

Epidemiology and causes of common soccer injuries during university games in Uganda

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ABSTRACT

The study sought to establish the common soccer injuries, their causes and management among Busitema University athletes. The study used a cross-sectional survey design involving quantitative and qualitative approaches on a sample of 76 respondents, obtained by simple random and purposive sampling techniques. Data was collected by use of self-administered questionnaires, an observational tool and interview guide. Quantitative data analysis involved generation of descriptive statistics; frequencies, percentages and means. Qualitative data was analysed using content analysis. The study established that the common injuries were ligament sprain or strains (56.6%) and re-injuries (55.1%). Dry and hard grounds, joint instability, bad playing field conditions, inadequate treatment/ rehabilitation from previous injury, exercise overload/ over training, poor skill execution, poor training techniques and player neglect caused the injuries. It was recommended that quality playing fields and equipment, providing players with adequate attention and advocating for full implementation of fair play rules should be fostered to abate sports injuries.

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KURJ
ISSN 2790-1394

pp. 48 - 57
Vol 1. Issue 3.
July 2022

Keywords: Sports injuries, Soccer Injuries, Sports accidents, University football

Introduction

Traditional scientific practice in sports injury research has routinely involved collapsing the broader socio-ecological landscape down in order to analyse individual-level determinants of injury whether biomechanical and/ or behavioural (Hulme & Finch, 2015). The concern for injuries in sports has been there for a long time with records made on sports fatalities. For instance, reports indicate that between 1945 and 1994, nearly 85% of all football-related fatalities resulted from head and cervical spine injuries (Zahir & Ludwig, 2010). In the FIFA World Cups 1998–2012, a total of 3944 injuries were reported from 1546 matches, equivalent to 2.6 injuries per match (Junge & Dvorak, 2013).

In Africa, the statistics on injuries resulting from sports are difficult to quantify because of limited data. However, the rate of sports injuries is also high. For instance, in South Africa in one season, among netball players, the injury rate was 61.8% with 1.9 injuries per player (Pillay & Frantz, 2012).

In Kenya, many sportspeople, especially footballers, had to end their careers due to an injury that could have been cured (Muneza, 2013). Still in Kenya, there were 102 injuries for 2,400 match player hours recorded in 60 league games for the season of rugby and the incidence of injuries was 42.5% of 1,000 match player hours (Nyagetuba, 2011).

In Uganda, injuries in sports are also of high concern. However, the rate at which Ugandan sportsmen get injuries, the time lag of rehabilitation, and the eventual full recovery procedure are not documented (Isabirye, 2013). The prevalence of sports injuries among the 2012 – 2013 Ugandan super league players was 64.0% (Mwaka, 2013). In addition, in a tour to Austria, a routine health check of Uganda's national soccer side (Cranes) showed that the entire Cranes side was injured (Bakama 2015). More so, that most clubs and federations simply do not care about injuries and thus players continue risking their lives in an environment of questionable medical Services.

Sports injuries refer to accidents sustained during an athletic game such as football or any other sporting activity such as running, cycling or skiing (Wood & Bellis, 2010). In this paper, sports injuries refer to common injuries including contusions, sprains/ strains, fractures, re-injuries and bruises. Causes of sports injuries refer to risk factors for sports injuries that expose players to sports injuries (Bahr & Holme, 2003). In this article, risk factors are defined as factors that make players get injured including poor conditions, poor injury treatment, collisions, foul play and poor playing techniques.

Epidemiology of Accidents Theory introduced by Gordon in 1949 underpinned this study. The theory proposes that injuries are caused by particular episodes (Hulme & Finch, 2015). The theory identifies two injury-causing episodes, namely predisposition and situational characteristics. Predisposition characteristics include the susceptibility of the people (host), hazardous environment and injury-producing agent among others (Bonilla-Escobar & Gutiérrez, 2014). Situational characteristics are risk assessment by individual, priorities of the supervisor and prevailing attitude predisposition (Hulme & Finch, 2015). This theory suggests that for certain athletes, because of their predisposition and situational characteristics, they are likely to suffer certain injuries during their participation in sports activities. This theory was the guide for analysing common sports injuries and their causes. Sports such as football are very important for individuals and society. Participation in sports is associated with improved self-esteem, social interaction, fewer depressive symptoms and improved psychosocial health and physical health outcomes (Eime et al., 2013). Despite the recognised importance of performance in sports, sports are associated with the risk of injuries which prevent players' continued performance in sports.

In Uganda, 80% of athletes have retired from sports because of injuries that could have been controlled (Muneza, 2013). At Busitema University, the medical report shows that a total of 102 players since 2012 have registered cases of chronic injuries obtained from the previous sports seasons (Makozi, 2016). Makozi (2016) further reported that Players have been made to continue playing during games despite suffering concussions in sports like football. Worse still, there has been no effort to compile data of injuries suffered by players of the university during play according to Busitema medical documentation. If the problem of injury among footballers at Busitema University is not addressed, the welfare of players will be put at stake and they will not be able to compete successfully in the various football tournaments in the country and abroad. Therefore, this study sought to analyse sports injuries in football in Busitema University, establish

the common injuries and their causes. The objectives of the study were (a) to establish common injuries, (b) to examine the causes of the injuries.

Methodology

This study adopted cross-sectional survey design. The target population was 119 including all the sports students involved in football numbering 108 and 11 sports department staff. The study was carried out at all campuses of Busitema University. The main campus is located at Busitema along Jinja-Tororo highway. The other campuses were: Nagongera, Mbale, Arapai, Pallisa, and Namasagali.

The sampling procedure was simple random and purposive sampling as explained by (Amin (2005)). The sample size for the questionnaire survey was 72 respondents. The sample for the interview guide included seven sports officials from the university sports department. The study adopted two types of proportional sampling methods, namely simple random and purposive sampling. Stratified random sampling involved dividing the sample for the questionnaire survey into different subgroups according to their positions that is players and Sports department staff. Thereafter, the respondents were randomly selected proportionally from the different subgroups as guided by Lu, Zhang, Wen and Lan (2012) on sample selection. Both male and female football players were involved in the study.

The questionnaire comprised close-ended question items based nominal scale with appropriate alternatives given for Section A on demographic characteristics of the respondents and ordinal scale based on the five-point Likert. Close-ended questions were selected because they were easy to administer, easily coded and analysed, allow comparisons and quantification, and they were more likely to produce fully completed questionnaires while avoiding irrelevant responses. At the end of each section of the SAQ there was an open ended question. Open-ended questions were added because they allowed time and space for free-form responses that invited participants to share their understandings, experiences, opinions and interpretations. Overall, a combination of close and open-ended questions provided the survey write-up with quantifiable and in-depth results. Closed questions produced results that were easily summarised and clearly presented in quick-look summaries while open questions produce verbatim comments adding depth and meaning as suggested by Bird (2009).

An interview guide was used to collect data from the seven staff in the sports department. The question items for the respondents were questions eliciting open-ended responses. The open-endedness of interview questions allowed the respondents to provide detailed information and allowed the asking of probing questions. The participants were able to fully express their viewpoints and experiences helping to obtain in-depth data necessary for qualitative analysis. The respondents were identified by "R" denoting "respondent". An observation check list was used to collect observation data by the researcher while observing different Busitema University team football games. Observations were carried out in seven games during the Uganda Inter- University games in December 2017 and seven games during the University football league in 2018. This was to get more information on the injuries which occur among football players.

Results

Common Injuries among Football Athletes

Objective 1 was to establish common injuries among football athletes of Busitema University.

The results are as presented in table 1

Table 1: Common Injuries among Football Players.

Common Injuries among Football Players	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean
I have previously suffered a contusion during play	26(37.7)	25(36.2)	4(5.8)	7(10.1)	7(10.1)	2.19
I have previously developed ligament sprain or strain during play	13(18.8)	12(17.4)	5(7.2)	24(34.8)	15(21.7)	3.23
I have suffered fractures in the past	22(31.9)	16(23.2)	5(7.2)	20(29.0)	6(8.7)	2.59
I have been prone to re-injuries	17(24.6)	12(17.4)	2(2.9)	26(37.7)	12(17.4)	3.06
I have suffered an ankle sprain during play	15(21.7)	19(27.5)	1(1.4)	22(31.9)	12(17.4)	2.96
I have injured my neck during play in the past	28(40.6)	23(33.3)	7(10.1)	11(15.9)	-	2.01
My head has been injured in the past during play	32(46.4)	23(33.3)	3(4.3)	8(11.6)	3(4.3)	1.94
My nose has previously been injured during play	24(34.8)	24(34.8)	3(4.3)	13(18.8)	5(7.2)	2.29
I have suffered a damage to the teeth during play	40(58.0)	15(21.7)	3(4.3)	9(13.0)	2(2.9)	1.81

The results in Table 1 show that the most common injuries were sprain or strain during play as reflected by 56.6% (39) of the respondents who agreed that they have suffered from either of the two injuries whereas 36.2% disagreed. The mean = 3.23 implied that the occurrence of a sprain or strain during play was moderately high. Therefore, the incident of sprain or strain amongst the football players was high.

Concerning whether the players had been prone to re-injuries, the larger percentage (55.1%) agreed with 42.0% disagreeing. The mean = 3.06 suggested that the respondents indicated re-injuries amongst the football players were moderately high. The results showed that, the injuries common among football players that occurred were; re: injuries (55.1%).

As to whether the football players had suffered fractures in the past, (55.1%) disagreed with 37.7% agreeing. The mean = 2.59 indicates that the occurrence of fractures in the past was moderately low. Therefore, the commonness of fractures amongst the football players was moderately low.

On whether the athletes had previously suffered contusions during play showed that, the majority (73.9%) disagreed while only 20.2% agreed. The mean = 2.19 suggested that the respondents generally disagreed. Therefore, this means that the occurrence of contusions during play among the football athletes was low.

With respect to whether the athletes had suffered ankle injuries during play, the results showed that the percentage (49.3%) of those who agreed and those who disagreed 49.2% were approximately equal. With regard to whether the athletes had injured their necks during play in the past, the majority percentage (73.9%) disagreed with 15.9% agreeing. The mean = 2.01 meant that most respondents disagreed. Therefore, the incidence of injuring the necks during play by the players was minimal.

As to whether the athletes had injured their heads in the past during play, the majority percentage (79.7%) disagreed with 15.8% agreeing. The mean = 1.94 implied that most of the respondents disagreed. Therefore, the frequency of head injuries to amongst the football players was low.

With regard to whether the players had injured their noses previously during play, the majority percentage (69.6%) disagreed with 26.0% agreeing. The mean = 2.29 meant that the respondents disagreed. Therefore, the commonness of nose injury during play amongst the football players was low.

Concerning whether the players had suffered damage to the teeth during play, the majority percentage (79.7%) disagreed with 15.9% agreeing. The mean = 1.81 meant that the respondents disagreed. Therefore, the incidence of teeth damage during play amongst the football players was low.

Observations were also carried out in seven games during the Uganda Inter- University games in December, 2017, and seven games during the University football league in 2018. This was to get more information on the injuries which occur to football players. The results are as presented in table 2

Table 2: Occurrence of Injuries among players of the Uganda Inter-University Games, 2017 and Uganda Universities Football League 2018.

Injury	Morning			Afternoon			Grand total	%
	Lower Extremity	Upper Extremity	Total	Lower Extremity	Upper Extremity	Total		
Sprain	03	00	03	04	01	05	08	22.2
Strain	02	01	03	03	01	04	07	19.4
Contusion	05	01	06	08	03	11	17	47.2
Fracture	00	00	00	00	00	00	00	00
Dislocation	00	01	01	00	03	03	04	11.1
Total	10	03	13	15	08	23	36 injuries	

The observations from Table 2 revealed that of the 36 injuries that occurred during the games, most of them, 17 (47.2%) were contusions; followed by sprains, 8 (22.2%); strains, 7 (19.4%); and 4 (11.1%) dislocations. This implies that contusion amongst the football players in Busitema University was the highest occurring while dislocations occurrence was lowest.

Qualitative data was collected using spaces for open responses in the questionnaire and interviews. Respondents from open ended questionnaire were denoted by “R” while those from the interview guide by “P”.

Out of 72 respondents from open ended questions, (90%) said that common injuries included ankle strains, minor injuries, lower limbs injuries and dislocations. These were in line with the results in the observation tool, which points out the strains and minor injuries (contusions) are common. R28 stated “Ankle strains are the common injuries among football players”. R41 and R48 observed, “Most injuries that occur on the legs are fractures and dislocations”. This was a response of 6(9.7%) of the total respondents, which implied that fractures and dislocations were not common.

In the interviews with the sports officials, they gave several responses to the question concerning what they considered common injuries among football players in the university. All the 7 (100%) respondents indicated that the common injuries were bruises, sprains, joint dislocations, ankle injuries and pains at the pelvic girdle.

During presentation of the responses obtained through interview data;

P1 stated, “the injuries that have plagued our teams are leg injuries which occur during play and training. These include joint dislocations, ankle injuries, strains and muscle pulls.” P4 said;

“Our number nine player got a dislocation during the final days to begin interuniversity games. The whole team was disorganised, demoralised and the games played were not well performed. The players almost refused to play because they had put much of their confidence in him. Some students demanded that the doctor injects him pain killers for him to play. The whole team became psychologically disturbed”.

P6 stated “Most players suffer injuries in their lower limbs including muscle pulls, ankle, knee, joint, toe injuries and dislocations. Due to lack of sufficient resources to handle these injuries, team performance has been affected and some players have had to give up their football careers.”

“The injuries affect the students’ participation in football more so their form. Thus most players abandon football due to repeated injuries.” Overall, the views from the questionnaire survey and interviews presented above were in agreement that the common injuries among the football players were joint dislocations, ankle injuries and sprains which affected the lower part of the lower limb.

Causes of Injuries among Football players.

Objective 2 was to examine the Causes of Injuries among Football players of Busitema University. The results are as presented below.

Table 3: Descriptive Statistics for Causes of Injuries among Football Athletes.

Causes of Injuries among Athletes	F/%	SD	D	N	A	SA	Mean
Dry and hard ground with the sunny weather	F	4	8	4	32	21	3.84
	%	5.8	11.6	5.8	46.4	30.4	
Joint instability	F	6	14	15	27	7	3.22
	%	8.7	20.3	21.7	39.1	10.1	
The bad playing field condition	F	4	3	2	37	23	4.04
	%	5.8	4.3	2.9	53.6	33.3	
Inadequate treatment/ rehabilitation from previous injury	F	4	6	4	35	20	3.88
	%	5.8	8.7	5.8	50.7	29.0	
Subjective exercise overload/ over training	F	5	26	12	19	7	2.96
	%	7.2	37.7	17.4	27.5	10.1	
Poor physical condition of players	F	3	12	10	35	9	3.51
	%	4.3	17.4	14.5	50.7	13.0	
Lack of/ poor equipment like football boots	F	3	5	4	29	28	4.07
	%	4.3	7.2	5.8	42.0	40.6	
Collisions during play	F	3	5	7	36	18	3.88
	%	4.3	7.2	10.1	52.2	26.1	
Foul play	F	5	10	5	30	19	3.70
	%	7.2	14.5	7.2	43.5	27.5	
Poor skill execution	F	3	17	16	20	13	3.33
	%	4.3	24.6	23.2	29.0	18.8	

Poor training techniques	F	8	6	6	37	12	3.57
	%	11.6	8.7	8.7	53.6	17.4	
Player neglect of the injury for the sake of representation on the team	F	4	11	5	21	28	3.84
	%	5.8	15.9	7.2	30.4	40.6	

The results in Table 3 show that the largest number of respondents, 60(86.9%) agreed that bad playing field condition was the cause of injuries while 10.1% disagreed. The mean = 4.04 indicated that the respondents agreed. Therefore, bad playing field condition was the major cause of injuries. This was followed by 59 (82.6%) of the respondents who agreed that lack of/ poor equipment like football boots caused injuries with 11.5% disagreeing. The mean = 4.07 implied that the respondents agreed. Therefore, lack of/ poor equipment like football boots was a major cause of injuries.

Concerning whether inadequate treatment/ rehabilitation from previous injuries were a cause of injuries, the majority percentage (79.5%) agreed with 14.5% disagreeing. The mean = 3.88 suggested that the respondents agreed. Therefore, inadequate treatment/ rehabilitation from previous injuries were a cause of injuries.

Regarding to whether collisions during play caused injuries, the majority percentage (78.3%) agreed with 11.5% disagreeing. The mean = 3.88 meant that the respondents agreed. Therefore, collisions during play caused injuries. On whether dry and hard ground with the sunny weather caused injuries, the largest number of respondents 55(76.8%) agreed with 17.4% disagreeing that sunny weather caused injuries. The mean = 3.84 suggested that the respondents agreed. Therefore, this implied that dry and hard ground with sunny weather caused injuries.

As to whether player's neglect of the injury for the sake of representation on the team caused injuries, the majority percentage (71.0%) agreed with 21.7% disagreeing. The mean = 4.06 meant that the respondents agreed. Therefore, player neglect of the injury for the sake of representation on the team caused injuries. Concerning whether foul play caused injuries, the majority percentage (71.0%) agreed with 21.7% disagreeing. The mean = 3.70 meant that the respondents agreed. Therefore, foul play caused injuries.

As to whether poor training techniques caused injuries, the larger percentage (71.0%) agreed with 19.3% disagreeing. The mean = 3.57 suggested that the respondents agreed. Therefore, poor training techniques caused injuries. As to whether poor physical conditions of players caused injuries, the majority percentage (63.7%) agreed with 21.7% disagreeing. The mean = 3.51 meant that the respondents agreed. Therefore, poor physical conditions of the players caused injuries. About joint instability being a cause of injuries, the larger percentage (49.2%) agreed with 29.0% disagreeing. The mean = 3.22 suggested that joint instability moderately caused injuries. Therefore, joint instability being a cause of injuries was moderate. With respect to whether poor skill execution was a cause of injuries, the larger percentage (47.8%) agreed with 28.9% disagreeing. The mean = 3.33 suggested that poor skill execution moderately caused injuries. Therefore, the effect of poor skill execution in causing injuries was moderate.

With respect to whether the subjective exercises overload/ over training, the larger percentage (44.9%) disagreed with 37.6% agreeing. The mean = 2.96 suggested that the respondents were not sure.

Therefore, the effect of subjective exercises overload/ over training causing injuries was moderate.

Discussion

The overall findings revealed that the most common injuries were sprains or strains during play and re-injuries. This is in agreement with Darrow et al. (2009), who revealed that the most common injuries in football were; complete ligament sprains and incomplete ligament sprains as well as Ekstrand et al. (2011), who also revealed that the single most common injury subtype was thigh strains. These findings were also in consonance with Abimbola et al. (2012), who stated that the most common injuries in football athletes were the re-occurring injuries.

The findings also revealed that the causes of injuries were: bad playing field conditions, lack of and poor equipment, inadequate treatment and rehabilitation from previous injuries, collisions during play, dry and hard grounds with the sunny weather, players' neglect of the injury for the sake of representation on the team, foul play, poor training techniques, poor physical conditions of players, joints instability, poor skill execution, subjective exercise overload/ over training. These results are consistent with Junge et al. (2000), who established that the causes of sports injuries were; playing field conditions, lack of equipment, inadequate treatment and rehabilitation, poor football skills and taping, violation of existing rules (foul play), poor physical condition of players and joint instability caused injuries. The findings are also in agreement with Mwaka (2013), who found out that dry and hard grounds and poor technique caused injuries, Arnason et al. (2004) and Stege et al. (2011), who revealed that players with previous injury were at increased risk of new injuries, Rynänen, et al. (2013), who found out that injuries were associated with the number of fouls in a match, Bahr and Holme (2003), who indicated that poor training caused injuries and Gulhane (2015), who reported that injuries were a result of improper training techniques, weakness (especially of the core muscles), poor preparation and poor training and muscle weakness.

Conclusion

The most common injuries among Busitema University football athletes were re-injuries, ligament sprain or strains, ankle sprains and fractures. However, nose injuries, contusions, neck injuries, head and teeth injuries respectively were the least common.

Factors including bad playing field conditions, lack or poor equipment like football boots, collisions during play, player neglect, dry and hard grounds, foul play, poor training techniques and poor physical conditions of players caused injuries.

Recommendations

Managers of Busitema University should ensure players adopt tactics that reduce proneness to sprains, strains and re-injuries.

Management of Busitema University should provide quality playing fields, equipment, provide players adequate attention and advocate full implementation of fair play rules.

There is also need to consider more funding to the sports department of the University from the University coffers each year, have a doctor who has specialised in sports medicine like many football clubs in developed countries. There is also need to improve upon ambulance-transport to a specialist, road safety and need to train supporting staff that can offer professional support.

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