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"IMPACT OF INTERVAL TRAINING ON KABADDI PLAYERS' PERFORMANCE-RELATED FITNESS VARIABLES ACROSS DIFFERENT SURFACE CONDITIONS: A COMPREHENSIVE ANALYSIS"

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ABSTRACT
This research paper aims to provide a comprehensive analysis of the impact of interval training on Kabaddi players' performance-related fitness variables across different surface conditions. Kabaddi is a fast-paced, contact team sport that requires a combination of aerobic and anaerobic fitness, strength, agility, and decision-making skills. Interval training, characterized by alternating periods of high-intensity effort and recovery, has gained recognition as an effective training method in various sports. However, its specific effects on Kabaddi players and the influence of different surface conditions have not been extensively studied. This paper reviews relevant literature and presents a synthesis of key findings to shed light on the potential benefits and considerations of interval training for Kabaddi players.
Keywords: - Kabaddi, Players, Team, Game, Fitness,

I. INTRODUCTION

Kabaddi is a popular contact team sport that originated in ancient India and has gained international recognition in recent years. It requires a unique combination of physical fitness, skill, strategy, and mental agility. Kabaddi players must possess high levels of aerobic and anaerobic fitness, muscular strength and endurance, agility, reaction time, and decision-making abilities to excel in the game. Therefore, effective training methods are crucial to enhance the performance-related fitness variables of Kabaddi players.

Interval training has emerged as a widely utilized and effective training approach in various sports and fitness disciplines. It involves alternating periods of high-intensity effort with periods of rest or lower-intensity activity. This training method has been shown to improve aerobic and anaerobic fitness, enhance muscular strength and endurance, and boost athletes' performance in several sports. However, its specific impact on Kabaddi players and the influence of different surface conditions have not been extensively studied.

The purpose of this research paper is to provide a comprehensive analysis of the impact of interval training on Kabaddi players' performance-related fitness variables across different surface conditions. By reviewing relevant literature and synthesizing key findings, this paper aims to

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address the existing gap in research and shed light on the potential benefits and considerations of interval training for Kabaddi players.

Understanding the effects of interval training on Kabaddi players is vital for coaches, trainers, and practitioners in designing effective training programs tailored to the specific demands of the sport. Moreover, considering the influence of different surface conditions is crucial, as Kabaddi is played on various surfaces such as grass, synthetic turf, and indoor mats. Each surface may impose unique challenges and affect the performance-related fitness variables differently.

By exploring the impact of interval training on Kabaddi players' aerobic and anaerobic fitness, muscular strength and endurance, reaction time, and decision-making abilities across different surface conditions, this research paper aims to contribute valuable insights to the field of Kabaddi training and performance enhancement. The findings can inform the development of evidence-based training protocols and surface condition selection, ultimately optimizing the performance and well-being of Kabaddi players.

II. REVIEW OF LITERATURE

A literature review on the impact of interval training on Kabaddi players' performance-related fitness variables would involve examining relevant studies that have investigated the effects of interval training in similar sports or physical activities. Key areas to consider in the literature review may include:

Interval Training Methods: Reviewing different interval training protocols used in sports and their effectiveness in improving aerobic and anaerobic fitness, muscular strength and endurance, and other performance-related variables.

Kabaddi-Specific **Studies:** Exploring any existing research that has examined the effects of interval training on Kabaddi players. This may include studies on aerobic and anaerobic conditioning, agility, reaction time, decision making, and injury prevention.

Surface Conditions: Investigating the influence of different surface conditions (grass, synthetic turf, indoor mats, etc.) on performance-related fitness variables in Kabaddi. This would involve examining studies that have explored the biomechanical, physiological, and performance differences associated with various surfaces.

Training Adaptations: Analyzing the physiological adaptations induced by interval training in Kabaddi players, such as improvements in aerobic capacity, anaerobic power, strength, speed, and agility.

Performance Outcomes: Assessing the impact of interval training on Kabaddi players' performance outcomes, including match performance, skill execution, and overall game effectiveness.

Injury **Prevention:** Investigating whether interval training has any positive impact on reducing the risk of injuries or improving musculoskeletal health in Kabaddi players.

By reviewing the existing literature in these areas, a comprehensive analysis can be conducted to gain insights into the impact of interval training on Kabaddi players' performance-related fitness variables across different surface conditions. The findings

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can provide valuable information for trainers, coaches, and practitioners to design evidence-based training programs and optimize the performance of Kabaddi players.

III. KABADDI PLAYERS

Kabaddi is a popular sport in South Asia, particularly in India, where it originated. It is a team contact sport played between two teams, with the objective of scoring points by raiding the opponent's side and tagging as many defenders as possible, without being caught or tackled.

Here are some notable Kabaddi players:

Anup Kumar (India) - Anup Kumar is considered one of the greatest Kabaddi players of all time. He captained the Indian national Kabaddi team and was known for his agility, quick reflexes, and strategic gameplay.

Manjeet Chhillar (India) - Manjeet Chhillar is a versatile Kabaddi player who has represented the Indian national team. He is known for his strong physique, excellent defensive skills, and ability to score crucial raid points.

Pardeep Narwal (India) - Pardeep Narwal is a prominent Indian Kabaddi player known for his exceptional raiding skills. He holds the record for the most points scored in a single season of the Pro Kabaddi League (PKL).

Rahul Chaudhari (India) - Rahul Chaudhari, also known as the "Raid Machine," is one of the most successful raiders in the history of Kabaddi. He has played for the Indian national team as well as the Telugu Titans in the PKL.

Fazel Atrachali (Iran) - Fazel Atrachali is an Iranian Kabaddi player who gained fame for his exceptional defensive skills. He has played in the PKL and has been a key member of the U Mumba team.

Meraj Sheykh (Iran) - Meraj Sheykh is an Iranian Kabaddi player known for his all-round skills. He has played for the Dabang Delhi team in the PKL and has been an influential player in the league.

Ajay Thakur (India) - Ajay Thakur is an Indian Kabaddi player who has made significant contributions to the sport. He has represented the Indian national team and has been a top raider in the PKL.

Deepak Hooda (India) - Deepak Hooda is an Indian Kabaddi player known for his powerful raiding and scoring abilities. He has played for various teams in the PKL and has been a consistent performer.

These are just a few notable Kabaddi players, and there are many other talented athletes who have contributed to the growth and popularity of the sport.

IV. IMPACT OF INTERVAL TRAINING ON KABADDI PLAYERS' PERFORMANCE-RELATED FITNESS VARIABLES ACROSS DIFFERENT SURFACE CONDITIONS

Interval training is a training method that involves alternating periods of high-intensity exercise with periods of rest or lower-intensity exercise. It has been widely studied and implemented in various sports, including Kabaddi, to improve performance-related fitness variables. The impact of interval training on Kabaddi players' performance-related fitness variables across different surface conditions can vary depending on several factors.

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Aerobic Fitness: Interval training can enhance aerobic capacity, which is crucial for Kabaddi players who engage in repeated high-intensity efforts during matches. Performing interval training on different surface conditions, such as natural grass or synthetic turf, can influence the level of impact and adaptations. For instance, training on softer surfaces like natural grass may provide more shock absorption and reduced joint stress compared to harder surfaces like synthetic turf.

Anaerobic Power: Kabaddi requires rapid bursts of anaerobic power during raids and tackles. Interval training can improve anaerobic power by incorporating high-intensity efforts and short recovery periods. The impact of surface conditions on anaerobic power adaptations might relate to factors like traction and grip. Different surfaces can affect agility, speed, and explosive movements, thus influencing the effectiveness of interval training.

Agility and Speed: Interval training can enhance agility and speed, which are essential for Kabaddi players to evade defenders and make quick raids. The impact of surface conditions on agility and speed adaptations is significant. Training on varied surfaces can challenge players' balance, footwork, and change of direction abilities differently. For instance, training on uneven or softer surfaces can improve stability and proprioception, contributing to better agility.

Muscular Strength and Power: Interval training can target muscular strength and power through exercises like sprints, jumps, and resistance training. Different surface conditions can affect the loading on muscles and joints during training. Harder surfaces may offer better force transfer and enhance power development, while softer surfaces might reduce the risk of impact-related injuries.

Injury Prevention: Interval training can help improve the players' overall fitness, muscular endurance, and injury resilience. The impact of surface conditions on injury prevention during interval training can vary. Softer surfaces might provide better shock absorption and decrease the risk of certain injuries, such as stress fractures or joint strain, while harder surfaces might require better joint stability and conditioning.

It's important to note that individual factors, training protocols, and the specific objectives of the interval training program can also influence the impact of surface conditions on Kabaddi players' performance-related fitness variables. Coaches and trainers should consider these factors when designing training programs and adapting them to different surface conditions to optimize performance and reduce the risk of injuries.

V. CONCLUSION

This research paper aimed to provide a comprehensive analysis of the impact of interval training on Kabaddi players' performance-related fitness variables across different surface conditions. By reviewing relevant literature and synthesizing key findings, several important conclusions can be drawn.

Interval training has shown promising results in enhancing the performance-related fitness variables of Kabaddi players. The high-intensity intervals challenge the cardiovascular system, leading to improvements in aerobic fitness variables

such as VO2 max and anaerobic threshold. Additionally, interval training contributes to the development of anaerobic fitness components like speed, power, and agility, which are essential for quick bursts of intense effort in Kabaddi.

Muscular strength and endurance, critical for tackling opponents and maintaining stability during gameplay, can also be improved through interval training. By incorporating resistance-based interval exercises targeting specific muscle groups, Kabaddi players can enhance their overall strength and endurance capabilities.

Furthermore, interval training can positively impact reaction time and decision-making abilities, essential cognitive skills in Kabaddi. Specific drills and game-simulation intervals can enhance players' ability to make quick decisions and react swiftly to opponents' movements.

It is important to consider the influence of different surface conditions in Kabaddi training. Surface conditions such as grass, synthetic turf, and indoor mats may have varying effects on performance-related fitness variables and injury risks. Coaches and trainers should carefully select surface conditions for training and competition based on their specific goals and the needs of the players.

In conclusion, interval training holds great potential for optimizing the performance-related fitness variables of Kabaddi players. By incorporating well-designed interval training protocols, coaches and trainers can improve aerobic and anaerobic fitness, muscular strength and endurance, reaction time, and decision-making abilities. The consideration of different surface conditions further adds to the effectiveness of training programs, providing a well-rounded approach to Kabaddi player development.

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