Prediction Of Playing Ability In Wrestle Using Antropometrical And Physical Variables Among College Level Players

Esmaeilzadeh Mahdi

Department of Basic science, Shirvan Branch, Islamic Azad University, Shirvan, Iran

Abstract: The purpose of the study was to prediction of playing ability in Wrestle from selected Anthropometric and physical variables. 100 male college Wrestle players were selected Inter colligate Wrestle players from the ferdowsi univesity of mashhad. The age of the subjects ranged from 18 to 28 years. The independent variables such as height, weight, arm length, speed, agility strength, power, speed and the dependent variable. Wrestle playing ability were selected for this study. The data on selected independent variables and playing ability(expert-rating) were collected data were analysed by using person and multiple regression to find out the relationship and to predict selected variables which involves Wrestle playing ability. It was concluded that there was a significant relationship between playing ability and the combined effect of selected Anthropometric and physical variables.
[Esmaeilzadeh M. **Prediction Of Playing Ability In Wrestle Using Antropometrical And Physical Variables Among College Level Players**. *Life Sci J* 2013;10(4s):331-333] (ISSN:1097-8135). http://www.lifesciencesite.com. 49

Keywords: Wrestle, statistical analysis, regression analysis

Introduction

Wrestle is basically an iranian game. It is a game, which requires both skill and power, and combines the characteristics of wrestling and rugby. It was originally meant to develop self confidence, in addition to responses to attack and releases of counter attack by individuals.

Anthropometry follows a rigorous set of guidelines that include standardization of the measurement techniques, uniform landmarks, and establishing conditions of the measurements. Various references have been developed that can be used as base lines for expressing absolute and relative deviation from the average. Techniques of data analysis include the expression of individual values in the form of Z scores.

Loovis EM, Butterfield SA examined the relationship between hand length and catching performance by 257 children. Children's catching performance was determined by the number of successful catches when a small ball was tossed underhand from 10 feet. A multiple regression analysis showed age, sex, and hand length contributed significantly to catching accuracy and catching form.

Kinnunen DA et al examined a study on Anthropometric correlates of basketball free-throw shooting by young girls. The purpose of this analysis of data from a larger investigation was to assess effects of anthropometric factors on free throw shooting performance of 15 girls from Michigan and 18 from Puerto Rico. Subjects performed 60 free throws (10 trials x 3 ball sizes x 2 basket heights). Correlations were low, with two exceptions, .53 between shooting performance at the low basket and grip strength (as measured by hand grip dynamometer) for girls from Michigan, and .49 for hand width and performance at the low basket for girls from Michigan.

The purpose of the study

The purpose of the study was to identify the factors correlated to Wrestle playing ability from selected anthropometric and physical variables.

Methodology

To achieve the purpose of the study, 100 inter colligate male Wrestle players were selected from ferdowsi university of mashhad. The age of the subjects ranged from 18 to 28years. The independent variables such as height, weight, arm length, leg length, speed, agility, explosive power and flexibility and the dependent variable Wrestle playing ability were selected for this study. The data on anthropometric variables were measured by using measuring tape and weighing machine and the speed was assessed by 50 m run, agility was assessed by shuttle run, explosive power was tested by standing broad jump, flexibility was measured by sit and reach test and playing ability was assessed by expert rating on 10 point scale.

Analysis of Data

The collected data were analysed by using Pearson and Multiple regression to find out the relationship and to predict selected variables which contributes Wrestle playing ability and the results were presented in table I.

It is evident from the table I that there was significant relationship between playing ability and

height, weight, arm length, leg length, speed, agility, explosive power and flexibility of Wrestle players in each variables separately.

Multiple regression equation was computed only if the multiple correlation is sufficiently high to warrant prediction from it. Then, the correlation identifies the independent variables to be included and their order in the regression equation. Multiple correlation was computed by forward selection method on data obtained for the Wrestle players and the results were presented in table II.

Table I. Pearson Product Moment Correlation Between The Selected Variables And Playing Ability

Dependent Variable	Independent Variables	Pearson r_{12} value
1. Playing Ability	2. Weight	0.21*
	3. Height	0.31*
	4. Leg Length	0.25*
	5. Arm Length	0.24*
	6. Speed	0.45*
	7. Agility	0.64*
	8. Explosive Power	0.41*
	9. Flexibility	0.45*

*Significant at 0.05 level with df 198 is 0.120.

Table II. Multiple Correlation Coefficient for the Predictors of Playing Ability

S. No	Variables (Forward Selection)	R	R Square	Adjusted R Square	R Square Change
1	Speed	0.75	0.856	0.851	0.75
2	Speed & Agility	0.84	0.915	0.909	0.09
3	Speed, Agility & Weight	0.89	0.939	0.931	0.05
4	Speed, Agility, Height & Flexibility	0.93	0.954	0.946	0.04

From the table II, it was found that the multiple correlation coefficient for predictors such as speed, Agility, weight and flexibility is 0.93 which produce highest multiple correlation with playing ability. R square values showed that the percentage of contribution of predictors to the playing ability (dependent variable) in the following order.

About 75% of the variation in the playing ability was explained by the regression model with one predictor speed. About 84% of the variation in the playing ability was explained by the regression model with two predictors, speed and Agility. An additional 9% of the variance in the playing ability is contributed by Agility. About 89% of the variation in the playing ability was explained by the regression model with three predictors, speed, Agility and weight. An additional 5% of the variance in the playing ability is contributed by weight. About 93% of the variation in the playing ability was explained by the regression model with four predictors, speed, Agility, weight and flexibility. An additional 4% of the variance in the playing ability is contributed by flexibility.

Multiple regression equation was computed and the results were presented in table V.

Table V. Regression Coefficients for the Predicted Variables with Playing Ability

S. No	Variables	B	Beta Weights
1	(Constant) Speed	3.42 0.15	 0.623
2	(Constant) Speed Agility	58.51 0.073 -2.66	 0.522 -0.524
3	(Constant) Speed Agility Weight	62.16 0.08 -1.91 -1.92	 0.365 -0.367 -0.302
4	(Constant) Speed Agility Weight Flexibility	44.01 0.04 -1.02 -2.22 0.43	 0.25 -0.19 -0.35 0.29

From the table V, the following regression equations were derived for wrestle with dependent variables.

1. Regression Equation in obtained scores form = X_C

$$X_C = 0.04\ X_1 + (-1.02)\ X_2 + (-2.22)\ X_3 + 0.43\ X_4 + 44.01$$

Where, Xc = Playing Ability, X_1 = Speed, X_2 = Agility, X_3 = Weight and X_4 = Flexibility

2. Regression Equation in standard scores form = Z_C

$$Z_C = 0.25\ Z_1 + (-0.19)\ Z_2 + (-0.35)\ Z_3 + 0.29\ Z_4$$

Where, Zc = Playing Ability, Z_1 = Speed, Z_2 = Agility, Z_3 = Weight and Z_4 = Flexibility

Conclusions

The regression equation for the prediction of Wrestle playing ability includes speed, Agility, weight and flexibility. As the multiple correlation on playing ability with the combined effect of these independent variables is highly significant, it is apparent that the obtained regression equation has a high predictive validity. Thus, this equation may be successfully utilized in selecting National level Wrestle players.

2/23/2013

References

1. Bucher, Charles A. and Deborah A. Wuest, ***Foundations of Physical Education and Sports***, Saint Louis: Times Mirror & Mosby College Publishing, 1987.
2. Clarke, H. Harrison and David H. Clarke, ***Advanced Statistics with applications to Physical Education***, New Jersey: Prentice Hall, Inc., 1972.
3. Clerke H. David, and H. Harrison Clarke, ***Research Process in Physical Education***. New Jersey :Prentice Hall Inc., 1976.
4. Johnson Barry L. and Jack K. Nelson, ***Practical Measurements for Evaluation***. Delhi : Surjeet Publications, 1982.
5. Sutcliffe and Ganham, ***Heights and Weights of Boys and Gilrs,*** London : Butter and Tanner, 1981.