

Profile Study of Selected Motor Fitness Variables of Badminton Player

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Abstract: - Many scientific investigations have increased in recent years due to the popularity of the Badminton game in the World. However, there is a lack of Descriptive data on the motor fitness of Manipur male Badminton players. Therefore the study aims to measure and describe the selected variables of motor fitness of male Badminton players. The sample included 21 male national badminton players of Manipur Badminton Association of 18-23 years (mean age 19.6 ± 2.26 years). The selected variables were assessed: body weight; height; abdominal strength(sit-up), power(vertical jump), and speed(30m Dash). Descriptive statistics (means and standard deviations) were used for data analysis using IBM SPSS 20. The mean height, body weight, and selected motor fitness variables are somewhat lower than other country badminton players. The result of the study can help coaches in identifying and choosing new badminton players, and also help to design the training program to enhance badminton performance.

Keywords: motor fitness, strength, power, speed, badminton player.

Introduction

Badminton is a popular sport played all over the world. It requires quick, forceful shots as well as quick footwork. Badminton is a high-intensity sport that requires a unique movement skill and strength over relatively a small court area. A perfect blend of physical condition, mental attitude, courage, intelligence, and the player's technical skill and tactical effectiveness usually wins the match. It necessitates the body's and reflexes' coordinated functioning. (Singh et al, 2011). Some studies found that lower body power is considered the most important component of badminton players for enhancing badminton performance(Ooi et al.,2000). A player's basic motor fitness, such as strength, power, muscular endurance, flexibility, coordination, and agility must be improved to perform advanced strokes or complete against ever stronger opponents(Leishout,2002). According to Andersson et al. (1988), well-developed strength is important in many sports context as relatively encompass the large movement of the trunk (Leishout, 2002). Motor fitness has been defined as a state of readiness for action with motor skills. It is important for massive muscle activity without exhaustion. It consists of the ability of an individual to move proficiently, with quality over a reasonable allocation of time. (Kumar, 2019). Additionally, Osmosegaard stated in his study that the speed of a badminton player is not only of being in good physical condition but it is a blend of technique, tactics, physique, and mental frame of mind. It is critical to identify the specific

skill and parameter that contribute to badminton players' playing abilities to improve their performance. Several studies have been carried out to determine the characteristics necessary for badminton skill performance. (Singh et al, 2011). Coaches, trainers, and athletes are always looking for the best way to identify key factors that influence athletic performance. Thus this study was undertaken to measure and describe the selected motor fitness variables.

Methodology

The participants in this study were twenty-one male Manipur national players (age 19.6 ± 2.26 years, body weight 61.80 ± 8.80 kg, height 1.69 ± 0.05 m). These players were regular practicing with their usual activities. All the subjects were informed of the possible discomfort related to tests and the possible withdrawal from the test at any stage. Before the test began approval and written informed consent was obtained from the coach and each of the subject.

Sit-up

According to the American Council on Exercise, Muscular strength is the maximum force a muscle can exert in a tightening. However, there are additional factors that influence how strong and how much strength need to complete daily duties or exercise (Mathuraj, 2019). Abdominal strength was determined through the maximal number of sit-ups in 60 sec of three trials.

Vertical Jump

The vertical Jump test was used to measure the explosive power. Vertical jumps are more usual in all aspects of the

game. It was suggested that there are relations between power and movement speed(Huges et al.,2005). The participant had to jump vertically by swinging an arm. The greatest value of the jumping height of three trials was recorded for each participant.

30m Dash

30- meter dash used to assess the speed of an individual. With the help of an assistant, the timing will be recorded. The test was repeated three times with the best of three trials was used in statistical analysis.

Statistical Analysis

IBM SPSS program (Version 20) has been used for statistical analysis. The descriptive statistics (mean, standard deviation, minimum and maximum) have been used to describe selected motor fitness of Badminton players.

Result and Discussion

All 21 players undertook the test and none reported any injury that may have impacted their performance. A complete set of data on a test item was collected on all players as indicated in the tables below.

Descriptive Statistic

	<i>Min</i>	<i>Max</i>
<i>Age</i>	18	25
<i>Height (cm)</i>	160	179
<i>Weight(kg)</i>	50	82
<i>Sit-up</i>	32	52
<i>Vertical Jump(cm)</i>	42.67	76.20
<i>30m Dash(sec)</i>	4.20	4.78

Note:N=21,Min = Minimum,Max=Maximum

The national male Badminton player of Manipur had a mean height of 169±5.39cm and a weight of 61.80±8.81. The mean height of Manipur badminton players is somewhat shorter and lighter than the Malaysian elite (176±0.7cm and weight 73.2±7.6) and sub-elite badminton players, 171±0.5 cm respectively (Ooi et al.,2009). Similarly, in male junior elite players, it had reported 181±6 cm and 73.1±8.8 kg, Bhambhani et al. (2001). The mean speed of male Manipur badminton player.

Badminton is a sport that is strength-related rather than strength-limited in the sense that a player's performance is influenced by strength rather than limited by it (Wringley and Strauss, 2000). The mean strength of male National Badminton Player in this study 42.67±4.47. The abdominal muscle performs a crucial role for all barking push-off as they condition the work of the leg muscle.

The mean of power(53.27±7.44 cm) of male National Badminton Player in this study is above the average according to Maria Hidalgo, Sergio Nagera and Y. Daneil Leleka. Acceleration during braking and push-off is attributable to muscle power, according to on-court video

analysis(Omosegaard,1996). The more the leg power player has the more he can able to jump high to play an overhead stroke and will generally appear swift and mobile on the badminton court. The capacity of the player to exert muscular force at a high rate is an important feature of badminton. Many sports necessitate the development of tremendous force and power output, and badminton at its top-level necessitates explosive power.

The mean speed(4.48±0.19 sec) of male badminton players of Manipur which low when compared to the Indonesian male badminton player (Özgür,2020). Speed is required in badminton for moving to and from the shuttle and the ability to cross short distances rapidly would be or a huge advantage for badminton players (Leishout,2002). On the court, heading to the shuttlecock (6.8 km/hr) is normally faster than returning to the playing center (5.5 km/hr), with the fastest speed being 14.0 km/hr. The more the intensity and pace of play that can be forced on the opponent, the faster the player can intercept the shuttle.

Conclusion

Badminton is an intermittent sport characterized by long periods of high-intensity exercise interspersed with periods of rest. The game necessitates a mix of technical talent, mental activity, expertise, and motor fitness. In the present study, the data of the selected motor fitness variable of male National Badminton of Manipur are low when compared to the other country data of Badminton players. Being taller may help the player to perform better in badminton since it allows them to reach more of the court (Ooi et al.,2009),(Abdullahi et al.,2017). Height, on the other hand, is merely one of many elements that influence badminton success and is not a key driver of success. Even yet, it's likely that high levels of Strength speed, and power, as well as height, can make a big difference in a player's success. The results of this study can be used as a reference for coaches, trainers, athletes, and future researchers, and can be compared to test scores of anyone playing with a normative background to identify several weaknesses. This could be useful in establishing personalized physical conditioning programs based on sport-specific demands, motivating athletes to work out, and guiding their progress.

Acknowledgment

The author would like to thank the coaches and Badminton players of the Manipur Badminton association for immense help in data collection. There was no financial assistant with research work.

Informed Consent

All the subjects gave their informed consent for inclusion before participation in the study.

Conflict of Interest

The authors declare no conflicts of interest

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