



The Physical Fitness Gap between Strikers and Defenders in Football Extracurricular Programs

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Abstrak

Penelitian ini merupakan penelitian deskriptif komparatif dengan survei. Subjek dari penelitian ini adalah pemain depan dan belakang siswa yang mengikuti ekstrakurikuler sepakbola di SMP Negeri 3 Sleman, yang berjumlah 37 orang, terdiri dari 14 pemain depan dan 23 pemain belakang. Instrumen penelitian untuk mengukur kebugaran jasmani pemain depan dan pemain belakang menggunakan Tes Kebugaran jasmani. Teknik analisis data menggunakan analisis uji t, uji prasyarat uji normalitas dan uji homogenitas dengan taraf signifikansi 5%. Hasil menunjukkan t hitung sebesar 3,956 berada di daerah penerimaan H_a yaitu dengan t tabel sebesar 2,027 ($3,956 > 2,027$). Ini berarti bahwa ada perbedaan yang signifikan antara kebugaran jasmani pemain depan dengan pemain belakang pada siswa yang mengikuti kegiatan ekstrakurikuler sepakbola di SMP Negeri 3 Sleman. Besarnya rerata kebugaran jasmani pemain depan sebesar 14,57, sedangkan rerata kebugaran jasmani pemain belakang sebesar 12,04. Hal tersebut mengindikasikan perbedaan kebugaran jasmani antara pemain depan dan pemain belakang pada siswa yang mengikuti ekstrakurikuler di SMP Negeri 3 Sleman.

Abstract

This research can be categorized as a comparative descriptive study conducted through a survey to measure physical fitness. The subjects of this study were the students who joined the football extracurricular program in the State Junior High School 3 Sleman that consisted of 14 strikers and 23 defenders. The research instrument used the physical fitness test. The data analysis technique employed t-test analysis that required normality test and homogeneity test with 5% significance level. The results showed t count 3.956 with t table 2.027 ($3.956 > 2.027$). It means that there is a significant physical fitness difference between strikers and defenders in the football extracurricular program. The average physical fitness for strikers was 14.57, while the average physical fitness of defenders was 12.04. Based on the research findings, it can be concluded that there is a significant physical fitness difference between the strikers and the defenders in the football extracurricular program in the State Junior High School 3 Sleman.

INTRODUCTION

Football is listed as the most popular sport among children to adults. Sometimes, it is called soccer and has received the most attention in terms of being used to enhance mental health, which is perhaps due to it being the most popular sport (The FA, 2015; Sport England, 2018) It is a team game played by two groups of eleven players. This game is done by kicking the ball in various directions (Sukiyani, 2013). This game is played by two teams consisting of 11 players for each team. Of the 11 players divided into several main positions that have their respective duties. Those are goalkeeper, defenders, midfielders, forwards. Each position has different roles and functions into three major groups namely defender to control defensive line, midfielder to manage the midfield line and forward or striker to score goal (Hadjar Kh. M. et.al, 2016).

In this game, the quality of physical fitness is very crucial during the training and competition. Besides, age, morphology, and physical fitness were influential parameters of football performance in elite-level football players, but also confirmed that playing position decisively dictated absolute performance loads and the intensity of fast movements during matches (Bujnovky, et al., 2019). The fitness refers to the person's ability to adjust to the physical imposition in performing effective and efficient work and daily tasks without having excessive fatigue (Muhajir, 2007). The physiological factors that cause fatigue include : the problems in the energy system; accumulation of lactic acid; muscles fails to mechanically contract; nerve system changes (Kusnanik, Nasution, & Hartanto, 2011). In modern football, the defensive players sometimes get petrified to attack as well as the strikers come down to help defense in certain situations. It means good physical fitness needs to be possessed by all players, especially the strikers and defenders, to maintain good playing performance in 90 minutes. This similar condition is also emphasized in State Junior High School 3 Sleman which conducts extracurricular of football twice a week.

This school is one of the participants of the Indonesian Students League (Liga Pelajar Indonesia/ LPI) since 2012 and has won as the first place in Sleman regency, Yogyakarta. However, there is a problem in the case of the low players' involvement who played as the

strikers to assist the defensive situation when the team was under pressure. Moreover, the defensive players are also trained to be active in joining the attacking role.

Based on this information, it is important to direct the level of physical fitness for several different positions. Therefore, it will be beneficial to prove the assumption regarding the differences of physical fitness between the strikers and defenders among the students who join football extracurricular activities in State Junior High School 3 Sleman.

METHODS

This study can be categorized as a comparative study through a survey method. This research model was to investigate the existing symptoms without investigating why these symptoms exist, so it did not need to take into account the relationship among the variables. The population was the whole subject of research (Arikunto, 2014). The population of this study was the students of State Junior High School 3 Sleman who participated in football extracurricular activities with the total of 50 people. The sampling technique used purposive containing strikers and defenders with 37 students.

The research instruments used by researchers to collect the data were the Indonesian physical fitness test (Depdiknas, 2010) with the validity of 0.950 and the reliability of 0.960. The Indonesian physical fitness test series was for 13-15 years old covering 50-meter run, 60-second hanging lift body, 60-second lying down sitting, jumping upright, 1000-meter run. Before joining the series of tests, the students were explained the sequence of tests. After that, they had enough warming up session to lower the injury risk.

Having collected the data, the next step was converting into the categorization norms using descriptive analysis with the percentages. The data obtained from the research was included in the Indonesian Physical Fitness Test (Tes Kebugaran Jasmani Indonesia/ TKJI) table. After knowing the value of the five test items, the value was summed to be confirmed by the TKJI table for boys and girls in the age of 13-15 years. Those were classified with the physical fitness level of "Very

Good”, “Good”, “Moderate”, “Bad”, or “Very Bad”.

After the data was obtained, the next step was analyzing the data to draw temporary conclusions of the research that will be conducted. To find out the difference in the level of physical fitness between the strikers and defenders, the t-test was used the significance level of 5%. The differences were existed between the two variables if the test criteria t count is bigger than t-table.

Before conducting data analysis, the data analysis requirements were needed. Those were the normality and homogeneity test. Here were the testing assumptions and hypothesis testing. The hypothesis testing used the t-test to look for the differences in each group with the significance level of 5%. Furtherly, the way to look for differences from two groups can use uncorrelated t-test. There will be differences from the two variables with the t-test testing criteria (Hadi, 2004).

RESULT

The The research variables represented the physical fitness for the strikers and for the defenders. The data description showed the maximum value, minimum value, mean, standard deviation, median and mode. Those were then compiled in the frequency distribution based on the guidelines of the Indonesian Physical Fitness test. The following was the description of the obtained data from the research subject. The physical fitness for the strikers obtained the minimum value of 18.00 and the maximum value of 11.00. The mean was 14.57, the standard deviation was 1.95, the mode was 14.00 and the median was 14.50, respectively. Meanwhile, the frequency distribution was based on the Indonesian Physical Fitness Test norms. The frequency distribution is presented in table 1.

The physical fitness of the defenders obtained the minimum value of 15.00, the maximum value of 8.00, the mean of 12.04, the standard deviation obtained of 1.85, the mode of 12.00 and the median of 12.00, respectively. Furthermore, the frequency distribution was based on the Indonesian Physical Fitness Test norms as presented in Table 2.

Meanwhile, the normality test with Chi Squares in this study was to measure the the sample came from the population with the normal distribution. The sample

Table 1. Frequency distribution of the physical fitness

No	Interval	Frequency	Relative Frequency	Cumulative Frequency	Category
1	17 – 25	0	0,00 %	0	Very Good
2	15 – 21	1	7,14 %	1	Good
3	14 – 17	11	78,57 %	12	Moderate
4	10 – 13	2	14,29 %	14	Bad
5	5 – 9	0	0,00 %	14	Very Bad
Total		14	100 %		

Table 2. Frequency distribution of the physical fitness

No	Interval	Frequency	Relative Frequency	Cumulative Frequency	Category
1	17 – 25	0	0,00 %	0	Very Good
2	15 – 21	0	0,00 %	0	Good
3	14 – 17	6	26,09 %	6	Moderate
4	10 – 13	16	69,57 %	22	Bad
5	5 – 9	1	4,35 %	23	Very Bad
Total		23	100 %		

Table 3. T-test analysis results

Variable	N	Mean	t _{count}	Df	t _{table}
The physical fitness for the strikers	14	14,57			
The physical fitness for the defenders	23	12,04	3,956	37	2,027

from the population with normal distribution was accepted ($4.857 < 11.070$) and ($5.913 < 12.592$). The homogeneity test used F-test. Based on the two data had ($0.969 > 0.05$). It can be concluded that the population variance was homogeneous. The results of the normality and homogeneity tests indicated that the distribution was normal and the variance was homogeneous, so that the data was further analyzed for hypothesis testing. The technique to test the differences in the two populations was t-test of two uncorrelated samples.

Based on these results, it can be seen that t count = 3.956 was bigger than t table = 2.027 in the significance level of $1-\frac{1}{2}\alpha$ (0.975). It indicates that there is a significant difference between the physical fitness of the strikers and the defenders among the students who join football extracurricular activities in State Junior High School 3 Sleman. The mean score from each group was 14.57 for the strikers physical fitness and 12.04 for the defender.

DISCUSSION

Based on the results of the study, it is obtained in the hypothesis testing that the score of t count was bigger than t table meaning that there is a significant difference of physical fitness between the strikers and the defenders among the students who joined football extracurricular activities in State Junior High School 3 Sleman. The mean score of the physical fitness for the strikers was 14.57, while the defender was 12.04. The standard deviation score for physical fitness between them was not much different, i.e. 1.95 for the strikers and 1.85 for the defenders respectively.

These results can be used as a beneficial reference to create the exercise model, for example, improving dribbling through small side games (Kusuma et.al, 2018) to decrease the differences so that the team's performance remains stable until the game ends. For the attacking players, it is advisable to maintain physical condition, while for defenders should increase the portion of training, especially for increasing physical fitness to be equal to the strikers so that the team's performance can be balanced.

The attacker or strikers have the task to score goals. But in modern soccer games the task of scoring is not only for the strikers. Moreover, the modern attacking player should not only able to score goals but also to create a space that allows other players to score goals. With increasingly intense competition in the opponent's defense area, the attacking player must always be active to take a good position to score goals as much as possible (Salim, 2008). So that, the forward must have the ability to dribble above average, fast running speed, and accurate kick. Dribbling is important because it can develop sensory perceptions that lead to improvements in ball control, which are the basis for

individual breakthrough skills (Taga, Ken & Asai, Takeshi, 2012). It means that they must be supported with adequate physical abilities and good physical fitness.

Meanwhile, the defender's task is to prevent the attacks built by the opposing team, either cutting off the passings, seizing the ball from the control of the opposing attacker, even if the opponent's attacker is considered very dangerous. Moreover, Additional defensive performance indicators should be considered such as areas where defending teams apply pressure, or time required to recover ballpossession (Vogelbein, Nopp, & Hökelmann, 2014). Therefore, a defender must also have good physical fitness in order to prevent the efforts made by the opposing team to score goals.

The forward has the opportunity to score. The defender is in charge for the defensive area, but in modern football like now many forward defenders steal attacks and score goals. Likewise, the attacking players also help to defend in certain conditions. It means the physical condition greatly affects the game results. If more players have a bad physical condition during the match, it will decrease the team achievement as a whole (Abdulullah, 1981). Therefore, football player should also have a fast recovery process in which active recovery is one of the most effective recovery methods for increasing the speed of blood flow through the working muscle system (Mota, Elias, Oliveira-silva, Sales, & Sotero, 2017). Besides, active and combined recovery can reduce the level of fatigue in football athletes (Kurniawan, R., & Elfarabi, A, 2018).

The quality of physical fitness is very important for every soccer player. If the player has good physical fitness, he will not experience fatigue during the matches. In modern football like today, good physical fitness is very important for every player, not only forwards and forwards. Sometimes a defender sometimes helps to attack, as well as front players also at any time down to help defense in certain situations. Therefore, good physical fitness needs to be possessed by all players in order to maintain good play performance for 90 minutes to get a victory. Moreover, physical fitness not only promotes students' participation in outdoor activities, but also has great significance for the development of adult sports habits and health (Ortega, 2008).

CONCLUSION

Based on the research findings, it can be concluded that there is a significant difference on the physical fitness between of the strikers and the defender among the students who joined football extracurricular activities State Junior High School 3 Sleman. These results can be used as evaluation to determine the exercise menu so that the differences that occur are not too significant or minimize so that the team's performance remains stable until the game ends. For the attacking players, it is advisable to maintain physical condition, while for defenders should increase the portion of training, especially for increasing physical fitness to be equal to the strikers so that the team's performance can be balanced.

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