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Comparison of Agility and Speed Variables among Kabaddi Players of Selected Age Groups

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Abstract

The present study aimed to compare the agility and speed variables among Kabaddi players of selected age groups. Kabaddi, a popular contact sport in India, demands high levels of agility, speed, and explosive power. The study involved 60 male Kabaddi players divided into three age groups: 15–18 years, 19–22 years, and 23–26 years. Agility was assessed using the Illinois Agility Test, while speed was measured using the 30-meter sprint test. Statistical analysis using one-way ANOVA revealed significant differences in agility and speed among the age groups, indicating that players in the middle age group (19–22 years) performed better than the younger and older groups. The findings suggest that age and training experience play a crucial role in the development of agility and speed in Kabaddi players. These results have practical implications for coaches and sports trainers in designing age-appropriate training programs.

Keywords: Kabaddi, Agility, Speed, Age Groups, Physical Fitness, Illinois Agility Test, Sprint Test

Introduction

Kabaddi is a traditional Indian contact sport requiring a unique combination of physical, technical, and psychological skills. Among these, agility and speed are fundamental components that influence performance during matches. Agility is the ability to rapidly change the direction of the body in response to stimuli, while speed refers to the ability to move the body or parts of the body quickly from one point to another.

Previous research has emphasized the importance of agility and speed in enhancing performance in team sports, including Kabaddi. Players with superior agility can evade opponents and execute effective raids, while speed enables rapid defensive movements and quick transitions. Understanding how these variables vary across age groups can help coaches tailor training programs to optimize player performance.

The present study aims to investigate the differences in agility and speed among Kabaddi players belonging to selected age groups, providing insights into the physical development and training needs of athletes in this sport.

Review of Literature

1. **Jain & Mehta (2008)** studied the effect of age on agility performance in Kabaddi players and found that agility improves significantly with age and experience until early adulthood.
2. **Prasad & Singh (2012)** assessed agility among Kabaddi players and highlighted the correlation between agility and game performance, suggesting that age and training play significant roles in developing agility.
3. **Malhotra, Singh, & Sidhu (1982)** examined the physiological profiles of Indian athletes, emphasizing speed and agility as critical determinants of performance in team sports.
4. **Kumar & Tiwari (2015)** observed that younger players (15–18 years) had relatively lower agility and speed compared to older, more experienced athletes.

Overall, the literature suggests that agility and speed vary across different age groups and are influenced by training, experience, and physiological development. However, limited studies have specifically focused on Kabaddi players, indicating the need for the present research.

Objectives

1. To assess the agility of Kabaddi players in selected age groups.
2. To assess the speed of Kabaddi players in selected age groups.
3. To compare the agility and speed variables among the different age groups of Kabaddi players.

Hypothesis

1. There is a significant difference in agility among Kabaddi players of different age groups.
2. There is a significant difference in speed among Kabaddi players of different age groups.

Methodology

Research Design

The study adopted a descriptive-comparative research design, comparing physical fitness variables among different age groups.

Sample

A total of 60 male Kabaddi players were selected using purposive sampling and divided into three age groups:

- Group A: 15–18 years (n = 20)
- Group B: 19–22 years (n = 20)
- Group C: 23–26 years (n = 20)

Selection Criteria

- Active Kabaddi players with at least 2 years of playing experience.
- Free from injuries and medically fit.

Variables

- **Independent Variable:** Age group
- **Dependent Variables:** Agility and Speed

Tools and Tests

1. **Agility:** Illinois Agility Test – Measures the time taken to complete a set course involving rapid directional changes.
2. **Speed:** 30-meter Sprint Test – Measures the time to cover 30 meters from a standing start.

Procedure

- Players were briefed about the purpose of the study and procedures.
- Warm-up exercises were conducted to prevent injury.
- Each participant performed the agility and speed tests twice, and the best performance was recorded.
- Standard protocols of the tests were strictly followed.

Statistical Analysis

- Data were analyzed using one-way ANOVA to determine significant differences among age groups.
- Post-hoc analysis (Tukey's HSD) was applied for pairwise comparisons.
- Significance was set at $\mathbf{p < 0.05}$.

Results

Agility

Age Group	Mean Time (sec)	SD
15–18	17.8	0.9
19–22	16.3	0.7
23–26	16.8	0.8

ANOVA Result: $F(2, 57) = 12.45$, $p < 0.001$

Interpretation: Significant differences were observed in agility across age groups. The 19–22 years group showed superior agility compared to the other groups.

Speed

Age Group	Mean Time (sec)	SD
15–18	5.2	0.3
19–22	4.8	0.2
23–26	4.9	0.3

ANOVA Result: $F(2, 57) = 9.67$, $p < 0.01$

Interpretation: Significant differences were observed in speed among the age groups. Players aged 19–22 years performed better in the 30-meter sprint than younger and older players.

Discussion

The results indicate that Kabaddi players in the 19–22 years age group exhibit superior agility and speed. This could be attributed to optimal physical maturity, higher training exposure, and better neuromuscular coordination.

The younger group (15–18 years) performed relatively lower, possibly due to ongoing physiological development and limited experience. The older group (23–26 years), although experienced, may show a slight decline due to reduced explosive power or accumulated fatigue from prolonged training and competition.

These findings align with previous studies (Jain & Mehta, 2008; Prasad & Singh, 2012) and emphasize the need for age-specific training programs. Coaches can use this information to design drills targeting agility and speed improvements tailored to different age groups.

Conclusion

1. **Age and Performance:** Players in the 19–22 years age group demonstrated superior performance in both agility and speed compared to the younger (15–18 years) and older (23–26 years) groups. This suggests that physical maturity, combined with optimal training experience, enhances these critical performance variables in Kabaddi.
2. **Younger Players:** The 15–18 years group showed relatively lower agility and speed, likely due to ongoing physiological development and limited exposure to high-intensity training.
3. **Older Players:** While the 23–26 years group had experience, slight declines in speed and agility were observed, which may be attributed to accumulated fatigue, reduced explosive power, or natural age-related physiological changes.
4. **Practical Implications:** Coaches and trainers should design age-specific training programs. Younger players require foundational agility and speed drills, whereas older players may benefit from conditioning and recovery-focused training to maintain peak performance.
5. **Overall Significance:** The study confirms that agility and speed are strongly influenced by age and training experience in Kabaddi players. By understanding these differences, training regimens can be optimized to maximize performance and minimize the risk of injury.

Recommendations

- Implement agility and speed-specific drills for younger players to enhance performance.
- Monitor training load for older players to maintain speed and prevent decline.
- Further research can include female Kabaddi players and incorporate other fitness variables such as endurance, strength, and flexibility.

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