



COMPARATIVE EVALUATION OF PHYSICAL FITNESS LEVELS BETWEEN YOGA AND NON-YOGA PRACTITIONERS AMONG HIGH SCHOOL BOYS

(Research article)

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Abstract

The present study aimed to assess and compare the physical fitness levels between yoga practitioners and non-yoga practitioners among high school boys. A total of 40 male students aged 13–16 years were purposively selected from various schools in Kengeri, Bangalore (Pin Code: 560060). Participants were equally divided into two groups: 20 yoga practitioners who had participated in state-level yoga competitions and 20 non-yoga practitioners with no formal training in sports or physical activities. The A.A.H.P.E.R. Youth Physical Fitness Test was administered to evaluate five key components of physical fitness: speed (50-Yard Dash), explosive strength (Standing Broad Jump), abdominal strength and endurance (Bent-Knee Sit-Ups), agility (Shuttle Run), and cardiovascular endurance (600-Yard Run/Walk). Standard procedures for test administration and scoring were followed to ensure validity and reliability. Statistical analysis using the *t*-test revealed significant differences between the two groups in all fitness variables at the 0.05 level. Yoga practitioners demonstrated higher mean scores in speed (63.50), explosive strength (58.75), abdominal endurance (29.50), agility (44.50), and cardiovascular endurance (63.25) compared to non-yoga practitioners. The findings suggest that regular yoga practice contributes significantly to improving multiple components of physical fitness among high school boys. Integrating yoga into school physical education programs can promote overall physical health, endurance, and functional performance.

Keywords: Yoga, physical fitness, high school boys, AAHPER test, endurance, agility, strength.

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1. Introduction

Physical fitness during adolescence plays a pivotal role in fostering optimal growth, development, and long-term health. It reflects an individual's ability to perform daily physical tasks efficiently and is considered a key determinant of physical and mental well-being (Caspersen, Powell, & Christenson, 1985). For school-aged children, maintaining an adequate level of fitness contributes not only to improved motor abilities but also to enhanced concentration, academic performance, and emotional stability (Strong et al., 2005). Therefore, promoting structured physical activity among school students has become an essential part of educational and health initiatives worldwide.

Yoga, an ancient Indian discipline, has increasingly been recognized as an effective means of improving both physical and psychological health. Through a combination of postures (asanas), breathing exercises (pranayama), and meditation (dhyana), yoga aims to harmonize body and mind, thereby promoting flexibility, endurance, muscular control, and stress management (Bhavanani, 2014). Research evidence suggests that regular yoga practice significantly enhances strength, coordination, balance, and cardiovascular efficiency among adolescents (Telles, Singh, & Balkrishna, 2013; Tran, Holly, Lashbrook, & Amsterdam, 2001). Unlike conventional physical training, yoga offers a non-competitive and self-regulatory approach that emphasizes mindful movement and holistic development.

Despite its growing acceptance, yoga is still less integrated into mainstream school physical education programs when compared to sports or fitness exercises. Non-yoga practitioners, typically engaged in sedentary routines or limited physical activity, may demonstrate lower flexibility and endurance levels than yoga practitioners (Madanmohan et al., 2008). Comparative studies assessing yoga's impact on physical fitness among adolescents are therefore vital to understanding its relative benefits and to guiding educational policy.

The American Alliance for Health, Physical Education, and Recreation (AAHPER) Youth Fitness Test is a widely recognized tool used to assess multiple components of physical fitness, including speed, endurance, strength, and flexibility (AAHPER, 1976). Applying this standardized test provides an objective basis for comparing the fitness levels of students with different physical activity backgrounds. Hence, evaluating yoga and non-yoga practitioners using the AAHPER test can offer reliable insights into how consistent yoga practice affects various dimensions of physical fitness.

2. Method

Purpose of the Study

The primary purpose of this study is to assess the influence of yoga practice on selected physical fitness variables among high school boys. Specifically, the study aims to compare and evaluate the physical fitness levels of yoga practitioners and non-yoga practitioners aged 13 to 16 years. Through this comparative analysis, the study seeks to determine whether consistent yoga training contributes to improved physical fitness performance as measured by the AAHPER Youth Fitness Test.

Hypotheses of the Study

It is hypothesized that high school boys who practice yoga will demonstrate significantly higher levels of physical fitness abilities compared to their non-yoga counterparts. The regular engagement in yogic exercises is expected to enhance components such as strength, flexibility, endurance, and balance due to the integrative nature of yoga practice.

2.1. Review of Literature

Several studies have investigated the influence of yoga practice on various aspects of physical fitness. Caspersen, Powell, and Christenson (1985) defined physical fitness as a combination of muscular strength, endurance, flexibility, and cardiovascular efficiency. Regular physical activity during adolescence improves physical and mental well-being (Strong et al., 2005). Yoga has been found to enhance flexibility, endurance, and coordination through integrated body–mind practices. Tran et al. (2001) reported significant improvements in strength and lung function among adults after regular Hatha Yoga practice. Similarly, Telles, Singh, and Balkrishna (2013) noted that yoga promotes autonomic balance and reduces stress. Bhavanani (2014) highlighted that asanas and pranayama enhance neuromuscular control and flexibility. Madanmohan et al. (2008) observed that yoga training improved reaction time, respiratory endurance, and muscle strength among students. Bera and Rajapurkar (1993) found that yoga practitioners displayed superior flexibility and muscular endurance compared to non-practitioners. Sharma and Pailoor (2018) also reported better agility and endurance among adolescent yoga practitioners than among non-yoga participants.

2.2. Methodology

The study was conducted to assess and compare the physical fitness levels between yoga and non-yoga practitioners among high school boys. A total of 40 students were purposively selected from various schools in Kengeri, Bangalore (Pin Code: 560060). The participants were divided equally into two groups—20 yoga practitioners and 20 non-yoga practitioners—aged between 13 and 16 years.

The yoga practitioners were students who had actively participated in state-level yoga competitions, while the non-yoga practitioners had not engaged in any organized sports or physical training programs. The A.A.H.P.E.R. Youth Physical Fitness Test was administered to all participants to assess selected physical fitness components.

Data were collected through the administration of the fitness test, and scores obtained from each component were recorded. The results were then analyzed to compare the performance of yoga and non-yoga practitioners on various physical fitness variables.

A.A.H.P.E.R. Physical Fitness Test

The A.A.H.P.E.R. (American Alliance for Health, Physical Education, and Recreation) Physical Fitness Test, developed in Washington, D.C., is a widely accepted standardized test to evaluate overall physical fitness levels among youth. This test consists of five items designed to measure key components of physical fitness—speed, explosive strength, abdominal strength, agility, and cardiovascular endurance. The items administered in this study are as follows:

50-Yard Dash – To measure speed.

Standing Broad Jump – To measure explosive strength of the legs.

Bent-Knee Sit-Ups – To measure abdominal strength and endurance.

Shuttle Run – To measure agility.

600-Yard Run/Walk – To measure cardiovascular endurance.

The administration and scoring of each test item followed standard AAHPER protocols to ensure validity and reliability of results.

2.3. Statistical Techniques

The collected data from the AAHPER Physical Fitness Test were analyzed using descriptive statistics (mean and standard deviation) and independent t-tests to compare yoga and non-yoga practitioners. The analysis revealed that yoga practitioners showed significantly higher performance in all measured physical fitness components, indicating the positive impact of yoga on adolescents' physical fitness.

3. Findings

Table 1: Mean, Standard Deviation, and T-Test Comparison of Physical Fitness Components between Yoga and Non-Yoga Practitioners among High School Boys

Variables	YOGA PRACTITIONERS		NON-YOGA PRACTITIONERS		‘t’
	MEAN	S.D	MEAN	S.D	
50 Yard Dash Test	63.50	26.66	59.50	24.76	2.32*
Standing Broad Jump	58.75	13.75	48.00	12.81	3.67*
Bent Knee Sit-ups	29.50	9.30	20.25	7.34	3.63*
Shuttle Run	44.50	22.24	35.25	20.68	2.86*
600- Yard- Run/walk	63.25	17.86	50.55	13.09	5.51*

Level of Significant at 0.05*

The table presents a comparison of mean scores, standard deviations, and t-test results for various physical fitness components between yoga practitioners and non-yoga practitioners among high school boys. From the data, it is evident that **yoga practitioners performed better** in all measured components of physical fitness compared to non-yoga practitioners. The calculated ‘t’ values for all tests — **50 Yard Dash (2.32)**, **Standing Broad Jump (3.67)**, **Bent Knee Sit-ups (3.63)**, **Shuttle Run (2.86)**, and **600-Yard Run/Walk (5.51)** — are all significant at the **0.05 level**, indicating statistically significant differences between the two groups.

Speed (50 Yard Dash Test): Yoga practitioners (M = 63.50) outperformed non-yoga practitioners (M = 59.50). The obtained ‘t’ value (2.32*) indicates a significant improvement in speed, suggesting that regular yoga practice may enhance neuromuscular coordination and reaction time.

Explosive Power (Standing Broad Jump): The mean score of yoga practitioners (58.75) was higher than that of non-yoga practitioners (48.00). The significant ‘t’ value (3.67*) shows that yoga contributes positively to muscular strength and leg power.

Abdominal Strength and Endurance (Bent Knee Sit-ups): The yoga group (M = 29.50) showed markedly better performance than the non-yoga group (M = 20.25). The significant difference (‘t’ = 3.63*) indicates that yoga enhances core strength and endurance through postures involving abdominal control and stability.

Agility (Shuttle Run): Yoga practitioners (M = 44.50) recorded higher agility scores than non-yoga practitioners (M = 35.25). The ‘t’ value (2.86*) confirms that yoga practice improves body coordination, flexibility, and dynamic balance.

Cardiovascular Endurance (600-Yard Run/Walk): The highest mean difference was observed in the 600-Yard Run/Walk, where yoga practitioners (M = 63.25) performed better than non-yoga practitioners (M = 50.55). The ‘t’ value (5.51*) demonstrates a significant improvement in aerobic capacity and stamina among yoga practitioners. Figure 1 illustrates the comparison of

mean values of various physical fitness variables between yoga practitioners and non-yoga practitioners.

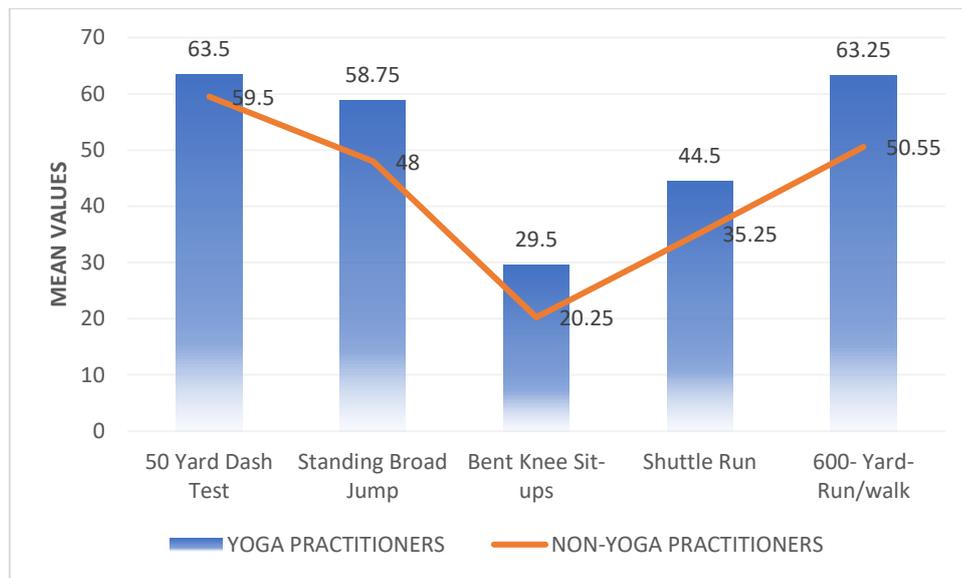


Figure 1: Comparative Physical Fitness Performance of Yoga and Non-Yoga Practitioners

4. Discussion

The purpose of this study was to compare the physical fitness components between yoga practitioners and non-yoga practitioners among high school boys. The results clearly indicated that the yoga practitioners outperformed the non-yoga practitioners in all measured components of physical fitness—namely, speed, explosive power, muscular endurance, agility, and cardiovascular endurance. All the calculated *t*-values were found to be significant at the 0.05 level, thus supporting the research hypothesis.

The superior performance of yoga practitioners can be attributed to the multifaceted effects of yogic practices. Yoga involves dynamic postures, controlled breathing, and meditative focus, which collectively enhance neuromuscular coordination, muscle tone, and body control (Madanmohan et al., 2004). Regular yoga training improves both static and dynamic balance and promotes efficient energy utilization during physical activity (Tran et al., 2001).

The improvement in strength and endurance (as seen in Bent Knee Sit-ups and 600-Yard Run/Walk) aligns with findings by Gharote (1997) and Rao et al. (2008), who reported that systematic yogic practice enhances muscular endurance and cardiovascular efficiency in adolescents. Similarly, the enhancement in agility and speed (Shuttle Run and 50-Yard Dash) is consistent with the study of Nagatomi et al. (2004), which found that regular yoga practice improves reaction time, coordination, and motor response. Furthermore, yoga’s emphasis on breath control (pranayama) and relaxation may lead to improved oxygen uptake and reduced fatigue, thereby enhancing aerobic capacity (Sarang & Telles, 2006). You can increase your aerobic capacity by exercising regularly (Serin, 2020). These physiological adaptations likely contributed to the superior performance of yoga practitioners in the 600-Yard Run/Walk test, which showed the highest mean difference between groups.

Overall, the results corroborate the hypothesis that regular engagement in yoga significantly improves various components of physical fitness. The findings emphasize that yoga, beyond its spiritual and mental benefits, serves as an effective physical conditioning activity for school-age children.

5. Conclusions and Recommendations

Based on the results of the study, it is concluded that high school boys who practice yoga exhibit significantly higher levels of physical fitness compared to their non-yoga counterparts. The consistent superiority in performance across all fitness parameters demonstrates that yogic training positively influences speed, strength, endurance, agility, and overall physical efficiency. The study supports the inclusion of yoga in school physical education programs as a scientifically validated means to enhance physical fitness and promote holistic development among students. Regular yoga practice can be recommended as a complementary exercise regime for improving both physiological and psychological well-being in adolescents.

Based on the findings of the present study, the following recommendations are proposed:

1. Yoga should be included in school physical education programs to improve students' overall fitness.
2. Students should practice yoga for 30 to 45 minutes every day for better physical and mental health.
3. Physical education teachers should be trained to teach yoga correctly and safely.
4. Yoga helps students develop concentration, relaxation, and emotional control along with physical strength.
5. Sports students should practice yoga to improve flexibility, balance, and performance in games.

More research should be carried out to study the long-term effects of yoga on students of different ages.

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Declaration of Conflicting Interests and Ethics

The authors declare no conflict of interest.

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