Reactive Agility Profile of Yogyakarta Tennis Players

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Abstract. Agility is one of the keys to success in tennis performance. The characteristics of the game of tennis are identical to the movement of changing direction in multiple directions so that agility in tennis is closely related to reactive agility. The aim of this study was to determine the reactive agility profile of Yogyakarta tennis players. This study is quantitative descriptive research with survey method. The sampling technique used is purposive sampling with the criteria 1) Yogyakarta tennis athletes, 2) have tennis player rankings, 3) follow regional and national level matches. The sample of this study was 40 tennis players, 21 male tennis players and 19 female tennis players. The instrument used in this study is the reactive agility test. data analysis using percentages. The results of data analysis show that most of the reactive agility of the research sample at the level of poor with a total of 15 samples from a total of 40 tennis players who were sampled. The conclusion in this study is that the reactive agility is uneven, and the majority is in the poor category. Reactive agility training is needed to be able to improve the agility ability of athletes because reactive agility is one of the factors that affect the performance of playing tennis.

Keywords: tennis; athlete; reactive agility

1 Introduction

Tennis is a dynamic and complex game in which players repeatedly make decisions regarding positioning and shot selection [1]. A large number of studies have addressed various performance indicators in tennis such as time factor [2,1], rally length [1], point profile [3], serve and return performance [4,5], patterns of play [3] and distance travelled [6,7]

The modern game of tennis has evolved from a primarily technical sport with sports specific technical skills being the main factor (e.g. racket and ball handling skills and stroke skills, such as service skills), to a more dynamic and explosive sport characterized by higher stroke and serve speeds and needs especially higher physical demands [6]. Therefore, it is widely accepted that players require a higher level of physical fitness to perform advanced shots and compete effectively against increasingly elite opponents [6]. In tennis research studies it has been suggested that tennis players require a mix of speed, agility, coordination, and strength, combined with moderate to high aerobic and anaerobic capacities. anaerobic capacity. Thus, successful performance cannot be determined by one dominant physical attribute; rather, ten-

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nis dominant physical attribute; instead, tennis demands a complexity of interactions of several physical components and metabolic pathways [6].

Tennis is a game that requires foot speed, controlled precision, stamina, anticipation, and control, stamina, anticipation, determination, and ingenuity. However, if you are weak in any of these areas, there is still the possibility of making up for it by [8]. To assess strengths and weaknesses of a particular player, standardized physical testing is usually used to provide a useful supplement to subjective coaching judgements [7,9]. In tennis, few studies have addressed physical testing for young high-level players with the aim to identify the most influential factors on tennis performance (i.e., ranking), and studies have been conducted with athletes from different backgrounds (e.g., age, gender, performance level) using different testing protocols [7]. The results are contradictory, with some studies showing that physical qualities are weak predictors of overall tennis performance and others showing that certain qualities, such as agility or vertical speed and strength correlate with tennis performance [7]. It can be concluded that reactive agility is very influential on the performance of tennis athletes.

Agility is one of the keys to success in tennis playing performance [10]. In the game of tennis all balls coming from the opponent have a type, speed, different spin percentages and based on that the ball falls into the area different field. This condition requires tennis athletes to have good agility Good. There are two forms of agility, namely: 1) non-reactive or planned agility (change of direction speed-CODS), which is characterized by a change in the direction of movement already previously known, 2) reactive or unplanned agility (Reactive Agility-RAG), which includes cognitive components, namely observation and decision-making factors [11,12]. The characteristics of the tennis game are identical to movements changing direction [13,14]. This rapid change of direction is not only done in direction linear and lateral but also multidirectional. All multidirectional movements are performed as reaction to the information received, namely in the form of a ball coming from the opponent, and depending on the speed, direction, rotation, and path of the ball [15]. This shows that in tennis the agility performed cannot be assumed as pure physical skills [16]. The process of responding to an opponent's actions during the rally in tennis includes and combines not only physical skills, but also cognitive and technical skills. These skills refer to reactive agility (reactive agility-RAG). Therefore, it is necessary to have reactive agility by tennis athletes and it is necessary to measure the reactive agility of tennis athletes to support performance. Research related to the ability of reactive agility in tennis athletes is still rarely done, especially research on reactive agility in Yogyakarta athletes. Therefore, research is needed to determine the ability of reactive agility in Yogyakarta athletes as an evaluation of training implementation.

2 Method

2.1 Study Design

This research is quantitative descriptive research using survey method. The subjects of this study were 40 tennis athletes in the Special Region of Yogyakarta. Sampling technique used purposive sampling method.

2.2 Research Participants

The population in this study was the entire achievement coaching players of Yogyakarta. The sampling technique used is purposive sampling with the criteria 1) Yogyakarta tennis athletes, 2) have tennis player rankings, 3) follow regional and national level matches. The sample of this study was 40 tennis players, 21 male tennis players and 19 female tennis players.

2.3 Data Collection and Instrumentation

This research data collection technique uses tests and measurements. The instrument used to obtain data is the reactive agility test. The research procedure begins with determining the research sample. After the sample is determined and obtained continued with data collection using the reactive agility test. Participants were verbally encouraged and instructed to try their best at the reactive agility test. At the start of the test, there was a standardized warm-up that lasted about 10 minutes. This warm-up included a general warm-up, dynamic stretching, and specialized warm-up exercises. After the warm-up, there was an active rest period of 3 to 5 minutes before testing.

2.4 Statistical Analysis

Data were analyzed using a descriptive quantitative approach. data analysis was carried out by summing the results of the reactive agility test for tennis athletes in each category and presented in the form of a percentage.

3 Result

The results of the data analysis of the reactive agility test of Yogyakarta tennis athletes are displayed in the form of percentages at each level of reactive agility. Table 1 illustrates the results of data analysis of reactive agility ability of Yogyakarta tennis athletes.

Table 1. Reactive Agility of Yogyakarta Tennis Athletes

Number	Category	Frequency	Percentage (%)
1	Excellent	1	2,50
2	Good	11	27,50
3	Fair	9	22,50
4	Poor	15	37,50
5	Very Poor	4	10,00
Total		40	100%

Based on table 1, the level of agility of Yogyakata tennis athletes consists of 1 athlete or 2,50% in the excellent category, 11 athletes or 27,50% in the good category, 9 ath-

letes or 22,50% in the fair category, 15 athletes or 37.50% in the poor category and, 4 athlete or 10% is in the very poor category. The reactive agility of Yogyakarta tennis athletes is uneven, and the majority are in the poor category. The level of agility of Yogyakarta tennis athletes can be seen in the figure 1.

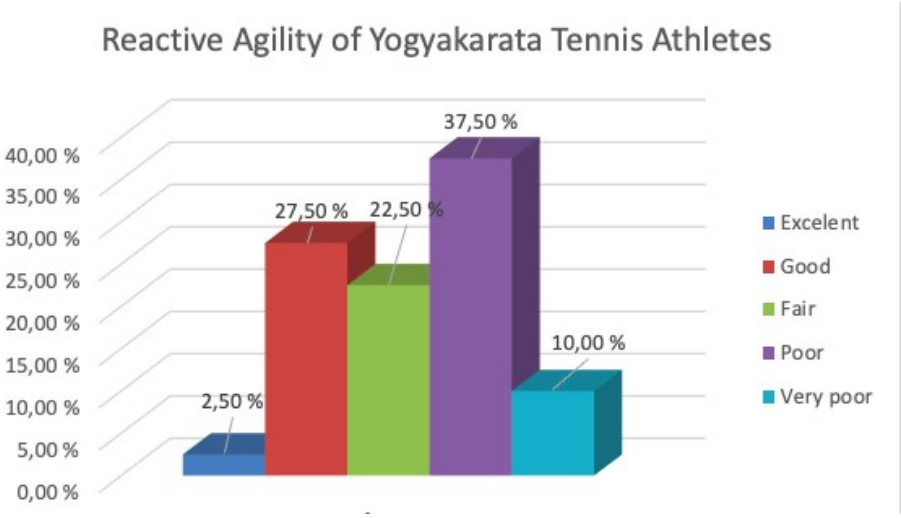

Figure 1. Reactive Agility of Yogyakarta Tennis Athletes

4 Discussions

The level of agility of Yogyakata tennis athletes consists of 1 athlete or 2,50% in the excellent category, 11 athletes or 27,50% in the good category, 9 athletes or 22,50% in the fair category, 15 athletes or 37.50% in the poor category and, 4 athlete or 10% is in the very poor category. The reactive agility of Yogyakarta tennis athletes is uneven, and the majority are in the poor category. Athletes who are in the very poor and poor categories are athletes whose PNP rankings are low and still lose at national level matches. The distribution of athletes from the entire total research sample is only one tennis player from the national team, so most reactive agility test results are in the less category. This can be explained through the results of previous research which states that there are differences in agility between tennis player levels.

There is a a significant positive correlation between athlete performance level and the level of agility of athletes [13]. There are 37.50% or 15 Yogyakarta athletes who are in the less category, after further analysis it is known that athletes who are in that category are most junior athletes under 13 years and bel. Novice athletes in this club still have minimal experience competing, have not received special attention or training from the coach in improving agility. At the age of 10 to 12 years is an important period in the motor development of children, and currently children usually lack proper training.

Previous study showed that agility ability greatly influences tennis playing performance. Agility is crucial for tennis athletes due to the dynamic and fast-paced nature of the sport. It involves the ability to change direction quickly, accelerate, decelerate, and move laterally while maintaining balance and coordination. Here are several reasons why agility is important for tennis athletes: improved court coverage, quick changes in direction, enhanced reaction time, injury prevention, strategic advantage, endurance and stamina, skill development [6,17,18]. Tennis matches require players to cover the court efficiently. Agility allows athletes to reach the ball more effectively, enabling them to return shots and cover a larger area of the court. Tennis involves rapid changes in direction. Agility helps players move swiftly in response to their opponent's shots, allowing them to adjust their position and reach the ball effectively. Agility training helps athletes improve their balance, stability, and body control, which reduces the chance of injury caused by rapid movements or awkward postures on the court. Players with more agility might obtain a strategic edge by being more unpredictable in their movements, making it more difficult for opponents to anticipate their shots. Agility training frequently includes cardiovascular workouts, which contribute to general endurance and stamina on the court, which is important during lengthy and tough matches. Agility drills may improve a player's footwork, coordination, and general athleticism, all of which contribute to the development of his or her talents.

The research results show that athletes' reactive agility abilities are still lacking. As it is known that the physical condition of tennis athletes needs further attention by coaches and coaches. As a result, coaches should be able to plan and implement training programs to enhance the physical condition of the players they teach while maintaining proper technical elements.

5 Conclusion

This research highlights the importance of reactive agility skills for the performance of tennis athletes. The research result showed that the reactive agility is uneven and the majority is in the poor category. Based on the results of this research, coaches need to provide a larger portion of reactive agility training than before and design and implement reactive agility training programs for their athletes.

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