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Analysis of the Contribution of Agility and Body Flexibility to Dribbling Skills

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ABSTRACT

Purpose of the study: The aim of this research is to determine the contribution of agility and body flexibility to ball dribbling skills.

Methodology: This type of research is multiple correlation. The population and sample in this study were 22 people. The research instruments used were an agility test using a shuttle run, a body flexibility test using a sit and reach and a ball dribbling skills test. The data analysis technique used is the multiple correlation value test.

Main Findings: Based on the results of the research that has been carried out, the following conclusions can be drawn: (1) There is a contribution of agility to the results of ball dribbling skills with a value of rcount = 0.543 > rtable = 0.423 and a KD value of 29.48%. (2) There is a contribution of body flexibility to the results of ball dribbling skills with a value of rcount = 0.546 > rtable = 0.423 and a KD value of 29.81%. (3) There is a contribution of agility and body flexibility to the results of ball dribbling skills with a value of rcount = 0.696 > rtable = 0.423 and a KD value of 48.44%.

Novelty/Originality of this study: With comprehensive analysis methods, this research not only strengthens understanding of the importance of physical training focused on agility and flexibility, but also provides practical insights for coaches in designing more effective training programs.

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1. INTRODUCTION

In general, sport is any physical activity based on the spirit of struggle against oneself, other people, or natural elements which, if competed, must be carried out in a heroic manner so that it is a powerful means of personal education towards improving a higher quality of life [1], [2]. Sport is a type of physical activity that is planned and structured with repetitive body movements to obtain various aspects of fitness. Sports activities include competition styles, so these activities must be carried out with a sporting spirit or spirit [3], [4]. Sport is useful for maintaining physical fitness, the real result of regular sports activities is physical fitness or physical freshness [5], [6]. Lack of active involvement in sports activities can cause a low level of physical fitness. Sportsmanship in sports will make sports fairer and fairer, in order to realize the goals of sports [7], [8].

Sports activities have various goals, depending on the wishes of the perpetrator. If someone wants to excel in a particular sport, then that person must carry out performance sports coaching activities in accordance with the sport they like, namely sports coaching activities to achieve certain achievements [9], [10]. To achieve this target, sports development through sports organizations is very much needed and must be able to provide a positive and effective contribution to the growth of basic human values which are the driving force for the

creation of the younger generation as the shoots of a better, more responsible, nation. stronger in body and soul, more personable and thus better able to fill and foster the independence of the nation and state [11], [12].

One of the sports activities that requires intensive coaching is football. Football is a very popular sport and is in demand by various groups, from children to adults and the elderly [13], [14]. Its popularity lies not only in its excitement but also in the values of cooperation, discipline and competitive spirit that it teaches. Therefore, it is important to start coaching from an early age to develop players' talents and abilities optimally. Coaching starting from a young age is very crucial in determining the quality of achievements in the sport of football. Talented young players need structured and ongoing training to achieve their best performance [15], [16]. In this process, the role of coaches and supporting facilities is very determining. With the right guidance and consistent practice, young players can hone their skills, improve their physical and mental abilities, and prepare themselves for higher levels of competition [17], [18]. The ultimate goal is to achieve optimal quality performance that not only brings victory on the field but also inspires the next generation to love and excel in the sport of football [19].

The implications of this research emphasize the importance of a balanced training program focused on increasing agility and body flexibility to improve players' dribbling skills [20]. By understanding that both of these factors contribute significantly to dribbling ability, coaches can design more holistic drills, integrating agility and flexibility training together [21], [22]. This will not only improve the player's dribbling performance, but also strengthen the overall physical aspect, so that the player is more competitive and efficient in the match. This research provides practical guidance for trainers in developing more effective and sustainable training programs.

In the sport of football, there are several basic techniques that players must master, including passing and stopping the ball, dribbling or dribbling, heading the ball or heading and shooting [23]. All of these basic techniques must be mastered thoroughly by the players so that with good basic technical skills combined with teamwork, achievements can be achieved [24], [25]. The technique that will be discussed in this research is dribbling, which is a movement of carrying the ball using the feet, both the inside of the foot, the outside, the back of the foot, used to control the ball from being grabbed by the opponent, and used to evade the opponent's guard. To support good technical skills, football players must also have good physical elements [26], [27]. One of the physical elements required in the sport of football is agility and body flexibility which is useful when dribbling a ball, players can easily avoid opponents who want to seize the ball that is being dribbling, because agility is the ability to change direction quickly and effectively while moving or running. almost at full speed without losing balance.

2. RESEARCH METHOD

2.1 Type of Research

This research was conducted using the multiple correlation method. The design of this research was carried out using a correlational research design. Correlational research designs according to relationship or (associative) research can be in the form of symmetrical, causal (cause and effect) relationships. Where in this research the variable X1 is agility, the variable X2 is flexibility and the variable Y is dribbling.

2.2 Population and Sample

The research population is a group of individuals or objects that are the focus of a scientific study. The population in this study was 22 people at Public High School 6 South Sumatra. A research sample is a part of a population selected to represent the whole in a study. Appropriate sample selection is essential to ensure that research results can be generalized to the wider population. The technique used is total sampling, that if the population is less than 100 people then it is better to take all of them. The sample in this study was 22 players.

2.3 Data Collection Technique

Data collection techniques are observation, tests and measurements. Observations are carried out before writing the thesis and during the implementation of the research. Observations were carried out by direct observation at the research location. The tests in this study were agility tests, body flexibility tests and ball dribbling skills tests.

2.4 Data Analysis Technique

The correlation analysis technique used is calculating correlation from X1 (agility) and X2 (flexibility body) to Y (dribbling skills). Meanwhile, it provides an interpretation of the magnitude of the relationship between agility and body flexibility for dribbling skills as following:

Table 1. Interpretation of the magnitude of the relationship between agility and body flexibility

Interval	Category
Equal to 0.00	Not Calculated

Less than 0.01-0.199	Very low
Between 0.20-0.399	Low
Between 0.40-0.599	Medium
Between 0.60-0.799	Strong
Between 0.80-1,000	Very strong

To see the magnitude of the contribution of arm muscle power and body flexibility regarding volleyball service to athletes by looking at coefficient of determination with the formula: KD = r^2 x 100.

3. RESULTS AND DISCUSSION

Based on the results of research conducted on players using an agility test with shuttle run, a body flexibility test with sit and reach and a ball dribbling skill test, the following detailed data were obtained.

1. Agility Test Results (X1)

Based on the results of agility tests on players, the lowest agility achieved by players was 13.81 seconds and the fastest agility was 10.63 seconds. Calculation of the score distribution resulted in: (1) average score = 12.23 seconds; (2) standard deviation = 0.82; (3) median = 12.53 seconds. The distribution of player agility data is presented in a distribution list with a number of classes of 5 and a class length of 0.64, namely in the first interval class in the range 10.63-11.26 there are 4 people or 18.18%, in the second interval class in the range 11.27-11.90 there are 3 people or 13.64%, in the third interval class at the distance 11.91-12.54 there were 5 people or 22.73%, in the fourth interval class at the distance 12.55-13.18 there were 7 people or 31.82%, in the fifth interval class at the distance 13.19-13.83 there were 3 people or 13.64%. For more details, see the following table:

Table 2. Agility Frequency Distribution (X1)

No	Interval	Absolute Frequency	Relative frequency
1.	10.63 - 11.26	4	18.18%
2.	11.27 - 11.90	3	13.64%
3.	11.91 - 12.54	5	22.73%
4.	12.55 - 13.18	7	31.82%
5.	13.19 - 13.83	3	13,64%
	Amount	22	100%

From the calculation results, it is known that the correlation between agility and the results of dribbling skills is large, with a value of rcount = 0.543 > rtable = 0.423, so the hypothesis that there is a relationship between agility and the results of dribbling skills is accepted with a contribution value of 29.48%.

2. Body Flexibility Test Results (X2)

Measuring body flexibility, it was found that the lowest body flexibility achieved was 8.50 centimeters and the maximum body flexibility was 18 centimeters. Calculation of the data distribution produced: (1) average = 13.18; (2) standard deviation = 3.03; (3) median = 13 (4) mode = 10. The research data is entered into a table with 5 classes, the class length is 1.90, namely in the first interval class in the range 8.50-10.39 there are 6 people or 27.27%, in the second interval class in the range 10.40- 12.29 there were 5 people or 22.73%, in the third interval class in the range 12.30- 14.19 there were 2 people or 9.09%, in the fourth interval class in the range 14.20- 16.09 there were 5 people or 22.73%, in the fifth interval class in the range 16.10- 18.00 there are 4 people or 18.18%. For more details, see the following table:

Table 3. Frequency Distribution of Body Flexibility (X2)

No	Interval	Absolute Frequency	Relative frequency
1.	8.50 - 10.39	6	27.27%
2.	10.40 - 12.29	5	22.73%
3.	12.30 - 14.19	2	9.09%
4.	14.20 - 16.09	5	22.73%
5.	16.10 - 18.00	4	18.18%
	Amount	22	100%

From the calculation results, it is known that the correlation value between body flexibility and the results of dribbling skills is obtained by the value rcount = 0.546 > rtable = 0.423, so the hypothesis that there is a relationship between body flexibility and the results of dribbling skills is accepted with a contribution value of 29.81%.

3. Dribbling Skill Test Results (Y)

Based on the results of calculations regarding the results of dribbling skills, the lowest time obtained by a player was 48.30 seconds and the fastest time was 19.35 seconds. Calculation of the score distribution resulted in: (1) average = 23.01; (2) standard deviation = 5.99; (3) median = 21.97. The research data is entered into a table with a number of classes of 5 and a class length of 5.79, namely in the first interval class in the range 19.35-25.13 there are 20 people or 90.91%, in the second interval class in the range 25.14-30.92 there is 1 person or 4.55%, in the class there are no third intervals in the range 30.93-36.71, in the fourth interval class in the range 36.72-42.50 there are none, in the fifth interval class in the range 42.51-48.31 there is 1 person or 4.55%. For more details, see the following table:

Table 4. Frequency Distribution of Dribbling Results (Y)

No	Interval	Absolute Frequency	Relative frequency
1.	19.35 - 25.13	20	90.91%
2.	25.14 - 30.92	1	4.55%
3.	30.93 - 36.71	0	0%
4.	36.72 - 42.50	0	0%
5.	42.51 - 48.31	1	4.55%
	Amount	22	100%

From the calculation results it is known that the correlation value between agility and body flexibility resulting from simultaneous dribbling skills is 0.696 > rtable = 0.423, this shows that there is a simultaneous correlation between variables X1 and X2 to variable Y or there is a significant relationship between agility and flexibility body with the results of dribbling skills so that the hypothesis that there is a relationship between agility and body flexibility on the results of dribbling skills is accepted with a contribution value of 48.44%.

The novelty of this research lies in its comprehensive approach in combining two main physical aspects, namely agility and body flexibility, to evaluate the contribution of each to a player's dribbling ability. This research offers a new perspective by identifying the simultaneous role of these two factors, which have previously rarely been analyzed together in the context of dribbling skills [11], [28]. The implications of this research indicate that a balanced training program focused on increasing agility and body flexibility can significantly improve players' dribbling skills. Thus, coaches can use these findings to design more effective and holistic drills, thereby helping players develop better dribbling skills, which in turn will improve their performance in matches [29], [30]. However, there are several limitations in this research. One is individual variation in response to agility and flexibility training, which may influence research results. Additionally, this study may not have considered other factors that also contribute to dribbling skills, such as basic technique, coordination, and the player's mental state.

4. CONCLUSION

The conclusion of the research shows that agility and body flexibility have a significant role in improving players' dribbling abilities. Agility allows players to make the quick movements and changes of direction necessary when dribbling the ball, while body flexibility helps in maintaining balance and body control during the dribbling action.

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