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An Investigation of Sensomotor Coordination through Vienna Test System & Agility among Racquet Sports

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Abstract – Background: ***The purpose of the study was to investigate the sensomotor coordination through Vienna test system and agility among racquet sports.***

Method: Total 30 racquet Players from badminton, tennis & table-tennis were selected were selected as subjects from LNIPE Gwalior. The age of all subjects was 19-25 years. To investigate the sensomotor coordination and agility among racquet players, one way analysis of variance' was used. sensomotor coordination & agility were measured by Vienna test system and 10*4 shuttle run.

Result: The analysis of data revealed that significant differences exist among mean of the Sensomotor coordination and agility among badminton, tennis & table-tennis players. The study showed quite interesting results as the game of badminton tennis and table-tennis are racquet games and have many skills very similar to each other. The difference lies in the area of the court, the equipment used for play and the time limit of the game. Badminton players have shown better performance in sensomotor coordination and agility due to the above difference and is in line with other studies done by Syed et. al. (2014), Lees (2008) etc. It is concluded that significant difference exists in terms of sensomotor coordination & agility between the badminton, tennis & table-tennis players and that the badminton players possess better sensomotor coordination & agility than the tennis & table-tennis players.

Conclusion: With the limitations of the study it may be concluded that significant difference was found between the means of Badminton, Tennis and Table-tennis players for both, sensomotor coordination as well as for Agility.

Key Words: Sensomotor Coordination, Agility, Racquet Sports

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INTRODUCTION

The word 'physical' alludes to the body, and demonstrates substantially attributes, for example, quality, speed, continuance, adaptability, wellbeing, coordination and execution. Person is an incorporation of the body and psyche. The two parts through their mixes make employ increasingly fruitful. The psychological procedure and the physical articulation are delightfully intertwined in the component of the entire man and his wholeness for no situation ought to be made to endure by isolating mental and physical angles. The term coordinative capacities have appeared supplanting the before utilized term spryness as expressed in the greater part of the writing on physical training. The idea of coordinative capacities ought to be comprehended as the capacity conveniently to frame, organize and, interface into an incorporated entire the rationale activities on one hand and also the capacity to change activity previously worked out under unique circumstances. These capacities to a significant degree have their very own particular task to carry out in learning and idealizing engine activities. Different rule measures have been utilized to assess coordinative capacities yet none of them being commonly acknowledged up until this point. In any case, still there is an understanding among a large portion of the games researchers on seven explicit coordinative capacities (adjustment, balance, coupling separation, introduction, response and cadenced capacity). The level of improvement of these capacities in some measure permit to pass judgment on the time consumed on acing new types of engine developments or on the rebuilding of those effectively aced.

Table tennis is broadly made a decision as one of the quickest games, and can be portrayed as a genuinely troublesome undertaking. It is an open, complex engine undertaking that requires execution in a

continually changing condition under incredible time weight. Ability distinguishing proof projects in table tennis should discover talented adolescents at a beginning time to instruct them to top players viably and productively. Kids who are talented with remarkable regular capacities in the sensomotor space are recommended to be in favorable position to other kids by a less demanding and quicker learning procedure for this kind of game. Such a successful and proficient learning or execution bend may be an indicator of the youngster's maximum capacity. The learning procedure in table tennis will be encouraged further beginning at a youthful age (6– 12 years) by utilizing the most touchy period to create engine aptitudes Consequently, evaluating common engine capacities important for table tennis in adolescents (6– 12 years) close to intellectual and social-enthusiastic capacities as a feature of ability ID appears to be sensible to distinguish high possibilities for this game. Be that as it may, the inquiry emerges how to quantify this skill? In games where method is of extraordinary significance, it is fundamental all competitors could perform refined aptitudes. Tennis is a game which requests abnormal state of coordination capacities. The expression "coordination" has been characterized in the writing as the capacity to perform complex engine abilities.

OBJECTIVE OF THE STUDY:

The purpose of the study was to investigate the sensomotor coordination through Vienna test system and agility among racquet sports.

METHODOLOGY:

The purpose of the study was to investigate the sensomotor coordination and agility among racquet Players. To achieve this purpose 30 racquet Players from badminton, tennis & table-tennis, their age ranged between 19 to 25 years. All the subjects were chosen from LNIPE, Gwalior. To compare the sensomotor coordination and agility between racquet Players, one way analysis variance was used. sensomotor coordination and agility were measured by Vienna test system & 10*4 shuttle run.

STATISTICAL METHODS:

One way analysis of variance was applied to investigate the sensomotor coordination and agility between racquet players. The hypothesis was tested at 0.05 level of significance.

Table I

Descriptive Statistics

		N	Mean	S.D	Std. Error
SMK	BADMINTON	10	7.00	1.56	.49
	TENNIS	10	3.80	1.39	.44
	TABLE-TENNIS	10	5.10	1.59	.50
	Total	30	5.30	1.98	.36
AGILITY	BADMINTON	10	13.85	.94	.29
	TENNIS	10	11.85	1.18	.37
	TABLE-TENNIS	10	10.89	.55	.17
	Total	**30**	**12.19**	**1.54**	**.28**

TABLE-1 indicates the value of descriptive statistic (Mean, standard deviation, standard error) of the data measured.

Table II

ANOVA

	Variables	Sum of Squares	Df	Mean Square	F	Sig.
SMK	Between Groups	51.80	2	25.90	11.18	.00
	Within Groups	62.50	27	2.31		
	Total	114.30	29			
AGILITY	Between Groups	45.56	2	22.78	26.12	.00
	Within Groups	23.55	27	.87		
	Total	69.12	29			

It is evident from table 2 that results of analysis of variance with regard to sensomotor coordination & agility of racquet players, the p value of all variables is found statistically significant as less than 0.05 obtained F- values of the players is (SMK=11.18 & AGILITY= 26.12) found greater than critical value i.e. F(0.05,2,27) = 3.37. Since the F- value is significant, the null hypothesis is rejected .therefore post hoc test (tukey HSD) is applied to find out differences between paired means among the variables. The results of post hoc test have been presented below.

Table III

Post hoc test for the difference of means for the data on sensomotor coordination & agility

Multiple Comparisons							
Tukey HSD							
Dependent Variable	(I) GROUPS	(J) GROUPS	M D (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
SMK	BADMINTON	TENNIS	3.20*	.68	.00	1.51	4.88
		TABLE-TENNIS	1.90*	.68	.02	.21	3.58
	TENNIS	BADMINTON	-3.20*	.68	.00	-4.88	-1.51
		TABLE-TENNIS	-1.30	.68	.15	-2.98	.38
	TABLE-TENNIS	BADMINTON	-1.90*	.68	.02	-3.58	-.21
		TENNIS	1.30	.68	.15	-.38	2.98
AGILITY	BADMINTON	TENNIS	1.99*	.41	.00	.95	3.02
		TABLE-TENNIS	2.96*	.41	.00	1.92	3.99
	TENNIS	BADMINTON	-1.99*	.41	.00	-3.02	-.95
		TABLE-TENNIS	.96	.41	.07	-.06	2.00
	TABLE-TENNIS	BADMINTON	-2.96*	.41	.00	-3.99	-1.92
		TENNIS	-.90	.41	.07	-2.00	.06

* The mean difference is significant at the 0.05 level.

From Table 3 it can be seen that the difference between badminton and tennis players on SMK is significant at 5% level, as the p-value for this mean difference is 0.00, which is less than 0.05. Similarly, the p-value for the significance of difference between badminton and table-tennis on SMK is significant at 5% level; the p-value is 0.02, which is less than 0.05.but there is a insignificant difference between tennis and table-tennis on SMK is insignificant at 5% level; the p-value is 0.15, which is more than 0.05. There is also a significant difference between badminton and tennis on agility is significant at 5% level; the p-value is 0.00, which is less than 0.05. Similarly, the p-value for the significance of difference between badminton and table-tennis on agility is significant at 5% level; the p-value is 0.00, which is less than 0.05

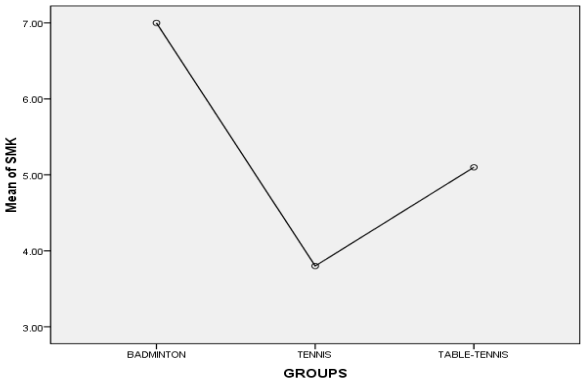

Figure 1: Graphical representation of the Means of SMK of Three Different groups

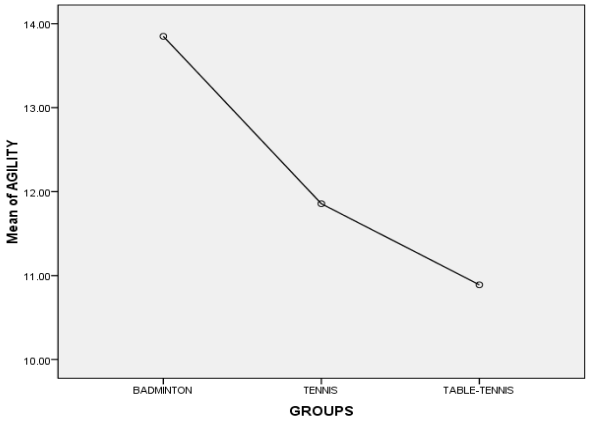

Figure 2: Graphical representation of the Means of Agility in Three Different groups

DISCUSSION OF FINDINGS:

The analysis of data reveals that there significant differences exist among mean of the Sensomotor coordination and agility among badminton, tennis & table-tennis players.The study showed quite interesting results as the game of badminton, tennis and table-tennis are racket games and have many skills very similar to each other. The difference lies in the area of the court, the equipment used for play and the time limit of the game. Badminton players have shown better performance in sensomotor coordination and agility due to the above difference and is in line with other studies done by Syed et. al. (2014), Lees (2008) etc. It is concluded that there exists significant difference in terms of sensomotor coordination & agility between the badminton, tennis & table-tennis players and that the badminton players possessed better sensomotor coordination & agility than the tennis & table-tennis players.

CONCLUSIONS:

With the limitations of the study it may be concluded that significant difference was found between the means of Badminton, Tennis and Table-tennis players for both, sensomotor coordination as well as for Agility.

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