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THE EFFECT OF ANTHROPOMETRY, EYE - HAND COORDINATION AND CONCENTRATION ON PETANQUE POINTING SKILLS

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Abstract The purpose of this study was to determine the direct and indirect effects of anthropometry, eye hand coordination and concentration on petanque pointing skills. The research method is quantitative associative, with the test and non-test techniques, while the analysis technique used path analysis. The data is tested by using a distribution list and histogram. Central measures include the mean, median and mode. The spread indicators include variance and standard deviation, regression estimation error testing using the Liliefors technique and variance homogeneity testing using the Barlett test technique. The subject in this study were 50 athletes in North Sumatra with saturated sampling technique. The results of the assessment obtained anthropometric significant value for concentration with a significant value in (0.280), eye coordination - hand to concentration in (0.373), anthropometry to pointing skills in (0.013), eye coordination-hand to pointing skills in (0.443), concentration to pointing skills in (0.000).

Keywords: Anthropometry, coordination, concentration, skills.

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INTRODUCTION

The basic skill of petanque is throwing, there are two, namely pointing and shooting. When carrying out pointing throws, athletes must know the factors that support the achievement of good pointing throws by mastering eye-hand coordination and athlete concentration as well as athlete anthropometry, because pointing has a very influential advantage in getting points and reducing opponent points, not just throwing the ball. However, if the opposing player is shooting, it will complicate and disperse the concentration of the opposing player if the ball that is thrown is attached to the jack and other boules are under and near the target jack (Ramdan Pelaana, 2016).

Many things need to be considered before a coach determines the training method for a sport, especially petanque sports. When carrying out the training process, it is rare for coaches or athletes to use concentration, eye-hand coordination when throwing and anthropometry of athletes, that during training they never measure or carry out exercises by measuring the athlete's ability based on several of the factors above.

The pointing throw includes the basic technique of throwing which aims to get the bosi as close as possible to the boka (Kharim & Nurkholis, 2018:1). When performing the correct pointing skill, the bosi position is held or in the grip with the entire palm of the hand and clenched into a fist without any space in the knuckles. So that the results of the throw can be perfect and reach the desired target (Puttman, 2011: 105). Pointing throws can be made in a squatting or standing position according to the distance from the petanque playing field. In pointing throws, it is more appropriate to use a squat position because in a squatting position you will be able to see the field conditions to predict the fall of a bosi or jack. Pointing throws use a lot of knowledge about the human body and also human body movements that support the achievement of results when doing pointing throws, including: (1) anthropometry, (2) hand eye coordination and (3) Concentration Level.

The basic technique of pointing in petanque sports cannot be obtained immediately, but through a process that

is intentionally formed, planned, executed, and evaluated continuously, structured, systematic and tiered. From the results of observations seen from their movements, many petanque athletes who have not been able to master the basic techniques of petanque pointing and there is no reference for every petanque athlete based on anthropometry, hand eye coordination and concentration, it is deemed necessary to know and analyze as a basis for improving sports performance. petanque in North Sumatra on the basic techniques and series of movements performed will provide an overview of the influence of anthropometry, hand-eye coordination and concentration during pointing. Success in pointing movements cannot be separated from technical factors alone, but playing experience, playing knowledge, anthropometry, hand eye coordination and concentration when doing petanque sport pointing movements.

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Success in pointing movements cannot be separated from technical factors alone, but playing experience, playing knowledge, anthropometry, hand eye coordination and concentration when doing petanque sport pointing movements. From the results of the analysis, the researcher felt that there was a need for a reference to determine the influence of anthropometry, hand eye coordination and concentration on petanque athletes when pointing, because the correct basic pointing technique will lead to a good attitude when pointing in petanque sports and can be used as a program reference. training by coaches.

METHOD

This research method uses an associative quantitative approach, with test and non-test techniques, while the analysis technique uses a path analysis

approach, which is a technique for analyzing causal relationships that occur in multiple regression if the independent variable affects the dependent variable not only directly. but also indirectly (Supardi, 2012, 263).

The path analysis model is used to analyze the pattern of relationships between variables with the aim of knowing the direct or indirect effect of a set of independent variables (exogenous) on the dependent variable (endogenous) (Riduwan, Engkos Achmad Kuncoro, 2012, 34).” The variables studied consisted of four variables consisting of three exogenous variables and one endogenous variable. Exogenous variables consist of Anthropometry (X_1), Eye-Hand Coordination (X_2). Concentration (X_3) and the endogenous variable is skill pointing (Y). The pattern of interrelationships between research variables is shown in the following figure:

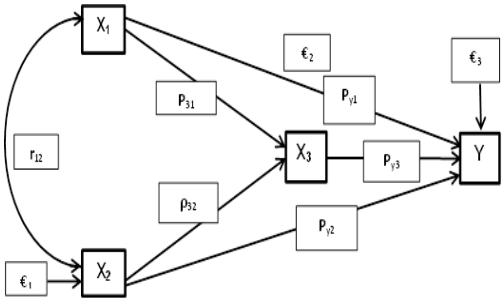

Figure 1. How to use path analysis

Data collection is a measuring tool needed in carrying out a research. The data to be collected can be in the form of numbers, written statements, oral information and various facts related to the focus of the research being studied. In connection with the understanding of data collection techniques and the form of data to be collected, data collection techniques are an important step in research use test and non-test techniques.

Path analysis model, there are two types of variables, namely: exogenous and endogenous variables. Exogenous variables have a direct or indirect influence on endogenous variables, while endogenous variables are variables that can affect other endogenous variables.

The endogenous variables in this study are pointing results (Y), while the exogenous variables include: anthropometry (X_1), eye-hand coordination (X_2), and concentration (X_3).

RESULT AND DISCUSSION

The data were obtained through statistical data processing, namely descriptive analysis looking for the total sample, lowest value, highest value, average value, standard

deviation, variance and frequency distribution. Then the data went through the normality test, linearity test and hypothesis testing using SPSS version 22.

1. Descriptive Analysis

The first analytical technique used is descriptive analysis. For convenience, the data can be standard scores or T-scores. Values are described by (N) total sample, (minimum) lowest value, (maximum) highest value, (mean) average value and (standard deviation) standard deviation, as well as histograms of each research variable data.

a. Anthropometry

Based on the data of statistical analysis of anthropometric variables, the lowest value was 28.59, the highest value was 66.13, the average value was 50, the median value was 52.16, the standard deviation was 7.96. Number of grades 7 and length of interval 6.

b. Hand eye coordination

Based on the statistical analysis data of the eye-hand coordination variable, the lowest value was 31.14, the highest value was 66.59, the average value was 50, the mean was 54.77, the standard deviation was 10. The number of classes was 7 and the length of the interval was 5.

c. Concentration

Based on the statistical analysis data of the concentration variable, the lowest value was 34.58, the highest value was 74.63, the average value was 50, the median value was 47.93 standard deviations of 10. The number of classes was 7 and the length of the interval was 6.

d. Pointing Skill

Based on the statistical analysis data on the Pointing Skills variable, the lowest score was 32.41, the highest value was 69.40, the average value was 50, the mean was 48.84, the standard deviation was 10. The number of classes was 7 and the length of the interval was 6.

2. Data Normality Test

From the data from the instrument test results, then a normality test is carried out, using the normality test for Estimated Errors using the Liliofers technique to see if the data distribution is normally distributed or not at this stage using a value of 0.05 in the SPSS version 22 application. From the results of the total sample, the L0 value is obtained.

The table for the number of samples is 50 people, namely 0.125. By testing if L0 Count < L0 Table then the data is normally distributed and if L0 Count > L0 Table then the data is not normally distributed.

3. Homogeneity Test

In the homogeneity test of the data of each variable, it is aimed at whether the data has a homogeneous variance or not by using a test if the significance value obtained is > 0.05, it can be concluded that the data variance is homogeneous.

4. Linearity Test

The linearity test of the data for each variable aims to see whether the two variables have a unidirectional relationship or not significantly. By testing if L0 Count > 0.05, it can be concluded that there is a linear effect between variables and if L0 Count < 0.05, it can be concluded that there is no linear effect.

CONCLUSION

Conclusions were drawn based on research findings with exogenous variables consisting of Anthropometry (X_1), Eye-Hand Coordination (X_2) and Concentration (X_3). The endogenous variable is Skill Pointing (Y), as follows:

(1) There is no anthropometric effect on concentration in petanque athletes with a percentage of only 15.8%. This proves that anthropometry cannot be a benchmark in influencing concentration, especially for athletes if it is not supported by other aspects.

(2) There is no effect of hand eye coordination on concentration in petanque athletes with a percentage of only 13.0%. This shows that eye-hand coordination is not an important aspect in influencing concentration because it only affects concentration for a fraction of a second, so athletes who have different eye-hand coordination do not affect the athlete's concentration.

(3) There is an anthropometric effect on the pointing skills of petanque athletes with a percentage of only 26.8%. This means that anthropometry can be a benchmark for athletes in influencing skills when doing pointing, athletes who have anthropometric differences, either deficiency, normal or excess, affect the athlete's pointing skills.

(4) There is no effect of eye-hand coordination on pointing skills in petanque athletes with a percentage of only -8%. This can mean that eye-hand coordination only affects a fraction of a second when the athlete is pointing,

anthropometric aspects, correct concentration and focus when pointing are important parts for athletes with different eye-hand coordination not affecting pointing skills.

(5) There is an effect of concentration on the pointing skills of petanque athletes with a percentage of 64.6%. This shows that concentration is a significant and decisive aspect in petanque sport pointing skills, the better the concentration, the better the athlete's pointing skills.

(6) There is an anthropometric effect through concentration on the pointing skills of petanque athletes with a percentage of 74.8%. This can mean that anthropometric aspects that are too general affect concentration and pointing skills so that athletes with different anthropometry indirectly affect pointing skills through concentration.

(7) There is an effect of hand eye coordination through concentration on pointing skills in petanque athletes with a percentage of 59.5%. This can mean the eye-hand coordination aspect when doing a series of movements and maximum concentration when doing petanque sport pointing skills so that athletes with good eye-hand coordination supported by good concentration will get good pointing skills as well.

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