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THE INFLUENCE OF LEG MUSCLE EXPLOSIVE POWER ON HAND EYE COORDINATION WITH SMASH ACCURACY OF ATHLETES VOLLEYBALL ATHLETES OF SOUTHEAST ACEH DISTRICT

Abstract
The problem in this study is that the accuracy of Smash of men's Volleyball athletes in Southeast Aceh Regency is not so good. This study aims to determine the effect of leg muscle explosive power on hand eye coordination with the accuracy of smash volleyball for men's Volleyball athletes in Southeast Aceh Regency. This type of research is quantitative. The population in this study was 25 people, the sample was taken using the total sampling technique, so the total sample was 25 people. Data were collected using measurements of the three variables. The variable of leg muscle explosive power using vertical jump test and hand eye coordination using balwerfen and fangen, while smash accuracy using smash accuracy test. The results showed that leg explosive power had a significant influence on smash accuracy with a score above the average group of 10 people, Hand eye coordination has a significant influence on smash accuracy with scores above the average group as many as 13 people, Furthermore, limb explosive power and hand eye coordination together have a significant influence on smash accuracy and are accepted empirically as many as 12 people.
Kata Kunci: Leg Muscle Explosive Power, Eye Coordination, Smash Accuracy

INTRODUCTION

Volleyball is a sport that uses a ball and is played by 2 different teams using hands. Volleyball is an acyclic sport with quick and short changes in direction, jumping and landing and hitting (Priyanto, 2014). Volleyball games use a net that separates the territories of the two teams. According to Salunta & Yendriza, (2019) Volleyball is a sport played by everyone, both men and women of all ages. According to the above opinion, it can be concluded that volleyball is a sport played by two teams with a net as an area divider for each team.

In a volleyball game there are many techniques that must be mastered. According to Astuti, Y et al (2020), the techniques that must be mastered in volleyball games are passing, service, block and smash. According to Erianti (2020), mastering techniques in volleyball is very important. Based on the results of observations made by the author to Southeast Aceh Regency men's volleyball athletes in several trainings and matches, the author sees that there are still many athletes who smash not on target. It can be seen that the ball hit is still easily returned by the opponent, sometimes even the ball leaves the field. Oleh Therefore the accuracy of the athlete's smash is not so good, so it is profitable for the opponent to get points. While smash is the main capital to get points. Therefore the author wants to make research on the effect of leg muscle explosive power on hand eye coordination of male volleyball athletes in Southeast Aceh Regency. There are many factors that can cause an athlete's smash accuracy, including: leg muscle explosiveness and hand eye coordination.

Problem Formulation

Based on the description contained in the background, the problems in this study can be formulated as follows :

1. Is there an Influence of Limb Muscle Explosive Power with Hand Eye Coordination of Men's Volleyball Athletes in Southeast Aceh Regency ?
2. Is There an Effect of Limb Muscle Explosiveness with the Accuracy of Smash of Putra Volleyball Athletes in Southeast Aceh Regency ?

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3. Is there an effect of leg muscle explosive power on hand eye coordination with the accuracy of smash by volleyball athletes in Southeast Aceh Regency?

Research Objectives

In accordance with the formulation of the problems described above, this research was conducted with the aim of knowing the Effect of Limb Muscle Explosiveness on Hand Eye Coordination with the Accuracy of Smash for Male Volleyball Athletes.

Research Benefits

This research is expected to be a contribution to thought :

1. Physical Education Teachers, it is hoped that it can be a contribution in the learning process of Limb Muscle Explosiveness and Hand Eye Coordination with the Accuracy of Volleyball Smash.
2. For Trainers
   a. Provide input on how to find out the Effect of Limb Muscle Explosiveness on Hand Eye Coordination with Volleyball Smash Accuracy from a biomechanical point of view.
   b. Can know the Effect of Limb Muscle Explosiveness on Hand Eye Coordination with the Accuracy of Volleyball Smash and be able to understand in each evaluation correctly.
3. For Athletes
   a. As input for athletes in the dominant physical condition in the long jump towards learning motivation and learning PE in accordance with the principles of biomechanical studies
   b. As an evaluation of dominant physical condition training in the long jump on learning motivation and PE learning
   c. For the researchers themselves, it can be useful to enrich the knowledge of sports, especially in the dominant physical condition in the long jump on learning motivation and learning PE.

THEORETICAL REVIEW

Influence is an activity or example that either directly or indirectly results in a change in the behavior and attitudes of another person or group. Meanwhile, other sources explain that influence is what causes something to happen, either directly or indirectly. Influence can be traced backwards from an impact to something that happens, so influence is the reverse logic of an event. Or a causal relationship caused by two variables (independent variable and dependent variable).

According to Herre in Syafrudin (2011: 126) “Explaining explosive power is the ability of players to overcome obstacles with high locking speed”. According to Yulifri (2018) “Leg muscle explosiveness can be defined as an ability of a group of leg muscles to produce work in a very fast time”. Based on the above opinion, it can be stated that the explosive power of the leg muscles is the ability of the leg muscles to overcome the load with short and fast muscle contractions. Leg muscle explosiveness is needed in doing smash so that the jump height can be maximized.

According to Jonath and Krempel in Syafruddin (1992: 84) said that “coordination is the cooperation of the central nervous system as a system that has been organized by the process of stimuli and obstacles and skeletal muscles at the time of a directed movement”. According to Syafruddin (2016: 116) “Coordination is the ability to complete tasks quickly and purposefully which is determined by the control and regulation of movement and cooperation of the central nervous system”. From some of the expert opinions above, it can be concluded that hand-eye coordination is the collaboration between the central nervous system and the means of movement in completing their tasks quickly, precisely and directed. Hand eye coordination is needed in smashing so that the accuracy of the smash is well directed and on target.

According to Darwis and Basa (1992: 119) say “accuracy is a person's ability to direct motion to a target in accordance with its purpose” Along with that M. Sajoto (1995: 9) says that “accuracy is ‘a person's ability to control free movements against a target’. According to Kiram (1999: 101) another opinion which says that: The accuracy of motion can be seen from two notions of the accuracy of the process, and the accuracy of motion in the sense of the product.

The accuracy of motion in the process is the accuracy of the course of a series of movements seen from the sector in motion and seen systematically motion.

METODE

According to Sugiyono (2007: 55) population is a generalization area consisting of objects or subjects that have certain quantities and characteristics set by researchers to study and then conclude. The population in this study were Southeast Aceh Regency Men's Volleyball Athletes totaling 25 people. The sample is part or representative of the population studied (Suharsimi Arikunto, 2002: 109). According to Sugiyono (2007: 56) the sample is part of the number and characteristics possessed by the population. The total number of samples in this study was 25 people. The sampling technique uses total sampling or takes the entire population.

Data analysis technique is an activity of understanding or interpreting in order to obtain research results and answer research problems. In this case the author collects data to determine whether there is a meaningful or significant effect. After the data is obtained from the results of the leg muscle explosiveness test, the next step is to organize data processing according to statistical procedures. The data that has been collected from the explosive power of the leg muscles on hand eye coordination with the accuracy of smash of male volleyball athletes in the southeast aceh district is analyzed using statistics. a. Looking for Mean Pre Test and Post Test.

RESULTS AND DISCUSSION

1. LIMB MUSCLE EXPLOSIVENESS

Based on the measurement of the variable explosive power of the leg muscles of the southeast aceh district male volleyball athletes, using the vertical jump test, the data results from 25 male volleyball athletes who were selected as samples in this study, obtained the highest score was 67 and the lowest score was 36. While the range (measurement distance) is 31. Based on the group data for the variable explosive power of the leg muscles, the calculated average value is 52.60 and the middle value is 51.5 While the standard deviation is 7.78. Furthermore, the frequency distribution of the results of the leg muscle explosive power data of male volleyball athletes in the southeast aceh district can be concluded that of the 25 volleyball athletes selected as samples in this study, who have leg muscle explosive power for the interval class 36 - 39, namely 2 people (8%), the interval class 40 - 46 is 3 people (12%) and the interval class 47 - 53 is as many as 9 people (36%). While the interval class 54 - 60 is 7 people (28%) and the interval class 61 - 67 is 4 people (16%).

Based on the description of the scoring of the variable leg muscle explosiveness of the men's volleyball athletes of the southeast aceh district, which has been stated on the previous page, it can be concluded that volleyball athletes who have leg muscle explosiveness with scores above the average group are 10 people (40%) and scores in the average group are 2 people (8%). While volleyball athletes who have leg muscle explosive power with scores below the average group are 13 people (52%).

2. Hand Eye Coordination

Based on the results of hand-eye coordination data from 25 male volleyball athletes, the highest score is 47 and the lowest score is 42, while the range (measurement distance) is 1.2 based on the group data, the calculated mean value = 45.8 and the middle value = 46. While the standard deviation = 1.7. Furthermore, the frequency distribution of the results of the eye-hand coordination data of male volleyball athletes in the southeast Aceh district concluded that of the 25 male volleyball athletes in the southeast Aceh district for the eye-hand coordination variable, those who had the interval class 42 - 43 were 5 people (7.7%), the interval class 44 - 45 was 5 people (23.1%), the interval class 46 - 47 was 15 people (53.8%). While the interval class ≥ 48 is 5 people (15.4%). Based on the results of the data that has been stated above, it can be concluded that the southeast aceh district male volleyball athletes who have eye-hand coordination with scores above the average group are 13 people (69.23%), and those who have eye-hand coordination scores in the average group are 2 people (7.69%). As for the score below the average group, there were 10 people (23.08%).

3. Volleyball Smash Accuracy

The results of the data on the accuracy of volleyball smash from 25 men's volleyball athletes in the southeast aceh district, obtained the highest score is 14 and the lowest score is 4, while

the range (measurement distance) is 10. Based on the data described above, the average count is 8.16, the middle value is 9, and the standard deviation is 2.53. Furthermore, the distribution of the results of the volleyball smash accuracy data can be concluded that of the 25 volleyball athletes, who have smash accuracy data with interval classes ≤ 4 are 3 people (12%), interval classes 5 - 7, namely 7 people (28%) and interval classes 8 - 10, namely 13 people (52%). Furthermore, the interval class 11-13 is only 1 person (4%) and the interval class ≥ 14 is also 1 person (4%). For more details on the smash accuracy variable Based on the data on the accuracy of smash volleyball volleyball athletes that have been stated previously, it can be concluded that the accuracy of smash volleyball athletes of southeast aceh district men who have smash accuracy, with scores above the average group is as many as 12 people (48%) and the accuracy of smash in the average group score is 3 people (12%). As for the score below the average group, there are 10 people (40%).

CONCLUSION

Based on the results of the analysis and discussion described in the previous section, conclusions and suggestions can be put forward, namely as follows:

1. Leg muscle explosiveness has a significant influence on the accuracy of smash volleyball athletes and is accepted empirically.
2. Hand eye coordination has a significant influence on the accuracy of smash volleyball athletes and is accepted empirically.
3. Leg muscle explosiveness and hand eye coordination power together have a significant influence on the accuracy of smash volleyball athletes and are accepted empirically.

Thus it can be interpreted that in addition to physical condition factors such as leg muscle explosive power and hand eye coordination studied in this study, mastery of the correct technique in smash execution, understanding and understanding of match rules is important for volleyball athletes.

So that technical errors and violations due to lack of mastering the rules of the match, result in losing points and this often makes a volleyball team fail to win. Therefore, the coach of men's volleyball athletes in the southeast aceh district and, in addition to smash technique training needs to be improved by doing continuous training, repeating with the correct technique, also increasing physical condition training to support techniques, and must have extensive knowledge about volleyball.

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