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Difference in Speed and Agility between Native and Non-Native Athletes: A Comparative study of Physical Performance

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Abstract - This study aimed to examine and compare the speed and agility levels between athletes participating in Native and Non- Native sports. Forty male athletes were selected, comprising twenty Native Kho-Kho players and twenty Non- Native Hockey players, all of whom competed at various levels, including subdivision, district, and state competitions. The participants, aged between 14 and 16 years, were exclusively male. The analysis revealed differences in the average motor performance between the two groups. Specifically, Non- Native players exhibited lower levels of speed and agility compared to their Native counterparts. A t-test was conducted to statistically compare the motor performance between Native and Non- Native athletes, revealing no significant differences in speed (p = 0.77) or agility (p = 1.23) between the groups. Consequently, the study concluded that there were no statistically significant differences in motor performance variables between Native and Non- Native players. These findings highlight the need for future research to develop strategies to enhance motor performance in athletes from these specific populations.

Keywords: Native games, Non- Native games, Bio-motor abilities, Speed, Agility

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INTRODUCTION

In the realm of competitive sports, athletes continually seek to improve their performance by optimizing various physical and psychological attributes. Physical conditioning, a key component of athletic performance, not only enhances muscular function but also sharpens cognitive and emotional responses, enabling athletes to perform under pressure (Clarke, 1959). The interplay between physical and mental fitness underscores its critical role in sports.

Drawing a parallel to Mark Twain's adage, "Clothes make the man. Naked people have little or no influence in society," it becomes evident that an athlete's lack of physical fitness can significantly hamper their competitiveness. Coaches and trainers, therefore, prioritize physical conditioning to ensure athletes achieve and maintain peak performance levels (Kannan, 2011).

The traditional concept of fitness, defined as the ability to perform daily tasks with vigor and alertness, has evolved to include 'health-related fitness' and 'motor performance fitness,' a shift driven by technological advancements that have altered lifestyles (Hockey, 1993). Interestingly, India's rural population, which constitutes about 70% of the total population, often displays superior physical fitness, which forms a strong foundation for the country's athletic prowess (Wilson, 2012).

Physical education and traditional sports have played a significant role in India's history, with various indigenous games promoting physical development and motor skills. Kho-Kho, a traditional Native game, exemplifies this heritage, emphasizing endurance, speed, and agility through its dynamic and rhythmic gameplay. This game, deeply embedded in India's cultural fabric, contrasts with Non- Native sports like soccer, which requires high levels of aerobic endurance and agility (Kalapotharakos et al., 2006).

This study aimed to compare the speed and agility of athletes engaged in Native and Non- Native sports, thereby contributing to the understanding of

how physical conditioning impacts performance in these distinct contexts.

METHODOLOGY

The study involved forty male athletes, evenly divided between Kho-Kho (Native sport) and Hockey (Non- Native sport) players, with participants selected based on their competition level (subdivision, district, state). Random selection was employed to minimize bias, and all participants were aged 14 to 16 years to ensure age homogeneity. The study focused on two primary variables: speed and agility. Speed was assessed using the 20-meter sprint test, while agility was measured using the arrowhead agility test. These tests were chosen for their relevance to the sports in question and their established significance in evaluating athletic performance.

Data were analyzed using measures of central tendency and dispersion, specifically mean values and standard deviation (SD). To determine significant differences between the groups, a t-test was conducted with a significance level set at $p < 0.05$, ensuring a 95% confidence level in the findings.

RESULTS

Table 1:

Components	Native Game(kho-kho)	Non- Native Game (Hockey)	Sig.
Speed	8.17±0.75	7.53±0.70	0.77
Agility	12.11±0.67	12.12±1.07	1.23

The results, summarized in Table 1, indicate that Non- Native players demonstrated lower levels of speed and agility compared to their Native counterparts. However, the t-test results showed no statistically significant differences between the groups for either speed ($p = 0.77$) or agility ($p = 1.23$). These findings suggest that the observed differences in motor performance between Native and Non- Native players were not statistically significant.

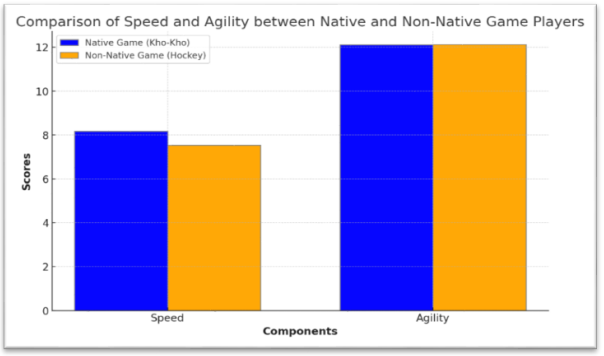

Figure 1

The Figure- 1 comparing the speed and agility between Native game (Kho-Kho) and Non-Native game (Hockey) players based on the provided data. The graph visualizes the differences in performance for these two components.

DISCUSSION

The absence of significant differences in motor performance between Native and Non- Native players may be attributed to several factors, including the small sample size and the similar levels of training and resources available to both groups. This study's results align with previous research suggesting that equitable access to training resources and consistent coaching practices contribute to uniformity in athletic performance among young athletes (le Gall et al., 2010).

Further research is needed to explore how tailored training interventions could enhance athletic performance in Native and Non- Native athletes. Investigating the role of traditional games like Kho-Kho in improving motor skills could provide valuable insights for incorporating these activities into school-based physical education programs.

CONCLUSION

This study found no significant differences in speed and agility between Native and Non- Native athletes, underscoring the need for future research to develop innovative strategies for improving motor performance in these populations. Traditional Native games, such as Kho-Kho, offer a promising avenue for enhancing physical fitness in a cost-effective and accessible manner, particularly within school-based physical education programs.

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