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Study of Co-Ordinative abilities of the male volleyball players at different level of competition

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Abstract

The aim of the study was to examine coordinative abilities of volleyball players. The study was conducted on one hundred and twenty (120) players (60) represented district and (60) represented state from Punjab. The subjects were tested on selected co-coordinative abilities orientation ability, differentiation ability, balance ability, reaction ability and rhythmic ability. The collected data was analysed using independent 't' ratio to find out the significant difference among district and state volleyball players. The results of the study showed that the state level volleyball players had significantly better orientation ability ($p < 0.05$), differentiation ability ($p < 0.05$), balance ability ($p < 0.05$), reaction ability ($p < 0.05$) and rhythmic ability ($p < 0.05$) than the district level volleyball players.

Keywords: Reaction Ability, Balance Ability, Rhythmic Ability, Orientation Ability, Differentiation Ability

Introduction

Volleyball is the most popular sport in the world. People of all ages and skill levels play volleyball in over 200 countries around the world. William G. Morgan at the YMCA in Springfield, Massachusetts, invented volleyball in 1895. Volleyball is a complex game of simple skills. There are several contributing factors for getting Excellency in volleyball game. The pattern of play in volleyball demands high energetic body because of the nature of the movements performed in the game greatly dependent upon the agility, explosive power, endurance and well coordinative approach to show its best in the execution of volleyball skills. Volleyball players require well-developed muscular strength, power and endurance, speed, agility, and flexibility, and have a high level of jumping ability, fast reaction time and swift movements (She, 1999) [4]. Coordination is the ability to repeatedly execute a sequence of movements smoothly and accurately. Co-coordinative abilities are also needed for maximum utilization of conditional abilities, technical skills and tactical skills. In volleyball, technical and tactical skills, anthropometric characteristics and individual physical performance capacities are most important factors that contribute to the success of a team in competitions (Hakkinen, 1993) [2]. Without the adequately developed co-coordinative abilities, a sportsman cannot make maximum use of his psycho-biological capacities and reserves. The co-coordinative abilities, a great extent, determine the maximum limits to which sports performance can be improved in several sports especially the sports which depends largely on technical and tactical factors. Because of this reason, the assessment of co-coordinative abilities and the possibilities of their further development form an important part of the process of talent identification in sports. Coordinative abilities are primarily dependent on the motor control and regulation process of the central nervous system. For each coordination ability the motor control and regulation process function in a definite pattern, when a particular aspect of these functions is improved then the sportsperson is in a better position to carry out a certain group of movements which for their execution depends on the Central Nervous System functioning pattern. Each of these components is comprised of intricate, small movements, the summations of which are coordinated acts of striking the volleyball in a desired fashions parameters and the execution of the motor movements of that concerned sports.. So the performance of the players greatly influenced by the physique physical fitness. It is essential for the players to possess physique and physical performance that allow them to play their roles most effectively (Chen, 1989a) [1].

Methodology

The purpose of this study is to examine the comparison of coordinative abilities among district and state players. For the purpose of present study, One hundred Twenty (N = 120) male volleyball players between the age group of 17-28 years (Mean ± SD: age 21.33 ± 1.43 years, body mass 62.50 ± 3.55 kg, height 1.67 ± 0.036 m) were selected as subjects. The subjects were purposively assigned into two groups: Group-A: District Volleyball Players (N1 = 60) and Group-B: State Volleyball Players (N2 = 60). Keeping in view the availability of tools, adequacy to the subjects and the legitimate time that could be devoted for tests and to keep the entire study unitary and integrated was made in consultation with experts. With the above criteria's in mind, the following variables were selected for the present study: (1) Orientation Ability (2) Differentiation Ability (3) Reaction Ability (4) Balance Ability (5) Rhythm

Ability. Orientation ability was measured by numbered medicine ball run test. Differentiation ability was measured with the help of backward medicine ball throw test. Reaction ability was measured by using ball reaction exercise test. Balance ability was measured by long nose test. Whereas sprint at the given rhythm test was used to measure rhythm ability.

Statistical Analysis

The data was analyzed using the SPSS version 16.0. The data was presented as the descriptive statistics such as mean and standard deviation. To compare the coordinative abilities of volleyball player's independent samples t-test was employed. The significance level were set at p<0.05.

Results and Discussion

Table 1: Comparison of coordinative abilities of volleyball players at different level competition

Variables	District Level Players		State Level Players		t-ratio
	Mean	SD	Mean	SD	
Orientation ability(sec)	11.06	1.18	9.28	0.48	10.77*
Differentiation ability(pts)	10.33	1.84	12.88	2.24	6.80*
Reaction ability(cm)	1.83	0.12	1.52	0.16	10.98*
Balance ability(sec)	7.61	0.60	6.17	0.62	12.83*
Rhythm ability(sec)	0.85	0.16	0.45	0.22	11.15*

* Significant at 0.05 level

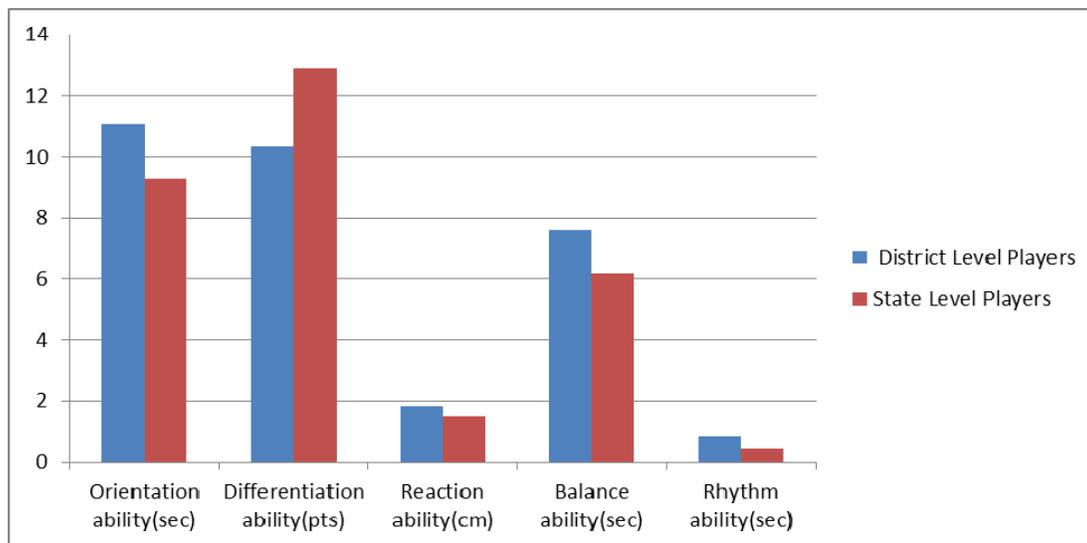


Fig 1: Graphical representation of Comparison of coordinative abilities of volleyball players at different level competition

All the investigated measures of coordinative abilities found better. The orientation ability in district and state level volleyball players was 11.06 and 9.28 respectively, whereas the standard deviation (SD) of orientation ability of district and state level volleyball players was 1.18 and 0.48 respectively. The data does suggest that the differences between district and state level volleyball players in regard to orientation ability are significant. Whereas mean of differentiation ability in district and state level volleyball players was 10.33 and 12.88 respectively, whereas the standard deviation (SD) of differentiation ability of district and state level volleyball players was 1.84 and 2.24 respectively. The data does suggest that the differences between district and state level volleyball players in regard to differentiation ability are significant. Whereas mean of reaction ability in district and state level volleyball players was 1.82 and 1.52 respectively, whereas the standard deviation (SD) of reaction ability of district and state

level volleyball players was 0.12 and 0.16 respectively. The data does suggest that the differences between district and state level volleyball players in regard to reaction ability are significant. Whereas mean of balance ability in district and state level volleyball players was 7.61 and 6.17 respectively, whereas the standard deviation (SD) of balance ability of district and state level volleyball players was 0.60 and 0.62 respectively. The data does suggest that the differences between district and state level volleyball players in regard to balance ability are significant. Whereas mean of rhythm ability in district and state level volleyball players was 0.85 and 0.45 respectively, whereas the standard deviation (SD) of rhythm ability of district and state level volleyball players was 0.16 and 0.22 respectively. The data does suggest that the differences between district and state level volleyball players in regard to rhythm ability are significant. The above results indicated that player's performance in competition dependent

upon their abilities to perform various skills of that game with agility and coordination. So the achievement in sports performance decreased or increased as according to the level of their strength, speed, endurance and coordinative abilities. As the level of performance increases the players attain high degree of physical fitness. Peter and Haliski (1950) ^[3] supported this view that the successful participation in any game is directly related to physical fitness.

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