A COMPARATIVE STUDY OF SELECTED MOTOR COORDINATIVE ABILITIES BETWEEN BASKETBALL AND FOOTBALL PLAYERS

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ABSTRACT

The purpose of present study was to compare the selected motor coordination ability between basketball and football players. For present study the researcher selected 30 male players (15 from basketball and 15 from football) from Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) and their age ranging from 18-25 years. The variables selected for the present study was selected motor coordination abilities. The data was collected through applying the tests; numbered medicine ball run test for orientation ability; backward medicine ball throw test for differentiation ability; sprint at the given rhythm test for rhythm ability. For comparing the means of selected motor coordination abilities, descriptive analysis and independent t-test were applied at 0.05 level of significant. All the statistical analyzed was carried out using SPSS version 16.0. The result of the present study showed that there was significant difference found in orientation ability (t=2.168, p<0.05), rhythm ability (t=2.244, p<0.05) and differentiation ability (t=1.525, p>0.05) between basketball and football players of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G). On the basis of the findings it was concluded that the football players have better orientation ability and rhythm ability than basketball players. On other hand basketball players were better in differentiation ability than football players.

Key words: Football, Motor Coordinative Ability, Orientation ability, Rhythm ability, Differentiation ability.

INTRODUCTION

The sports scientist have identified seven coordinative abilities namely orientation ability, differentiation ability, coupling ability, adaptation ability, rhythm ability, balance ability and reaction ability. All the coordinative abilities are invariably important for learning of sports
techniques and for their continuous refinement and modifications during long term training process. (Singh, 1982; Harre, 1989; Raczek, 2002; and Mynarski, 2000).

Efficiency requires good coordination between the body and mind. Lack of coordination results in unskilled or poor movements which is dominated by cortical control that supersedes reflex and integrated mechanism (David, Johnson and Farrow, 1976).

Insufficient training of coordinative abilities limits the performance ability especially at the higher level. On the contrary, better development of coordination abilities provide essential base for faster and effective learning, stabilization and valuation in technique and their successful execution in game situation. The quality of performance of all fundamental mechanical skills, the rhythm, flow, accuracy, amplitude etc. are improved by coordinative ability; it helps in developing very fine extra credible skills (Singh, 1991).

Basketball is the fastest game. It is also the fastest growing sport in the world. It is played by both sexes of all ages and sizes and also by the physically challenged, including those in the wheel chair. A rare beauty of the basketball is that it can be played alone (Kamlesh, 2007). Basketball is a game of technique and good game skills. Basketball players need high degree of coordination abilities such as hand eye coordination, eye foot coordination for throwing, passing, dribbling, shooting etc. which make the player’s best form the others. It is a game of quickness of (hand and foot) and speed (overall body motion) that are used at the proper time (Mitra S., 2012).

Research shows that in football endurance, speed, agility, coordination and reaction time are important for efficient football performance. The football is the most played sport on the world and football players must have a high degree of physical and physiological condition, which
makes possible to play long time on play field. The game is unique because primarily feet are used to play the game. This requires far more skill and coordination than most other sports where hands are used. Football requires a balanced of all motor physical fitness components. Each of these components should be addressed and maximized for the better performance (Gopal Chandra Saha, 2011). Football also needs a high degree of coordination abilities such as foot eye coordination.

The present study was carried out to determine the selected motor coordinative abilities such as orientation ability, differentiation ability and rhythm ability of basketball and football players of Guru Ghasidas Vishwavidyalaya, Bilaspur. It was expected that there would be significant difference in selected motor coordinative abilities of football players.

**METHODOLOGY**

For present study the researcher selected 30 male players (15 from basketball and 15 from football) randomly selected from Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G), as subjects and the age ranging from 18-25 years.

**Selection of Variables**
The following variables were selected for the present study:

1) Orientation ability 2) Differentiation ability 3) Rhythm ability.

**Criterion Measures**
Selected variables and their criterion measures:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Test Items</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation ability</td>
<td>Numbered medicine ball run test</td>
<td>In seconds</td>
</tr>
<tr>
<td>Differentiation ability</td>
<td>Backward medicine ball throw test</td>
<td>In points</td>
</tr>
<tr>
<td>Rhythm ability</td>
<td>Sprint at the given rhythm test</td>
<td>In seconds</td>
</tr>
</tbody>
</table>
Statistical Technique: To find out the significance difference of selected motor coordinative abilities between basketball and football players independent to-test used as a statistical technique for the data analysis. The level of significance was set at 0.05.

The researcher used mean and standard deviation to analyse the results. Mean and standard deviation of the selected motor coordinative abilities of basketball and football players were computed. Its results have been shown in table II, table III, table IV and table V.

Table II
Descriptive analysis of orientation, differentiation and rhythm abilities of basketball and football male players

<table>
<thead>
<tr>
<th>Variables</th>
<th>Name of Games</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation ability</td>
<td>Basketball</td>
<td>15</td>
<td>07.333</td>
<td>1.046</td>
<td>06.00</td>
<td>09.00</td>
</tr>
<tr>
<td></td>
<td>Football</td>
<td>15</td>
<td>06.400</td>
<td>1.298</td>
<td>05.00</td>
<td>09.00</td>
</tr>
<tr>
<td>Differentiation ability</td>
<td>Basketball</td>
<td>15</td>
<td>15.133</td>
<td>1.125</td>
<td>13.00</td>
<td>17.00</td>
</tr>
<tr>
<td></td>
<td>Football</td>
<td>15</td>
<td>15.800</td>
<td>1.264</td>
<td>14.00</td>
<td>18.00</td>
</tr>
<tr>
<td>Rhythm ability</td>
<td>Basketball</td>
<td>15</td>
<td>10.066</td>
<td>1.099</td>
<td>09.00</td>
<td>12.00</td>
</tr>
<tr>
<td></td>
<td>Football</td>
<td>15</td>
<td>09.200</td>
<td>1.014</td>
<td>08.00</td>
<td>11.00</td>
</tr>
</tbody>
</table>

* Statistically Significant at 0.05 level

Table II shows that the mean and standard deviation values of selected motor coordinative ability of basketball players. These values were recorded as variable wise, orientation ability 7.333 and 1.046, differentiation ability 15.133 and 1.125 and rhythm ability 10.066 and 1.099 respectively. And the mean and standard deviation values of selected motor coordinative ability of football players. These values were recorded as variable wise, orientation ability 6.400 and 1.298, differentiation ability 15.800 and 1.264 and rhythm ability 9.200 and 1.014 respectively.
Table III
Comparative analysis of Orientation ability of basketball and football male players

<table>
<thead>
<tr>
<th>Game</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>15</td>
<td>7.333</td>
<td>1.046</td>
<td>.933</td>
<td>.430</td>
<td>2.168*</td>
<td>.039</td>
</tr>
<tr>
<td>Football</td>
<td>15</td>
<td>6.400</td>
<td>1.298</td>
<td>.666</td>
<td>.437</td>
<td>1.525**</td>
<td>.138</td>
</tr>
</tbody>
</table>

* Statistically Significant at 0.05 level

Table III indicates that the mean and standard deviation values on the orientation ability for basketball and football players were recorded as 7.33, 1.04 and 6.40, 1.02 respectively and the t – value (2.168) which was found statistically significant at 0.05 level.

Table IV
Comparative analysis of Differentiation ability of basketball and football male players

<table>
<thead>
<tr>
<th>Game</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>15</td>
<td>15.133</td>
<td>1.125</td>
<td>.666</td>
<td>.437</td>
<td>1.525**</td>
<td>.138</td>
</tr>
<tr>
<td>Football</td>
<td>15</td>
<td>15.800</td>
<td>1.264</td>
<td>.866</td>
<td>.386</td>
<td>2.244*</td>
<td>.033</td>
</tr>
</tbody>
</table>

* Statistically Significant at 0.05 level

Table IV indicates that the mean and standard deviation values on the differentiation ability for basketball and football players were recorded as 15.13, 1.12 and 15.80, 1.26 respectively and the t -value (1.525) which was found statistically non significant at 0.05 level.

Table V
Comparative analysis of Rhythm ability of basketball and football male players

<table>
<thead>
<tr>
<th>Game</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>15</td>
<td>10.066</td>
<td>1.099</td>
<td>.866</td>
<td>.386</td>
<td>2.244*</td>
<td>.033</td>
</tr>
<tr>
<td>Football</td>
<td>15</td>
<td>09.200</td>
<td>1.014</td>
<td>.866</td>
<td>.386</td>
<td>2.244*</td>
<td>.033</td>
</tr>
</tbody>
</table>

* Statistically Significant at 0.05 level
Table V indicates that the mean and standard deviation values on the rhythm ability for basketball and football players were recorded as 10.06, 1.09 and 9.20, 1.01 respectively and the t – value (2.244) which was found statistically significant at 0.05 level.

**Figure 1**

*Graphical representation of means of orientation, differentiation and rhythm abilities of basketball and football male players*

<table>
<thead>
<tr>
<th>Ability</th>
<th>Basketball</th>
<th>Football</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation</td>
<td>7.333</td>
<td>6.4</td>
</tr>
<tr>
<td>Differentiation</td>
<td>15.133</td>
<td>15.8</td>
</tr>
<tr>
<td>Rhythm</td>
<td>10.066</td>
<td>9.2</td>
</tr>
</tbody>
</table>

**RESULTS AND DISCUSSION**

The results of the study revealed that there was significant mean difference found between the male basketball and football players in relation to orientation ability and rhythm ability. In the relation of differentiation ability there was no significant difference found between the male basketball and football players from Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G). Coordinative abilities have is directly related to sports performance. Performance in various games and sports, as it were, depends on the level of coordinative abilities of a sportspersons. Therefore, the difference occurs between the male basketball and football players in comparison to orientation ability and rhythm ability due to the playing area and time, players have spent more time with ball which is enhance the orientation ability and rhythm ability.
was also supported by Akter, N., Rahman, A. and Uppal, A. K. (2012) were concluded that football players are superior to cricket players in relation to orientation and rhythm abilities. Manilal, K. P., Sebastian, P. J. & Thomas, R. (1990) was conducted a study and they were concluded that the female basketball players had better differentiation ability. Kushwah, D. S. (2012) were concluded that the significant difference in differentiation ability among basketball and handball players. Football players have to execute different skills at different conditions ensuring impeccable execution, which may be the reason for better orientation ability and rhythm ability then the basketball players. The results of the study also revealed that there was significant mean difference found between the male basketball and football players in relation to differentiation ability in which basketballers have better differentiation ability in comparison of footballers. It may be due to nature and speed of the game. In which players have to gives accurate pass to others players in limited time.

CONCLUSIONS

On the basis of result following conclusions have been made:

1. Significant difference was found between the male basketball and football players of Guru Ghasidas Vishwavidyalaya, Bilaspur in relation to orientation ability ($t=2.168$, $p<0.05$).
2. Significant difference was found between the male basketball and football players of Guru Ghasidas Vishwavidyalaya, Bilaspur in relation to rhythm ability ($t=2.244$, $p<0.05$).
3. No significant difference was found between the male basketball and football players of Guru Ghasidas Vishwavidyalaya, Bilaspur in relation to differentiation ability ($t=1.525$, $p>0.05$).

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REFERENCES


