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COMPARATIVE STUDY OF SELECTED COORDINATIVE ABILITIES BETWEEN URBAN AND RURAL FEMALE SOCCER PLAYERS

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Abstract

Background: Fitness means being in good physical condition and able to function at one's best level. Total fitness for living involves spiritual, mental, emotional and social as well as physical qualities Coordination is about controlling all the body parts while doing different activities of children. ***Methods:*** A group of sixty (N=60) Female soccer players aged between 13-18 years were randomly allowed for this study from different club of north 24 parganas district, West Bengal. They were further divided into two groups of 30 each (i.e., N1=30; rural players and N2=30; urban players). The purposive sampling technique was used to attain the objectives of the study. Orientation ability, Differentiation ability, Reaction ability, Balance ability and Rhythmic ability were the Coordinative abilities selected for the study. The independent sample t- test statistical technique was used to analyze the significant difference of coordinative abilities between rural and urban female soccer players and the level of significance was set at 0.05 levels. ***Results:*** The results showed that there was significant difference between rural and urban female soccer players, in respect to their Coordinative abilities on the sub variables i.e. reaction ability, orientation ability and differentiation ability. However insignificant difference was found for rhythm ability. ***Conclusions:*** It can be concluded that the rural female soccer players were better in Orientation ability, Differentiation ability, Reaction ability and Balance ability in comparison to urban female soccer players.

Keywords: Women Soccer Club players, Coordinative abilities, Rural, Urban

Introduction

Games and sport provide us a good exercise to keep us healthy and physically fit. Regular exercise helps to increase the overall quality of life. Playing sports acts as a beautiful blend of recreation and physical activity. It is a combination of both enjoyment and exercise. In past five motor abilities were recognized as components of physical fitness. These were strength, endurance, speed, flexibility and agility. But since one and a half decade the term agility has been gradually replaced by the term coordinative abilities **(Hirtz, 1982&Harre, 1986).**
Coordination is the harmonious functioning of your limbs, muscles, brain and senses when executing the body's movements and the ability to repeatedly execute movements smoothly and accurately. The developing tendencies in international sports are identified as the increase in game tempo, tougher body game and greater variability in technique and tactics. In principle, an increase in performance level can only be achieved by better exploitation of all major components i.e., technique co-ordination, tactics, physical fitness and psychological qualities of the sportsman. Individual and collective factor can become competitively effective only by a certain coordinative mastery of the technique **(Nordman,1994)**.

The playing ability of the soccer players has a very important association with Coordinative abilities. Reaction ability, orientation ability, differentiation ability, rhythm ability, balance ability etc. are the very important component of coordination ability which has a vital role in achieving high level of performance in soccer. All technical, tactical and conditional performance components need to be trained and practiced for highly advanced performance **(Minz, 2003).** In addition to performance development, coordinative abilities play an important role in demonstration of tactical skills in situations showing changes constantly in team sports **(Kalb, 1989).**

During a soccer match, players perform several dynamic movements (i.e., kicks, sprints,tackling, jumps), which require high strength and power of leg muscles **(Dorge, 1999),** proper timing, and transfer of energy between segments. Much research has stressed the importance of fine multi joint control to improve soccer performance **(Dorge, 1999; Hodges et al., 2005),** the coordinative ability at one hand and at physical fitness the other, are equally important to maintain equilibrium of the player. They are dependent on the motor control and regulation process of central nervous system for each of the coordinative ability, the motor control and regulation function in a definite manner. When a particular aspect of these functions is improved then the sportsperson is in a better position to do the certain group of movements, when for their execution depend on this type of CNS functioning pattern **(Singh, 1991).**

The investigator talks about the rural and urban female soccer players. Both are present with different lifestyles and different perception of life with contrasting characters. The living conditions caused by urbanization limit the activities of individuals, leading to a sedentary lifestyle. Previous studies have reported that the adolescents living in rural areas are usually more active than those from urban areas **(Russell Dw, et al. 2008).**The main reason is that city provides variety of opportunities in every discipline of life. Without any shadow of doubt urban life is dominant. Considering this view the present researcher felt the importance of coordinative abilities not only in our daily life activity but also take a significance role in game and sports. The present study, therefore, aims to evaluate the coordinative abilities of the rural and urban female soccer players.

Objective

The Purpose of the study was to compare the coordinative abilities between rural and urban female soccer players.

Material and methods Selection of subjects

The subjects of the present study were selected randomly (purposive) from different clubs of North 24 parganas district of West Bengal. The researcher selected 60 female soccer players aged between 13-18 years, divided into two groups, rural group (RG) consisting of30 female soccer players (N-30), and urban group (UG) consisting of30 female soccer players (N-30). Both the children and their parents were informed about the nature of the research study and the involvement of the student volunteers in this study. The consent was taken from parents and also was taken from each individual before the measurement.

Selection of variables

The following five coordinative abilities were selected for the purpose of this research.

☒ Orientation ability was measured by numbered medicine ball run test and was recorded in 1/ 100th of second. Three trials were given and the best was recorded as the score.

Pic 1: Numbered medicine ball run test - orientation ability

☒ Differentiation ability judged through 1kg medicine ball touching the mat- 1 point, 1 kg medicine ball touching the circle line- 2 points, 1kg medicine ball touching inside the circle- 3 points, 1 kg medicine ball touching the 2kg medicine ball – 4 points and was recorded in points.

Pic. 2: Backward medicine ball throw test - differentiation ability

☒ Reaction ability was the distance measured in centimeters from the top of the planks to the point where the subject stopped the ball. Three trials were given and the best was recorded as the score.

Pic.3: Ball reaction exercise test - reaction ability

☒ Balance ability was measured by bass stick balance test and was record in 1/100th seconds.

Pic.4: Bass stick balance test - balance ability

☒ Rhythm ability was measured by sprint at the given rhythm test and was scored as difference between the timing of the first and second attempt was taken as a score.

Pic 5: Sprint at given rhythm test - rhythm ability

Statistical procedure

Descriptive statistics including mean scores and standard deviations were computed for all variables. Independent‘t’ test statistics was applied to investigate the significance difference between rural and urban female soccer players. The level of significance was set at 0.05.

Results

The results pertaining to significant difference if any between rural and urban female soccer players were assessed using the independent t-test statistics and results are presented in table-1

TABLE -1

Mean, standard deviation, t-value of rural and urban female soccer players

Variables	Rural		Urban		t-value
	MEAN	SD	MEAN	SD	
Orientation ability	9.77	± 0.38	9.96	± 0.51	2.09*
Differentiation ability	11.7	± 1.88	10.87	± 1.74	2.28*
Reaction ability	161.63	±9.68	165.51	±8.09	2.15*
Balance ability	85.45	±12.96	77.64	±21.84	2.15*
Rhythm ability	1.04	± 0.35	1.13	± 0.25	1.57

*Significant at 0.05 level

't' value required to be significant at 0.05 level of confidence with 58 degree of freedom was2.00

It is evident from table -1 that significant differences was found in Orientation ability between the rural and urban female soccer players, since the calculated 't' value 2.09 was greater than tabulated 't' value 2.00 at 0.05 level of significance. Thus it was found statistically significant. It was observed that rural female soccer players have demonstrated significantly better on orientation ability than the urban female soccer players.

Table-1 presents the results of rural and urban female soccer players, with regards to differentiation ability. The descriptive statistics shows the calculated't' value 2.28 was greater than tabulated't' value 2.00 at 0.05 level of significance. Thus it was found statistically significant. It was observed that rural soccer players have demonstrated significantly better on differentiation ability than the urban soccer players.

The results of rural and urban female soccer players, with regards to reaction ability. The descriptive statistics shows the calculated 't' value 2.15 was greater than tabulated 't' value 2.00 at 0.05 level of significance. Thus it was found statistically significant. It was observed that rural soccer players have demonstrated significantly better on reaction ability than the urban soccer players.

The results of rural and urban female soccer players, with regards to balance ability. The descriptive statistics shows the calculated't' value 2.15 was greater than tabulated't' value 2.00 at 0.05 level of significance. Thus it was found statistically significant. It was observed that rural soccer players have demonstrated significantly better on balance ability than the urban soccer players.

Table-1 also shows that no significant difference was found in rhythm ability between the rural and urban female soccer players.

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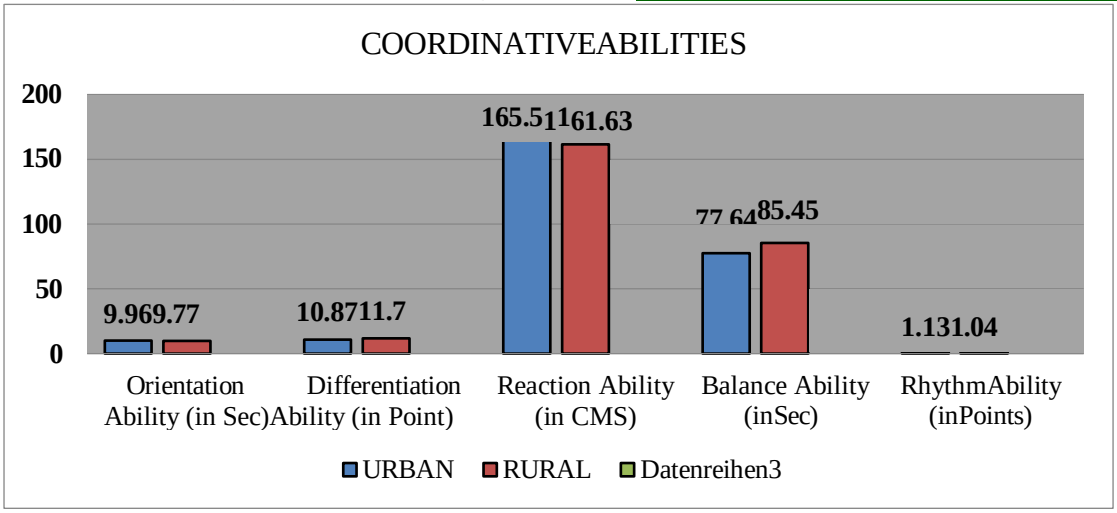

Fig 1: Graphical representation of Orientation, Differentiation, Reaction, Balance and Rhythm ability between rural and urban Female soccer players

Discussion

The statistical analysis of data shows that there were significant differences for coordinative abilities i.e. Orientation, Differentiation, Reaction and Balance Ability between rural and urban female soccer players. The results of presents study showed that the rural soccer players had performed significantly better in Orientation, Differentiation, Reaction and Balance Ability as compared to urban soccer players. As supported by **(Raghupati K and Krishnaswamy- 2013).** On the other hand, insignificant difference was found in the rhythmic ability between rural and urban female soccer players.

The present data also agreed with the **Wilczewski et al. (1996); Ozdirenc et al. (2005); Saha and Haldar (2012); Das and Chatterjee (2013),** the reports from Poland, Turkey and Bengal proposed that rural children were fitter than their urban counterparts.**Raghupati and Krishnaswamy (2013)** suggested that need to create awareness among urban school children and their parents about physical growth and health which can be improved by providing proper care and nutrition right from early childhood period.

Coordinative abilities in achieving athletic performance depends on biological factors, motor factors and psychological factors. **Singh (2017)** says that rural children were better in physical fitness than the urban children, it might be due to more activity oriented routine in rural areas, engagement in agriculture related work, more open spaces and play fields compared to cities, clean air etc in the rural areas of Punjab.

The orientation ability may be attributing to the reason that there is a greater need of awareness of footballer teammates and oppositions players in football and the training that there is a sensor developed without any conscious effort. Significant difference in the rural and urban soccer players might be due to the reason that rural soccer players have high kinesthetic sense organs assume more importance of orientation than urban soccer players **(Raghupathi & Krishnaswamy, 2013).** Differentiation ability is the ability to achieve a high level of fine tuning or harmony of individual movement phases and body part movements. During training and competition the regular conditioning of such ability helps the footballers to develop better differentiation ability. Significant difference between rural and urban soccer players in relation to differentiation ability might be due to the reason that the different level

of tuning and harmony of individual movement phase and body part movements. Rural school soccer players might have high level of tuning and harmony due to less weight. This result is reliable with the results reached by (**Bakhit 2010).** The results have also shown that there is significant difference in reaction time of rural soccer players as compared to urban soccer players. Footballer emphasized a lot of reaction in training during their practice session because they have to tackle the ball with their body and at the same time they need dribbling and fainting maneuvers with their own body. It has been reported in recent studies that environmental factors, lifestyles, diet, family structure, cultural differences, and several other factors are closely related with physical fitness and physical activity **(Clark & Ferguson, 2002; Finn et al., 2002; Hussey et al., 2001; Rowlands et al., 1999 & Strauss & Pollack, 2001).**The statistical analysis shows that significant differences exists in balance ability between rural and urban soccer players. Significant difference in the rural and urban soccer players might be due to the reason that rural soccer players have the ability to rhythmically transfer their center of gravity (COG) from left to right and forward to backward with more excursions than urban soccer players (**Raghupathi & Krishnaswamy, 2013).**

Rhythmic ability allows athletes to perceive an externally given rhythm and to reveal it during an action. In addition to this, athletes can reproduce a rhythm which is in the motor memory due to their rhythm abilities **(Minz, 2003).** The rhythmic ability was found insignificant of rural and urban soccer players' reason due to the similar kind of coordinated and rhythmic moments required during the dribbling and feinting to the opponents in match situations. This finding is in agreement with previous studies **(Sharma & Gangwar, 2014). Tsimeas et al. (2005),** did not find any difference for the measured physical fitness components (flexibility, muscular fitness, cardio respiratory, speed and agility) among rural and urban young people.

Another possible explanation for the differences in coordinative abilities among rural and urban female soccer players may be the differences in the physical activity, food habits, environment, nutritional status and socioeconomic status in rural and urban areas. Comparing the overall results, rural female soccer players scored significantly better than urban female soccer players in Orientation, Differentiation, Reaction, Balance ability, suggesting rural soccer players engaged in a higher number of physical activities and more strenuous activity than urban female soccer players.

Conclusion

It is concluded from above finding that significant difference was found in Orientation ability, Differentiation ability, Reaction ability, Balance ability. The rural female soccer players had better Orientation ability, Differentiation ability, Reaction ability, Balance ability in comparison to urban female soccer players. The insignificant difference was found in rhythmic ability, though rural female soccer players had better rhythm ability in comparison to urban female soccer players. Thus, the coordinative abilities of individual, affected by different environmental, locality, food habits, life styles, nutritional status, socioeconomic status and all factors act together on coordinative abilities of an individual.

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