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AN EMPIRICAL STUDY OF COMMON CAUSES OF INJURIES IN FOOTBALL

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Abstract: The primary purpose of the research is to quantify the causes of injuries in elite football players. Total 1000 football players from different states and national level affiliated unites of all India football federation was selected as sample size of the study. The study depends mainly on primary source of data. The data was collected through respondents in the form of Questionnaires from 1000 football players of different Academies, Clubs, States and Universities affiliated to all India football federation separately, investigator contacting footballers personally and some cases at the venue of Inter-varsity, State tournaments. The demographic information was collected through respondents in the form of different descriptive tests. The demographic information about, age, height, weight etc. was obtained before seeking responses. For the present study, modified questionnaires for footballers was utilized after the modification of this questionnaires and the test -retest reliability was found out by the researcher. The results found that 19.34% Football Players reported that they injured due to Tackle. Whereas 15.67% football players reported that they injured due to collision. Furth more, 25.30% Football Players reported that they injured during the Running. More over. 09.50% football players reported that they injure due to Twist.

Keywords: Causes, Football, injuries, Empirical, Common

I. INTRODUCTION

Association football, commonly known as football or soccer, is one of the most popular sports in the world. England is considered to be the birthplace of modern football, when the world's first football club 'Sheffield Football Club' was formed there in the year 1857 (Singh,2008).

Due to the fast contact nature of running and playing football, players are commonly at risk of injuries such as sprains, strains, dislocations and fractures (*Bahr and Holme , 2003*; Drawer and Fuller , 2002b).. Although players wear a variety of padding and protective equipment to avoid injuries, these conditions can still occur during training and match play periods (Junge , 2004; Junge A, Chomiak , and Dvorak , 2000a ; Cromwell, & Walsh Gromely, 2000). The objective of Football game is for the players to cleverly put the ball into the opposing team's goal. The goalkeeper is the only player in the game who is allowed to use his hands to stop the ball.

In addition to the essential technical and tactical skills, it can be underlined that strength, speed, agility and the ability to repeat high-intensity actions are the main physical determinants of football performance (Hawkins RD and Fuller CW , 1999 ; Inklaar , Bol , Schmikli , and Mosterd 1996; Nielsen AB and Yde J, 1989) . During a football match, players run several miles and change directions several times, which helps burn calories and improve cardiovascular health.

Football also helps increase muscular endurance, strength and flexibility, thereby improving overall physical fitness (Dvorak J, Junge A, Chomiak J, Graf-Baumann T, Peterson L, Rosch D, and Hodgson R et.al.2000) ; Ekstrand J and Gillquist J , 1983a) Over the course of a season, 30.8 injuries occur for every 100 National Football League players, compared to 38.8 in the National Hockey League, 42 in Major League Baseball and 72.9 in the National Basketball Association, according to Injuries in 13 Seasons of Professional Sports 2021 Got from the analysis (The Wall street Journal,2023).

Injuries in football typically result from collisions with players, falling to the ground, rapid change of direction, foul play, overuse, direct collision with the goal post, tackling the ball, kicking the ball or exceeding the body part's capacity. Structural resistance occurs due to the use of force (Singh ,2008, (Hawkins, Colin & Fuller 1998; Singh S.K. et.al ,2008, Smith , Scott , Wiese ,1990;Singh, 2006).

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II. METHODS

Pilot Study

A pilot study was conducted immediately after the approval of this research, prior to the commencement of the main study. The purpose of the pilot study is to test the feasibility and logistical aspects of the proposed main study in particular the submission of detailed injury occurrence data and player activity data

Research Design

This study was involve a descriptive study of football players in a non-experimental, retrospective research design.Retrospective studies usually employ some form of questionnaire and ask subjects to recall injuries that occurred over a particular period.

Ethical consideration:

In collecting the data, the **researcher Follow to ethical** guidelines, principles, and standards for studies conducted with human beings

Sampling method and Sample Size:

The method of sample was purposive –A non-random method of sampling design for elite football players with a specific purpose. Total 1000 football players at the venue of Tournaments from different states and national level affiliated unites of all India football federation was selected as sample size of the study. The study depends mainly on primary source of data. The data was collected through respondents in the form of Questionnaires from 1000 football players of different Academies, Clubs, States and Universities affiliated to all India football federation separately, investigator contacting footballers personally and some cases at the venue of Inter-varsity, State tournaments. There was following questionnaires, including are as follows. The demographic information was collected through respondents in the form of different descriptive tests. The demographic information about, age, height, weight daily smoking, drug use, etc. was obtained before seeking responses. For the present study, modified questionnaires for footballers was utilized after the modification of this questionnaires and the test -retest reliability was found out by the researcher.

III. RESULTS OF THE STUDY

The results presented through appropriate table and figures

Table – 1
Mean Scores (MS) and Standard Deviations (SDs) of Practice /Training and Playing Components of the Football players

Sr. No.	Components	Means Scores	Standard Deviations
1.	Practice /Training in week	04.00	01.22
2.	Practice /Training duration in a hours	02.10	0.51
3.	Conditioning / Warm up in a Minutes	15.69	3.30
4.	Warm down / limbering Dawn in a minutes	10.45	2.89
5.	Participation in Tournament in a year	15.78	3.08

Table-1, illustrates that the Mean Scores (MS) and Standard Deviations (SDs) of Practice /Training and Playing Components of the Football players. Mean Score (M.S) of practice /training in a week was obtained 04.00 and Standard Deviation of (S.Ds.) practice /training in a week was obtained 01.22 ; the mean Scores of Practice / training duration in a hours was obtained and Standard Deviation (S.Ds.) was obtained 0.51 hours; Mean score (MS) of Conditioning / Warm up in a Minutes was obtained 15.69 and the Standards Deviation of (S.Ds) of Conditioning / Warm up in a Minutes was obtained 3.30 ; Mean score (MS) of Warm down / limbering Dawn in a minutes was obtained 10.45 and the Standards Deviation of (S.Ds) of Warm down / limbering Dawn in a minutes was obtained 2.89 and Mean score (MS) of Participation in Tournament in a year was 15.78and Standards Deviation of (S.Ds) Participation in Tournament in a year was 3.08.

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Figure -1

Shows that the Mean Scores (MS) and Standard Deviations (SDs) of Practice /Training and Playing Components of the Football players.

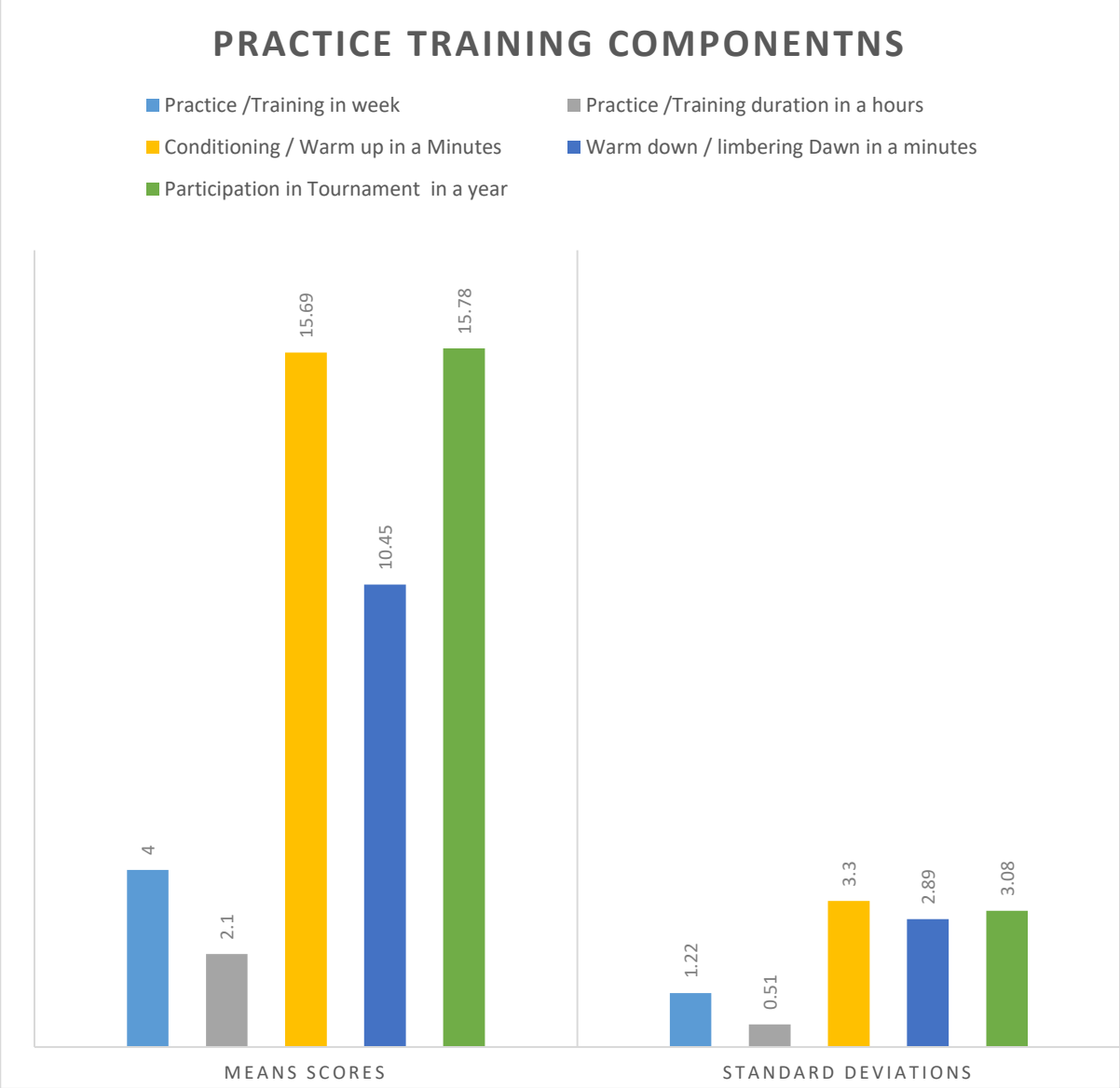

Table – 2

Mean Scores (M.S) and Standard Deviations (S.Ds) of Morphological Profile of Football players.

Sr. No.	Components	Means Scores	Standard Deviations
1.	Age in a Year	27.67	05.40
2.	Weight in a K.G	71.80	09.78
3.	Height in a cm.	175.68	16.80
4.	BMI	18.30	02.09

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Table-2, shows that the mean scores and standard deviations of the selected components of the football players. Mean Score age in a year of football players was obtained 27.67 while, Standard Deviation (S.Ds) of age in a year was obtained 5.40. The mean score of weight in a K.G was obtained 71.80 while the Standard Deviation (S.Ds) of weight was obtained 09.78Kg. The mean scores of Height was obtained 175.68 in centimeters, while the standard Deviation (S.Ds) height was obtained 16.80centimeters ; and the mean scores of Body Mass index of football players was obtained 18.30and the standard deviation of body Mass index (S.Ds) was obtained 02.09kg .

Figure-2.

The mean scores and standard deviations of selected components of the football players are shown in graphically in figure-2**.**

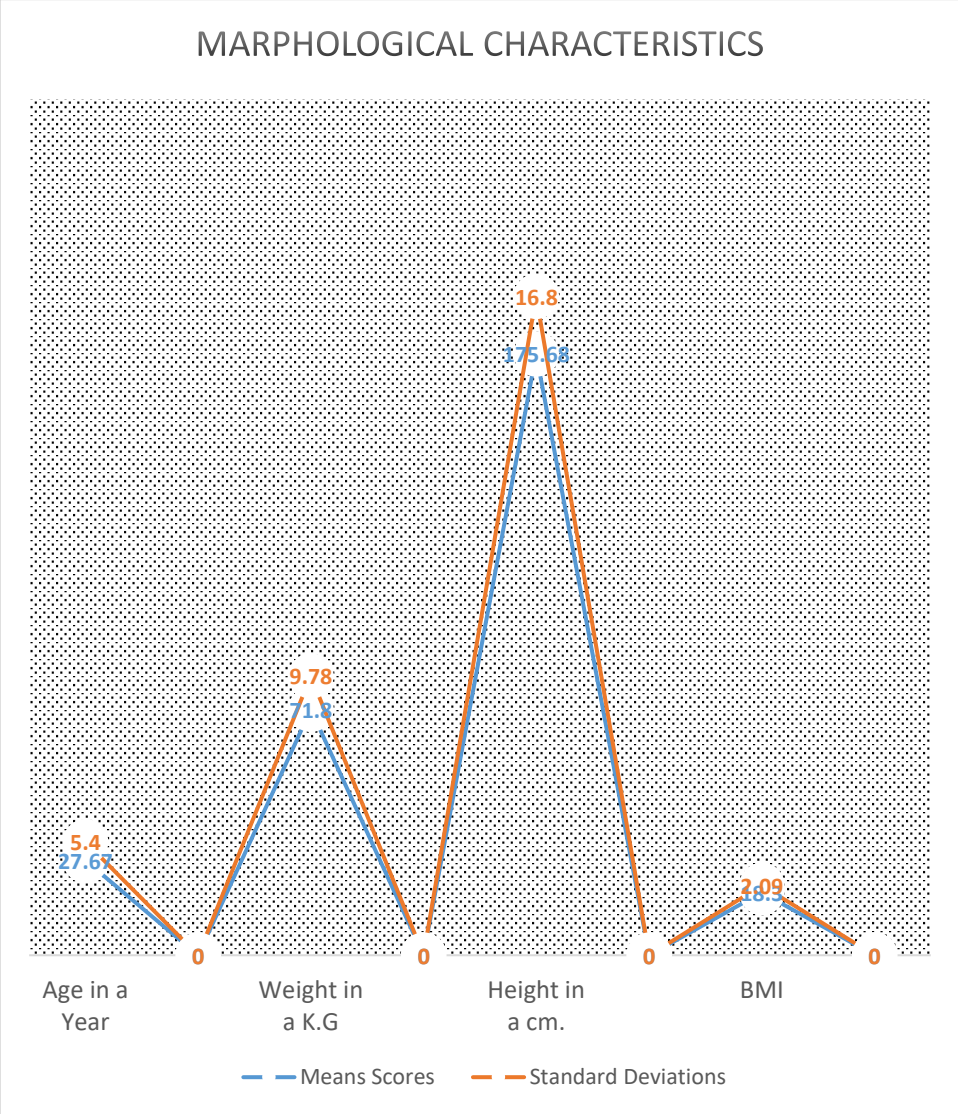

Table – 3

Illustrated the Percentage (%) of Causes of injuries of football players.

Sr. No.	Causes of injuries	Percentage (%) of injuries
1)	Tackle	19.34%
2)	Collision	15.67%
3)	Running	25.30%
4)	Twist	09.50%
5)	Foul play	17.72%
06)	Others	13.33%

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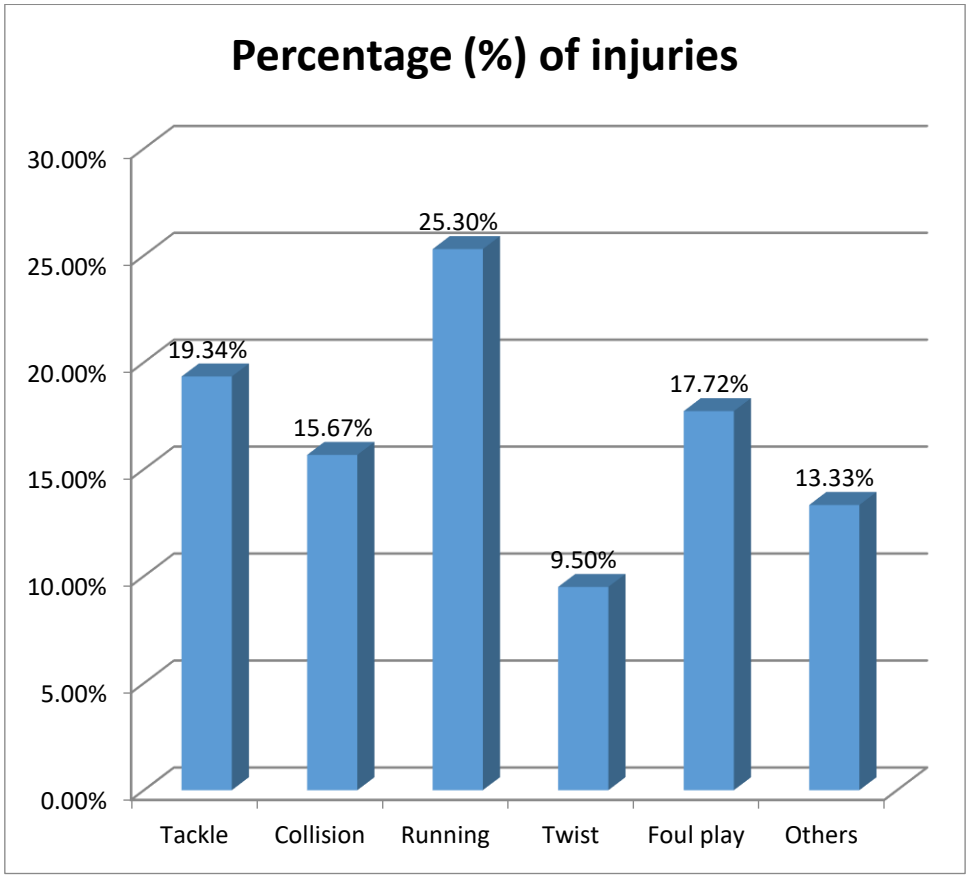
Table-3 indicates that the percentage (%) of Causes of injuries among football player

Figure-3

The indication of causes of percentage (%) of injuries among football players has been graphically illustrated in given below figure.



IV. DISCUSSION

The results found that 19.34% Football Players reported that they injured due to Tackle. Whereas 15.67% football players reported that they injured due to collision. Furth more, 25.30% Football Players reported that they injured during the Running. More over. 09.50% football players reported that they injure due to Twist. On other hand 17.72% football players reported that they injured due to foul play and 13.33% football players reported that injured due to other causes On the basis of Results, it was concluded that Collision, others and Tackle are most reported causes of Injuries among football players.The game of Football requires a variety of physical attributes and technical skills, so footballers need to have the sound physical fitness, physical proficiency and psychological requirements to cope with the demands of the game (Ostenberg and Roos, 2000; Orchard , Seward , McGivern , and Hood,2001 ; Petrie, 1992; Peterson, Junge , Chomiak , Graf-Baumann , and Dvorak , 2000). The game of football involves, tackling, kicking, running, bending, twisting, jumping, heading and turning activities which put players at a higher risk of injury (Dvorak J, Junge A, Chomiak J, Graf-Baumann T, Peterson L, Rosch D, and Hodgson R et.al.2000)

This study confirms with the study of Fuller, et. al (2004) who investigated to understand how tackling leads to injury in football, to develop a framework for classifying tackles and to plentify tackles with the greatest propensity to cause injuryInjuries to the foot for tackled and tackling players and the lower leg and high for tackling players were less likely to receive on pitch medical attention than other injuries. Tackles with the greatest propensity for causing injuries involved dash of heads and two footed tackles for tackled players and dash of heads, two footed tackles, jumping vertically and tackles from the side for tackling players. **In addition Ivarsson and Johnson (2010)** reported that between 65–91% of elite soccer players have at least one injury per year. This study also supported to Astrid and Dvorak (2013)studied the incidence, characteristics and changes of football injury during international tournaments .

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The average response rate was 92%.A total of 3944 injuries were reported from 1546 matches, equivalent to 2.6 injuries per match. The majority of injuries (80%) was caused by contact with another player, compared with 47% of contact injuries by foul play. On other hand , Dvorak (2011) analyzed the incidence and characteristics of injuries and illnesses incurred during the 2010 Fédération Internationale de Football Association (FIFA) World Cup he found Contact with another player was the most frequent cause of match (65%) and of training (40%) injuries.

This study also supported to Bronwen & Chalmers (2010)was to develop a method for undertaking routine surveillance of injury in community-level soccer. A total of 677 match injury events were reported, giving overall incidence rates of 50.2 injury events per 1000 player-match hours and 6.0 injury events per 100 player-matches. The incidence rate for match injury events was significantly higher for females than for males (63.9 vs 46.9). A total of 145 training injury events were reported, giving overall incidence rates of 9.0 injury events per 1000 player-training hours and 1.3 injury events per 100 player-training sessions. The most common injuries were sprains and strains of the lower limb, and tackling was the most common cause of injury.

V. LIMITATIONS OF THE STUDY

There are a number of limitations restricting the generalize ability of this study are as:

1. Results of this study are limited by a survey of self-reported statement rather than a study of actual behaviour, which would be very difficult to achieve. As such, participants may have answered questions in a socially desirable manner to avoid the stigma associated with admitting personal inadequacies.

2. A limitation of this study is inability to draw cause-effect associations between the studied variables.

3. One more limitation with anonymous self reported questionnaires is inaccurate reporting. Future studies should be proactive in maintaining a balance of participants on the basis of year wise.

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