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COORDINATIVE ABILITIES OF NORTH-ZONE INTERVARSITY VOLLEYBALL PLAYERS

ABHISHEK KUMAR SINGH
Department of Physical Education, Babu Banarasi Das University, Lucknow, INIDA.
Email: *abhisingh26@hotmail.com*

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ABSTRACT

The purpose of the study was to compare coordinative abilities of north-zone intervarsity volleyball players. A total of 40 male intervarsity volleyball players belonging from Faizabad, Hisar, Jhansi and Aligarh teams of north zone intervarsity tournament region, 10 players of each team were selected as the sample of the study. The necessary data for comparing the selected coordinative abilities was collected by administering coordinative ability tests as suggested by Hirtz (1985). In order to find-out the coordinative abilities of male intervarsity volleyball players belonging from Faizabad, Hisar, Jhansi and Aligarh teams of north zone intervarsity tournament, data were summarized by descriptive statistics (mean, standard deviation). One Way Analysis of Variance (ANOVA) was used to find out the significant difference of male north-zone intervarsity volleyball players. The significance was tested at 0.05 levels. From the results of the study it was found that there was no significant difference exists among Faizabad, Hisar, Jhansi and Aligarh intervarsity volleyball team players on orientation ability, differentiation ability, reaction ability, balance ability and rhythmic ability.

Keywords: *Coordinative abilities, volleyball players.*

1. INTRODUCTION

Volleyball is essentially a game of transition from the one skill to the next, with choreographed team movement between plays on the ball. These team movements are determined by the teams chosen serve receive system, offensive system, coverage system, and defensive system which requires a high level of motor fitness and neuromuscular coordination in order to perform very complex movements of the game.

Correspondence: Abhishek Kumar Singh, Ph.D., Assistant Professor, Babu Banarasi Das University, Lucknow, INDIA. Tel: +91-9889995688, Email: abhisingh26@hotmail.com

Coordinative abilities are an important pre-requisite for good performance in sports. They are primarily dependent on the motor control and regulation process of Central Nervous System (CNS). For each of the coordinative ability, the motor control and regulation process functions in a definite manner. When a particular aspect of these functions is improved then the sportsperson is in a better position to do a certain group of movements, which for their execution depend on this type of CNS functioning pattern (Singh, 1991). Motor coordination is a part and parcel of action regulation and hence is closely linked with the processes of regulation of cognitive, psychic (e.g. motive, drive etc.) and movement execution aspects of an action. Hirtz (1985) point out that these aspects of action regulation are important determinants of coordinative abilities.

Coordinative abilities become effective in movements only through the motor abilities and activity determined drives and cognitive process (Hirtz, 1985). Because of the complex nature of coordinative abilities, it is not easy to define coordinative abilities. Coordinative motor abilities are particularly important at the initial stages of the sports development of a competitor (Zimmermann, Nicklisch, 1981; Raczek, 1989; Bakhit, & Hamed, 2010; Akter, Rahman, & Uppal, 2012). Coordinative abilities are qualities of an organism to coordinate separate elements of action in our system to decide a concrete action task (Bardaglio, Settanni, Marasso, Musella, & Ciairano, 2012). Coordinative abilities help in learning faster and also to achieve the high level of performance (Sadri, 1993; Singh, & Singh, 2014). In another work Tomić and Nemec (2002) give the following attitude: "In relation to training and improvement of volleyball technique, the development of coordinative abilities is distinguished as a fundamental part of volleyball players' exercise". Raczek, (1989), giving general characteristics of volleyball, emphasizes numerous specific characteristics of volleyball players, among which motor characteristics are dominant: "Volleyball is a typical game of jumps. Spikes and blocks are done while jumping, and there is more and more present raising the ball for jump spike, as well as serving from jump. All these are maximally done, most often two-leg jumps, so that a player, during the game that can last longer than two hours, jumps over 200 times (Singh, 2012). Over 50% of blocks and hitting the ball is done while jumping. The result is that for a contemporary volleyball player it is very important, apart from other abilities, explosive strength and endurance in it. Because of great speed of the ball and its short flight, there is volleyball players are required, above all, ability of good prediction, i.e. placing and reaction. Play in defence demands good flexibility, coordination and the speed of movement, often with changing direction and body posture. Nicholls (1987) recommended power, agility, coordination, flexibility, muscular and cardio-respiratory endurance and concentration as well as quick thinking and reaction time as the primary factors for better performance in the game of volleyball. According the Timothy (1982)

the physical abilities found to be superior of great relevance in top-class volleyball players includes jumping ability, strength, reaction-time and the ability to make lateral movements.

All of these researchers worked hard to prove the signifcance of co-ordinative abilities. Here I would like to state that among all of the cited works, all were conducted outside India. As Indians are differe as far as physical performance is concerned, therefore as an Indian researcher I took this topic to work on.

2. METHODS AND MATERIALS

2.1 Subjects

A total of 40 male intervarsity volleyball players (10 from each university) belonging from Faizabad, Hisar, Jhansi and Aligarh north-zone intervarsity teams were selected as the subjects. All the selected teams were came to participate in the north-zone volleyball intervarsity tournament, organized by Dr. Ram Manohar Lohia Avadh University, Faizabad in the year 2012.

2.2 Tool

The necessary data was collected by administering coordinative ability tests as suggested by Hirtz (1985).

2.3 Variables

Five coordinative abilities were selected for the study viz. orientation ability, differentiation ability, reaction ability, balance ability and rhythmic ability.

2.4 Procedure

The necessary markings were done before the start of the test and the investigator strictly followed the specification as mentioned in the test (Hirtz, 1985). All tests items were demonstrated and explained to the subjects by the investigator. They were given a chance to practice so as to become familiar with the tests and to know exactly what was expected to be done. There were no time limit in performing the test but the subjects were exhorted to put in their maximum effort. The data was collected by the administering tests on 40 male intervarsity volleyball players belonging from Faizabad, Hisar, Jhansi and Aligarh teams of north-zone intervarsity tournament. The data was collected in the evening after proper warm up.

2.5 Statistical Technique

In order to find-out the coordinative abilities of male intervarsity volleyball players belonging to Faizabad, Hisar, Jhansi and Aligarh teams of north-zone intervarsity tournament, data were summarized by descriptive statistics (mean, standard deviation). One Way Analysis of Variance (ANOVA) was used to find out the significant difference of male north zone intervarsity volleyball players. The significance was tested at 0.05 levels. All the statistical procedure was performed with the help of SPSS (v.19).

3. RESULTS

Table 1: Descriptive statistics of selected coordinative abilities of all selected north-zone intervarsity team volleyball players

Coordinative abilities	Teams	N	Mean	SD
Orientation Ability	RMLAU Faizabad	10	10.13	00.67
	GJU Hisar	10	9.97	01.44
	BU Jhansi	10	10.21	00.56
	AMU Aligarh	10	10.18	01.89
Differentiation Ability	RMLAU Faizabad	10	05.20	01.55
	GJU Hisar	10	05.30	02.31
	BU Jhansi	10	06.00	02.94
	AMU Aligarh	10	06.00	01.70
Reaction Ability	RMLAU Faizabad	10	148.80	12.95
	GJU Hisar	10	153.10	18.03
	BU Jhansi	10	157.30	23.67
	AMU Aligarh	10	168.80	24.88
Balance Ability	RMLAU Faizabad	10	09.80	01.62
	GJU Hisar	10	11.04	02.36
	BU Jhansi	10	10.24	01.05
	AMU Aligarh	10	10.20	01.16
Rhythmic Ability	RMLAU Faizabad	10	04.79	00.50
	GJU Hisar	10	04.79	00.54
	BU Jhansi	10	05.27	01.20
	AMU Aligarh	10	05.22	00.44

Table 2: ANOVA summery of orientation ability

	Sum of Squares	*df*	Mean Square	*F*
Between Groups	0.33	3	0.11	0.07
Within Groups	57.47	36	1.59	
Total	57.80	39		

Tab. $F_{.05}$ (3, 36) = 2.87

A cursory glance over table 2 reveals that the computed value of *F* (0.07) is less than the tabulated value of *F* (2.87). It is showed that there is no significant difference exists among Faizabad, Hisar, Jhansi and Aligarh intervarsity volleyball team players on orientation ability.

Table 3: ANOVA summery of differentiation ability

	Sum of Squares	*df*	Mean Square	*F*
Between Groups	5.67	3	1.89	0.39
Within Groups	173.70	36	4.82	
Total	179.37	39		

Tab. $F_{.05}$ (3, 36) = 2.87

Table 3 reveals that the computed value of *F* (0.39) is less than the tabulated value of *F* (2.87) thus there is no significant difference exists among Faizabad, Hisar, Jhansi and Aligarh intervarsity volleyball team players on differentiation ability.

Table 4: ANOVA summery of reaction ability

	Sum of Squares	*df*	Mean Square	*F*
Between Groups	2217.80	3	739.26	1.76
Within Groups	15052.20	36	418.11	
Total	17270.00	39		

Tab. $F_{.05}$ (3, 36) = 2.87

An examination of table 4 reveals that the computed value of *F* (1.76) is less than the tabulated value of *F* (2.87). Therefore no significant difference exists among Faizabad, Hisar, Jhansi and Aligarh intervarsity volleyball team players on reaction ability.

Table 5: ANOVA summery of balance ability

	Sum of Squares	*df*	Mean Square	*F*
Between Groups	8.07	3	2.69	1.01
Within Groups	95.88	36	2.66	
Total	103.96	39		

Tab. $F_{.05}$ (3, 36) = 2.87

Readings of the above cited table 5 reveals that the fact that computed value of *F* (1.01) is found less than the tabulated value of *F* (2.87). So there is no significant difference exists among Faizabad, Hisar, Jhansi and Aligarh intervarsity volleyball team players on balance ability.

Table 6: ANOVA summery of rhythmic ability

	Sum of Squares	*df*	Mean Square	*F*
Between Groups	2.04	3	0.68	1.23
Within Groups	19.76	36	0.54	
Total	21.80	39		

Tab. $F_{.05}$ (3, 36) = 2.87

It is vivid from the table 6 that the computed value of *F* (1.23) is less than the tabulated value of *F* (2.87), so there is no significant difference exists among Faizabad, Hisar, Jhansi and Aligarh intervarsity volleyball team players on rhythmic ability.

4. DISCUSSION

This study was conceptualized to find out whether any difference exists in the coordinative abilities within almost homogenous group of population in Indian context. Analysis of data reveals that there was no significant difference exists among Faizabad, Hisar, Jhansi and Aligarh intervarsity volleyball team players on the coordinative abilities (orientation ability, differentiation ability, reaction ability, balance ability and rhythmic ability). This result showed that, India in general and north-zone in particular volleyball players having similar type of coordinative abilities.

The findings may be due to the fact that all the four north-zone university volleyball team players (Faizabad, Hisar, Jhansi and Aligarh) posses same type of body build, and they might have same type of physical exercises as well (Bakhit,

& Hamed, 2010). They might have same team selection processor, training pattern, physical fitness and playing ability. This may be the potential cause for this type of findings (Bokan, 2009; Verma, Rana, & Singh, 2011). Puri, Mishra, Jhajharia, & Singh, (2014) compared coordinative abilities of volleyball players in different age groups, and they had found same type of results. They reported that as subjects growing their coordinative abilities also increase, and when they reached at certain age there is a plateau.

5. CONCLUSIONS

Within the delimitations and limitations of the method used, the sample on which the present investigation was carried out and the results drawn, the investigator concluded that all four north-zone university volleyball team players (Faizabad, Hisar, Jhansi and Aligarh) had no significant difference on orientation ability, differentiation ability, reaction ability, balance ability and rhythmic ability. It implies that, as far as north-zone volleyball players of India are concerned they all have same type of coordinative abilities.

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