International Journal of Physical Education and Sports Sciences

Vol. VIII, Issue No. XV, July-2015, ISSN 2231-3745

AN ANALYSIS UPON VARIOUS RELATIONSHIPS IN SELECTED MOTOR FITNESS VARIABLES: A CASE STUDY OF PLAYING ABILITY AND PERFORMANCE IN FOOTBALL GAME

AN INTERNATIONALLY INDEXED PEER REVIEWED & REFEREED JOURNAL

www.ignited.in

International Journal of Physical Education and Sports Sciences
Vol. VIII, Issue No. XV, July-2015, ISSN 2231-3745

An Analysis upon Various Relationships in Selected Motor Fitness Variables: A Case Study of Playing Ability and Performance in Football Game

Naveen

Asst. Professor, Jat College, Hisar

Abstract – Football is probably the most popular game worldwide but there is still limited scientific information available concerning the physique and performance qualities of elite Indian footballers. Team games are sports where size, shape, body composition and fitness all play an important part in providing distinct advantages for specific playing positions. Hence an attempt has been made to study the various anthropometric parameters, motor ability and physiological profiles of the different Indian national club footballers and also to compare the above parameters with their international counterparts.

Motor fitness is a present aptitude for physical skills, includes strength and co-ordination enriches today's Manpower in players performance. The study focuses on selected motor fitness components to ensure the playing ability among low and high performers of State level Football players.

----------♦----------

INTRODUCTION:-

Football is one of the most popular games in the world in general. Football being most competitive sport, a player who is Physically fit does not only enjoy more but he is also capable of using all the skills attained and mastered by him throughout, right from beginning to end of the game. The twin combination of both skill and physical fitness is indispensible for a player without either of which he will not be able to achieve much, specifically in order to play any ball game competently.

However, the word physical fitness and motor fitness are often used interchangeably. The term motor fitness was developed to describe a broad concept than physical fitness. This extensive term means the ability to perform basic motor. A Comparative Study of Motor Performance Level 409 skills efficiently and effectively.

Power, balance, agility, speed, reaction time and kinesthetic perception are the traits of motor performance, and these traits plays major role in enhancing the performance of any game's skills. With a good and well efficient combination of all these motor performance traits a player can give all his/her utmost throughout the most strenuous of competitive matches. Muscular power, often referred to as explosive power, is a combination of speed and strength an important in vigorous performance because it determines how hard a person can hit, jump and push etc. There are various means and method to increase power by increasing strength without sacrificing speed, by increasing speed of movement without sacrificing strength and by increasing both can be stressed by applying strong force through rapid motion.

Agility is the ability to change the direction of body or its parts rapidly' is dependent on strength, reaction time, speed of movement and muscular coordination. Quick start and stops and quick changes in direction are fundamental to good performance in Football Running speed is not only an athletic event itself, but it is an important factor in almost all court and field games it can result the difference in whether a performer is able to gain an advantage over his/her opponent. It is determined by the length and frequency (speed) of strides and mostly dependent upon speed of muscular and neuromuscular coordination. Balance is involved to some degree with all motor performances and some performances heavily depend upon balance.

The game football is played in Asian and Olympic games and has attained an impressive level of popularity at National and International level sports. The game also played in various countries as a professional game including Asia. In India it is one of the simple and popular games.

The game began in England in the 12th century but Edward II banned it in 1389 and Henry in 1401. The Monarch could not stop the interest of peoples and football became popular. The football rules were first framed in 1862 and were revised in 1863. The same year football association of England was formed. Considering the popularity of the game, seven Nations met on 21st May 1904 to form the Federation International De Football Association (FIFA). FIFA organized world football championship in 1930.

The game football combines skills from other games like handball, hockey etc. It involves skills like running, dribbling, passing, kicking, goal keeping etc. Its recreational values and enjoyment level keeps attention of male and females at professional as well as collegiate levels. This is the game of accuracy, agility, flexibility, endurance and perception. The theme of the game football requires players' athletic ability as well as good motor ability.

EFFECTIVE TRANSFORMATION IN BASIC-MOTOR ABILITIES OF FOOTBALL

From the aspect of its structure, football is a very complex sport activity in which quality of the game depends on a number of factors which significantly contribute to the success of a football game. One training period represents a transformation process, and the purpose of this process is to reach optimum effects for the shortest period of time possible. With the purpose of successful management of sport training process, it is very important to choose adequate training means and to apply those means in a proper manner and at a proper difficulty level.

Technical preparation of football players is the main precondition for efficient motion performance. More precisely, technical preparation enables that motor potential of a soccer player reaches its maximum. We have to stress that further progress in terms of technical improvement of a soccer player is not possible without parallel work on development and maintenance of those motor abilities which are vital for the game of football (Smajić, M., Molnar, S., 2007).

All this requires precise programming based on individual needs of athletes, as well as controlling working effects and potential corrections based on gained data. Scientific contribution of this research is reflected exactly in solving the problem of adequate selection of training programs which were applied in the training process of football players12 to 14 years of age. Quarterly working program made for the purpose of this research (Ismaili, H. 2010), indicates that by making a more precise selection of training program one can expect faster and better quality changes in basic-motor abilities of young football players.

LITERATURE REVIEW

The contemporary status of research on physical fitness is an outcome of the vast literature available on physical fitness: comparison of physical fitness with other aspects, factor analysis of variables representing physical fitness, multiple correlation and regression analysis with the developed criteria and so on. This study involves the literature pertinent to the construction and standardization of specific physical fitness test for soccer players, yet, pertinent literature, and though peripheral to physical fitness, deemed to be relevant and that which are effective for the meaningful study was also incorporated.

A sincere and exhaustive attempt has been made by the researcher to present in this study some relevant and useful studies and references covering different areas after exploring all possible sources and the findings and conclusions of those studies and references have been carefully extracted and cited below in order to make a comparison with the present study and interpretation thereon.

This study intends to establish norms of a "selection criteria" for composing a standard football team. In this study, the investigator has reviewed the literature and found that there are very limited reports available in football game. The investigator has summarized few of them.

Mc David predicted the football potential of sixty seven football players from their score on a football potential test. The test battery consisted of motor ability items as well as football skill items (power, strength, agility, speed. Mc Cloy's classification index, time to hit, and audio visual work out-put). Substantial corrections were obtained between most test items and the test criterion, the sum of X scores, size, as depicted by Mc Cloy's classification index, has a negative non-significant correlation with the criterion. The discriminative power of the battery was evidenced by the highly significant correlation between the test criterion and the coach's ranking of individual players. It was concluded that athletic potential in football can be predicted by testing.

Christian studied the contribution of selected variables to college football performance Thirty members of South-Eastern State Collegiate Football Teams were selected for this study. From the multiple correlation coefficient it was found that the best predictor of the game percentage for backs was lateral movement. For the line, the best predictor of the game percentage score was bench step. When he
combined the groups, the best predictor of the game percentage score was the vertical jump and also the 12-minute run.

Eaton has conducted a study to examine the criteria of football offences. The study examined the criteria upon which twenty one Massachusetts high school football

coaches built their offences. It was concluded that speed, ball control, simplicity, balance, deception, power, players confidence and timing must be made as basic criteria to be considered for the long gain, balance of offensive and defensive style, quarter back training and blocking angles.

Caru ct. al. compared the maximum anaerobic and maximal aerobic muscular power of young football players with corresponding non-athletic subjects. He found that the average maximum anaerobic muscular power in football players was significantly higher than non-players. On the contrary the maximal aerobic power does not differ significantly between two groups.

Verma investigated the differences in selected anthropometric characteristics between senior-junior and offensive-defensive players of football. Forty football players of Greater Gwalior were selected as subjects. They were divided into two groups of junior offense-defense and senor offense-defense groups respectively of 20 each. *T test were employed to find out the difference with the level of significance at .05. There were no significant difference between senior offensive and defensive players in calf girth, thigh girth, leg length, height and weight. However there were also no significant difference between junior offensive and defensive players in case of calf girth, leg length, height and weight, but they showed significant difference in thigh girth.

Bhattacharya compared the difference in selected anthropometric measurements and motor fitness components among football players in relation to positional play. Sixty male national level football players were selected as subjects for the study from West Bengal and Orissa. The age level of subjects ranged from 23 to 28 years. The anthropometric variables were body weight, standing height, arm length, leg length, fore-leg length, thigh girth, calf girth and foot length. The motor fitness components were speed, agility, power and cardio-respiratory endurance. The test-
rctest method were used top establish the reliability of the data. Speed, agility, power and cardio-respiratory endurance consisted the motor fitness components. One-way Analysis of Variance was used with the level of significance at .05 level.

Ellena in a study to find the relationship between physiological factors and football performance administered on the footballers the tests in 50 yard dash, right grip, left grip, and arm push and pull strength. The criterion measure of the study was the duration computed in minutes played by the footballers during the 1958 footbajl season. Speed correlated 0.60 and total strength 0.40 with the criterion. Both correlations were significant but the predictive value for minutes played was little.

Steinfeldt et al. (2011) studied drive for muscularity and conformity to masculine norms among college football players. With sociocultural norms in American culture suggesting that muscularity is associated with masculinity, men often strive for a muscular physique. Because the psychological research on this drive for muscularity has focused primarily on negative outcomes, our mixed-method study intended to assess the contextual nature of this dynamic by examining muscularity within a functional context (e.g., sport). We assessed the experiences of 197 college football players who operate in this “masculinized” context where muscularity is viewed functionally (i.e., maximizing athletic performance,

minimizing injuries). Quantitative results indicated that athletic identity and certain traditional masculine norms (i.e., risk taking, emotional control, primacy of work) were significantly related to the drive for muscularity among college football players. Qualitative results indicated that

football players primarily cited reasons for their desire to be muscular that were related to athletic functioning, while also acknowledging social benefits of external gratification (e.g., physical appearance, conformity, sex appeal) that are more prominent in the drive for muscularity literature. Results of this contextual examination were interpreted within existing theoretical frameworks of social comparison theory, masculinity socialization, and drive for muscularity.

METHODOLOGY

The purpose of the study was to find out the significant difference on motor fitness components and the ability of erformance among Chennai Team, Salem and Coimbatore Team; Trichy and Madurai Team football players Selection of subjects One hundred and fifty Tamil Nadu state level men players were selected as subjects and their age ranged between 20 to 25 years, they were in selected sports and games, from Football participated in Tamilnadu State level men Football Tournament held at Chennai in 2008-09 and they were divided in to three categories with fifty numbers in each Group I served as Chennai Team, Group II as Salem and Coimbatore Team and Group III served as Trichy and Madurai The variables were selected based on the discussions with experts, feasibility of the criteria, availability of tools, and the relevance of the variables to the present study. The investigator selected the following variables.

Sixty (N=60) Football playing male subjects, age group ranging from 14 to 16 years, will be pooled randomly as sample. The criteria for inclusion and exclusion of the subjects will be as follows:

- The players who are the regular practitioners of Football will be included in the experiment.
- The subjects who are expected to remain present till the experimental trials are finished will be incorporated in this study.
- The subjects irrespective any community, willing to participate in this study, will be incorporated.
- The players suffering from known serious health problems are to be excluded. Moreover, players having incapacitating physical illness as ruled out by clinical investigation will be excluded prior to the study.

The subjects will be divided into two equal group's viz., Gr. A and Gr. B. Group-A will participate in the "Yoga Exercise Schedule" and Group-B will be acted as "Control Group." There will be daily 45 minutes practice considering the above schedules except Sundays and holidays. During daily experimental period while all the subjects of selected groups will be involved with their respective training schedules, the subjects of control group will be kept busy with some recreational activities in Physical Education. Moreover, after completion of daily training schedule for 45 minutes there will be a regular practice of Football game for 30 minutes. All the experimental as well as control groups will combine participate in the same. The total duration of the experimentation will be at least for three months (including testing dates, Sundays and holidays) which include the one experiment, one follow-up programmes to record the long term effects of the experiment and one detraining programme of 6 weeks each.

The first step in the process of data collection for the study was to establish contact with the Football Team Managers / Coaches of the Tamil Nadu state (Boards and standard sports clubs), which fell within the sampling frame of the present study. Accordingly, letters were posted to coaches/boards, chief of the selected state teams, seeking their permission to administer the questionnaire and tests on the players. After confirmation of permission from the respective Head, Coaches/Team Managers were informed of the tentative dates of visits of the places. The permission letter is produced by the concerned head.

RESULTS

The purpose of this investigation was to compare physical, anthropometric, physical fitness and motor fitness measurements of Canadian amateur football players of different ability levels. Secondly, this Investigation was to determine which variables or groups of variables were the best Indicators of football ability at each playing level. Analysis of variance and Duncan's Multiple Range tests were performed into determine significant differences among the three playing levels of minor, high school and university and among the three positions of linemen, linebacker and back. Also, a multiple stepwise regression analysis was utilized to select the best linear prediction equation for -each position at each of the playing levels. Within-the regression equation, the relative importance of each variable was determined.

The various anthropometric, motor ability and physiological parameters of Indian National League club footballers were presented in these tables respectively. The mean age, height, weight, BMI and %BF were significantly different among footballers of different national clubs. Regarding motor qualities, flexibility, agility and VO2 max were also found to be significantly different among the footballers of different clubs ($P<0.01$). No such significant difference was observed in case of Standing Vertical Jump (SVJ) and 20 m sprint.

The results of the study reveal that the playing ability of university Basketball, Football and Volleyball players had significant variations at different times of the day. The above said findings of the study supported by the following findings of smith, Guilleminault and Efron,who conducted a study on circadian rhythms and enhanced athletic performance in the National Football League. Circadian rhythms produce daily changes in critical elements of athletic performance.

CONCLUSION

We believe that this study can contribute to safer and more efficient planning and programming of training with young soccer players, because the results of our tests helped us detect the basic motor abilities that are predominantly responsible for the success of the performance of situational motor abilities.

Further investigations are needed on the above studied variables along with physiological variables to assess relationships among them and with performances in team games and individual games football. The information derived from this study will not only serve scientists and coaches in their selection of young athletes, but provide guidelines for training programs for individual and team games football.

To conclude, a well-known, age-dependent development pattern in physical fitness and in football skills among adolescent football players was found in the present study. Although general and football-specific perceptual motor skills also developed with age, it seemed that football specific perceptual skills became more important with age and general perceptual motor skills less important.

REFERENCES

BARKER, M., T.J. WYATT, R.L. JOHNSON, M.H. STONE, H.S. O'BRYANT, C. POE, AND M. KENT. (1993). Performance factors, psychological assessment, physical characteristics, and football playing ability. J. Strength Cond. Res. 7: pp. 224–233.

BOUCHARD, C.; SHEPHARD, R.J. & STEPHENS, T. (1994). Physical activity, fitness, and health. Champaign, IL: Human Kinetics.

Brown L, Ferrigno, VA. and Santana, JC. (2000). Training for Speed, Agility and Quickness. Champaign, IL:Human Kinetics.

CARU, B.; LECOULTRE, L.; AGHEMO, P. & PINERA, L.F. (1970). Maximal aerobic and anaerobic muscular power in football players. Journal of Sports Medicine & Physical Fitness, 10: pp. 100-103.

Feza Korkusuz (2007). Uniting science and the art of football. Journal of Sports Science and Medicine, Vol. 6, Suppl. 10: pp. 1-2.

Ismaili, H. (2010). Transformacioni efekti bazično-motoričkih i situaciono-motoričkih sposobnosti kod nogometaša uzrasta 12 – 14 godina. [Transformational effects of basic-motor and situational-motoric abilities of football players aged 12-14 years. Master's Thesis, Faculty of Physical Education and Sport, University of Tuzla.

Jovanovic, M., Sporis, G., Omrcen, D. & Fiorentini, F. (2011). Effects of speed, agility, quickness training method on power performance in elite football players. J Strength Cond Res. 25 (5): pp. 1285-92.

Nabhendra Singh (2010). A Comparative Study of Motor Performance Level among Categorized Skilled Hockey Players. International Journal of Educational Administration, Volume 2, (2), pp. 403-410.

Smajić, M., Molnar, S. (2007). Relations of Basic-Motoric Abilities and Specific Preciseness of Football Players of 10-12 Age. Journal for Sport, Physical Education and Health SPORT MONT, number 12, 13, 14 /5, pp. 87-95. Podgorica.

Young, W., Farrow, D. (2006). A review of afility: practical application for strenght and conditioning. Strenght and Conditioning Journal, 28(5): pp. 24-29.