

A STUDY ON SELECTED ANTHROPOMETRIC MEASUREMENT, HEALTH RELATED PHYSICAL FITNESS COMPONENT AND SPORTS SKILL TEST FOR SCHOOL CHILDREN TO DETERMINE THROWING ABILITY.

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ABSTRACT

This study investigates the relationship between anthropometric measurements, specifically arm length, and health-related physical fitness (HRPF) components such as muscular strength and endurance, with sports skill proficiency in throwing games among school children aged 8 to 10 years. This study was conducted on 100 boys and 100 girls from Thane district. The HRPF tests include the 30-second Hang Test for upper body strength and the 1-minute Push-Up Test for muscular endurance. Sports skill assessment researcher have taken medicine ball throw which focuses on distance covered, angle of release, and biomechanical position in various throwing games. The statistical tool used in this research is Co-relation with help of mean score. A standardized assessment protocol was employed to ensure consistency and accuracy. The findings reveal a significant correlation between arm length and throwing accuracy Boys (0.57) and Girls (0.35) indicating its biomechanical advantage. Children significant correlation analysis between HRPF components Boys (0.01) and Girls (0.04) which shows, children with higher upper body strength and endurance demonstrated better performance in throwing tasks, emphasizing the importance of these fitness attributes in skill execution. The study concludes that integrating anthropometric and HRPF assessments into early sports programs can enhance talent identification and inform tailored training regimens. These insights contribute to optimizing athletic development and improving performance in throwing-related sports.

INTRODUCTION

Throwing ability is a fundamental motor skill that plays a pivotal role in various sports and physical activities, especially those requiring precision, power, and coordination. Understanding the factors influencing throwing performance is crucial for the development of training programs and skill enhancement strategies, particularly for school-aged children who are at a formative stage of physical and motor development. The present study aims to examine the relationship between selected anthropometric measurements, HRPF components, and sports skill tests to determine the throwing ability of school children.

Anthropometric characteristics such as arm length have a significant impact on throwing performance, as they directly affect the biomechanics and leverage of the throwing motion. Longer arms, for instance, may provide greater mechanical advantage, enabling higher velocity and distance during a throw. In addition, HRPF components like muscular strength, endurance, and flexibility contribute to the overall throwing ability by enhancing the functional capacity of the musculoskeletal system. Sports skill tests, on the other hand, offer a practical means to evaluate specific motor skills and throwing efficiency in a controlled environment. By analyzing the data from 100 male and 100 female students, this research seeks to provide insights into the interplay between physical attributes and motor skill performance, thereby contributing to the understanding of skill development in young athletes.

This study's findings are expected to have practical implications for physical education professionals, coaches, and sports scientists in designing targeted interventions to improve throwing performance in children. Furthermore, it highlights the importance of integrating anthropometric and fitness assessments into training programs to optimize skill acquisition and athletic potential.

OBJECTIVE

1. To analyze the relationship between arm length and throwing ability in school-aged children.
2. To assess the impact of selected anthropometric measurements on the medicine ball throw performance.
3. To examine the contribution of health-related physical fitness (HRPF) in throwing performance.
4. To evaluate the effectiveness of sports skill tests in determining throwing performance.
5. To provide insights into the interplay between physical attributes and motor skill performance in young athletes.
6. To recommend strategies for integrating anthropometric and fitness assessments into physical education programs for skill enhancement.

HYPOTHESIS

There may be a significant relation between anthropometric measurement, physical fitness components and sports skill test performance to determine throwing ability for athletes.

There may not be a significant relation between anthropometric measurement, physical fitness components, and sports skill test performance to determine throwing ability for athletes.

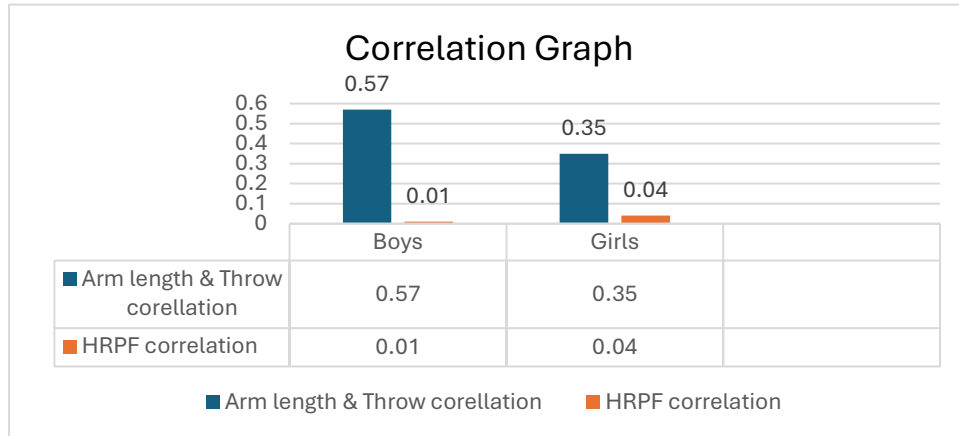
PROCEDURE

The purpose of this study was to observe the performance of school children the of ages 8 to 10 years on tests such as taking Anthropometric Measurement i.e. Arm Length, 30 Sec Hang Test, 30 Sec Modified Pushup Test to check muscular endurance and muscular strength respectively of shoulder, Medicine Ball Throw for sports specific skills test.

The methodology chosen for this study was descriptive research. In this study the researcher only observed and collected data without any manipulation of the variables.

The researcher conducted tests on school children aged 8 to 10 years. Prior to testing the tests were explained to the students and demonstrated by the researcher.

ANALYSIS OF DATA



According to graph Shown above Findings of analysis are as follows:

1. Relationship Between Arm Length and Throwing Test

The correlation coefficient between arm length and throwing test for boys is 0.57, which indicates a moderate to strong positive correlation. This suggests that boys with longer arms tend to throw farther.

For girls, the correlation is 0.35, which is a moderate positive correlation. It still suggests that arm length contributes to throwing ability.

2. Relationship Between HRPF Components

The correlation between HRPF (Health-Related Physical Fitness) components is very weak for both boys (0.01) and girls (0.04). These values indicate that HRPF components have almost no direct relationship with throwing ability in this study.

Results:

Relationship Between Arm Length and Throwing Ability

The correlation between arm length and throwing test for boys is 0.57, and for girls it is 0.35 which indicates a moderate to strong positive correlation. This suggests that children with longer arms tend to throw farther.

Relationship Between HRPF Components

The correlation between HRPF (Health-Related Physical Fitness) components is very weak for both boys (0.01) and girls (0.04). These values indicate that HRPF components have almost no direct relationship with throwing ability in this study.

Conclusion:

1. Arm length is a significant factor in throwing performance, particularly for boys, as it has a higher correlation with throwing distance.
2. HRPF components have a minimal influence on throwing ability, suggesting that general fitness alone is not a major determinant of throwing performance.
3. Gender differences exist in the strength of correlation, indicating that different training approaches might be needed for boys and girls to enhance their throwing ability.
4. Practical applications include developing targeted training programs that focus on improving, throwing mechanics, strength, and arm leverage rather than solely relying on general fitness training.

Recommendations:

1. Incorporate Anthropometric Assessments:

Coaches and trainers should include arm length assessments as a factor in talent identification for throwing-based sports.

2. Skill-Specific Training Over General Fitness

Since HRPF components showed weak correlations, training programs should focus more on throwing mechanics, arm leverage, and coordination rather than just strength or endurance.

3. Gender-Specific Training Approaches

Boys, with a higher correlation of 0.57, may benefit more from leveraging arm length advantages in their training. Girls, with a lower correlation (0.35), may require additional technique-focused drills to maximize throwing ability.

4. Early Sports Program Integration

Schools should integrate sports skill assessments with anthropometric and fitness evaluations to tailor training strategies and optimize skill development.

5. Future Research Directions

Further studies could explore additional factors such as grip strength, flexibility, and biomechanics to understand their impact on throwing ability. A longitudinal study can help analyze how these relationships change as children grow and develop.

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