



Analysis of Endurance and Agility in the BTP Futsal Team

Sudirman¹, Irvan²

¹ Fakultas Ilmu Keolahragaan, Indonesia

² Fakultas Ilmu Keolahragaan, Indonesia

* Coresponding Author. E-mail: correponding@mail.com

Abstract

This study aims to determine how the condition of endurance and agility in the BTP futsal team. This research is a quantitative descriptive study using the test method, the instrument used from the bleep test and illinois agility, namely: jogging a distance of 20 meters, the higher the level the more the tempo of running increases, to measure cardiovascular endurance. The sample used in this study amounted to 15 people. Data analysis techniques used in this study are descriptive and percentage. The results of research on endurance in the BTP futsal team, namely from the endurance value data using the percentage test, show that there are 2 players who have moderate criteria, 5 players have less criteria, and 8 players have poor criteria. And the results of research on agility in the BTP futsal team, the agility value data of 4 players have very good criteria, 4 players have good criteria and 7 players have medium criteria. It can be concluded that athletes on the BTP Futsal team in the element of endurance are in the poor category, and in the element of agility in the good category.

Keywords: Endurance, Agility, Futsal



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INTRODUCTION

The physical condition component of the futsal game has differences with other sports. The characteristics of futsal sport are that it requires endurance, strength, and agility for a relatively long time. The main factor needed is the level of physical condition so that it is able to carry out futsal game activities without experiencing excessive fatigue because it has good fitness. Physical fitness is defined as the body's ability to perform various physical activities without experiencing excessive fatigue, and remain fit to perform the next physical task (Suhartoyo et al., 2019). Furthermore, Suhartoyo et al. (2019) explained that physical fitness is one of the main factors to be able to do various physical activities and sports. Physical condition and fitness factors are important, so they need to be owned by futsal players. One element of physical condition that is dominant and important in supporting futsal games is the aerobic endurance component. Endurance is very important to maintain the body's ability to perform aerobic activities for a long time (Nala, 2011). Then Sandi (2016) explains that an increase in heart rate and respiratory frequency can occur when doing physical activity continuously. Aerobic endurance is a component of physical condition that must be owned by futsal athletes.

A good aerobic endurance condition is needed by futsal players, especially players, because the characteristics of futsal games are fast and played for a long time. If male athletes do not have good aerobic endurance, it will be difficult to play futsal well. Setiawan et al., (2014) suggested that the endurance factor (stamina) which is not good will cause uncontrolled basic techniques, inaccurate, weak and wrong kicks.

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According to Wahjoedi (2000: 61) "agility is the body's ability to change direction quickly without disturbing balance or losing balance". Agility has a very important role in futsal games, especially in avoiding opponents when dribbling, or used to break through the opponent's defense, so as to score goals. The body's ability to outwit opponents is needed by futsal players. Regarding the dominant physical condition of the BTP futsal team, it has the potential to develop according to what is desired, having good physical condition, especially agility.

The physical condition component of futsal significantly differs from other sports due to the unique demands of the game. Futsal requires players to maintain endurance, strength, and agility over extended periods. The primary factor crucial for successful performance in futsal is the level of physical condition, which enables players to engage in the game without experiencing excessive fatigue, thus maintaining good fitness levels. Physical fitness, as defined by Suhartoyo et al. (2019), is the body's ability to perform various physical activities without excessive fatigue and remain fit for subsequent tasks. This underscores the importance of physical fitness in executing various sports activities. For futsal players, the physical condition and fitness factors are essential components that need to be developed and maintained.

Among the various elements of physical condition, aerobic endurance is particularly important for futsal. Aerobic endurance is vital for sustaining the body's capacity to perform prolonged aerobic activities, as noted by Nala (2011). Continuous physical activity in futsal results in increased heart rate and respiratory frequency, highlighting the necessity for robust aerobic endurance, as explained by Sandi (2016). This component of physical fitness is critical for futsal players to maintain high performance levels throughout the game, which is characterized by fast-paced action and extended play durations. Setiawan et al. (2014) emphasized that poor endurance adversely affects basic techniques, leading to inaccuracies, weak kicks, and mistakes.

Agility, another crucial physical attribute, is defined by Wahjoedi (2000) as the body's ability to quickly change direction without losing balance. In futsal, agility is essential for maneuvering past opponents while dribbling or breaking through defenses to score goals. The ability to outwit opponents through agile movements is a valuable skill for futsal players. The BTP futsal team, possessing significant potential, needs to focus on developing a good physical condition, particularly agility, to enhance their overall performance in the game.

METHODS

In this study the instruments used were the bleep test and agility. Researchers took references from the book (Brian Mackenzie, 2008). with the title "101 Performance Evolution Test".

Data analysis techniques in this study use quantitative descriptive analysis techniques which include:

1. Range, is a combination of several cells selected from several kinds of columns and lines.
2. Max (Maximum Data), is the most data from the data group.
3. Min (Minimum Data), is the lowest or least data in the data group.
4. Sum (Total Data), is the count of the number of data values in the data group obtained from the total sum of all data values.
5. Mean (Average), is the average of the data obtained by summing up all data values, then dividing by the amount of data 4.
6. Data Frequency, aims to see the number of these values in the existing data group.

Intended to get an overview of the research data in order to interpret and give conclusions to the data obtained. Furthermore, the data is presented in the form of a frequency table and then categorized and presented in graphical form.

RESULT AND DISCUSSION

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Descriptive data analysis is intended to get an overview of the research data. The data description is intended to be able to interpret and give meaning to the data successively as in the following table

From the table above, an overview of the endurance analysis on the BTP futsal team can be obtained, as follows:

- Athlete stamina after doing the test, the average strength of cardiovascular endurance possessed by BTP futsal athletes obtained an average value of 36.48, minimum value 24.8, maximum value 42.7, and range 17.9, thus there is a relationship between cardiovascular endurance on the BTP futsal team.

From the table above, an overview of the agility analysis on the BTP futsal team can be obtained, as follows:

- The average agility possessed by BTP futsal athletes obtained a minimum value of 13.46, a maximum value of 17.62, an average value of 15.83, and a range value of 4.16, thus there is a relationship of agility "agility" to the BTP futsal team.

Frequency Analysis

The hypothesis proposed in this study needs to be tested and proven through empirical data obtained in the field through tests and measurements of endurance and agility analysis variables on the BTP futsal team, then the data will be processed statistically. The test used in this data analysis is the percentage test.

Based on the table above, the results of the agility analysis of the BTP futsal team can be obtained by using the categorization formula using $P: F / N$ shows that there are 4 players who have very good criteria, 4 players have good criteria, and 7 players have moderate criteria.

Based on the table above, the results of the analysis of cardiovascular endurance (VO2 max) of the BTP futsal team can be obtained by using the categorization formula using $P: F / N$ shows that there are 2 players who have moderate criteria, 5 players have less criteria, and 8 players have poor criteria.

In connection with the importance of endurance and agility in futsal sports, it is necessary to develop endurance and agility both in terms of training and evaluation. Development of training stages. However, before starting the endurance and agility training stage, the coach needs to evaluate the extent to which the athlete's endurance and agility abilities before being trained and after being trained. So an instrument of endurance and agility for futsal games is needed, which is in accordance with the instruments and data above.

Frequency Analysis

The hypothesis in this study, which involves testing and measuring the endurance and agility of the BTP futsal team, is validated using empirical data. The statistical analysis, specifically the percentage test, helps in categorizing players based on their performance.

Implications for Training and Evaluation

Given the importance of endurance and agility in futsal, the findings underscore the need for:

Focused Training Programs: Specific training interventions aimed at improving both cardiovascular endurance and agility, tailored to the current abilities of the players.

Regular Evaluation: Continuous assessment to monitor improvements and adapt training programs accordingly. This should include pre- and post-training evaluations to measure progress effectively.

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Customized Training Instruments: Development of specific instruments and protocols for measuring endurance and agility in futsal, ensuring they align with the demands of the sport and the current performance levels of the athletes.

In summary, while the BTP futsal team shows varying levels of endurance and agility, there is a clear need for targeted training to enhance these critical attributes. Regular evaluation and tailored training programs will be essential in improving the overall performance of the team.

CONCLUSSION

Based on data analysis and discussion, the results of this study can be concluded as follows: It can be obtained from the results of the analysis of endurance and agility in the BTP futsal team in the average categorization table for endurance is categorized as not good, and the average for agility is categorized as good.

Based on data analysis and discussion, the results of this study can be concluded as follows: It can be obtained from the results of the analysis of endurance and agility in the BTP futsal team in the average categorization table for endurance is categorized as less good, and the average for agility is categorized as good.

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