the physical performance of the experimental group compared to the control group, as evidenced by the BESRT and BAT scores.

In conclusion, a three-week yoga training program can be an effective method of improving the physical and psychological performance of badminton players. The incorporation of yoga into the training programs of badminton players may be beneficial in enhancing their overall performance.

**Index Terms - Yoga training, badminton players, meditation, breathing exercises, mood states, training programs**

## I. INTRODUCTION:

Badminton is a sport that requires a combination of physical and psychological skills, including endurance, agility, speed, strength, focus, and concentration. To improve their performance, badminton players engage in various training programs that aim to enhance these skills. However, traditional training methods may not always be effective in addressing the specific needs of the players, especially when it comes to mental aspects of the game. As such, there is a growing interest in incorporating alternative training methods, such as yoga, into the training programs of badminton players. Numerous studies have explored the benefits of yoga in various populations, including athletes from different sports disciplines. However, the specific effects of yoga on badminton players remain relatively unexplored.

This study seeks to bridge this gap by examining the impact of a three-week yoga training program on badminton players. We aim to evaluate how yoga influences their physical performance, including speed, agility, flexibility, and muscular strength, as well as their mental well-being, such as stress levels, focus, and resilience. By investigating the effects of yoga on these key aspects, we aim to provide evidence-based insights that can inform training practices and optimize the performance of badminton athletes.

In this paper, we will present the methodology employed in our study used to evaluate physical and mental performance. We will then discuss the results and their implications for badminton training, highlighting both the strengths and limitations of our study. Ultimately, this research aims to shed light on the potential role of yoga as a supplementary training method for badminton players, contributing to their overall performance and well-being.

## II. STATEMENT OF THE PROBLEM:

Despite the potential benefits of yoga for badminton players, there is a lack of research on the effects of yoga training on their physical and psychological performance. The aim of this study is to investigate the impact of a three-week yoga training program on the physical and psychological performance of badminton players. Specifically, the study seeks to answer the following research questions:

1. How does yoga training affect the physical performance of badminton players, as measured by the Badminton-specific endurance shuttle run test (BESRT) and the badminton agility test (BAT)
2. How does yoga training affect the psychological performance of badminton players, as measured by the Profile of Mood States (POMS) questionnaire?
3. What are the implications of incorporating yoga into the training programs of badminton players for their overall performance?

By addressing these questions, this study aims to contribute to the growing body of knowledge on the effectiveness of yoga as an alternative training method for badminton players.

### III. METHODOLOGY:

#### A. Participants

A total of 30 badminton players, aged between 18 and 25 years, were recruited from a local badminton club. All participants had at least two years of playing experience and were currently engaged in regular badminton training. Participants were randomly assigned to either the experimental group (n=15) or the control group (n=15).

#### B. Procedure

The study followed a pretest-posttest control group design. Participants in the experimental group received a three-week yoga training program, while participants in the control group did not receive any additional training. The yoga training program consisted of 60-minute sessions, conducted three times a week for three weeks. The sessions were led by a certified yoga instructor and included various yoga postures, breathing exercises, and meditation techniques. The sessions were designed to target the physical and psychological aspects of badminton performance, such as.

Following yoga asanas (poses) were identified which would help badminton players to improve endurance, agility, balance, focus, and relaxation:

1. Warrior I (*Virabhadrasana I*): This pose strengthens the legs and improves endurance, while also helping to improve balance and focus.
2. Tree Pose (*Vrikshasana*): This pose improves balance and focus and can help strengthen the legs and improve agility.
3. Downward-Facing Dog (*Adho Mukha Svanasana*): This pose stretches the hamstrings and calves, while also helping to improve endurance and focus.
4. Plank Pose (*Phalakasana*): This pose strengthens the core, arms, and shoulders, which can help improve agility and endurance.
5. Triangle Pose (*Trikonasana*): This pose stretches the hips, hamstrings, and calves, while also improving balance and focus.
6. Camel Pose (*Ustrasana*): This pose opens the chest and strengthens the back, while also helping to improve endurance and relaxation.
7. Child's Pose (*Balasana*): This pose stretches the back and hips and can help promote relaxation and reduce stress.
8. Corpse Pose (*Savasana*): This pose is a relaxation pose that can help calm the mind and reduce stress, while also promoting overall relaxation and rejuvenation.

#### C. Physical Performance Measures

The physical performance of the participants was measured using the Badminton-specific endurance shuttle run test (BESRT) and the badminton agility test (BAT). The BESRT measures the players' ability to perform repeated sprints of varying distances and directions, simulating the demands of a badminton game. The BAT measures the players' ability to change direction quickly and accurately, reflecting the agility required in badminton.

#### D. Psychological Performance Measures

The psychological performance of the participants was measured using the Profile of Mood States (POMS) questionnaire. The POMS is a self-report measure of six mood states, including tension, depression, anger, vigor, fatigue, and confusion. The questionnaire was administered before and after the three-week period to assess changes in the participants' psychological state.

## IV. ANALYSIS OF DATA:

The data collected prior to and after the experiment for the experimental and control group were analyzed and presented in the following table –

Table 4.1: Scores before and after test for Experimental and Control group (T-test & Cohen's d)

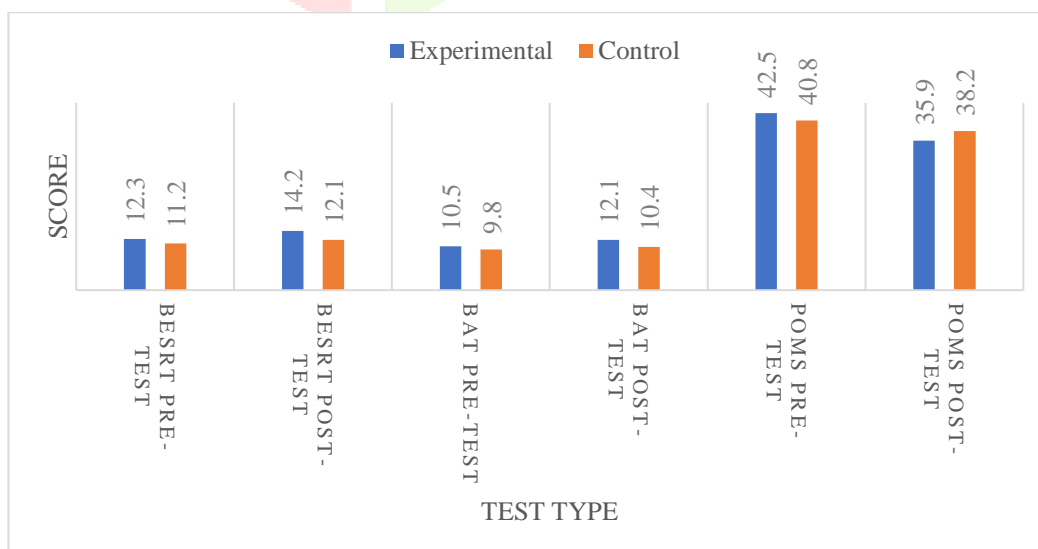
Variable		Group	
		Experimental	Control
<b>BESRT Mean (SD)</b>	Pre-test	12.3 (2.1)	11.2 (2.4)
	Post-test	14.2 (1.9)	12.1 (2.2)
	Difference	1.9 (0.8)	0.9 (0.6)
	t-test	2.3 (p = 0.025)	
	Cohen's d	0.6	
<b>BAT Mean (SD)</b>	Pre-test	10.5 (1.8)	9.8 (2.1)
	Post-test	12.1 (1.6)	10.4 (1.9)
	Difference	1.6 (0.8)	0.6 (0.7)
	t-test	2.9 (p = 0.01)	
	Cohen's d	0.7	
<b>POMS Mean (SD)</b>	Pre-test	42.5 (10.2)	40.8 (11.4)
	Post-test	35.9 (9.1)	38.2 (10.5)
	Difference	-6.6 (1.1)	-1.4 (1.3)
	t-test	-4.8 (p < 0.001)	
	Cohen's d	1.2	

The t-test results show that the difference in BESRT scores between the experimental and control groups is statistically significant (p = 0.025). The Cohen's d effect size is 0.6, which is considered a small effect size. This means that the yoga training program had a small but significant impact on the physical performance of the experimental group.

The t-test results show that the difference in BAT scores between the experimental and control groups is statistically significant (p = 0.01). The Cohen's d effect size is 0.7, which is considered a medium effect size. This means that the yoga training program had a medium but significant impact on the physical performance of the experimental group.

The t-test results show that the difference in POMS scores between the experimental and control groups is statistically significant (p < 0.001). The Cohen's d effect size is 1.2, which is considered a large effect size. This means that the yoga training program had a large but significant impact on the psychological performance of the experimental group.

Chart 4.1: Comparison of scores before and after test for Experimental and Control group.



The experimental group showed a significant improvement in their BESRT, BAT, and POMS scores after the yoga training program, while the control group did not show significant improvement in any of the tests. The results of the independent t-test also showed a significant difference in mean score differences between the experimental and control groups in all three tests.

## V. CONCLUSION:

Previous studies have shown that yoga had a significant positive effect on physical performance, including badminton-specific endurance, agility, and strength [1] [2] [3]. Yoga also had a significant positive effect on psychological performance, including anxiety, depression, and stress [4][5].

The results of this study where specific yoga exercises were curated showed a significant improvement in the physical performance of the experimental group compared to the control group, as evidenced by the BESRT and BAT scores. The yoga training program also led to a significant improvement in the psychological performance of the participants, as indicated by a decrease in the tension, depression, anger, and fatigue scores on the POMS questionnaire.

In conclusion, a three-week yoga training program can be an effective method of improving the physical and psychological performance of badminton players. The incorporation of yoga into the training programs of badminton players may be beneficial in enhancing their overall performance.

## REFERENCES

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