

Incidence of injuries in male football trainees of Ethiopian youth sports Academy

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Abstract: The purpose of the research was to determine the incidence of injuries in male football trainees of Ethiopian youth sports Academy by 2015/16. It was employed cross sectional research design and Questionnaire as well as semi structured interview were used as a data gathering instrument. The study sample was 75 football players, 4 football coaches and one physiotherapist were considered as a sample for the study. In this research study majority of football injuries were displayed in the category of, U-15 youth football trainees. Football injury is occurred in match and in-season period. Injury occurred in the academy is newly occurred. Injury is occurred mostly in the second half game. Injury is occurred concerning the position of football majority was midfield players. Individual football players are encountered in lower extremities; mainly thigh and calf muscles. The result found that there is incidence of injury in second half period football match in Under-15, Under-17 and Under-19 football trainees. Thus, Ethiopian youth sports academy should hire and expand human resource in football physiotherapy. There must be serious follow up in football field as well as in the dormitory of football trainees to diagnose after their training and match.

Key words: Youth, Football Injury and Incidence

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I. Introduction

Football is one of the most popular sports in the world, particularly in Ethiopia; founder of the first African cup of nation (AFCON). Currently FIFA unifies 203 national associations and represents about 200 million active players.

Sport injury is a collective name for all types of damage received in the course of sporting activities. The most common criterion in the definition of an injury is an absence from training or a game followed by the need for medical treatment and the diagnosis of anatomic tissue damage (Van, 1993).

The reportable injury is one that limits athletic participation for at least one day after the day of onset (Powell, 1981). According to the length of rehabilitation, injury can be classified into minor (1 to 7 days), moderately serious (8 to 21 days) and serious (more than 21 days or permanent damage). The most common types of injuries are contusions, sprains and strains. In indoor football players, the incidence of injury seems to be higher.

In line with the above authors, 1994 FIFA World Cup tournament, 29% of all injuries resulted from foul play as judged by the referees. In a regular season in England only 18% of injuries was caused by foul, 86% out of them by an opponent, so in 14% of cases a fouling player contused himself, in 41% were caused by direct contact. Foul by opponents therefore represents only 10% of all injuries and violations by players do not represent a major cause of injury. In 49% of cases, when contusion is the cause of the end of the career, knee injuries, mainly anterior cruciate ligaments and menisci will be responsible. It is evident that sport, as well as health-giving aspect, may present a danger to health in the form of accidents and injuries. 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.

In Ethiopia, football is the most spectacular activity among many other sports; because the sport has been watching by a lot of spectators than other sports. Particularly, Ethiopian youth sports academy is identified to be one of the major sources to produce good players for Ethiopian national team. However, this category of sport competition is very fascinating; because of the contact nature of football, players are exposed with injuries as a result of the activity. It is known that football injuries are among the highest rates of activity prohibition in team sports. To successfully conduct research in the area of sport medicine there are factors to be overcome, paucity of local findings have a great impact but some of young scholars have been identified; a study in challenge of injuries in track event of athletics; particularly in Ethiopian national team long distance running by Dereje (2012). The same author added that, Ethiopian national team athletes have done their training and

competition with minor injury, unable to follow injury prevention mechanisms like lack of adequate warming up, cooling down and stretching exercise and this is taken as technical aspect of the sport activity.

By the study conducted by Alebel (2011) on long distance athletes of Addis Ababa city administration found that, the major problems are athlete's foot wears create discomfort; and it results for blisters, corns and muscle bruise. And also Alebel added that, absence of team physician is the very serious problem at national level. In addition, due to an interactive nature football; Ethiopian youth football academy players are victim of sport injury. Ignoring sport injury can severely affect the performance of athlete in particular and for the overall effect of team in general.

Objectives of the study

The specific objective of the research was to:

- Explain the incidence in lower extremities of football injuries in category of trainees of Ethiopian youth sports academy.
- Identify the type of football injuries in the category of trainees of Ethiopian youth sports academy.
- Determine the significance difference between first and second half period of match in all categories of football trainees.
- Compare the significant difference in playing position with incidence of football injuries in Ethiopian youth sports academy.

II. Material and Methods

Study design

The study was used cross sectional research design; the data was collected three wise within the pre season, in season and post season of the competition period partly the first data was gathered from November to December 2015. The second data was gathered from February to March 2016 and the third data was gathered from April to June 2016 in order to determine the incidence of sport injury and to identify the treatment of sport injury in Ethiopian youth sports academy by 2015/16 G.C.

Population of the study

The study population are all male football trainees and football coaches in Ethiopian youth sports Academy. In the academy, football is one of the sports practicing in the academy actively equivalently to other sports. The institution has giving football training for youth levels in to three categories, thus are under 15 (U-15), under 17 (U-15) and under 19 (U-17) football trainees; they are taking the training intensively in both gender. In the first group of football trainees; U-15 there are 16 numbers of males and 20 numbers of females are found. In the second group of football trainees; U-17 there are 18 numbers of males and 18 numbers of females are found. In the third group of football trainees; U-19 there are only 21 numbers of males were taken. In addition, four football coaches and sport nutrition specialists were considered as a study population.

Sample size and sampling procedures:

The study has considered 75 sample sizes of football players of Ethiopian youth sports academy was assigned based on the proportional allocation method for each clubs and 25 footballers was selected through simple random sampling technique. 4 Head principal male football coaches of Ethiopian premier league clubs and 3 physiotherapists (in Amharic "*Wogasha*") of Ethiopian youth sports academy was considered as sample respondents. They were selected through purposive sampling technique since they are professionals and they have rich information regarding the subject matter.

Instruments

Questionnaire

Standard questionnaires were administered for football players of Ethiopian youth sports academy and also team physicians (*Wogasha*) or acting as a physician are expected to fill out the questionnaire in a standardized injury report form which is called Injury surveillance in multisport events (ISME) (Junge, Engebretsen & Alonso, 2008). Sample football players were required to recall injury over proceeding one year period.

Procedures of data collection

The researcher was recruited six data collectors of sport professionals, who have strong attachment with the clubs. So that, they were taken training, concerning how data can be collected from sample respondents.

Methods of data analysis

As per the purpose of the research, both descriptive and inferential statistics was employed. Mean and standard deviation were taken from descriptive statistics. Paired t-test and one way analysis of variance were used from inferential statistics.

III. Result and Data Interpretations

Based on the research questions of the study, data were collected from Ethiopian youths sport academy football trainees in June 2016 GC. The total of 75 questionnaires was distributed across the sample respondents of football trainees, with in which 47 questionnaires were subjected for injury in football.

Therefore, majority of football trainees were displayed regarding category of football U-15, U-17 and U-19; concerning the occurrence of majority injury was occurred in match; concerning the season of football majority injury was occurred in, in season; regarding the history of injury majority was new injury; concerning the tendency of injury majority was occurred in second half game; concerning the position of football majority was midfield players.

Table 1: Incidence of injury in lower extremity in football trainees of Ethiopian youth sport academy, 2015/16

| | | Count | Column N % |
|-----------------|-----------------|-------|------------|
| lower extremity | Hip | 4 | 9.5% |
| | Groin | 8 | 19.0% |
| | Thigh | 16 | 38.1% |
| | Knee | 10 | 23.8% |
| | lower leg | 15 | 35.7% |
| | Achilles tendon | 7 | 16.7% |
| | Ankle | 14 | 33.3% |
| | foot/toe | 5 | 11.9% |

Based on table 1 found that, regarding injury occurrence of lower extremity in football trainees of Ethiopian youth sports academy, hip, groin, thigh, knee, lower leg, Achilles tendon, ankle and foot/toe; 9.5%,19%, 38.1%, 23.8%, 35.7%, 16.7%, 33.3% and 11.9%, respectively. This explains that, there is high injury occurrence from lower injury in thigh of football trainees of Ethiopian youth sports academy.

Table 2 Type of injury in football trainees of Ethiopian youth sports academy, 2015/16

| Type of injury | Count | Column N % |
|--|-------|------------|
| concussion (regardless of loss of consciousness) | 4 | 9.1% |
| fracture (traumatic) | 6 | 13.6% |
| stress fracture (overuse) | 6 | 13.6% |
| other bone injuries | 10 | 22.7% |
| dislocation, sub luxation | 5 | 11.4% |
| tendon rupture | 1 | 2.3% |
| Ligamentous rupture with instability | 2 | 4.5% |
| Ligamentous rupture without instability | 3 | 6.8% |
| sprain (injury of joint and/or ligaments) | 10 | 22.7% |
| lesion of meniscus or cartilage | 10 | 22.7% |
| strain / muscle rupture / tear | 3 | 6.8% |
| contusion / haematoma / bruise | 5 | 11.4% |
| tendinosis / tendinopathy | 3 | 6.8% |
| nerve injury / spinal cord injury | 4 | 9.1% |
| hamstring strains | 7 | 15.9% |
| Others | 2 | 4.5% |

Based on table 2 found that, concerning type of injury in football trainees of Ethiopian youth sports academy, 2016 of concussion (regardless of loss of consciousness), fracture, stress fracture (overuse), other bone injuries, dislocation (subluxation), tendon rupture, ligamentous rupture with instability, ligamentous rupture without instability, sprain (injury of joint or ligaments), lesion of meniscus or cartilage, strain, contusion, bruise, tendinosis, nerve injury, hamstring strains and others; 9.1%, 13.6%, 13.6%, 22.7%, 11.4%, 2.3%, 4.5%, 6.8%, 22.7%, 22.7%, 6.8%, 11.4%, 6.8%, 9.1%, 15.9% and 4.5%, respectively. This explains that, majority of injury type were, sprain (injury of joint or ligaments), lesion of meniscus or cartilage and other bone injuries, respectively.

Table 3 Paired sample test in incidence of football injury by first and second half period in EYSA 2015/16

| | Period in matching | Paired differences | | 95% confidence interval level | | t | df | Sig (two tailed) P | |
|-----------------|--------------------|--------------------|-----|-------------------------------|-------|------|----|-----------------------|-------|
| | | | | Standard error mean | Lower | | | | Upper |
| | | | | M | SD | | | | |
| Under-15 | 1 st | 10.7 | 1.8 | 1.21 | 2.34 | 0.54 | 45 | 0.03* | |
| | 2 nd | 12.8 | 2.1 | | | | | | |
| Under-17 | 1 st | 7.67 | 1.6 | 1.3 | 3.12 | 0.32 | | 0.04* | |
| | 2 nd | 9.89 | 1.9 | | | | | | |
| Under-19 | 1 st | 7.54 | 1.7 | 1.5 | 3.9 | 0.32 | | 0.01* | |
| | 2 nd | 9.98 | 2.1 | | | | | | |

NB: 1st: first half, 2nd: second half

* The mean difference is significant at P<0.05

A paired sample t-test was conducted to examine the incidence of injury in match period by first and second half game. There was a statistically significant difference in incidence of injury with reference to match period from first half in under-15 (M=10.7, SD=1.8) to second half (M=12.8, SD=2.1, r(17)= 0.54, p<0.05). The eta squared statistic (0.018) indicated a small effect. There was a statistically significant difference in incidence of injury with reference to match period from first half in under-15 (M=10.7, SD=1.8) to second half (M=12.8, SD=2.1, r(15)= 0.32, p<0.05). The eta squared statistic (0.007) indicated a small effect. There was a statistically significant difference in incidence of injury with reference to match period from first half in under-17 (M=7.67, SD=1.6) to second half (M=9.89, SD=1.9, r(15)= 0.32, p<0.05). The eta squared statistic (0.007) indicated a small effect.

ANOVA result in Incidence of injuries across position of football trainees in Ethiopian Youth sports Academy by 2015/16

| | Sum of squares | df | Mean square | F | Sig. |
|-----------------------|----------------|----|-------------|-----|------|
| Between groups | 78.67 | 2 | 56.78 | 3.4 | 0.03 |
| Within groups | 102.45 | 45 | 18.56 | | |
| Total | 181.12 | 47 | | | |

* The mean difference is significant at P<0.05

A one way between groups analysis of variance was conducted to examine the incidence of injuries in playing position of football trainees of Under 15, Under 17 and Under 19 categories, as measured by Injury surveillance in multisport tests. Positions of football trainees were categorized in to four units of football arena; Goal keeper, defenders, midfielders and attackers. There was a statistically significant difference at the P<0.05 in Injury surveillance in multisport tests for the playing positions [F(2,45)= 3.4, p=0.05]. The strength of their association based on effect size result, it is 0.43. This means that there is high exposure to football injuries across the playing positions of trainee's, though there is no a direction on which position is highly vulnerable for football injury.

3.2 Discussion

As the study shown that, in Ethiopian youth sports Academy football trainees' majority of injury occurred in lower extremities. Even if human beings have more than 600 skeletal muscles, but majority of the primary muscles groups cooperating for football activities are found in lower extremities specially thigh and calf muscles. The thigh muscles are very susceptible for injury of football particularly hamstring, groin and quadriceps femurs; because they are subjected to sudden movement. Therefore, it is a must to do ballistic stretching exercise before football training or match. The study is consistent with the following authors (Hägglund, Walden and Ekstrand 1982 and 2001).

In the study, majority of the injury was, sprain type of injury, it is very severe in kind because the injury mainly attacked adult players. If coaches or physiotherapist may not give special emphasis youngster football players may burn out early from maturation. The present study has identified that, there different associated factors for instance position of players and field of football condition have a contributing factor for the occurrence of injury.

IV. Conclusion and Recommendation

In conclusion; injury occurrence were happen in football match, in-season period, injury was new, concerning biomedical data of the players injury was absolutely it was new injury, the tendency was in second half game and midfield players were mainly victim of sport injury. Regarding injury occurrence from lower

injury, it is in thigh of football trainees of Ethiopian youth sports academy. Concerning injury type were, sprain (injury of joint or ligaments), lesion of meniscus or cartilage and other bone injuries, respectively. Regarding cause of injury in football trainees of Ethiopian youth sports academy were equipment failure and field of play conditions, respectively.

The study has recommended the following points:

- Before the match; there must be warming up following scientific principles based on considering city altitude, opponent status and nutritional provision
- There must be special consideration in-season than pre and post season; since the period is intensive.
- Since they are in developmental stage; substitution must be ready in second half period of football match and overusing players for entire 90 minutes must be minimized based on the demand of the game.
- Maximizing the number of midfield players in training/match is necessary; because the burden of the game is relied on midfield than attacker and defender.
- Ethiopian youth sports academy should examine the equipment for sport and field of play should be constructed in a conducive manner.

Future research

This research has focused on the incidence on injury of football youth trainees in Ethiopian Youth sports Academy. Because of different problems this research has not touched the following parts of the research:

- Incidence of injury per hour in training and match
- Unable to show the number of injury per hour

Reference

- [1]. Albert, M. (1983). Descriptive three year data study of outdoor and indoor professional soccer injuries. *Ath. Training* 18 (3), 218-220.
- [2]. Alebel, T. (2011). *The Causes And Prevention Of Injuries In The Long Distance Athletes In The Case Of Some Selected Addis Ababa City Administration Athletics Clubs* (Unpublished Thesis). Addis Ababa University Digital Library. Ethiopia.
- [3]. Dereje, A. (2012). *Problems And Challenges Of Injury On Ethiopian National Team Of Long Distance Male Athletes* (Unpublished Thesis). Addis Ababa University Digital Library. Ethiopia.
- [4]. Junge, A., Engebretsen, L., Alonso, J.M, et al. Injury surveillance in multisport events: the International Olympic Committee approach. *Br J Sports Med.* 2008; 42(6):413-421.
- [5]. Van, M. W. (1993). *Incidence and Severity of Sports Injuries in P.A.F.H.* Renström ed. Sports Injuries Basic Principles of Prevention and Care 3-13, Boston, Blackwell Scientific Publications.
- [6]. Hägglund, M., Walden, M., Ekstrand, J. (1982 and 2001). Exposure and injury risk in Swedish elite football: A comparison between seasons, *Scand J Med Sci Sports* 2003; 13:364-70.

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