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A COMPARATIVE STUDY ON REACTION ABILITY AND KINESTHETIC PERCEPTION OF SENIOR AND JUNIOR FOOTBALL PLAYERS

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Abstract

The aim of the study was to compare the reaction ability and kinesthetic perception on Senior and Junior football players. Total 90 schools and colleges going males were selected as subject for this study. Age of the subjects were ranged from 12-27 years. All subjects were equally divided into two groups namely Senior and Junior football players. Reaction time and kinesthetic perception were considered as the parameters of this study and these were measured by Nelson hand and foot reaction test and Depth perception jump test respectively. In statistical procedure, mean and Standard Deviation were used as descriptive statistics and to analyses the significant difference statistical 't'- test was applied. There was a significant difference found in Hand reaction time and Kinesthetic perception. Difference also found in Foot reaction time though it was not statistically significant.

Keywords: reaction ability, kinesthetic perception, Football Players.

INTRODUCATION

These days sports competitions are very tough. Players are using best techniques and best training methods for better results during competitions. Even then they are not satisfied by their results. Thus the importance of psychology was realized in physical education to give best possible results of players. Sports psychology is the branch of psychology which deals with positive behavior of sports person during training and competition period to increase performance. It guides coaches and players to give individual attention regarding various methods and various motivational techniques. It gives knowledge regarding adolescence problems, changes during adolescence, managing adolescence problems. It guides sports ethics and sportsmanship to develop sports attitude. The knowledge of sports psychology helps coaches and players to develop and control anxiety level. It also helps to tackle various stresses of life.

Reaction time is simply as the sudden movement (Slater-Hammel, 1955) or the time between a stimulus and a response. In other word, it is an interval between the onset of a signal (stimulus) and the initiation of a movement response (Şenel & Eroğlu, 2006) . It plays an important role for an athlete to improve their sports performance. It also acts as a reliable indicator of rate of processing of sensory stimuli by central nervous system and its execution in the form of motor response. Due to many factors, reaction ability can fluctuate. The main factors are age, sex, vision, practice, fatigue, intelligence, muscle type etc. (Jain *et al*., 2015) .

On the other hands, kinesthetic sense is known as the 'position sense'. It is the ability to control, coordinate and perceive the position, effort and movement of the body during muscular action (Das *et al*., 2015; S. Mariyappan & Raj, 2017) , 10] that can detect the changes in body position and movements without relying on information from the five senses. A well kinesthetic perception can tell a person where different parts of the body is located even if the eyes are closed or that person is standing in a dark room. It is actually attributed to the action of the proprioceptors (Flynn, 1964). A proprioceptor is the sensory receptor (organ which transmit a signal to a sensory nerve) which is located in the deep tissues (skeletal muscles, tendons, ligaments etc.). Perception is not only the passive receipt of these signals, but it's also is shaped by the recipient's learning, memory, expectation, and attention. Prior studies found a positive impact of reaction ability and kinesthetic perception which are requisite in sports performance (Jensen & Munro, 1979; Misra *et al*., 1985) .

Ability to maintain balance during stationary position or slow movement (static balance). It depends primarily on kinesthetic tactile and some extent on vestibular sense organs. Ability to maintain or regain balance during large range movements and during rapidly changing positions of the body it depends primarily of the vermicular sense organ. Balance ability is necessary prerequisite for all m for the movements. Static balance is required for the execution of all movements whether slow or fast, part body movement or whole body movement. Static balance ability develops to significant extent through various activities in childhood. Dynamic balance ability is important in sports in which frequent and rapid change of body position is required e.g., gymnastics, ski jump etc. In those sports the performance has positive relationship with dynamic balance.

As, both reaction ability and kinesthetic perception are depended mostly on activity of CNS and genetics, so the present researcher was interested to look for how the reaction ability and kinesthetic perception fluctuates according to age between Senior and Junior Football Players .

STATEMENT OF THE PROBLEM

To Find "A comparative study on reaction ability and kinesthetic perception of Senior and Junior football players".

OBJECTIVES

The objective of this study was to investigate the difference on reaction ability and kinesthetic perception of Senior and Junior Foot ball Players.

HYPOTHESIS

It was hypothesized that- H0: There would be no significant difference on reaction ability and kinesthetic perception of Senior and Junior Foot ball Players.

METHODOLOGY

Selection of the subjects:

A total no. of 90 male school and college going students were randomly selected from Andhra University Affiliated Colleges and Visakhapatnam District Schools for this study as subject. The age of the subjects was ranged from 12-27 years. The total subjects were equally divided into two groups on

the basis of their age category i.e., Juniors football players (12-17 years) and Senior Players (18-27 years).

SELECTION OF THE PARAMETERS

Reaction ability and kinesthetic perception were considered as the parameters for this study. These parameters were measured by Nelson hand and foot reaction test and Depth perception jump test respectively.

Table 1: Contains the details of instruments and tools that were used in this study.

Sl. No.	Variables	Instruments & Tools
1	Age	Birth certificate
2	Height	Anthropometric rod
3	Body weight	Weighing machine
4	Reaction ability	Nelson hand and foot reaction test
5	Kinesthetic perception	Depth perception jump

In statistical procedure, mean, Standard Deviation were used as descriptive statistics and to analyse the significant difference statistical 't'- test was applied.

Result

The results obtained from the data were as follows: At first, in table 2 the personal data of the subjects were presented.

Table 2: Shows the details of personal data of the subjects

Group Variable	Juniors Players		Seniors Players	
	Mean	S.D.	Mean	S.D.
Age (Years)	15.90	± 1.80	23.35	±0.96
Height (cm.)	159	±0.59	170	±0.10
Weight (kg.)	45.23	±4.66	63.52	±4.89

From table 2, it was found the mean (S.D.) of personal data i.e., age, height and weight of the Juniors Players group were 15.90 (±1.80), 159 (±0.59), 45.23 (±4.66) and Seniors Players group were 23.35 (±0.96), 170 (±0.10), 63.52 (±4.89) respectively. Below in graph 1, the personal data of the subjects were presented.

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Graph 1: Graphical representation of personal data of Senior and Junior Players.

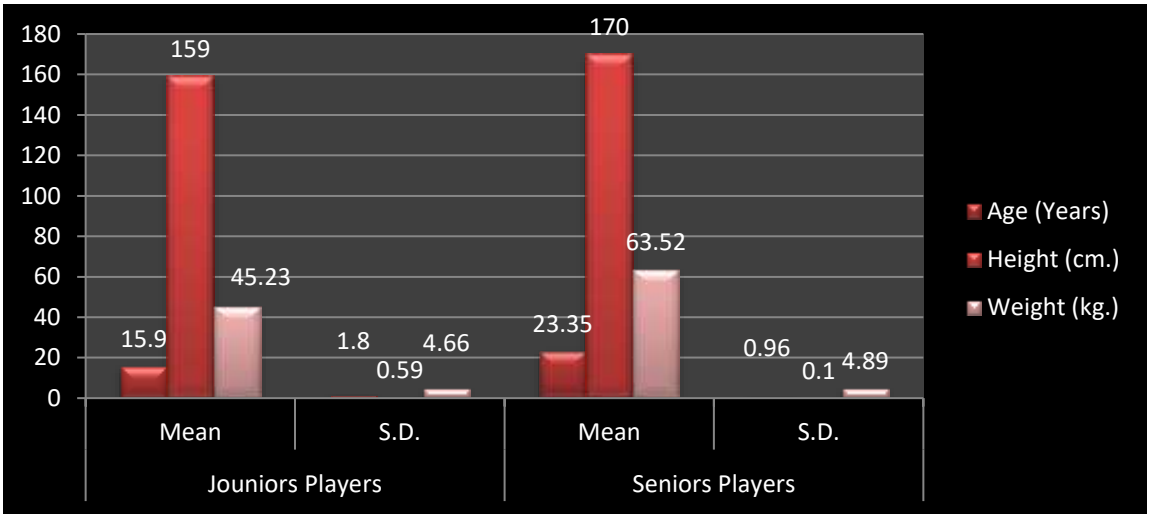

Table 3: Shows the difference of Mean and S.D. of reaction ability of the subjects.

Reaction ability	Junior Football players		Senior Football Players		't' value
	Mean	S.D.	Mean	S.D.	
Hand reaction	0.39	±0.032	0.48	±0.037	5.80*
Foot reaction	0.41	± 0.049	0.62	± 0.039	0.069

From table no.3, it was observed that the mean (S.D.) on the hand and foot reaction of Junior Football Players subjects were 0.39 (±0.032) & 0.41 (± 0.049) and young adult subjects were 0.48 (±0.037) & 0.62 (± 0.039). From the above data, t-value of hand and foot reaction were found 5.80 and 0.0069 at the 0.05% level of significance. It was evident that the calculated value of 't' for hand reaction was higher than the table value i.e., 5.80>2.009. So, it can be assessed that there was significant difference on hand reaction ability between Senior and Junior Football Players. On the other side, the calculated value of 't' for foot reaction was lower than the table value i.e., 0.0069<2.009. So, it can be explored that there was no significant difference on foot reaction ability between Senior and Junior Football Players.

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Graph 2: Graphical representation of reaction time of Senior and Junior Football Players.

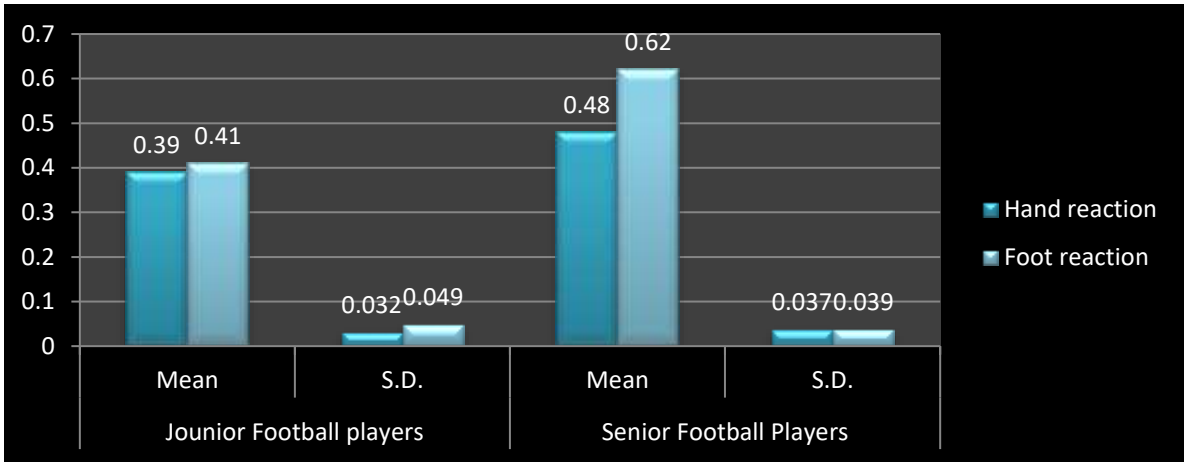
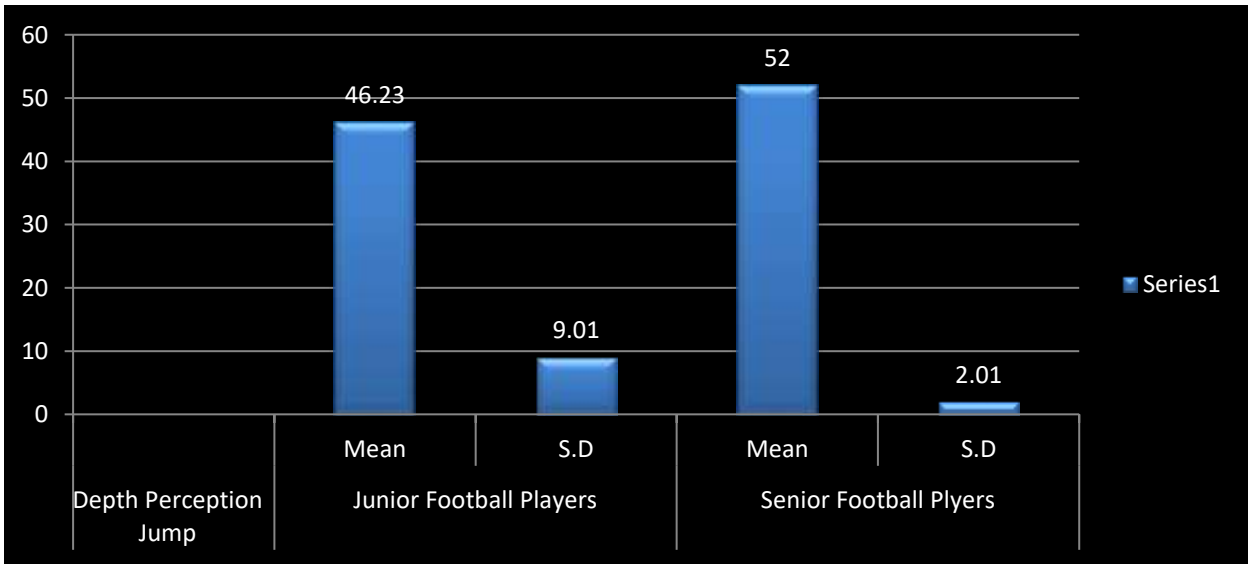


Table 4: Shows the difference the Mean and S.D of perception jump test of the subjects

Depth Perception Jump	Junior Football Players		Senior Football Plyers		"t" Value
	Mean	S.D	Mean	S.D	6.23*
	46.23	± 9.01	52	± 2.01	

From the table 4, it was observed that the mean (S.D.) of the perception jump Senior and Junior Football Players were 46.23 (±9.01) and 52.00 (±2.61). From the above data, t- value was found that was 6.23* at the 0.05% level of significance. It was evident that the calculated value of 't' is higher than the table value i.e., 6.23*>2.009. So, it can be assessed that there was significant difference of kinesthetic perception between Senior and Junior Football Players.

Graph 3: Graphical representation of perception jump of Senior and Junior Football Players.



DISCUSSION

In this study, reaction ability and kinesthetic perception were studied and compared between Senior and Junior school and college going subjects. From this study, it was revealed that there was a significant difference on hand reaction ability and kinesthetic perception. Foot reaction ability that also been studied and also had a difference but it was not statistically significant. The result of this study agreed with Samanta *et al*., 2016 [7]. They Conducted a comparative study on kinesthetic perception and reaction ability between Kathak and Aerobics male dancers in 2016. From that study, they found all parameters were significant difference between kathak and aerobic dancers. In the present study, hand reaction and kinesthetic perception were also found significant difference between Senior and Junior Football Players. The significant difference that occurred while analyzing hand reaction ability and kinesthetic perception of Senior and Junior Football Players were may be due to the age and activity of CNS. Every person usually uses hand fingers to grip a bat, ball or any object. So, the fingers of the hand are more active than legs. This activation of the hand fingers become more stronger with the functions of CNS and age. And as kinesthetic perception is related to six sense , so this perception ability also matures more with age. In spite of these shortcomings, present researchers demonstrated objective findings in this study, primarily the superior reaction ability of hand, kinesthetic perception of Senior Football Players versus Junior Football Players.

CONCLUSIONS :

Based on the results of the study the following conclusions were drawn:

1. There was a significant difference on Hand reaction ability between Senior and Junior Football Players.
2. There was no significant difference on Foot reaction ability between Senior and Junior Football Players.
3. There was a significant difference on Kinesthetic perception between Senior and Junior Football Players.

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