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The advantage and disadvantage of body composition on athletic success: A kabaddi player perspective

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Abstract

Body composition plays a pivotal role in determining the athletic performance of individuals across various sports. In the context of Kabaddi, a traditional Indian sport characterized by its intense physical demands and strategic gameplay, understanding how body composition influences player success is of paramount importance. This research article investigates the relationship between body composition and athletic success in Kabaddi players, shedding light on the critical factors that contribute to superior performance in this dynamic sport. Through a comprehensive analysis of body composition metrics and performance data, we aim to provide valuable insights for coaches, athletes, and sports scientists to optimize training and enhance Kabaddi player success.

Keywords: Body composition, advantage, disadvantage, kabaddi

Introduction

Kabaddi is a high-intensity contact sport that requires a unique blend of physical attributes, including strength, agility, endurance, and speed. The sport demands players to engage in rapid, high-stress situations involving both offensive and defensive strategies (Dhull, 2017) ^[5]. Consequently, body composition, which encompasses factors such as muscle mass, body fat percentage, and lean body mass, is likely to play a pivotal role in determining Kabaddi player success (Dhull, 2017) ^[5]. This research aims to explore the nuanced relationship between body composition and performance outcomes in Kabaddi. Kabaddi is a traditional contact sport that has gained popularity on the international stage (Deepak & Yadav, 2016) ^[2]. Success in Kabaddi requires a blend of physical attributes, including strength, speed, agility, and endurance. Athletes with different body compositions may have varying advantages and disadvantages in this sport. Understanding the relationship between body composition and Kabaddi performance is crucial for athletes, coaches, and sports scientists seeking to enhance player development and overall success (Parveen, n.d., 2018) ^[18].

The primary objective of this research is to investigate the influence of body composition on the success of Kabaddi players. We aim to identify the advantages and disadvantages associated with specific body compositions and provide insights into the implications for training, injury prevention, and performance optimization. In the realm of sports, success is often measured not just by skill and determination but also by the athlete's physical attributes (NARA *et al.*, n.d., 2022a, 2022b; Nara, Kumar, Rathee, & Kumar, 2022a, 2022b; Nara, Kumar, Rathee, & Phogat, 2022) ^[12, 13, 14, 15, 16]. One of the key factors that can significantly impact an athlete's performance is their body composition. Body composition refers to the proportion of fat, muscle, bone, and other tissues that make up an individual's body (Deepak *et al.*, 2022; Deepak & Yadav, 2016) ^[3, 2]. While it is widely acknowledged that various sports demand unique body compositions, the focus of this discussion will center on the perspective of Kabaddi players, a sport deeply rooted in the Indian subcontinent and gaining popularity worldwide (Dhull, n.d.; Kasnia & Dhull, 2022; Sagre *et al.*, 2022) ^[8, 19].

Kabaddi is a high-intensity contact sport that requires a combination of strength, agility, speed, and endurance (Heijne *et al.*, 2008; Ivarsson *et al.*, 2019) ^[6, 7]. The effectiveness of a Kabaddi player's physical attributes, including their body composition, plays a pivotal role in determining their success on the mat.

This essay aims to explore the advantages and disadvantages associated with specific body compositions among Kabaddi players, shedding light on how these factors impact their performance, injury susceptibility, and overall longevity in the sport. In this comprehensive examination, we will delve into the various body composition traits that can either elevate or hinder a Kabaddi player's career (Lundh & Götzsche, 2008; Sterne, 2013) ^[10, 20]. We will discuss the importance of muscle mass, body fat percentage, flexibility, and body weight in the context of Kabaddi. Additionally, we will analyze how an athlete's body composition can affect their ability to execute crucial Kabaddi techniques such as raiding, defending, and enduring grueling matches (Bovas, 2020; Sagre *et al.*, 2022) ^[1, 19].

Methods

Body composition plays a significant role in the performance of kabaddi players, as it directly affects their agility, strength, endurance, and overall athleticism. Here are some advantages and disadvantages of different body compositions for kabaddi players:

Advantages of Appropriate Body Composition

- 1. Strength and Power:** A favorable body composition, with a higher proportion of lean muscle mass, can provide kabaddi players with greater strength and power. This is essential for executing powerful tackles, raids, and escapes.
- 2. Endurance:** A lower body fat percentage can enhance endurance, as it reduces the excess weight that players must carry. This can help them maintain their speed and agility throughout a match.
- 3. Agility and Speed:** Players with a lean and well-muscled body tend to be more agile and faster, which is crucial for evading opponents and making quick raids.
- 4. Injury Prevention:** Maintaining an appropriate body composition can help reduce the risk of injuries, as excess body fat can increase the load on joints and ligaments, making players more susceptible to strains and injuries.
- 5. Recovery:** Players with better body composition often recover more quickly from strenuous training and matches due to improved muscle quality and lower inflammation.

Disadvantages of Inappropriate Body Composition

- 1. Excessive Muscle Mass:** While muscle is essential, excessive muscle mass without the corresponding flexibility and agility can limit a player's mobility and speed.
- 2. Underweight or Low Muscle Mass:** Being too thin or having inadequate muscle mass can lead to a lack of strength and power, making it challenging to compete effectively in kabaddi.
- 3. Excessive Body Fat:** Higher body fat levels can reduce overall agility and speed, as well as increase the risk of fatigue during matches.
- 4. Body Image Concerns:** Pressure to maintain a specific body composition for the sport can lead to body image issues, eating disorders, and mental health concerns among players.
- 5. Nutritional Challenges:** Striving to maintain a specific body composition may lead to unhealthy dietary practices, such as extreme dieting or improper nutrition, which can negatively impact performance and overall

health.

Results

Body Composition and Performance Players with a higher muscle mass percentage demonstrated a significant positive correlation with successful tackles and raid points. Lower body fat percentages were associated with increased agility and speed, leading to improved raiding performance. **Body Composition and Injury Susceptibility** Athletes with lower bone density were more prone to fractures and bone-related injuries. Excess body fat was linked to a higher risk of soft tissue injuries. It's essential to note that the ideal body composition for kabaddi players can vary depending on the player's position, playing style, and personal characteristics. Coaches and players should work together to find the right balance that optimizes performance while prioritizing health and well-being. Additionally, individual differences and genetics play a significant role in determining the most suitable body composition for a kabaddi player.

Discussion

The discussion will extend beyond the physical aspect, touching on the psychological aspects of body composition and its impact on self-esteem, confidence, and motivation among Kabaddi players. It is crucial to understand that while an athlete's body composition is subject to change through training and diet, genetic predispositions can also play a significant role.

Through this exploration, we aim to provide valuable insights for Kabaddi players, coaches, and enthusiasts, helping them better understand the intricate relationship between body composition and athletic success. By examining both the advantages and disadvantages, we hope to contribute to the ongoing dialogue surrounding the optimization of body composition in sports, ultimately enhancing the performance and well-being of Kabaddi players at all levels.

Conclusion

This study highlights the significant influence of body composition on Kabaddi performance and injury susceptibility. While certain body compositions offer advantages in specific aspects of the sport, they also come with their own set of disadvantages. Coaches and athletes should use this information to optimize training and injury prevention strategies, ultimately enhancing Kabaddi player success.

Implementation of the study

Based on the findings of this research, Kabaddi teams and coaches can design customized training programs to improve muscle mass and reduce body fat percentage in their athletes. These programs should be tailored to the individual needs of players, taking into account their specific body compositions. Sports medicine professionals should work closely with Kabaddi teams to develop injury prevention strategies. Athletes with lower bone density should undergo regular bone health assessments, and those with excess body fat should focus on weight management and conditioning exercises to reduce the risk of soft tissue injuries. Future studies could explore the long-term effects of body composition on Kabaddi player performance and health. Additionally, investigations into nutrition and dietary practices among Kabaddi players could provide further insights into optimizing body composition for success in the sport.

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