A PILOT STUDY EXAMINING THE MECHANISM OF INJURIES TO ELITE LEVEL FOOTBALL PLAYERS

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ABSTRACT
The primary objectives of this study was to identify the mechanism of injuries to football players. The investigator personally contacted the elite football players and the purpose of the study was explained to them. Further instructions were given by the investigator to the players for the completion of questionnaire. A questionnaire prepared by Cromwell & Gromely (2000) for elite Gaelic football players and modified by the investigator was used. The information of injuries collected from 685 football players .Total 480 injuries out of 388 football players were found out over the one year of the period. The football players were asked to recall injuries over the proceeding one year period. Total 480 injuries out of 388 football players were found out over the one year of the period .Incidence of injuries due to mechanism of football players due to Stumble (11.01%), Tackle (13.33%), collision (15.62%), Running (17.70%), Twist (07.50%), Contact with ball (06.45%), and Foul play (17.70%) Kicking the ball (09.58%) and others (00.62%). Running, Collision and foul play are most common mechanism of injuries to football players. The result of the research provides a useful insight in the injuries due to mechanism of football players.
Keywords: Stumble, Collision, Contact and Twist

INTRODUCTION

Football is one of the most popular sports in the world. Football has been demonstrated to be among the most hazardous of organized team sports. (Winter , 1989; Sinku 2006). High velocity trauma and direct contact between sportsmen have made of football a kind of a combat sport, connecting both the consequences of chronic overuse and acute injuries. It requires a variety of physical attributes and specific playing skills. Therefore, participants need to train and prepare to meet at least a minimum set of physical, physiological and psychological requirements to cope with the demands of play and reduce the risk of injuries(Crombell 2000).

In football injury are traditionally divided into contact and non-contact mechanisms in which case contact refers to player to player contact. Some of the forces involved in a non-contact injury are transmitted from the playing surface to the injured body part. (Hawkins and Fuller 1996) . Injury mechanisms in football is of prime mportance when considering preventive measures (Ekstrand and Gillquist 1983a).Today, limited information is available on injury mechanisms in football. Most of these studies are prospective and injury mechanisms are registered by team doctors, physical therapists or athletic trainers, it is difficult to analyze injury mechanisms from the sideline (Orchard 2001). They only see the injury once and just from one side, making it impossible to analyze in details the mechanism and the playing situation. Questionnaires answered by players also give limited information because of recall bias. Injuries happen quickly and the players may not remember in detail the playing situation or the moment of injury.

MATERIALS AND METHODS

The present study deals determination to Mechanism of injuries to elite level football players. The information of injuries collected from 685 football players of, Total 480 injuries out of 388 football players were found out over the one year of the period . The investigator personally contacted to the football players and the purpose of the study was explain before the players. The data was collected with the help of questionnaires prepared by Cromwell, F.J. Walsh Gromley for Elite Gaelic footballers (2000) and it was modified by the investigator and utilized. The subjects were required to fill out a questionnaire for each injury for one year. The design in a research study refers to "the researcher's overall plan for answering the researcher's question or testing the research hypotheses. This study involves a mechanism of injuries among three groups of football players in a non-experimental, retrospective study design.

Statistical Technique

Statistical techniques play very significant role in the interpretation of numerical data obtained from individuals by giving numerical expressions to the relationships and the variations with respect to different aspects. Keeping in view the aim of the study, following statistical tools have used for interpretation of the data . The statistical computation of data of the present study is used by using SPSS package in the computer. The result computed also cross checked by using following statistical variables.

RESULTS AND DISCUSSION

This section is dedicated to the presentation of results along with the discussion of present study. The results and discussion have been presented in concise and comprehensive manner that is easy to comprehend.

The results concerning this are presented in the form of figures and tables For the sake of convenience and methodical presentation of the results, following order has been adopted.

Figure-I, illustrates the Percentage of Mechanism of injuries to football players.

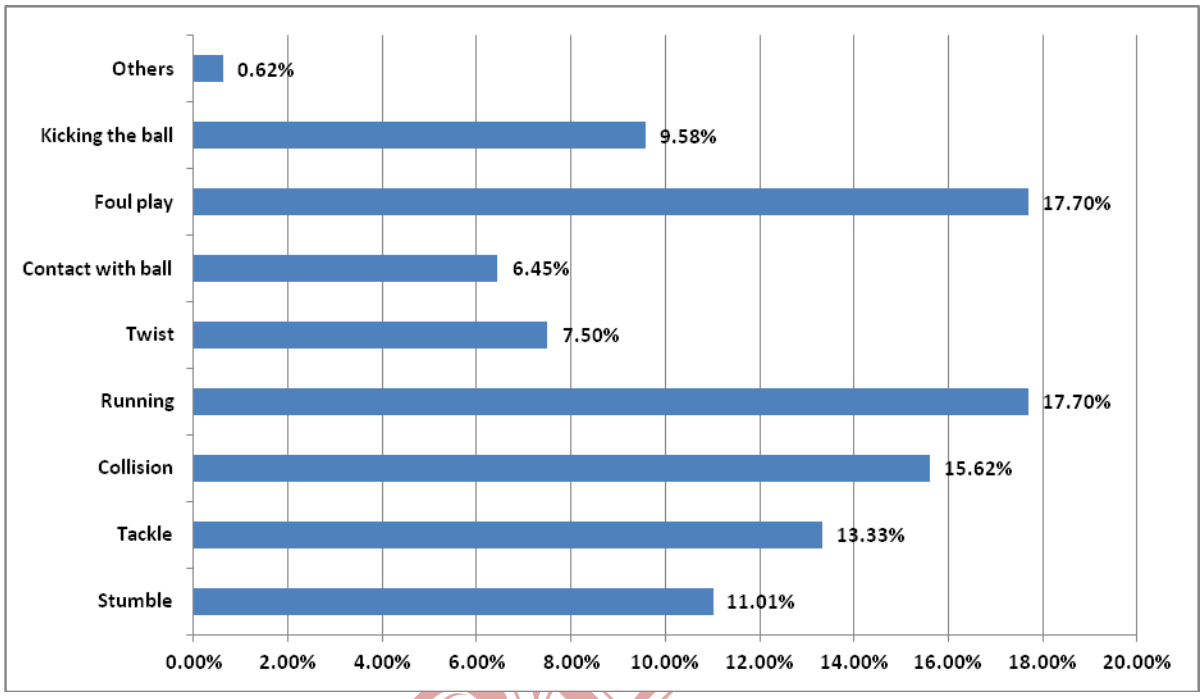

Figure 1, shows that the percentage of causes of injuries among football players. incidence of injuries to football players due to Stumble (11.01%), Tackle (13.33%), collision (15.62%), Running (17.70%), Twist (07.50%), Contact with ball (06.45%), and Foul play (17.70%) Kicking the ball (09.58%) and others (00.62%).Running, Collision and foul play are most common mechanism of injuries to football players.

TABLE – 1

SHOWS PERCENTAGE OF CAUSES FOR INJURY AMONG THREE GROUPS OF FOOTBALL PLAYERS.

S. No.	Location	Young (%)	Junior (%)	Senior (%)
1)	Stumble	10.17%	10.13%	18.98%
2)	Tackle	11.50%	14.28%	18.91%
3)	Collision	14.60%	15.66%	21.62%
4)	Running	19.02%	17.05%	13.51%
6)	Twist	07.52%	07.83%	05.40%
7)	Contact with ball	07.96%	05.99%	--------
8)	Foul play	17.69%	19.33%	08.10%
10)	Kicking the ball	10.61%	08.75%	08.10%
11)	Others	00.44%	00.92%	----------

As per Table-1, shows that the percentage of causes of injuries among three groups of competitive football players. Young group football players sustained injuries due to Stumble (10.17%), Tackle (11.50%), collision (08.84%), Running (19.02%), Twist (07.52%), Contact with ball (03.53%), and Foul play (17.69%) Kicking the ball (10.61%) and others (00.44%). Running ,Collision and foul play are most occurrence of injuries to young groups football players. Meanwhile, junior group football players sustained injuries due to Stumble (10.13%), Tackle (14.28%), collision (15.66%), Running (17.05%), Twist (07.83%), Contact with ball (05.99%), and Foul play (19.35%) Kicking the ball (08.75%) and others (00.92%).Foul play, Running and Collision are most occurrence of injuries to junior groups football players. Similarly, senior group football players sustained injuries due to Stumble (18.91%),

Tackle (18.91%), collision (21.62%), Running (13.51%), Twist (05.40%), Foul play (08.10%) and Kicking the ball (08.10%) .Collision, Stumble and twist are most more incidence of injuries to senior group football players. In several studies foul play called by the referee are studied (Ekstrand et al. 1983b; Engstrom et al. 1990; Hawkins and Fuller 1996; Hawkins and Fuller 1998b; Hawkins and Fuller 1999), while in other studies players reported whether it was foul or not (Nielsen and Yde 1989; Luthje et al. 1996; Chomiak et al. 2000; Junge et al. 2000a). Results have shown that foul play was the cause of 16-28% of all injuries (Nielsen and Yde 1989; Hawkins and Fuller 1996; Hawkins and Fuller 1999; Peterson et al. 2000; Junge et al. 2000a), or 28-30% of traumatic injuries (Ekstrand and Gillquist 1983b; Engstrom et al. 1990). Other studies have found that 76-86% of the foul play injuries were caused by opponent and the rest by own foul (Ekstrand and Gillquist 1983b; Hawkins and Fuller 1999), and also reported that own foul play resulted in more serious injuries than opponent foul (Ekstrand and Gillquist 1983b). In elite players contact injuries represents for 33-42% of all acute injuries (Hawkins and Fuller 1999; Hawkins et al. 2001). Only Luthje et al. (Luthje et al. 1996) found much higher proportion of contact injuries (79%). Studies on players at lower or various level reports that 55-59% of acute injures were contact injuries, while the comparable percentage for junior players was 42-53% (Ekstrand and Gillquist 1983a; Nielsen and Yde 1989; Hawkins and Fuller 1999; Ostenberg and Roos 2000; Heidt, Jr. et al. 2000)

Tackling has been shown to be the most common injury mechanism in football (Nielsen and Yde; Luthje et al. 1996; Hawkins and Fuller 1999) . Studies on elite players have shown that tackling is responsible for 21-39% of acute injuries (Luthje et al. 1996; Hawkins and Fuller 1999;), while for junior players this rate is 40-48% (Nielsen and Yde 1989; Yde and Nielsen 1990; Hawkinsand Fuller 1999). Studies have also indicated that tackling is the most usual injury mechanism for ankle (43-67%) and knee (55%) injuries (Nielsen and Yde 1989; Yde and Nielsen 1990). Four studies (Sinku 2009, Pagare 2009, Sinku 2006 and jadhav 2008) show that collision is the most usual mechanism for concussion, and such collisions account for an even larger proportion of concussions in female players (71-75%) than in males (47-65%) (Barnes et al. 1998; Boden et al. 1998). . A larger proportion of collisions with other objects than players occurred among male players (35-53%) than females (25-29%) (Barnes et al. 1998; Boden et al. 1998), and most of them occurred when a player was hit in the head by the ball

Studies reports that 58-67% of acute injuries in elite male football occurred in non-contact situations, while 41-45% of acute injuries in players at lower or various level and 47-58% of acute injuries in youth players occurred in non-contact situation (Ekstrand and Gillquist 1983a; Nielsen and Yde 1989; Hawkins and Fuller 1999; Ostenberg and Roos 2000; Heidt,

Jr. et al. 2000; Chomiak et al. 2000; Hawkins et al. 2001). Running is the most usual non-contact injury mechanism, accounting for 20-24% of acute injuries in elite players and 9-27% in youth players (Hawkins and Fuller 1999; Hawkins et al. 2001) . Muscle strains occur most frequently during sprinting, especially hamstring strains (Nielsen and Yde 1989). Kicking the ball has found to be the mechanism of 9-10% of acute injuries in elite players and 8-13% in youth players (Nielsen 1990; Hawkins and Fuller 1999). The result of the research provides a useful insight in the injuries due to mechanism of football players and its ill effects of football performance.

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