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THE PREDICTION OF ATHLETIC COPING SKILLS INVENTORY, LEG MUSCLE STRENGTH, AGILITY, TORSO FLEXIBILITY, EYE-FOOT COORDINATION, LEG MUSCLE POWER WITH IDAN DOLLYO CHAGI TAE KWON DO KYORUGI LEARNING RESULT

(Correlational Study on Player Tae Kwon Do 15-20 Year Age Group Class Under 54 Kilogram at Banyumas District)

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ABSTRACT

This research aims to find out: (1) the prediction of athletic coping skills inventory with the *idan dollyo chagi tae kwon do kyorugi* learning result, (2) the prediction of leg muscle strength with the *idan dollyo chagi tae kwon do kyorugi* learning result, (3) the prediction of agility with the *idan dollyo chagi tae kwon do kyorugi* learning result, (4) the prediction of torso flexibility with the *idan dollyo chagi tae kwon do kyorugi* learning result, (5) the

prediction of eye-foot coordination with the *idan dollyo chagi tae kwon do kyorugi* learning result, (6) the prediction of leg muscle power with the *idan dollyo chagi tae kwon do kyorugi* learning result, (7) the prediction of athletic coping skills inventory, leg muscle strength, agility, torso flexibility, eye-foot coordination, leg muscle power with the *idan dollyo chagi tae kwon do kyorugi* learning result. This research employed the descriptive approach with the methodology correlational. The population of the research in the *tae kwon do* players age group 15-20 years under 54 kg class Banyumas district, as many as 27 players. The sampling technique was saturated sampling, the size of the samples taken are as many as 27 players. Data analysis technique used technique correlation analysis. To find connectivity (whereabouts of prediction) between predictor variables with criterion variable that is done with correlation analysis product moment. The results of this research showed that when the factors of athletic coping skills inventory, leg muscle strength, agility, torso flexibility, eye-foot coordination, leg muscle power simultaneously having the correlation with the *idan dollyo chagi tae kwon do kyorugi* learning result, soit will be the happen increased of *idan dollyo chagi tae kwon do kyorugi* of 0.045 every increase in a rating score of athletic coping skills inventory, 0.037 every increase of leg muscle strength, 2.059 every increase of agility, 0.106 every increase of torso flexibility, 0.353 every increase of eye-foot coordination, 0.001 every increase of leg muscle power.

Keywords: The Prediction, Tae Kwon Do, Learning Result

INTRODUCTION

The sport of martial tae kwon do is a traditional and culture in Korea, include taegeuk, kyupka and kyorugi. Kyorugi is one of a number that in event tae kwon do. A idan dollyo chagi is a kick that is often used and must be controlled by a player, this is a basic in tae kwon do.

Every achievement in the sport must be supported by a lot of factors, one of them is that element in psychology. Psychology on a player idan dollyo chagi tae kwon their call therein will be kyorugi whose aim is to place a which the player undertaking the exercise of idan dollyo chagi is getting better. The psychological state of drives someone to do something (Nasution, 2011: 5). Each player must have constant mental, each player must be able to beyond all non-technical pressure, such as the condition at the time before the

match, during the match, when after the match, the situation of spectators or fans and responsibilities given to coach. Increasing or decline in the many achievement was determined by psychological factors (Gunarsa, 2008: 207).

Athletic coping skills inventory is a development of a player in taking a idan dollyo kyorugi chagi tae kwon do. Athletic coping skills inventory have contribution very essential on the achievement a player tae kwon do.

Achievement athletes in a branch exercise was not could be set up instantly. The physical condition is one a prerequisite needed in the effort to enhance an athlete performance, may in fact become a was said to be an fundamental purposes may be deferred or insensible again. Sajoto (1995: 8) said guidance the physical condition of in sports that if someone athletes want to high performing must have the physical condition, as: strength, endurance, muscular power, speed, coordination, flexibility, agility, balance, reaction and accuracy.

METHODOLOGY

This research used the descriptive approach with the methods of correlational research. Correlational method in this research aimed to locate prediction between variables independent (predictor) and dependent (criterion). According to Sugiyono (2013: 87) correlation method is the method affiliation or method of research trying to links between one element with another element to create forms and a new form different than before. The relation between variables determined by using a correlation coefficient calculated to technique statistical analysis.

Independent variables in this research was athletic coping skills inventory (X1), leg muscle strength (X2), agility (X3), torso flexibility (X4), eye-foot coordination (X5), leg muscle power (X6). Variable dependent of the research is idan dollyo chagi tae kwon do kyorugi learning result (Y).

An analysis of data used in the study used a technique correlation analysis. To find the relationship (whether or not there a prediction) between variables predictor with variable criterion to do with correlation analysis product moment. Formerly also done normality test and linear test.

RESULT AND DISCUSSION

a. Result

Variable	N	*Min*	*Max*	*Mean*	SD
Athletic Coping Skills Inventory (X_1)	27	53	88	71.70	8.00
Leg Muscle Strength (X_2)	27	215	300	248.41	28.55
Agility (X_3)	27	23.89	25.78	24.73	0.55
Torso Flexibility (X_4)	27	40	46	42.85	1.68
Eye-Foot Coordination (X_5)	27	15	22	17.67	1.66
Leg Muscle Power (X_6)	27	332	882	639.58	142.68
Idan Dollyo Chagi Tae Kwon Do Kyorugi Learning Result (Y)	27	18	29	23.07	2.42

Table 1. Summary Results From The Data Descriptive Analysis

Variable	N	L_{count}	α	L_{table}	Conclusion
Athletic Coping Skills Inventory	27	0,165	5 %	0,171	Normal
Leg Muscle Strength	27	0,146	5 %	0,171	Normal
Agility	27	0,156	5 %	0,171	Normal
Torso Flexibility	27	0,062	5 %	0,171	Normal
Eye-Foot Coordination	27	0,087	5 %	0,171	Normal
Leg Muscle Power	27	0,081	5 %	0,171	Normal
Idan Dollyo Chagi Tae Kwon Do Kyorugi Learning Result	27	0,166	5 %	0,171	Normal

Table 2. Summary Results From The Data Normality Test

Variable	F_{count}	α	F_{table}	Conclusion
X_1.Y	0.01	5%	4.26	Patterned linear
X_2.Y	0.27	5%	2.63	Patterned linear
X_3.Y	0.05	5%	2.58	Patterned linear
X_4.Y	0.37	5%	2.54	Patterned linear
X_5.Y	0.80	5%	2.99	Patterned linear
X_6.Y	3.09	5%	3.19	Patterned linear

Table 3. Summary From The Data Linear Test

Variable	r_{count}	r_{table}	Conclusion
X_1.Y	0.427	0,367	There is a correlation
X_2.Y	0.420	0,367	There is a correlation
X_3.Y	0.417	0,367	There is a correlation
X_4.Y	0.438	0,367	There is a correlation
X_5.Y	0.418	0,367	There is a correlation
X_6.Y	0.453	0,367	There is a correlation

Table 4. Summary From The Correlation Test Each Predictor Of Criterion

Variable	A	B	F_{count}	F_{table}
X_1.Y	13,825	0,129	0,01	4,26
X_2.Y	14,246	0,036	0,27	2,63
X_3.Y	-22,015	1,823	0,05	2,58
X_4.Y	-3,952	0,631	0,37	2,54
X_5.Y	12,360	0,606	0,80	2,99
X_6.Y	18,167	0,008	3,09	3,19

Table 5. Summary Results From The Criterion Regression Analysis on Each Predictor

Sources of variation	Db	JK	RK	Freg
Regression	6	93.4276	15.5713	5.3304
Residue	20	58.4243	2.9212	-
Total	26	151.8519	-	-

Table 6. Summary Results From The Multiple Regression Analysis

b. Discussion

The discussion of the results of this study provides further interpretation to the analysis of the data that has been done before. Based on the testing of hypotheses has produced conclusions analysis that can be presented by further in detail as follows:

1. Athletic coping skills inventory having a prediction with *idan dollyo chagi tae kwon do kyorugi* learning result.

   Based on analysis of the that was done on variable athletic coping skills inventory to *idan dollyo chagi tae kwon do kyorugi* learning result, obtained a correlation coefficient as many as 0,427. With N = 27, the value of $r_{table\ 5\%}$ = 0,367. Apparently r_{count} = 0,427 > $r_{table\ 5\%}$ = 0,367. This shows that direction of a correlation positive, if there is an increase of value athletic coping skills inventory, so would be followed by an increase in *idan dollyo chagi tae kwon do kyorugi* learning result. This indicates that there is a prediction athletic coping skills inventory and *idan dollyo chagi tae kwon do kyorugi* learning result significantly.

   The results of the simple regression analysis in *idan dollyo chagi tae kwon do kyorugi* learning result to athletic coping skills inventory produce the regression equation is $\hat{Y}$ = 13,82497 + 0,1289906 X_1. This shows that when an increasing *idan dollyo chagi tae kwon do kyorugi*, so there will be an increase of value as many as 0,13 on athletic coping skills inventory, which means has been an increase on the variables of *idan dollyo chagi tae kwon do kyorugi* learning result.

   The value of 13,82 is constant value which means that when value athletic coping skills inventory (variable X_1) is zero, so Y value of 13,82. The value of test significance F_{count} as many as 0.01 and F_{table} = 4.26, this shows that change of the

variables *idan dollyo chagi tae kwon do kyorugi* learning result on changes in variable athletic coping skills inventory is significant, so athletic coping skills inventory can be predictor *idan dollyo chagi tae kwon do kyorugi* learning result.

2. Leg muscle strength having a prediction with *idan dollyo chagi tae kwon do kyorugi* learning result.

   Based on analysis has been done on the variables leg muscle strength against *idan dollyo chagi tae kwon do kyorugi* learning result, obtained a correlation coefficient as many as 0,420. With N = 27, the value of $r_{table\ 5\%}$ = 0,367. Apparently r_{count} = 0,420 > $r_{table\ 5\%}$ = 0,367. This shows that direction of a correlation positive, if there is an increase of value leg muscle strength, so would be followed by an increase in *idan dollyo chagi tae kwon do kyorugi* learning result. This indicates that there is a prediction leg muscle strength and *idan dollyo chagi tae kwon do kyorugi* learning result significantly.

   The results of the simple regression analysis in *idan dollyo chagi tae kwon do kyorugi* learning result to leg muscle strength produce the regression equation is $\hat{Y}$ = 14,2464718 + 0,0355368 X_2. This shows that when an increasing *idan dollyo chagi tae kwon do kyorugi*, so there will be an increase of value as many as 0,04 on leg muscle strength, which means has been an increase on the variables of *idan dollyo chagi tae kwon do kyorugi* learning result. The value of 14,25 is constant value which means that when value leg muscle strength (variable X_2) is zero, so Y value of 14,25. The value of test significance F_{count} as many as 0.27 and F_{table} = 2.63, this shows that change of the variables *idan dollyo chagi tae kwon do kyorugi* learning result on changes in variable leg muscle strength is significant, so leg muscle strength can be predictor *idan dollyo chagi tae kwon do kyorugi* learning result.

3. Agility having a prediction with *idan dollyo chagi tae kwon do kyorugi* learning result.

   Based on analysis has been done on the variables agility against *idan dollyo chagi tae kwon do kyorugi* learning result, obtained a correlation coefficient as many as 0,417. With N = 27, the value of $r_{table\ 5\%}$ = 0,367. Apparently r_{count} = 0,417 > $r_{table\ 5\%}$ = 0,367. This shows that direction of a correlation positive, if there is an increase of

value agility, so would be followed by an increase in *idan dollyo chagi tae kwon do kyorugi* learning result. This indicates that there is a prediction agility and *idan dollyo chagi tae kwon do kyorugi* learning result significantly.

The results of the simple regression analysis in *idan dollyo chagi tae kwon do kyorugi* learning result to agility produce the regression equation is $\hat{Y}$ = -22,01504733 + 1,823337943 X_3. This shows that when an increasing *idan dollyo chagi tae kwon do kyorugi*, so there will be an increase of value as many as 1,82 on agility, which means has been an increase on the variables of *idan dollyo chagi tae kwon do kyorugi* learning result. The value of -22,02 is constant value which means that when value agility (variable X_3) is zero, so Y value of -22,02. The value of test significance F_{count} as many as 0.05 and F_{table} = 2.58, this shows that change of the variables *idan dollyo chagi tae kwon do kyorugi* learning result on changes in variable agility is significant, so agility can be predictor *idan dollyo chagi tae kwon do kyorugi* learning result.

4. Torso flexibility having a prediction with *idan dollyo chagi tae kwon do kyorugi* learning result.

Based on analysis has been done on the variables torso flexibility against *idan dollyo chagi tae kwon do kyorugi* learning result, obtained a correlation coefficient as many as 0,438. With N = 27, the value of $r_{table\ 5\%}$ = 0,367. Apparently r_{count} = 0,438 > $r_{table\ 5\%}$ = 0,367. This shows that direction of a correlation positive, if there is an increase of value torso flexibility, so would be followed by an increase in *idan dollyo chagi tae kwon do kyorugi* learning result. This indicates that there is a prediction torso flexibility and *idan dollyo chagi tae kwon do kyorugi* learning result significantly.

The results of the simple regression analysis in *idan dollyo chagi tae kwon do kyorugi* learning result to torso flexibility produce the regression equation is $\hat{Y}$ = -3,951564077 + 0,630676085 X_4. This shows that when an increasing *idan dollyo chagi tae kwon do kyorugi*, so there will be an increase of value as many as 0,63 on torso flexibility, which means has been an increase on the variables of *idan dollyo chagi tae kwon do kyorugi* learning result. The value of -3,95 is constant value which means that when value torso flexibility (variable X_4) is zero, so Y value of -3,95. The value of test significance F_{count} as many as 0.37 and F_{table} = 2.54, this shows that change of the variables *idan dollyo chagi tae kwon do kyorugi* learning result on

changes in variable torso flexibility is significant, so torso flexibility can be predictor *idan dollyo chagi tae kwon do kyorugi* learning result.

5. Eye-foot coordination having a prediction with *idan dollyo chagi tae kwon do kyorugi* learning result.

   Based on analysis has been done on the variables eye-foot coordination against *idan dollyo chagi tae kwon do kyorugi* learning result, obtained a correlation coefficient as many as 0,418. With N = 27, the value of $r_{table\ 5\%}$ = 0,367. Apparently r_{count} = 0,418 > $r_{table\ 5\%}$ = 0,367. This shows that direction of a correlation positive, if there is an increase of value eye-foot coordination, so would be followed by an increase in *idan dollyo chagi tae kwon do kyorugi* learning result. This indicates that there is a prediction eye-foot coordination and *idan dollyo chagi tae kwon do kyorugi* learning result significantly.

   The results of the simple regression analysis in *idan dollyo chagi tae kwon do kyorugi* learning result to eye-foot coordination produce the regression equation is $\hat{Y}$ = 12,3595679 + 0,606481481 X_5. This shows that when an increasing *idan dollyo chagi tae kwon do kyorugi*, so there will be an increase of value as many as 0,61 on eye-foot coordination, which means has been an increase on the variables of *idan dollyo chagi tae kwon do kyorugi* learning result. The value of 12,36 is constant value which means that when value torso flexibility (variable X_5) is zero, so Y value of 12,36. The value of test significance F_{count} as many as 0.80 and F_{table} = 2.99, this shows that change of the variables *idan dollyo chagi tae kwon do kyorugi* learning result on changes in variable eye-foot coordination is significant, so eye-foot coordination can be predictor *idan dollyo chagi tae kwon do kyorugi* learning result.

6. Leg muscle power having a prediction with *idan dollyo chagi tae kwon do kyorugi* learning result.

   Based on analysis has been done on the variables leg muscle power against *idan dollyo chagi tae kwon do kyorugi* learning result, obtained a correlation coefficient as many as 0,453. With N = 27, the value of $r_{table\ 5\%}$ = 0,367. Apparently r_{count} = 0,453 > $r_{table\ 5\%}$ = 0,367. This shows that direction of a correlation positive, if there is an increase of value leg muscle power, so would be followed by an increase in *idan dollyo chagi tae kwon do kyorugi* learning result. This indicates that there is a

prediction leg muscle power and *idan dollyo chagi tae kwon do kyorugi* learning result significantly.

The results of the simple regression analysis in *idan dollyo chagi tae kwon do kyorugi* learning result to leg muscle power produce the regression equation is $\hat{Y}$ = 18,16653864 + 0,007673109 X_6. This shows that when an increasing *idan dollyo chagi tae kwon do kyorugi*, so there will be an increase of value as many as 0,01 on leg muscle power, which means has been an increase on the variables of *idan dollyo chagi tae kwon do kyorugi* learning result. The value of 18,17 is constant value which means that when value leg muscle power (variable X_6) is zero, so Y value of 18,17. The value of test significance F_{count} as many as 3.09 and F_{table} = 3.19, this shows that change of the variables *idan dollyo chagi tae kwon do kyorugi* learning result on changes in variable leg muscle power is significant, so leg muscle power can be predictor *idan dollyo chagi tae kwon do kyorugi* learning result.

7. Athletic coping skills inventory, leg muscle strength, agility, torso flexibility, eye-foot coordination, and leg muscle power simultaneously there are predictions with *idan dollyo chagi tae kwon do kyorugi* learning result.

Based on multiple regression analysis *idan dollyo chagi tae kwon do kyorugi* learning result of all variable athletic coping skills inventory, leg muscle strength, agility, torso flexibility, eye-foot coordination, and leg muscle power simultaneously produce the regression equation is $\hat{Y}$ = 0.045 X_1 + 0.037 X_2 + 2.059 X_3 + 0.106 X_4 + 0.353 X_5 + 0.001 X_6 - 52,008.

From the multiple regression equation shows that when factors athletic coping skills inventory, leg muscle strength, agility, torso flexibility, eye-foot coordination, and leg muscle power simultaneously there is a prediction with *idan dollyo chagi tae kwon do kyorugi* learning result, so there will be increasing *idan dollyo chagi tae kwon do kyorugi* learning result as many as 0,045 for each an increase in a rating score of athletic coping skills inventory, an increase of 0,037 for each increase leg muscle strength, an increase of 2,059 for each increase agility, an increase of 0,106 for each increase torso flexibility, an increase of 0,353 for each increase eye-foot coordination, an increase of 0,001 for each increase leg muscle power. The value of -52,008 is constant value which means that when value all variable athletic coping

skills inventory, leg muscle strength, agility, torso flexibility, eye-foot coordination, and leg muscle power is zero, so Y value of -52,008.

Later retrieved value the coefficient of multiple correlation as many as 5,3304 and the price of $F_{table\ 5\%}$ is 2,59898 who explained that change simultaneously happened to *idan dollyo chagi tae kwon do kyorugi* learning result caused by change factors athletic coping skills inventory, leg muscle strength, agility, torso flexibility, eye-foot coordination, and leg muscle power as many as 61,53% and the rest 38,47% caused by other factors.

CONCLUSION

The conclusion from this research is that there a prediction positive and significant between athletic coping skills inventory, leg muscle strength, agility, torso flexibility, eye-foot coordination, and leg muscle power with *idan dollyo chagi tae kwon do kyorugi* learning result.

After analyzed by employing correlation product moment, simple linear regression, so can be explained summary conclusion as follows:

1. There are predictions athletic coping skills inventory with *idan dollyo chagi tae kwon do kyorugi* learning result, $r_{count} = 0,427 > r_{table\ 5\%} = 0,367$.
2. There are predictions leg muscle strength with *idan dollyo chagi tae kwon do kyorugi* learning result, $r_{count} = 0,420 > r_{table\ 5\%} = 0,367$.
3. There are predictions agility with *idan dollyo chagi tae kwon do kyorugi* learning result, $r_{count} = 0,417 > r_{table\ 5\%} = 0,367$.
4. There are predictions torso flexibility with *idan dollyo chagi tae kwon do kyorugi* learning result, $r_{count} = 0,438 > r_{table\ 5\%} = 0,367$.
5. There are predictions eye-foot coordination with *idan dollyo chagi tae kwon do kyorugi* learning result, $r_{count} = 0,418 > r_{table\ 5\%} = 0,367$.
6. There are predictions leg muscle power with *idan dollyo chagi tae kwon do kyorugi* learning result, $r_{count} = 0,453 > r_{table\ 5\%} = 0,367$.
7. There are predictions athletic coping skills inventory, leg muscle strength, agility, torso flexibility, eye-foot coordination, and leg muscle power with *idan dollyo chagi tae kwon do kyorugi* learning result, $\hat{\hat{Y}} = 0.045\ X_1 + 0.037\ X_2 + 2.059\ X_3 + 0.106\ X_4 + 0.353\ X_5 + 0.001\ X_6 - 52,008$.

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