



Dominant Physical Condition Components of Sepak Takraw Sport for Cimahi City Athletes

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Abstract

The quality of physical condition is the foundation for developing an athlete's technique, tactics, strategy, and mentality. The purpose of this study was to determine the dominant physical condition components that support sepak takraw skills through measurement of physical aspects including strength, endurance, speed, agility, and flexibility of sepak takraw players. The method used in this research is descriptive quantitative by taking data using tests and measurements. The population and sample were seven Cimahi City sepak takraw athletes consisting of three male athletes and five female athletes. The instruments used for physical conditions are physical condition test items including speed, flexibility, balance, strength and endurance. The results showed that the speed component was in the very poor category (12.5%). In the flexibility component in the excellent category (12%). In the agility component in the excellent category (25%). In the strength component in the excellent category (25%). And in the power component in the poor category (25%). The research findings reveal that the dominant physical condition components are agility, balance and strength.

Keywords: Dominant Physical Condition, Sepak Takraw, Athletes

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A. Introduction

In sports, achieving the desired results by an athlete is inseparable from what is called physical condition. Good physical condition and the ability to get the best results are not obtained easily and instantly, but are obtained through early training (Brian et al., 2017). In terminology, physical condition can include (initial ability), during, and after experiencing a training process. Physical condition is an ability that includes strength, endurance, flexibility, coordination, and flexibility (Cattuzzo et al., 2016). Physical condition is an important factor in the development of an athlete's performance and can be described as a need that cannot be delayed or satisfied (Sundgot-Borgen et al., 2013).

The physical and mental state of an athlete is a key factor in their success (Adeyeye et al., 2013). The quality of physical condition is the basis for the formation of an athlete's technique, tactics, strategy, and mentality (Rice et al., 2016). Other research says that (Gould et al., 2020) The quality of good physical condition is determined by continuous training factors and supported by the ability of professional trainers to develop athlete performance gradually without causing negative consequences. This is in line with what is described by (Bridge et al., n.d.) which suggests that the athlete's physical and physiological condition profile is a

supporting factor in determining the quality of athlete performance in competition (D'Isanto et al., 2019). With the quality of good physical condition will have an impact on athlete performance. The quality of training is an important factor in determining maximum results so that athletes can achieve the desired performance when facing the next training session (Awaliyah et al., 2019).

Physical factors are the foundation of sports achievement because techniques, tactics, and mentality will develop well when in good physical condition (Rohman Hidayat et al., 2016). The components of physical condition can be defined as follows: strength, endurance (muscular endurance, general endurance, muscular explosive power), agility, flexibility, balance, coordination, agility, and accuracy (Nugroho et al., 2021). Some of the physical components that need to be considered to improve are cardio endurance, strength endurance, muscle strength (strength), flexibility, speed, stamina, agility, muscle explosiveness (power), and strength endurance. Improving physical condition greatly impacts the ability of each individual, not only in the content of the game but also the rapid recovery of the body's organs after exercise (Chen & Xiao, 2017).

Physical condition is one of the prerequisites that is indispensable in an

effort to improve the success of an athlete's achievement, it can even be said to be the basic foundation of sports achievement. A whole unity of components that cannot be separated, both improvement and maintenance is physical condition. Physical condition is very decisive in supporting the athlete's task in the match so that he can perform optimally. The physical condition training program must be well planned and systematic physical condition training is important to improve the physical condition of sepak takraw athletes. The purpose of physical training in sepak takraw is to enable players to deal with the physical demands of the game as well as enabling the efficient use of effective various technical and tactical skills throughout the match, without proper physical training athletes are unable to undergo and perform the technique of playing sepak takraw.

The skill of playing sepak takraw must be supported by several factors, namely physical factors, basic techniques, tactics, and mentality (Hidayat Ada et al., n.d.). However, the dominant physical condition factor in sepak takraw sport is not yet known as a reference basis for the training program to be implemented by the coach. Sepak takraw sport is also one of the popular sports so that it is in great demand by various groups, including in the Cimahi City area which consists of the Cimahi City

Indonesian sepak takraw union (PSTI) team, many players have represented their respective regions in the West Java PORPROV. However, in organizing the West Java PORPROV, the Cimahi City team experienced a decline in achievement in medal achievement, after confirming the athletes and coaches of the Indonesian sepak takraw union (PSTI) Cimahi City they thought that the decline in achievement was due to factors of less than maximum physical condition. Factors that support success in sports achievement include physical, technical, tactical and mental factors. Physical condition and technique are two factors that greatly support an athlete to reach peak performance. With good physical condition, an athlete will be faster and more precise in using technical skills. The purpose of this study was to determine the dominant physical condition components that support sepak takraw skills through measuring physical aspects including strength, endurance, speed, agility, and flexibility of sepak takraw players.

B. Methods

The method used in this research is non-experimental using a quantitative approach and ex post facto research type with a secondary data analysis approach. This study aims to determine the dominant

physical condition components of sepak takraw sports, using tests and measurements of physical condition components.

The population in this study were all Cimahi City sepak takraw athletes totaling 7 athletes. The sampling technique uses total sampling technique, which is a sampling technique that takes all members of the population as respondents or samples (Sugiyono, 2013). The data analysis technique uses the help of SPSS version 26.0 to find the average value, standard deviation and percentage.

The method used in this research is descriptive quantitative by taking data using tests and measurements. This research method is a survey using tests and physical conditions. This study uses tests and measurements of the physical condition of sepak takraw athletes. The population in this study were all Cimahi City sepak takraw athletes totaling 7 athletes. The sampling technique uses total sampling technique, which is a sampling technique

that takes all members of the population as respondents or samples (Sugiyono, 2013). Data collection techniques in this study using tests and measurements. Data collection in the implementation of this study is to use the following: 1) Physical condition, the tests to be carried out are strength, speed, endurance, flexibility and agility.

C. Result and Discussion

Result

This study uses a test and measurement approach such as physical conditions: agility, speed, endurance, flexibility, and strength. The number of players involved in this study were 7 Cimahi City athletes. This research data is based on the results of measurement data obtained from the field. The results of the physical condition test data analysis of Cimahi City Sepak Takraw male athletes can be seen in table 1.

Table 1. Data Description of Physical Condition Component Test Results

Component	N	Mean	Std. Deviation
Speed	7	5,11 detik	1,56
Flexibility	7	23 cm	1,73
Agility	7	13,96 detik	0,46
Strength	7	60 cm	6,23
Endurance	7	30,57 ml/kg/min	2,55

Table 2. Results of Physical Condition Component Test Data Analysis Based on Gender Differences

Component	Gender					
	Male			Female		
	Mean	%	Category	Mean	%	Category
Speed	5,79 detik	12,5	Very poor	8,60 detik	12,5	Very poor
Flexibility	25,76 cm	25	Very good	24,17 cm	25	Very good
Agility	13,88 detik	25	Very good	14,56 detik	25	Very good
Strength	71,6 cm	25	Very good	61,25 cm	25	Very good
Endurance	35,48 ml/kg/min	12, 5	Not very good	31,06 ml/kg/min	12, 5	Not very good

Table 2 shows the results achieved by Cimahi City sepak takraw athletes. The results show the speed component with a mean value (5.79 seconds) in the category of very poor (12.5%). In the flexibility component with a mean value (25.76 cm) in the excellent category (12%). In the agility component with a mean value (13.88 seconds) in the excellent category (25%). In the strength component with a mean value (71.6 cm) in the excellent category (25%). And in the endurance component with a mean value (35.48 ml / kg / min) in the category of very poor (25%).

Discussion

The physical demands required by Sepak Takraw athletes are closely related to their achievements. An athlete constantly needs to improve the level of his basic physical qualities, such as strength, power, muscular endurance, flexibility, and agility (Supriady, 2021). As is the case in the sport of volleyball, in fact, players need well-

developed muscle strength, muscle strength and endurance, speed, agility, and flexibility; players must have high jumping ability, fast reaction time, and fast movement (Wahyuntoro & Rismayanthi, 2019). Just like the sport of Sepak Takraw, the same physical demands are required to play competitively. These demands can be related and evaluated by the biochemical parameters or physiological profile of the athlete.

In this study, the speed component with a mean value (5.79 seconds) is in the very poor category (12.5%), these results indicate that most athletes have poor speed abilities so that they can affect achievement at a high level. Speed is a very important physiological factor in Sepak Takraw because it significantly affects the players' ability to perform. Speed is required to move to and from the Sepak Takraw ball and to cover short distances in the shortest possible time (Alfiandi et al., 2008). To support this, it is argued that due to the

nature of the game, it is important for Sepak Takraw players to reach their maximum speed as quickly as possible and the ability to cover the field in the shortest possible time is very important. Takraw players are required to have the ability to move quickly in various directions on the field to reach the ball.

In the components of flexibility, agility and strength, the average is in the excellent category, this shows that these three components are dominant in the sepak takraw game. The balance component is needed in playing sepak takraw to maintain body position when making movements, acceleration, and deceleration when there is a sudden change in location and direction (Indrayana & Yuliawan, 2019). Another opinion says that balance, which is defined as "the ability to implement movements with the highest possible speed" affects agility which is defined as "the ability to change direction quickly while maintaining balance without losing speed and balance is an important element for agility" (Acar & Eler, 2019). While agility is defined as the athlete's ability to speed up, slow down, move in the right direction, and quickly change direction of movement, posture control requires many skills (Acar & Eler, 2019).

Muscle strength is the main component needed in sepak takraw, especially in kicking, jumping, and blocking (blocking)

(Chen et al., 2018). The results showed that the endurance component possessed by male and female athletes was in the very poor category. This is a physical component that must be considered by a coach to support athlete performance. It is also very important to avoid injury because stronger and tighter muscles are not easily torn. In this study, muscular endurance is mainly associated with core strength as it is necessary to perform various physical activities and demands required in Sepak Takraw. Another important factor and fundamental parameter for maintaining and improving athlete performance in this sport is flexibility. Flexibility is closely related to range of motion as the former reinforces the latter thus allowing players to perform their actions at a higher level. The need for muscular endurance and flexibility among Sepak Takraw players, regardless of position, can be said to be related to the research results. The endurance of Cimahi City sepak takraw athletes is at a very poor percentage so that special attention is needed in the training process.

The findings in this study reveal that the dominant physical condition components of sepak takraw sport are the components of flexibility, balance and strength. The results also show that there is no difference between the results of the physical component test between male athletes and female athletes. Previous

research showed the results of physical condition in the good category as many as 5 people (41.67%) in the Sangkuriang Club sepak takraw team to prepare themselves for the national competition in 2022 (Purwanto, 2022). From the research results Anderson dkk., (2015) Above, muscle explosiveness, speed, flexibility, balance, agility and endurance are required in game sports. (Horicka et al., 2014) In sepak takraw games, agility is needed to reach wild balls, and an athlete's agility is also needed for defense. Doing agility training will greatly help athletes make extensive movements during games on the field. Cardiopulmonary endurance is an endurance exercise related to blood circulation and breathing, while muscular endurance is an exercise related to muscle mass and muscle strength. (Rønnestad & Mujika, 2014) that physical condition is a requirement for improving student achievement. It can even be said to be a basic need that cannot be postponed anymore.

The same thing as the journal of the physical condition abilities of talented athletes (PAB) of the sepak takraw sport in Bantul Regency shows that there are dominant components that are very good at strength and flexibility (G/Tsodik et al., 2020). The same thing as the journal survey of physical conditions and techniques of

Central Java BPPLOP sepak takraw athletes shows that there is a dominant component of excellent agility (Ataqwa, 2020). Efforts that must be made to improve the speed component in male athletes are to increase sprint training from 30 to 100 meters with a portion of a week 3 (three) times. Meanwhile, to increase the endurance component in male athletes, the effort that must be made is to jog (small runs) with a distance of 5km with a portion of a week 3 (three) times. These efforts are targeted to be carried out for 1 (one) month with the achievement of increasing at least the sufficient category. Likewise, the journal of the physical condition abilities of talented athletes (PAB) of the sepak takraw sports branch in Bantul Regency shows that there are dominant components that are very good at strength and flexibility (G/Tsodik et al., 2020). The same thing as the journal survey of physical conditions and techniques of Central Java BPPLOP sepak takraw athletes shows that there is a dominant component of excellent agility (Ataqwa, 2020). Efforts that must be made to improve the speed component in female athletes are to increase sprint training from 30 meters to 100 meters with a portion of a week 3 (three) times. Meanwhile, to increase the endurance component in female athletes, the effort that must be made is to jog (small runs) with a distance

of 3 km with a portion of a week 3 (three) times. These efforts are targeted to be carried out for 1 (one) month with the achievement of increasing at least the sufficient category.

This research is limited to a small sample and the physical condition components seen are only the components of speed, flexibility, balance, kink and endurance. Further research development can be in the form of sports science development to develop sports science. In the future, it is necessary to know the physical quality of each athlete, so that the coach can understand the ability of his athletes, and the results of this study are expected to be a reference for other studies with a larger sample and more physical component items. The results of this study can be developed into a study in compiling an exercise program with the aim of maintaining or improving the physical condition of athletes.

D. Conclusion

This study aims to determine the dominant physical condition components that support sepak takraw skills through measuring physical aspects including strength, endurance, speed, agility, and flexibility of sepak takraw players. The whole series of research directly sees the phenomena that exist in the field. So that the results of the study show the actual

condition of the dominant physical condition with a percentage of speed of 12.5%, balance 25%, flexibility 25%, strength 25% and endurance 12.5%, so that the dominant physical condition components in the balance, flexibility and strength components of Cimahi City sepak takraw athletes.

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F. Conflict of Interest

No conflict of interest

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