# STUDY ON RELATIVE IMPORTANCE OF SOMATOTYPE PSYCHOLOGICAL PARAMETERS AND BASIC SOCCER SKILLS WITH RESPECT TO POSITION OF PLAY

**A SYNOPSIS OF THE THESIS SUBMITTED TO THE JADAVPUR UNIVERSITY FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN ARTS**

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# INTRODUCTION

Soccer is one of the most popular sports watched with great interest in all countries of the World. Soccer, more commonly known as simply football is a team game played with a spherical ball between two teams of eleven players each. Soccer is played at a professional level all over the World. Millions of people regularly go to football stadiums to follow their favorite teams, while billions more watch the game on television or on the internet. A very large number of people also play football at an amateur level. According to a survey conducted by FIFA published in 2001, over 240 million people from more than 211 countries regularly play football. Football has the highest global television audience in sports **(www.fifa.com).**

Fundamental position of players and basic skills to be used by there are not same for all. The skills needed for a goal keeper is different from the skills require for midfielder or attacker. Thus soccer players may be of different ability in execution of the fundamental skills because of different demand of position of play.

Soccer formation describes how the players in a team generally position themselves on the ground. Formation are generally denoted how many players are in each row of the formation. The choice of formation is typically made by the coach and team management. Formation depends on the situation of the game.

Players in one soccer team tend to have varying body composition and body shapes. Soccer players carry their weight over a distance; by so doing they should have a lean body composition in order to achieve a better movement economy. Studies in soccer revealed that most soccer players are ectomorphic-mesomorphs **(Bandyopadhyay, A. (2007)** and **Gil, S.M, Gil, J, Ruiz, F, Irazusta, A, J, & Irazusta, J. (2007)**. Anthropometry comprises of measurement of physical characteristics such as weight and height, as well as body composition measurements that include percentage body fat (%BF), lean body weight (LBW), body mass index (BMI), limb lengths and girths, as well as limb and body circumferences. Somatotype is a technique used to describe the relative fatness (endomorphy), relative musculo-skeletal robustness (mesomorphy), and the relative linearity or slenderness (ectomorphy) Carter, J.E.L. & Heath, B.H. (1990).

The analysis of somatotype of athletes from different countries of the world has revealed some differences in their anthropometric characteristics. For Example,

Turkish soccer players were classified as balanced mesomorphs (4-2, 4-8, 2-3), featuring a performance of a muscle-skeletal component and a balance of fat and linearity components **(Hazir, 2010)**. In case of Zimbabwean soccer players, the mean somatotype rating reached values of 1-4, 4-4, 3-2, indicating ectomorphic-mesomorph **(Makaza, Amusa, Tapera & Gundani, 2012)**. Croatian amateur soccer players were classified as endomorph-mesomorph. In comparison to elite soccer players, Croatian amateur soccer players were more endomorphic and less mesomorphic. It is very likely that such body build diminishes the quality of their performance in competitions **(Erceg, Grgantov & Milic, 2013)**. There is currently a lack of studies to show differences in the somatotypology of soccer players of different countries and our country, which would be examined at the same time and using the same tools. In the present study the relative importance of basic soccer skills with respect to position play was analysed.

Therefore, this study was to identify the somatotyping profile of professional soccer players and to verify differences according to their playing positions. In addition, different equations to determine body composition were applied in order to ascertain which gave similar results for this population.

‘‘Sports psychology is the application of psychological principles to sports and physical activity at all levels of skill improvement.’’ Browne and Miihoney. Sports psychology is an important ingredient of sports training programme and deals with the way in which various psychological states and straits influence sports performance. It is the application of psychology to the issues and problems in the field of sports as the problems of sports persons are unique, different subtle and complex. Therefore, the main purpose of sports psychology is to understand the behavior of an athlete, to modify it according to the demands of situations and to optimize the benefits for elite performance and excellence.

Sports Psychology is playing and ever-increasing role in the influencing soccer performance. As Ajax Football Club in Holland, their selection policy and 18 years old players depends 80% of the time on the intelligence and personality of the footballers! A sports Psychology can identify weaknesses in the Psychological make-up of a player and provide the necessary counselling. So that the player can continuously play his optimal level of performance. Besick himself mentions that players and coaches must

look beyond Physical evaluation to assess underlying mental, emotional and even lifestyle issues.

Testing the personality of the player may prove beneficial. The coach can have an idea of the differences in personality between players and thus learn how to better handle this issue. Tests have shown that successful footballers possess superior mental and emotional health (Less anger, tension and more vigor) than others who may need psychological support/counselling.

Sports Psychology can also measure motivational and attention levels. Studies on Australian football have shown that top teams scored highly in test on factors such as drive, determination, leadership and mental toughness. Similarly, a player's performance can depend on this arousal levels which refer to the level of awakeness, attention and alertness. As arousal levels increase so does the level of performance although there are optimal levels which should not be passed. Again a Sports Psychologist can help find and maintain a player mentally at these optimal levels.

Once a Sports Psychologist has discovered the personality, motivational and attentional styles of a group of players then improvements can be undertaken. Areas such as relaxation and mental imagery (where players picture themselves performing particular skills and actions during a game) can be used Imagery self-hypothesis has been found to be useful as it allows players to narrow their attention and remove distractions. Goal setting concentration and self-confidence sessions can also be implemented.

In the present study 'soccer' has been used to identify the ball game generally understood as Association. It is a form of Soccer played by two teams of eleven players each with a ground ball which may not be handled during play except the goalkeeper. Basic Soccer skills were understood as the basic techniques used by the players during game situation. These include Passing. Dribbling, Shooting, Kicking, Heading, Goalkeeping etc.

This issue has implications on overall soccer skills. For example, **Malina et at, (2005)** reported no significance differences in ball control, dribbling, passing and shooting in youth soccer players based on position, where as reported by **Lee et al, (2013)** found that long distance kick power was stronger in defenders among middle school players. These differences suggest that different physical training based on

position cannot be the only influencing factor. Previous studies have found no significance in physical characteristics or trained ability by position. As an explanation, soccer players generally train using normal exercise routines rather than individualized physical or skillful abilities for specific positions. Therefore, more research would be helpful to develop important physical skills in soccer players categorized by positions.

Success in soccer is dependent upon a variety of factors including the physical characteristics and psychological capacities of the players, their level of skill, their degree of motivation and tactics employed by them against the opposition. Some of these factors are not easily measured objectively, but others can be tested using standardized methods and can provide useful information for coaches.

Research findings indicate that soccer performance is dependent on somatotyping profile, psychological parameters such as Aggression and Achievement motivation etc. and Basic Soccer Skills such as Passing, Dribbling, Shooting, Kicking, Heading and General Soccer Ability. Research findings also indicate that players at different levels and in different playing positions also differed in these parameters. Advanced countries identify the talents giving due considerations to the performance determining factors and then develop the identified talents on scientific lines. No such efforts are being made in our country and hence low standard of soccer and hence we are not able to compete with our Asian counterparts even, leaving aside top South-American, European countries etc. In order to raise the standard of state level soccer it is felt necessary to conduct a research study to identify the parameters of soccer players playing at different positions so that right type of parameters can be selected and scientific training can be given to develop those selected parameters, their fitness level as well as performance level. After reviewing the literature related to above mentioned variables and how the Somatotyping Profile, psychological parameters and Basic Soccer Skills have impact on the different playing positions of soccer players and their performance, the researcher has decided to undertake the present study.

## STATEMENT OF THE PROBLEM

The present investigation was planned to assess the importance of Somatotype Psychological Parameters and basic soccer skills with position of play. Therefore, the research topic was stated as, **"STUDY ON RELATIVE IMPORTANCE OF**

**SOMATOTYPE PSYCHOLOGICAL PARAMETERS AND BASIC SOCCER SKILLS WITH RESPECT TO POSITION OF PLAY."**

## PURPOSE OF THE STUDY

The purpose of the study was as follows:

1) The purpose of the study was to analyze and understand the difference if any, among different groups of soccer players on the basis of position of play in selected Somatotyping Profiles and Psychological Parameters.
2) Basic purpose of the present research work was to study, analyze and understand the relative importance of Basic Soccer Skills with respect to position of play.
3) Purpose of the study was also to analyze the difference in performance if any, of different soccer groups of players on the Basic Soccer Skills.

## DELIMITATION OF THE STUDY

The study was delimited to the following aspects:

1) Subject for the study was selected from players having participation of Inter-University Tournaments and Kolkata Football League.
2) The study was delimited to 120 soccer players only.
3) These players were classified into four groups on the basis of playing positions: Goal Keepers, Defenders, Midfielders and Forwards.
4) Among the personal data the Age, Height, Weight, Somatotype were considered as physical characteristics and Aggression and Achievement Motivation were considered as psychological parameters.
5) For the purpose of measuring the Somatotype, method of skinfold measurements was used.

## LIMITATION OF THE STUDY

Present study was limited to the following conditions:

1) Dietary habits and other environmental factors related with daily living of the subjects could not be controlled.
2) Data of all the subjects could not be collected on the same day.

3) Psychological condition of the subjects during tests could not be controlled.
4) Time and finance were also limiting factors.

## HYPOTHESES

Present study was based on following hypotheses:

1) There would be no difference in somatotyping profile among different groups of positional soccer players.
2) There would be no difference in selected Psychological Parameters (Aggression and Achievement Motivation) among different groups of positional soccer players.
3) There would be no difference in performance of selected basic soccer skills in Passing, Dribbling, Shooting, Kicking and Heading among soccer players of different positions.
4) There would be no difference in General soccer ability among different groups of positional soccer players.

## SIGNIFICANCE OF THE STUDY

The results would be great significance for Physical Education and Sports towards the following ways:

1) The results of the study will help to understand quality of execution of basic soccer skills by different positional players.
2) The Result of the study will help to understand relative importance of basic soccer skills for different position of play.
3) The finding of the study will help to compare the Somatotype (Heath & Carter) of soccer players in different position of play.
4) The study will further help to compare psychological parameters of soccer players among Goalkeepers, Defenders, Midfielders and Forwards.
5) It will be possible to compare the players of different positions in soccer on the basis of their performance in basic soccer skills.
6) On the basis of the result, game strategy and player's position may be planned effectively in soccer.

# REVIEW OF RELATED LITERATURE

The review of related literature act as a guideline for identifying the general trend in the research work already done in the concerned field or area. This also helps the investigators in formulating the problems and in providing directions to the research undertaken.

**Masocha, V and Katanha, A. (2015)** Compared the study to determine the anthropometric and somatotype characteristics of male provincial youth league soccer players according to their playing positions of sixteen youth players (15.3±0.68 years) were purposively selected through volunteer participation from a club in Mashonaland Central Province of Zimbabwe. Somatotype was calculated using the Heath-Carter (1990) method. No statistically significant differences were observing among playing positions in both anthropometric and somatotype variables except in height. There were mean of anthropometric and somatotype for Zimbabwean youth players was slightly lower than that of players of similar age group around.

**Hazir, T. (2010)** Assessed the physical characteristics of soccer players according to playing level and position of 305 professional male soccer players [Turkish Super League 161 and Turkish First League 144) were involved in this study. The both physical characteristics and somatotype of players were significantly different between playing levels and positions. Although the somatotype of soccer players in both levels was dominated by the mesomorph category, players at the Although the higher playing level were more mesomorphic, and less endomorphic and ectomorphic than players at the lower level at all playing positions.

**Goswami, S., and Sarkar, L, N. (2017)** Compared the psychological characteristics among the players of football in relation to the player position. The analyzed sample included forty-five male players who participated in the All India football competitions. The age levels of the subjects were ranged from 18-25 years. Subjects were divided into three groups (each group consists of fifteen players) on the basis of their position of play (defenders, midfielders and forwards). The results revealed that the self confidence among the players in the different positions defender group is maximum in comparison to that of midfielder and forward groups; forward players shows better in aggression and achievement motivation than defender and midfielder players. Finally, it was revealed that the defenders and midfielders football

players were similar with regard to self-confidence, aggression and achievement motivation. The differences found in the studied variables with regard to the playing position are related to players' needs regarding the actions they perform.

**Joo, C. H. And Seo, D. (2016)** compared performance factors of youth soccer players according to position. A total of 101 high school soccer players were selected and were classified into goalkeeper (n=7), defense (n=37), midfield (n=39), and forward (n=18) positions. All subjects were subjected to the Wingate test for anaerobic capacity, shuttle run test for aerobic capacity, and pass, kick, dribble, and shooting tests for soccer skills. There was no significant difference in aerobic capacity according to position. It was suggested that middle and high school soccer players should improve aerobic, anaerobic capacity, and soccer skills irrespective position to achieve high-level soccer performance.

**Bloomfield, J., Polman, R. and O'Donoghue, P. (2007)**, studied the physical demands of different positions in (FA) English Premier League Professional Soccer Players from three positional groups (Defenders, Mid-fielders and Strikers) representing various professional clubs in 2003-2004 season and reported that significant differences existed between Strikers, Mid-field and Defending players in various kinds of body movements with the soccer ball and without soccer ball and have suggested different type of specific conditioning programme for different positions.

From the literature reviewed above, it has been detected that no endeavor has so far made to study the Somatotype, Psychological Parameters and Basic Soccer Skills of soccer players at different playing positions, especially in the four groups subjects and their age limit of 18 to 25 years, even though, research studies cited above revealed that there has the possibility of some differences among every soccer player with regard to their playing positions. It has been noticed that the Somatotype, Psychological Parameters and Basic Soccer Skills is highly suitable and authentic to find such playing positions differences. Hence, a solemn attempt has done by the investigator to investigated Somatotype, Psychological Parameters and Basic Soccer Skills of soccer players at different playing positions.

# METHODOLOGY

## SELECTION OF THE SUBJECT

The purpose of this study was to analyze the relative importance of Somatotype, Psychological Parameters and Basic Soccer Skills with respect to position of play. To achieve this purpose, one hundred twenty (120) elite soccer players were selected. The subjects had experience of participation in competitive soccer game like Inter-University Tournaments and Kolkata Football League. The age of the subjects ranged between 18 to 25 years. The break-up of number of subjects as per playing position have been presented in Table No-1

**Table No-1**

**Distribution of the subjects on the basis of playing position**

| Sl.no. | Position of play | No. of players |
|---|---|---|
| 1. | Goal Keeper | 25 |
| 2. | Defender | 39 |
| 3. | Midfielder | 26 |
| 4. | Forward | 30 |
| 5. | Total | 120 |

## CRITERION MEASURES

For the present study the parameters for measurement and analysis were selected from three different groups of variables namely Somatotype Profile, Psychological Factors and Basic Soccer Skills.

In personal data measurement were (i) Age, (ii) Height and (iii) Weight.

In somatotype profile the measurement were:

**a) Skinfolds:** (i) Biceps, (ii) Triceps, (iii) Subscapular, (iv) Supra-iliac, (v) Supra-spinal and (vi) Calf.

**b) Girths:** (i) Biceps and (ii) Calf.

**c) Breadth:** (i) Humorous and (ii) Femur.

In selected psychological parameters measurement were: (i) Aggression and (ii) Achievement motivation.

In selected basic soccer skills were (i) Passing, (ii) Dribbling, (iii) Shooting, (iv) Kicking, (v) Heading and (iv) General soccer ability was also considered as a criterion for measurement.

All these measurements were the selected criteria for this study.

## INSTRUMENT AND TOOLS USED

The following instruments and tools used for collecting data in the present study.

1) Digital weighing machine to measure body weight in kg.
2) Stadiometer to measure standing height in centimetre.
3) Herpend skinfold caliper to measure different skinfold in millimetre.
4) Sliding caliper to measure breadth in centimetre.
5) Steel tape to measure girth in centimetre.
6) Digital stop watch to measure time in second.
7) Aggression scale (AS) to measure aggression by Dr. Rajeev Luchan Bharwadwaj with 28 questions (2005).
8) Achievement Motivation Scale (AMS) to measure achievement Motivation by Dr. P.S. Goregaonkar & Dr. R.D. Helode with 40 questions (2002).
9) Mor-Christian Soccer Skill Test to measure Passing.
10) Mor-Christian Soccer Skill Test to measure Dribbling.
11) Mor-Christian Soccer Skill Test to measure Shooting.
12) Warner Soccer Skill Test to measure Kicking.
13) Van Rossum and Wijbenga Soccer Skill Test to measure Heading.
14) McDonald Soccer Skill Test to measure General Soccer Ability.

## PROCEDURE FOR COLLECTION OF DATA

In order to acquaint the participant with specific purpose of the research being conducted, all the participant was assembled in various in Universities and

Clubs ground. All the necessary information pertaining to the requirement of the testing procedure was imparted to them. To make the research findings more authentic a positive attitude towards investigation emphasized.

Somatotyping profile was selected as one of the criteria for measurement and it was measured by Heath Carter method. Aggression and Achievement motivation were selected as the psychological criteria. Aggression was measured using the questionnaire developed by Bharwadwaj and Achievement motivation was measured using the questionnaire developed by Goregaonkar and Helode. Performance in selected Basic Soccer Skills were measutred by using following standardized soccer skill tests - Mor-Christian Soccer Skill tests for Passing, Dribbling and Shooting; Warner Soccer Skill test for Kicking; Rossum and Wijbenga Soccer skill for Heading. The general soccer ability was tested using McDonald Soccer Skill test.

### PROCEDURE FOR ANALYZING DATA

The collected data were analyzed using standard statistical procedure.

Mean, SD, standard error, maximum and minimum values were calculated as descriptive statistics.

Differences among group means were analyzed for testing statistical significance using the technique of analysis of variance (ANOVA). Exact location of the difference between mean values was identified using least significance difference (LSD) as post-hoc test.

## RESULTS AND DISCUSSION

In the present study the differences among four groups of positional soccer players for Somatotype Profile, Psychological Parameters and Performance in five Basic Soccer Skills were analyzed and compared. The groups were also tested for General Soccer Ability, inter-group comparison and judge's ratings. On the basis of analysis and discussion of data, following results were obtained.

## SOMATOTYPE PROFILE

In present study the somatotype profile of different groups of subjects were analyzed. Results obtained through analysis of data revealed the following:

1) Values of the somatotype profile of four different groups- Goalkeepers (3.17, 3.25, 2.82), Defenders (2.97, 3.34, 3.04), Midfielders (2.96, 3.37, 2.84) and Forwards (2.53, 2.98, 3.36).
2) Inter group analysis of somatotype profile revealed no significant inter-group differences among the somatotype components.

## PSYCHOLOGICAL PARAMETERS

1) In Aggression the group of Forwards was significantly higher than the group of Goalkeepers and Defenders.
2) In Achievement Motivation there was no significant difference among the selected groups of positional soccer players.

## PERFORMANCE IN BASIC SOCCER SKILLS

1) In passing the performance of all the four different groups of positional soccer players were above average. The performance of mean values was 8.16 ±1.70 (No. of Passes) for the group of Goal Keepers, 8.26±1.48 (No. of Passes) for Defenders, 8.80±1.20 (No. of Passes) was for Mid-fielders and 8.37±1.24 (No. of Passes) for Forwards.
2) There were no statistical significant differences among the groups of positional soccer players in basic soccer skill of passing.
3) In dribbling the performance of all the four different groups of positional soccer players was measured in time (second). The mean performance scores were 35.42 ±03.5 (second) for the group of Goal Keepers, 33.43 ±03.36 (second) for Defenders, 32.14 ±2.74 (second) for Mid-fielders and 32.79 ±3.10 (second) for Forwards.
4) With greatest time taken to complete the specific task of dribbling, the group of Goal keepers appeared to be lowest in performance in this basic soccer

skill of dribbling. All other groups were significantly higher in performance than the group of goal keepers. The group of Mid-fielders appeared to be the best of all groups in performance in dribbling.

5) In shooting the performance of all the four different groups of positional soccer players were above average. The mean performance scores were 108.64 ±14.90 (points) for the group of Goal Keepers, 112.51±19.26 (points) for Defenders, 115.69±11.64 (points) was for Mid-fielders and 114.60±11.65 (points) for Forwards.

6) There were no statistical significant differences among the groups of positional soccer players in the basic soccer skill of shooting.

7) In kicking for distance the performance of all the four different groups of positional soccer players was measured in meter. The mean performance was 42.48 ±1.70 (meter) for the group of Goal Keepers, 44.61 ±6.01 (meter) for Defenders, 41.69 ±5.06 (meter) for Mid-fielders and 43.13 ±4.82 (meter) for Forwards.

8) There were no statistically significant differences among the groups of positional soccer players in the basic soccer skill of kicking for distance.

9) In heading the performance of all the four different groups of positional soccer players was measured in number of headings continuously in a single trial. The mean performance scores were 15.00 ±10.15 (No. of Head) for the group of Goal Keepers, 17.62±10.41 (No. of Head) for Defenders, 16.16±07.38 (No. of Head) for Mid-fielders and 15.13±05.64 (No. of Head) for Forwards.

10) There were no statistically significant differences among the groups of positional soccer players in the basic soccer skill of heading.

11) Finally, the results revealed that the performance of dribbling as basic soccer skill was significantly lower for the group of Goalkeepers than other three groups- Defenders, Midfielders and Forwards.

**GENERAL SOCCER ABILITY**

1) In General Soccer Ability the performance of all the four different groups of positional soccer players was tested using Mc Donald Soccer Ability Test and measured in number of kicks within 30 second of time. The mean performance scores were 25.24 ±2.39 (No. of Kicks) for the group of Goal Keepers, 24.97±2.55 25.24 ±2.39 (No. of Kicks) for Defenders, 25.27±2.52 25.24 ±2.39 (No. of Kicks) for Mid-fielders and 25.57±1.99 25.24 ±2.39 (No. of Kicks) for Forwards.

2) There were no statistically significant differences among the groups of positional soccer players in General Soccer Ability.

**JUDGES RATINGS**

1) It is such that the group of Goalkeepers was rated with lowest percentage score by the experts except Kicking.
2) The group of Defenders were rated with highest percentage score for Kicking.
3) The group of Midfielders were rated with highest percentage score for Passing.
4) The group of Forwards were rated with highest percentage score for Dribbling, Shooting and Heading, and
5) Overall importance of fundamental skills was rated lowest for Goalkeepers and very high for both Midfielders and Forwards

**DISCUSSION ON THE RESULTS**

Present research study focused on analyzing the relative importance of Somatotype Profile, Psychological Parameters and Basic Soccer Skills with respect to position of play. The performances of different groups of positional soccer players viz. Goal-keepers, Defenders, Mid-fielders and Forwards in somatotype profile viz. Endomorph, Mesomorph and Ectomorph, Psychological parameters viz. Aggression and Achievement Motivation in five basic soccer skills viz. passing, dribbling, shooting

for accuracy, kicking for distance and heading for number of times in a single trial were measured and statistically analyzed for checking inter-group variation.

Results of Somatotyping profile indicates that Goal keepers are Endomorph-Mesomorph; Defenders are Ectomorph– Mesomorph, Midfielders are slightly more Mesomorphic and Forwards are slightly more Ectomorphic, Forwards are significantly higher than Goalkeepers and Defenders in aggression. But Achievement motivation there was no significant difference among different groups of positional soccer player in Achievement Motivation.

Results of the study have indicated that the group of Goalkeepers exhibited significantly lower performance in dribbling than all other groups of positional soccer players. This study clearly indicates that the relative importance of dribbling as a basic soccer skill in lesser for Goal keepers than all other positional players in the game of soccer. This might be due to the fact that during game situation, the Goal-keepers very rarely require to dribble the ball. Most of the time the Goal-keeper remains inside the penalty box and is allowed even to handle the ball. He does not need to cross over the opponent with ball, which is the purpose of dribbling.

But, results indicated that the group of Goalkeeper's performed at per other groups of positional soccer players because the difference in performance of this group in all other four basic soccer skills was not statistically significant. This might be due to the fact that the Goal-keepers also require to use other basic soccer skills like passing, shooting for accuracy, kicking for distance and even juggling the ball with head.

Results also reported that there was not statistically significant difference among all the four groups of positional soccer players in the selected basic soccer skills except the dribbling as discussed above.

This might be due to the two reasons. Firstly, the modern game of soccer is based on the concept of 'Total game/ total football'. Though the players excepting the Goal-keepers are arranged in different positions of the field with some basic responsibility, everyone needs to play everywhere and perform all types of positional requirements most of the time during game situation. So, modern soccer compels different groups of positional players except Goal-keepers to be equally competent in all the basic soccer skills.

Secondly, in the performance structure of the game of soccer, the basic skills like passing, dribbling, kicking, heading etc. are of fundamental importance. So, everyone intends to play soccer need to learn the basic soccer skills perfectly and practice them for better performance. So, except Goal-keepers all other positional soccer players develop mastery on the basic soccer skills.

These have been reflected in the another result of the present study regarding the inter-group difference in Basic Soccer Ability of different groups of positional soccer players. The results indicated that the inter-group difference in basic soccer ability was not statistically significant.

In order to substantiate the results of the present study, the researcher conducted a small survey with the experts for their opinion on the issue of relative importance of basic soccer skills with respect to position of play. The experts were qualified soccer coaches. In results the group of Goal-keepers was adjudged as the lowest performing groups for all the selected basic soccer skills except kicking for distance. The results also indicated significant difference in performance of passing, dribbling, shooting and heading among four groups of positional soccer players.

Further research on this issue would clarify the results.

**TESTING OF HYPOTHESES**

Present study was based on four hypotheses. According to the first one there would be no difference in relative importance of somatotype with respect to position of play. The results of the study proved that there was no statistically significant difference in Somatotype profile among different groups of soccer players. So, on the basis of results of the study the first hypotheses were accepted.

In the second one, there would be no difference in relative importance of psychological parameters (Aggression and Achievement motivation) with respect to position of play. The results of the study proved that the group of Forwards was significantly higher in aggression than the groups of Goalkeepers and Defenders. So, the formulated hypotheses were not accepted for this psychological parameters of aggression. But the results indicated that the inter group difference in achievement motivation was not statistically significant. So, the hypotheses were accepted for the psychological parameters of achievement motivation.

The third hypotheses were that there would be no difference in relative importance of basic soccer skills with respect to position of play. The results of the study proved that the group of Goal keepers was significantly lower than all other groups of positional soccer players in performance of basic soccer skills. So, on the basis of results of the study the third hypothesis was not accepted.

The fourth hypothesis of the study assumed that there would be no difference in General Soccer Ability for different groups of positional soccer players. The results of the study confirmed that the inter-group difference in General Soccer Ability of four different groups of positional soccer players was not statistically significant. So, on the basis of results of present study the fourth hypothesis has been accepted.

## SUMMARY

Soccer is a team game. Each team is formed with eleven playing members. These eleven players are placed on the field at eleven well defined positions with specific responsibilities. Though, modern soccer is a team game, the players follow their basic responsibilities even during game situations. Important such positions for the game of soccer are: Goal keepers, Defenders, Midfielders and Forwards. As the demand of the job for different positions differs, it is expected that the players of different positions would vary in their physical structure, fitness level, mental make-up, technical expertise and tactical know-how.

On this proposition there have been a number of studies. On the basis of results some studies have reported that the players of different positions of play differ in body height and weight, body composition; motor fitness, self-confidence and aggression; and in performance of basic soccer skills. But, some other studies have reported results differently.

Depending on this knowledge base regarding intergroup variation in different performance factors for soccer, present study was planned to analyse the somatotyping profile, selected psychological parameters and basic soccer skills of different groups of soccer players selected from different positions of play. It was believed that the results would help to understand the relative importance of somatotype, psychological parameters and basic soccer skills with respect to position of play in a soccer game.

A total of one hundred twenty soccer players were selected as subjects for the study. Among them there were twenty-five Goal Keepers, thirty-nine Defenders, twenty-six Midfielder and rest thirty Forwards. The subjects were selected on the basis of purposive sampling principle. The subjects had the experience of participation in Intervarsity tournaments and Kolkata Football league tournaments.

Somatotyping profile was selected as one of the criteria for measurement and it was measured by Heath Carter method. Aggression and Achievement motivation were selected as the psychological criteria. Aggression was measured using the questionnaire developed by Bharwadwaj and Achievement motivation was measured using the questionnaire developed by Goregaonkar and Helode. Performance in selected basic soccer skills were measured by using following standardized soccer skill tests- Mor-Christian Soccer Skill tests for passing, dribbling and shooting; Warner Soccer Skill test for kicking; Rossum and Wijbenga Soccer skill for heading. The general soccer ability was tested using McDonald Soccer Skill test.

Collected data were analysed using appropriate statistical methods. Mean and standard deviation were calculated as the measure of central tendency and variability. Statistical significance of the difference among the mean values of different groups was tested using the technique of Analysis of Variance. Exact location of the difference was tested using post-hoc test.

On the basis of results of the study the conclusions were drawn.

## CONCLUSION

On the basis of results obtained in the present study, following conclusions were drawn:

1) Somatotyping profile indicates that Goal keepers are Endomorph-Mesomorph; Defenders are Ectomorph– Mesomorph, Midfielders are slightly more Mesomorphic and Forwards are slightly more Ectomorphic in nature.

2) Forwards are significantly higher than Goalkeepers and Defenders in aggression. But there was no significant difference among different groups of positional soccer player in Achievement Motivation.
3) Among the basic soccer skills, Goal-Keepers are lowest in performance ability in dribbling than all other groups of positional soccer players – Defenders, Mid-Fielders and forwards.
4) There was no significant difference among different groups of positional soccer player's viz. Goal-Keepers, Defenders, Mid-Fielders and forwards in basic soccer skills viz. Passing, Shooting, Kicking and Heading.

5) There were no significant differences among different groups of positional soccer player's viz. Goal-Keepers, Defenders, Mid-Fielders and forwards in General Soccer Ability.

## RECOMMENDATION

On the basis of results obtained and conclusions drawn in this investigation, following recommendations were made for future investigation and practical application.

**For Practical Application:**

Results of the present study may be used for selection of positional players and their training for the similar team games.

**For Future Investigation:**

**1)** Similar studies may be planned to analyse the relative importance of basic soccer skills with respect to position of play for similar other team games like field hockey, cricket etc.
**2)** Future studies may be planned to analyse the somatotyping profile and body composition of the players with respect to position of play for similar other team games like field hockey, cricket etc.

**3)** Similar studies may be planned to analyse the selected psychological parameters with respect to position of play for similar other team games like field hockey, cricket etc.

**4)** Similar future studies may also be conducted with female players of similar team games.

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