

Football Injuries: a Survey of Injuries of Iraqi National League Male Players during the 2021-2022 Season

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Abstract:

Objective: The current article aims at recording the falling , and severity of wounds among the male players of premier Soccer League players in Iraq in the season of 2021–2022 .

Background: Men's football largely prevailed over in the last decades. Based on (FIFA), there have been considerably 265 million women and men soccer of all ages worldwide. Several studies on European professionals and elite players showed increasing level of wounds incidence during games and a very high accidents in ankle, knee, and thigh injuries. There are insufficient studies of injury incidence among soccer players in Iraq. We followed the Iraqi male premier soccer League players during the 2021–2022 season to assess the wounds accidents and types of wounds.

Method: Ten top clubs (235 players (age, 22.4 +/- 5.0 years) from the south and middle of the Iraq national league have been adhered prospectively throughout 2021-2022 and a player exposure and temporal – lost wounds including details about injuries (kind , body part, duration and circumstances of occurrence) were recorded from medical staff during all club training sessions and matches. A typical medical questionnaire has been employed to assort the injury in respect to type, intensity , site , and injury mechanism.

Results: about 416 injuries were recorded. (274 injuries in matches and 142 in training). We put down baseline data, match and training exposure, and injury data as type of injury, location, and injury intensity y. The players' mean age was 24 years (range 19-35). The average (SD) injury incidence has been 8.80 injuries per 1000 hours. The wounds incidents during the match has been higher than in training, 18.65 injuries per 1000 match hours and 4.35 injuries per 1000 training hours. Most injuries (95%) were located at the lower extremities, and most of the recorded injuries were acute (73%). Most acute injuries (26.92%) were caused by player contact while 59.13 % were

noncontact. The thigh muscle strain (posterior), ankle sprain, and knee were the known sites of injury (30.28%) (21.87%) (14.90%). The national team faced huge risks of injuries more than the rest of the players. The incident events of match wounds indicated a soaring injury tendency across time in both the first and second halves ($p < 0.0001$). There were 93 slight injuries, 104 minor injuries, 168 moderate injuries and 51 major injuries. Re-injuries formed 34% of all injuries, and they resulted longer absences than non-re-injuries (27 vs 20 days. Thigh muscle strain suffered from the greatest consequences in respect to days of absence from football player (on average, 45 days). There have been not differences among the non- similar positions on the field.

Conclusions: The incidence of injuries among male soccer football players in Iraq was high, especially during matches. Most injuries were thigh muscle strain and sprains involving the ankle, and knee injury. Thigh muscle strain was the main reason of absence in matches owing to injury.

An important finding of this investigation was the frequent occurrence of thigh muscle strain and ankle sprain injuries. This high number of these injuries must be treated to consider either this results from playing on artificial turf, insufficient rehabilitation routines resulting in re-injuries, or some other reasons like skill level and physiological/ psychological factors.

The high number of thigh muscle strain, ankle, and knee -injuries in these reports is worried and requires a special focus in the future, such as adequately enforcing rules, and continuing education in techniques and skills focusing on fair play. Future studies are required to determine risk reasons for injury and directing injury prevention initiatives.

Keywords: injury incidence, injury severity, thigh muscle, ankle, knee, football.

Introduction

Football, widely celebrated for its global appeal and dynamic nature is an intricate contact sport with high (physical, technical, tactical, and physiological) requirements at the elite level, and the risk of injury is considerable (1,2).

Many papers wrote about the injury epidemiology and traumatology of male adult football at the professional level in Europe all asserted a high risk of injury, especially ankle, knee sprain, and thigh strain. (2,3,8,9,10, 45).

This soaring in injury incidence might be owing to the increasing exercise frequency, increased intensity, and physical demands of football match play over the last decade, which happens as players become older and exerted efforts to be top quality, especially high-level players. Soccer injuries depend on the player age, exercise load, level of play, and standard of training. (13,14,16,12,15).

The high rate of injuries ranges from minor sprains to severe fractures and ligament tears. Studies have consistently highlighted the high prevalence of injuries in football, which can have significant implications for players' health and careers. (17).

Injuries can severely impact individual player performance and the overall success of a team. Injuries often lead to missed games, diminished performance, and long-term career implications. If any injuries are sustained, team results can suffer (18). Previous studies asserted that soccer injuries lead to diminished physical activity, resulting in the longest absence from match and training, and substantial medical costs. (19,4,5,6,7). Analyzing injury patterns helps develop tailored prevention strategies to mitigate these risks (44).

Iraq is one of the more successful national teams in Asia. In Iraq, a country of 41 million citizens, a national elite league for male players was established in 1974 which has seen a growing interest in recent years (49).

The Football Association of Iraq comprises close to 107,000 male players, which gives reasons for 29% of all organized players (The Football Association of Iraq, 2021). Furthermore, the share of recorded male football players keep on to get higher . From 2001 to 2020, the growth was 28%, with 13- to 19-year-olds accounting for the largest increase.

The Iraqi National League has seen a growing interest in both its domestic and international fan base and the number of competitive matches had been further increased in the 2017-2020 season. Many top players also play for their national team, Arab and Essence (AFC) Championships League. This increase in match exposure may be accompanied by a higher risk of injury (23).

Articles on injury incidence and risk in male football players written by Europe and North America, however, there are limited studies of injury incidence among soccer players in Iraq.

Iraq's distinct environmental and infrastructural conditions, such as varying pitch quality and extreme climatic factors, may create specific risk factors that influence injury rates differently than in other regions. Understanding these patterns and their causes is critical for developing effective injury prevention and management strategies.

While most studies on injury rates in male football players focus on Europe and North America, there is limited research on injury incidence among players in Iraq. Iraq's distinct environmental and infrastructural conditions, such as varying pitch quality and extreme climatic factors, may create specific risk factors that influence injury rates differently than in other regions. Understanding these patterns and their causes is critical for developing effective injury prevention and management strategies.

Research Aims

This study aimed to examine and analyze the injuries sustained by male football players in the Iraqi Premier National League during the 2021-2022 season, providing insights into their frequency, types, and potential causes.

Research hypotheses

1. The players would present a high injury incidence.
2. The thigh strains and ankle/knee sprains among lower limb injuries would be the primary causes of match absences.

Study Sample and Study Period

Throughout the 2021-2022 season (from July 1, 2021, to May 15, 2022), male soccer players in the Iraqi Premier League were monitored prospectively. The season was divided into two phases: the pre-season (July to August) and the competitive season (September to May). Players who were injured at the start or left their team mid-season were included for the duration of their participation. Twelve top-division clubs affiliated with the Iraqi Football Association were invited to take part in the study, with two clubs declining. The ten participating clubs were Naft Maysan, Al-Samawa, Al-Minaa, Naft Al-Janoob, Al-Shorta, Al-Naft, Al-Quwa Al-Jawiya, Al-Zawraa, Al-Talaba, and Al-Minaa. All 235 players involved were fully informed about the study and provided written consent, except for five players who declined and were excluded from the research.

Exposure and injury registration

The study adhered to standardized definitions and injury data collection methods for football injuries as established by FIFA and UEFA (42, 43). Each player's exposure time during both training sessions and matches was tracked using a standardized attendance record. Match exposure was documented for games against other clubs and was categorized into friendly matches and competitive matches for further analysis (20).

Injury recording was overseen by one of the team's doctors and a medical staff member. At least one medical team member was present during all training sessions and matches. Injuries were documented in a computerized report, detailing the date, whether the injury occurred during training or a match, the type and location of the injury, its severity, and contributing factors like player contact, weather conditions, lack of warm-up, artificial turf, and other relevant factors.

Definitions

An injury was described as any "physical complaint sustained by a player during a match, regardless of whether it required medical attention or resulted in time away from football." (21).

A training session was defined as any planned physical activity led by the coach involving the entire team. A match referred to any organized game, whether friendly or competitive, played either for the club or the national team (20,22).

A recurrent injury was described as "an injury of the same type and at the same location as a previous injury that occurs after the player has returned to full participation following the initial injury." A time-loss injury was described as "any physical complaint sustained by a player during a soccer match or training session that caused the player to be unable to fully participate in football activities the following day." (21).

Traumatic injuries were classified as those caused by a specific, identifiable event with an abrupt onset. On the other hand, overuse injuries resulted from repeated microtrauma rather than one distinct incident (23,24).

The severity of injuries was categorized based on the number of days missed from participation: slight (1-3 days), minor (4-7 days), moderate (8-28 days), and severe (more than 28 days). The total number of days absent from training and competitive matches was tracked for additional analysis. A player was deemed fully recovered when the medical staff cleared them to return to full training and match participation (21).

Statistical analysis:

All statistical procedures were conducted using SPSS for Windows Version 15.0 (SPSS Inc., Chicago, IL, USA).

The incidence of injury was expressed as the number of injuries per match and the number of injuries per 1000 match hours.²³ Injury incidence rates were calculated as the 'number of injuries divided by number of matches documented with returned injury report forms' and as the 'number of injuries multiplied by 1000 and divided by exposure hours.

Ordinal or categorical variables, such as injury severity and history, were presented as absolute numbers and percentages. We also calculated the percentage of acute injuries, percentage of recurrent injuries, body parts affected, diagnoses, and duration.

Differences in injury incidence between training and match and between preseason and competitive season were analyzed using the Wilcoxon signed-rank test.

Comparisons between national team players and the rest of the players were analyzed with the Mann-Whitney U test.

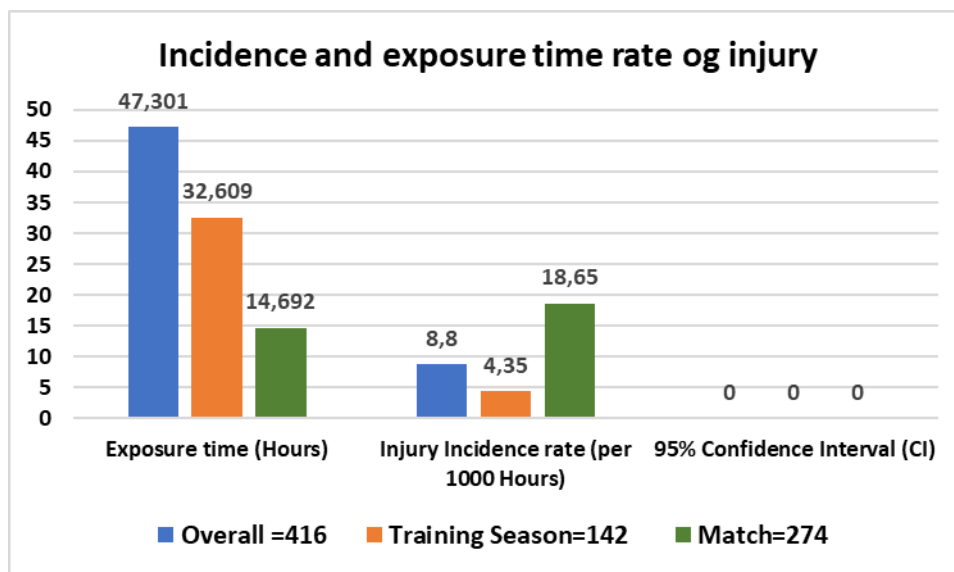
The difference in ankle and knee injury location was analyzed using the χ^2 test. The comparison of length of absence between reinjuries and initial injuries was analyzed using the Wilcoxon signed-rank test, and the Mann-Whitney U test was used when comparing length of absence between overuse and traumatic injuries. The significance level was set at 5% ($p, 0.05$). Results are expressed as mean (SD).

RESULTS

Exposure and registering of injury

The Iraqi National League players sustained 416 time-loss injuries, (Training Sessions:142, match play: 274) during the 2021-2022 season. The total exposure time was 47301 hours (32609 training session hours and 14692 match hours), and the overall injury incidence was 8.80 per 1000 hours of exposure (95% CI = 7.95, 9.65). The incidence rates varied significantly between training sessions and match play, reflecting the differing intensities and risks associated with each type of activity. The training session rate was **4.35 injuries per 1000 player hours** (95% CI = 3.65, 5.05), and the match play incidence rate was **18.65 injuries per 1000 player hours** (95% CI = 16.48, 20.82). These figures indicate that the risk of injury was considerably higher during matches compared to training sessions, highlighting the intense physical demands and competitive nature of match play.

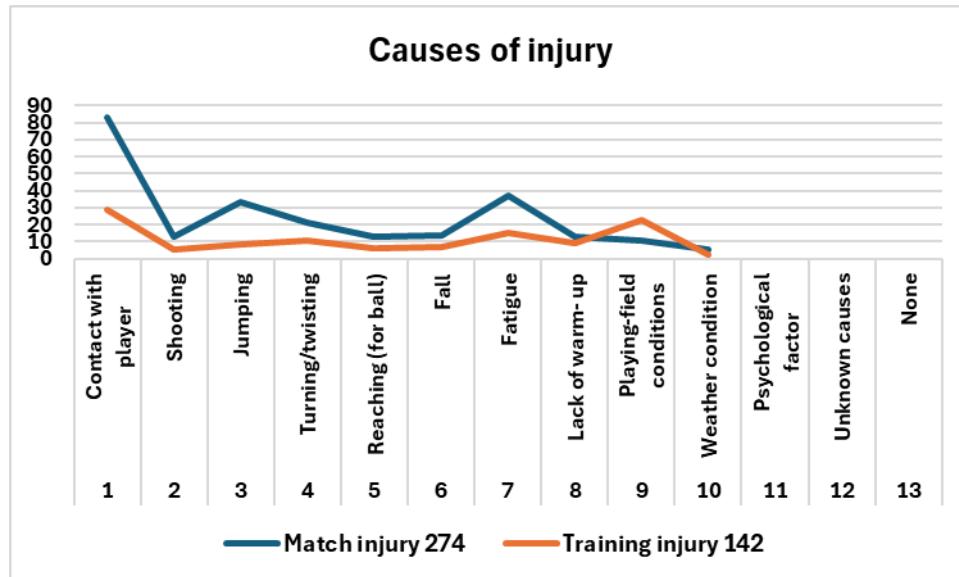
Table No. (1) Includes the Exposure Time (Hours), Injury Incidence Rate (per 1000 Hours), 95% Confidence Interval (CI), for the Iraqi National League during the 2021-2022 season.



Most of the recorded injuries were acute ($n = 306$; 73.55 %) and occurred during a match ($n = 206$; 49.51% and 100; 24.03 in training). Overuse injuries (12.5%) were the single most common injury subtype although muscle thigh strains and abductor muscle related groin pain.

The most common was contact with another player ($n = 112$; 26.92%), fatigue ($n = 52$; 12,5%) Jumping ($n=41$; 9,85%), artificial turf ($n=34$; 8, 17%), turning/twisting ($n=32$; 7,69%) and lack of warm-up ($n=22$; 5. 28%).

Table No. (2) shows the factors or causes that led to the occurrence of the injury.



Injury types and locations

95 % of the injuries affected the lower extremities. The single most common injury was the posterior thigh strains (30. 28%), representing the highest percentage of all injuries. Ankle sprain (21. 87%). A total of 56.04% of the players reported injury of the right ankle, 27.47 % of the left, and 16.48 % in both. Knee injury represented 14.90% of all injuries. Posterior thigh strains were significantly more common than anterior thigh strains (126 v 59). Posterior biceps thigh strains represented 60.86% of the all-thigh strains injuries.

Table No. (3) shows the injured Body Parts (Match, Training, and Total) in the Iraqi Premier Soccer league.

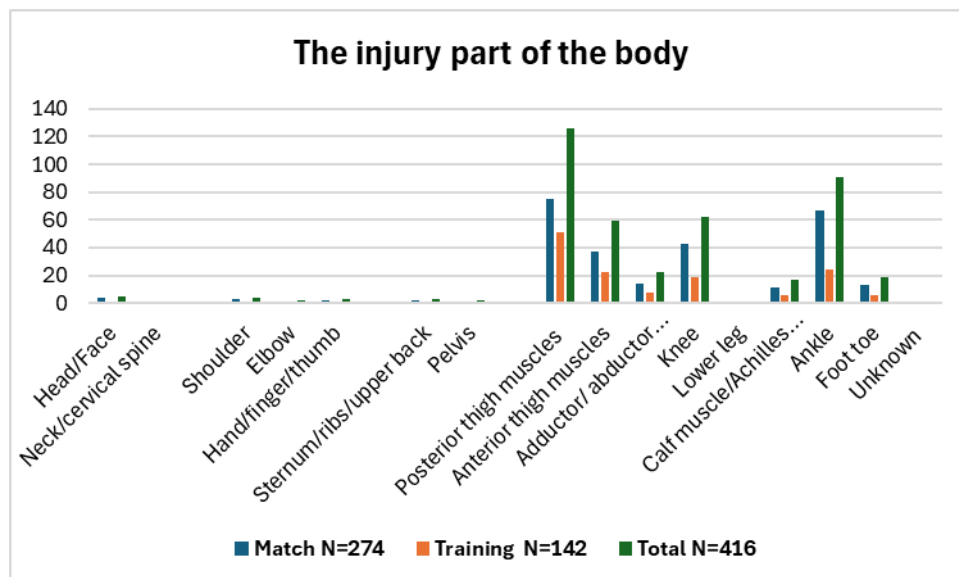
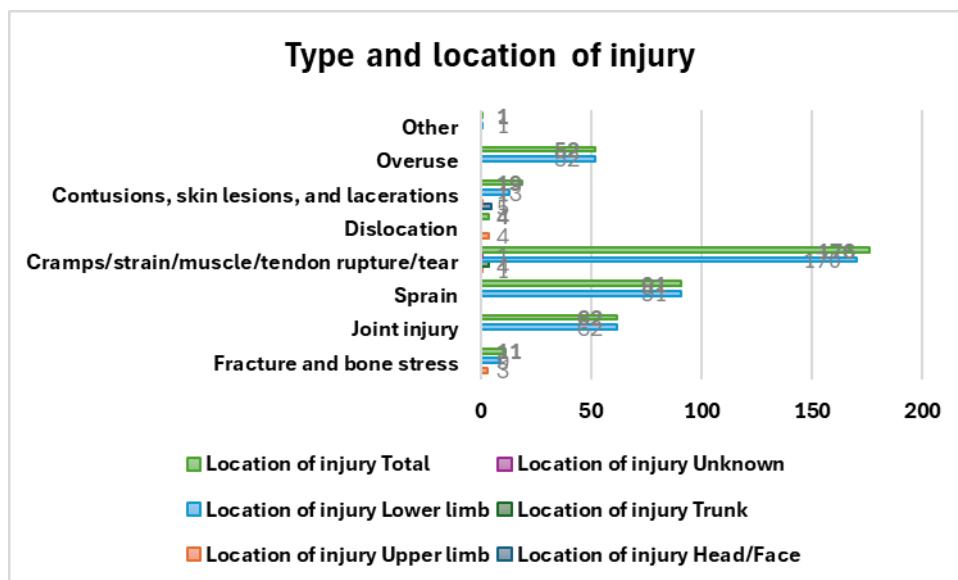


Table No. (4) shows the type and location of all injury in official matches and training.



Unknown because the injury location was not recorded

Injury severity and recurrent.

Injury severities are listed in Table 5: (18; 35%) of the major injuries were in the thigh muscles, (14;27.45%) located in the ankle and (8;15.68%) were in knee. Only (2; 3.92%) of the major injuries were due to overuse, and acute injuries resulted in a significantly longer mean absence than overuse injuries 21.1 (36.8) v 11.4 (24.5) days; $p < 0.0001$). Thigh strain and ankle sprain injuries had the greatest consequences in terms of absence from football play. Over three quarters of the moderate and major injuries (184/219) located in the thigh muscles, ankle and knee.

Reinjuries constituted 34% (142/416) of all injuries. Moderate and major muscle (18/48) and joint (8/19) injuries experienced the highest recurrent injury rate 4 % of the major and moderate injuries were due to overuse. (15; 17.4%) of these injuries occurred within 1 or 2 months of a player's return to full participation. Recurrent injuries caused longer absence (median =11.5 days, IQR=12) than first-time injuries (median=7 days, IQR=12.5). No players had to end their soccer career because of an injury.

Table No. (5) shows the type and severity of injury among Iraqi Premier League football players

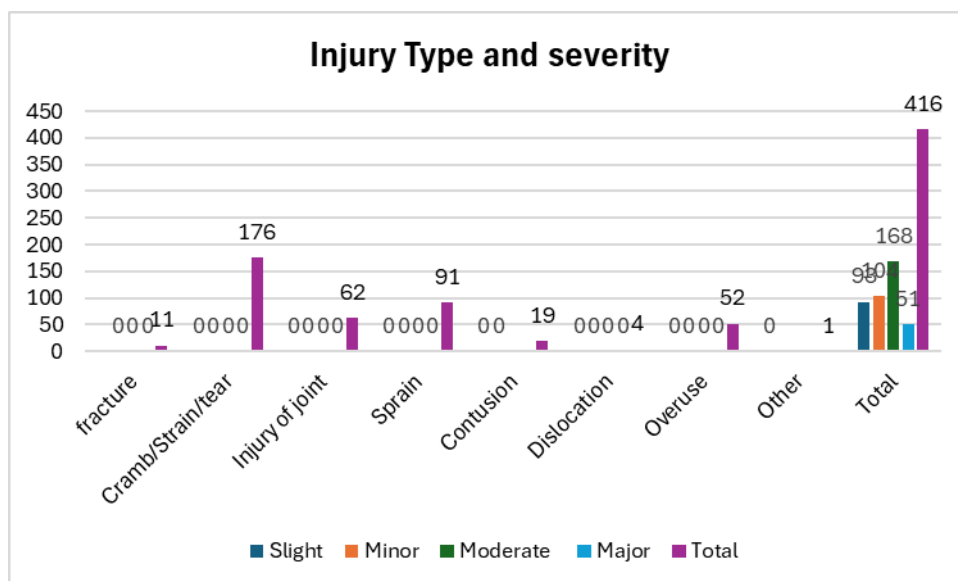


Table N. (6) Injury Severity and Absence in the Iraqi Premier Soccer League

Injury severity and absence				
1,2				
1				
0,8				
0,6				
0,4				
0,2				
0				
Major	51	30.5 (7.2)	25.7 (6.1)	56.2 (13.3)
Moderate	168	16.8 (3.5)	12.4 (2.8)	29.2 (6.3)
Minor	104	5.4 (1.2)	4.6 (1.1)	10.0 (2.3)
Slight	93	2.1 (0.7)	1.5 (0.5)	3.6 (1.2)
Injury severity	Number of injuries	Training Absence Mean (SD) (Days)	Match Absence Mean (SD) (Days)	Total Absence Mean (SD) (Days)

Foul play

About (27%; 67/274) of the match injuries were due to foul play, and all of them were due to opponent foul. The most common foul play injuries were all traumatic origin and consisted mainly of sprains (23%), and fractures /contusions (4%). Every third major match injury (17/51) was caused by opponent foul play. Foul play injuries were evenly distributed among the two halves (32 vs 35).

Discussion

The purpose of this study was to investigate the incidence and severity of injuries in male soccer players in the Iraq premier soccer league.

The present study revealed an overall incidence of 8.80 injuries per 1,000 player hours (95% CI = (7.9, 9.6), which is significantly higher than the incidence rates previously reported in the literature for European teams (18,25,17,26,27,28,29,30). Previous studies on European teams have typically reported injury incidences ranging between 4.0 to 6.0 injuries per 1,000 player hours (17,31).

Moreover, our study observed a high incidence of injuries both in training and matches, indicating that the risk is not confined to competitive play but extends to preparation activities as well. This underscores the importance of closely monitoring training loads, implementing injury prevention programs, and ensuring adequate recovery periods.

The training injury incidence of 4.35.(95% CI = 2.3, 3.3), and the match injury of 18.65 in our study was also significantly higher than in the European studies. Comparable studies have documented lower injury rates in training (2.0 to 3.50 per 1,000 player hours) and higher rates in matches (9.0 to 12.0 per 1,000 player hours) (46,47,48).

The elevated injury rate might reflect differences in the level of competition, player workload, or training intensity compared to European counterparts. Teams included in this study might have had more demanding training regimens or match schedules, leading to increased physical stress and a higher likelihood of injuries.

The environmental and contextual factors, such as playing conditions, medical support, and recovery practices, might differ significantly from those in Europe, potentially contributing to the higher injury incidence. Variations in the availability and quality of medical staff, physiotherapists, and recovery facilities could also play a critical role. The difference in the total number of injuries

could be due to countries' variations in the playing style of the teams and skill level or to different injury definitions (27,32,39,11).

In this study, the injury rates during competition or match were always higher than during training. This is compared with several studies and the results are agreement with most of results of these studies (18,17,35,19). This may be because the higher the speed of play, the higher the rate of injury. As the speed and intensity increases, players tend to have more body contact, such as sliding and tackling, twisting, jumping and landing which leads to more injury (35,19).

The analysis of injury severity revealed a different pattern among the players taking part in the UEFA Champions League (23,37,33). The footballers investigated in the present study had a significant increase in the incidence of moderate and major injuries (219/416). Each player missed 48 days due to injury. This means that approximately 14 % of the season is lost due to injury if we assume that a season lasts 345 days.

Location of soccer injuries expressed as a percentage of total injuries; In this study, lower extremity injuries represent 95% of the total number of injuries, and Thigh strains, ankle sprains, and knee injury were the most common locations of soccer injuries and caused the highest match absence. These results agree with most of the results of several studies (34,18,13,23,20,17,36, 29).

Re-injury in the present study was higher than that reported for different European elite players (27,17,18). constituted 34% of all injuries. These values disagree also with studies of Scandinavian professional soccer, in which recurrent injury rates varied between 22% and 30% (13,27,29,37).

According to Ekstrand et al, (17) one explanation for the difference might be that top-level clubs in Europe have more medical support and can provide more personalized rehabilitation for injured players. Furthermore, the difference in the league system in Iraq as compared with that of most European countries. Owing to climatic conditions, the Iraq league seasons run from September to October/November, with a 3-month preseason period starting in January. In most other European leagues, the soccer season starts in July and ends in May.

The finding in this study is that the risk of injury may differ between countries, also between the national team players and other league players. In this study, the national team and players who play in the Asian Champions League had higher injury incidence than other players.

This is consistent with other findings, where the players exposed to international duties during the season have a higher risk of injury than the rest of the level players. The players requiring elevated physical fitness levels and more intensive training predominantly at the professional/higher skill level (38,40,41). International soccer bodies are concerned about the pressure on elite and professional soccer players and the increased mental and physical demands leading to injuries (13,39).

What is already known on this topic

The risk of injury in elite football is known to be high. In recent years, the number of competitive matches during a season has increased for the top clubs. In the most recent studies, thigh strain, ankle sprain and knee injury, and have been the most common football injury.

What this study adds

The injury incidence differed significantly between teams from European regions and East Asian due to the high skills players as well as medical and psychological care. National team players had a significantly higher risk of injury. The study confirms that ankle/knee sprain and thigh strain are the most common injuries in professional/elite football.

Conclusions. The incidence of injuries among male soccer football players in Iraq was high, especially for the national team players. Most injuries were thigh strain, and sprains involving the ankle and knee injury. Thigh strain was the first cause of absence in competition due to injury.

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