International Journal of Physical Education and Sports Sciences
Vol. 11, Issue No. 18, (Special Issue) January-2017, ISSN 2231-3745

Assessment of Motor Ability Variables and Psychological Variables in Relation to the Performance among Collegiate Volleyball Players

Dr. C. Venkatesh[1]* Rajeeva H. N.[2]

[1]Assistant Professor, DOSPESS, University of Mysore, Mysore, Karnataka, India

[2]Assistant professor (Physical Education), College of Horticulture, Kolar, Karnataka, India

Abstract – Sport being integral part of human life is getting more competitive and knowledge driven these days. The coaches are challenged with selection of best playing team and the criterion for their selection is getting systematic. The present study intended to assess the psychological and motor ability variables that most importantly influence the collegiate volleyball player's performance. The necessary data was collected previous day of the competition, using panel of two expert coaches and a national player. The data was analyzed using step-wise regression. The analysis indicated the psychological variables viz., reaction, self-confidence and SCAT, the motor ability variables, arm power and leg power could be crucial factors.

Keywords: Volleyball Ball, Psychological Variables, Motor Ability, Performance.

----------♦----------

INTRODUCTION

Eighteenth and nineteenth century witnessed tremendous changes in the field of physical education and sports, with plenty of new games being invented by various physical educationists. But only very few games created interest among people. Volleyball ball is one such major game of which caught people interest. volleyball is a complex intermittent game, which requires players to have well developed aerobic and anaerobic capacities. Volleyball need to achieve certain fitness components, to be better performance. These components attributes can either directly or indirectly influenced on volleyball performance and some of these can be categorized in to Psychological and Motor ability variables. This study may be very-much useful for coaches and physical education teachers to screen competitive volleyball players of all age groups. Selection of best players in the beginning by considering the important criteria would enable to improve the potentiality of the players. This study is an effort in this direction to determine the attributes which could determine the volleyball players' potentiality.

PSYCHOLOGY AND VOLLEYBALL

Psychological variable which may influence the performance of the sportsmen, however, are the Neuro-psychological abilities such as reaction time, concentration, perception, memory, intelligence, etcetera, which would seem to be topping the hierarchy of the overall psychological demands of the competitions. It is an established fact that a 'sound body' alone cannot do much in the absence of a 'sound brain'. In competitive situations of volleyball l, the competitors are exposed to a variety of stimuli or situations which require a very quick and accurate analysis for the adequate handling of the task. The competitors possessing the abilities of quick reaction, brisk perceptional analysis, adequate concentration, sharp memory, and high intelligence always have an edge over those volleyball players who lag behind in these abilities. In some of the individual sports events, it may not be the same extent, albeit these attributes are greatly needed in team games.

MOTOR ABILITY AND VOLLEYBALL

Every individual must know the need of physical exercise. Physical fitness is the capacity of a person to function steadily and smoothly when a situation arises. A physical exercise makes one mentally sharpe, physically comfortable and ease with his body to be better able to cope with the demands that everyday life makes upon him.

An increased motor quality not only improves health but improves performance at work. Hundreds of American companies have backed this idea financially by employing full time directors of fitness for their work.

PERFORMANCE ASSESSMENT

The present study collected the data pertaining to the performance ability university volleyball players by adopting rating method. A panel of expert two coaches and A national volleyball player rate the subject's performance in various factors like skill, technique and application of skill in the game situation, such as passing, blocking, spiking, offensive and defensive ability etc., are assessed on 10 point rating scale, the rating was based on subjective evaluation to predict the performance ability of volleyball players. The overall score for individual players was calculated by averaging the scores by three experts.

METHODOLOGY

To achieve the purpose of the study, the investigator has selected men volleyball players who represented their college in Inter-collegiate volleyball tournament. The subjects identified for present study were sixty (N=60) from University of Horticultural Sciences, Bagalakot in Karnataka state. The subjects were aged between 18-28 years .In order to get sufficient number of subjects, the data was collected in consecutive two days during and previous day of the competition of the Inter-collegiate volleyball tournament at Bangalore, in the year 2014.The data on psychological and motor abilities of the players and their performance was elicited.

STATISTICAL TECHNIQUES

After obtaining the data the below mentioned statistical technique were used to analyze and to interpret the study.

1. Stepwise Regression multiple

RESULTS AND DISCUSSIONS

Table 1 Step-wise regression coefficients of performance against psychological variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Significance	R^2
		B	Std. Error	Beta			
1	(Constant)	39.730	2.511		15.825	0.000	0.366.
	Reaction	-0.109	0.019	-0.605	-5.791	0.000	
2	(Constant)	27.215	4.982		5.462	0.000	0.446
	Reaction	-0.086	0.020	-0.474	-4.356	0.000	
	Self Confidence	0.279	0.098	0.311	2.855	0.006	
3	(Constant)	32.707	5.475		5.973	0.000	0.487
	Reaction	-0.079	0.019	-0.439	-4.108	0.000	
	Self Confidence	0.224	0.098	0.250	2.288	0.026	
	SCAT	-0.257	0.120	-0.220	-2.135	0.037	

The regression coefficients and their significance for each of the three regression models are presented in Table1. It is clear from the table that addition of each variable to the model had significant influence the dependent variable, as is evident from the high values of't'. The final model of step-wise multiple regression presented in the table shows that while self-confidence had positive influence on the player's performance, the SCAT and reaction exhibited negative influence. The results were as anticipated and is explained as follows. A quick reaction would help player to giving and receiving quick passes and improving spiking movements against opponents. Every one unit increase in reaction would reduce the performance by .08 units. That means lesser the reaction time higher the performance and vice-versa. The coefficient value of 0.22 for self-confidence indicates that the every one unit increase in the player's self-confidence would improve the player's performance by 0.22 units.

Table 2 Step-wise regression coefficients of performance against motor ability variables

Model		Unstandardized Coefficients		Standardized Coefficients	T	Significance	R^2
		B	Std. Error	Beta			
1	(Constant)	-4.438	6.589		-0.674	.503	0.264
	Arm power	4.946	1.086	0.513	4.556	.000	
2	(Constant)	-22.050	7.311		-3.016	.004	0.427
	Arm power	4.043	0.992	0.420	4.077	.000	
	Leg power	1.791	0.444	0.415	4.032	.000	

The regression coefficients and their significance for each of the three regression models is presented in table 2. It is clear from the table that addition of each variable to the model had significant influence the dependent variable, performance, as is evident from the high values of 't'. The final model of step-wise multiple regression presented in the table shows that while the arm power and leg power had positive influence on the player's performance. The results were as anticipated and is explained as follows. Arm power would also help players in applying maximum force during spiking attempts. A strong leg power would help player to increasing stride length and taking strong take off for spiking and blocking. Every one unit increase in arm power would increase the performance by 4.04 units and thus emerged as one of the crucial variable influencing player's performance. Leg power is also important in volleyball and it showed a positive influence on volleyball players also. The coefficient value of 4.04 indicates that the every one unit increase in the player's arm power would increase the player's performance by 4.04 units.

DISCUSSION

The results of present study are discussed briefly so as to give justification to our findings by providing suitable explanation and comparing the results of other similar studies. Comparing other's results provides empirical support for accepting/rejecting the results.

Step-wise regression was employed to assess the influence of psychological and motor ability variables on volleyball player's performance, separately. Out of the four psychological variables considered in the analysis, 3 variables viz., reaction, self-confidence and SCAT were found to be significant determinants of performance. Reaction and SCAT among psychological variables showed negative influence on the performance while self-confidence exerted positive influence. Sehgal (2013) through t-test found a significant difference between national and state level female volleyball ball players both in terms of anthropometric and psychological variables. The study found the national volleyball ball players to possess less anxiety, more adjustment and motivation that corroborated our findings. Martinez et al. (1993) found that the success in the game to be better predicted by physical, technical and anthropometric variables while failure to be better predicted by the variables of personality and behaviors. This shows that lack of confidence, lower reaction and high anxiety could seriously hamper the game show.

Motor abilities seem to have received higher attention by several researchers to evaluate its influence on volleyball players' performance. In the present study, arm power and leg power significantly influenced the performance. Cavala & Katic (2010) following the ANOVA and discriminative analysis techniques found that the successful female volleyball players differed from unsuccessful ones, in terms of the motor ability factors such as throw strength, movement without and with ball, agility and ball manipulation abilities. Predicting the volleyball players performance due to the motor ability variables of national players of Greece and Serbia. Classifying the school women volleyball players (over a 7 years of training period) as elite volleyball players and dropouts using discriminative analysis, Srhoj et al. (2006) found the elite players to possess better coordination, explosive strength and speed and concluded that these variables could be reliable criteria for player selection. Thus, in selection of players, the anthropometric variables viz., height, hand span and leg length and the motor ability variables, arm power, leg power and hand grip strength could be crucial factors.

CONCLUSION

The present study undertook an assessment of player's performance as influenced by the psychological and motor ability variables among the young inter collegiate volleyball players. The study measured these different variables by using appropriate equipment during tournament of the Inter collegiate sports meet. Stepwise regression analysis was employed to establish the relationship. The study concluded that the psychological variables viz., Self-confidence, reaction and SCAT and the motor ability variables, arm power and leg power could be crucial factors.

REFERENCES:

Sehgal, Nitin (2013). Comparison of psychological and kin anthropometric variables of female volleyball players at state and national level competitions, Asian Journal of Multidimensional Research, 2 (8). pp. 72-79.

Martinez, J G, Bonet, A C & Encinas, F L (1993). Physical and psychological variables predictors of sports output and therapeutic change, PSICOTHEMA, 5(1). pp. 97-110.

Cavala, M., & Katić, R. (2010). Morphological, motor and situation-motor characteristics of elite female volleyball players according to playing performance and position. Collegium Antropologicum, 34(4), pp. 1355–1361.

Srhoj, V., Rogulj, N., Zagorac, N. & Katić, R.(2006). "A new model of selection in women's", Coll. Antropol. 30: pp. 601–605.

Corresponding Author

Dr. C. Venkatesh*

Assistant Professor, DOSPESS, University of Mysore, Mysore, Karnataka, India

E-Mail – ravirajdaya@gmail.com