

Common Musculoskeletal Injuries Sustained in an Uncommon Sport: Assessment of Injuries at the Gaelic Games North American Championships

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Received: July 15, 2019; **Published:** July 19, 2019

DOI: 10.31080/ecor.2019.10.00470

Abstract

Most sports are recognizable, and to most orthopedists or sports medicine specialists, the mechanisms of injury and possible sequelae of such sports injuries are well researched, recognized, and understood. However, what if a patient presented with an injury that occurred while they were participating in the Gaelic Games or playing or practicing Gaelic football or hurling? Any injury resulting from such would likely be less researched, recognized, and understood. The Gaelic Games consist of competitions in Gaelic football, hurling, camogie, and handball. They are physically demanding, rugged, and contact-intense sports played, for the most part, without the benefit of protective padding. Each Gaelic sport, being a mix of other more recognized sports, can present its own set of injuries and challenges in how to diagnose, treat, and prevent them. Although the roots of the Gaelic Games are from ancient times, the Gaelic sports and competitions are growing in popularity and participation globally, among men, women, young adults, and children. The following study takes a look at the injuries that were noted and treated at the 2016 North American Gaelic games held in Seattle, Washington, USA. There is relatively little medical research on these sports, thus this study attempts to assess the incidence and types of injuries commonly sustained during such competitions so the orthopedist, sports medicine specialist, and health care provider may become more familiar with, and better diagnose and treat, such: and researchers, trainers, and coaches can better prepare their players and prevent or minimize injuries.

Keywords: Gaelic Football; Gaelic Games, Hurling; Sports Injuries

Abbreviations

CITI: Collaborative Institutional Training Initiative; IRB: Institutional Review Board

Introduction

The Gaelic Games is an up-and-coming sporting competition that has its known roots in Belgium in 1774, and is enjoying a renaissance on the European sporting stage and expanding globally [1]: 90 clubs across 20 countries with over 4,000 players who participate in camogie, hurling, football (men and ladies), handball, and rounders competitions [2]. In the football and hurling competitions, no protective padding is worn by participants [2] (except for a plastic protective helmet with a faceguard in hurling) leaving them vulnerable to injury. Both competitions are played on a grass field with fifteen players on each side and H-shaped goal posts at each end of the pitch. The goal in both competitions is to score points; the team with the most points at the end of the game is the winner. Because of the rugged nature of these competitions, injuries often occur.

The football competition of the Gaelic Games (which has its distinct origins in Ireland thousands of years ago) requires a combination of skills that may be used in other sports, such as American football, rugby, soccer, basketball, and volleyball. The football competition of the Gaelic Games uses a round-shaped football, which is slightly smaller than a soccer ball. The ball can be caught, kicked, and hand passed. The ball can be kicked as in soccer and hand-passed as in rugby (using a striking motion with a hand).

The goal of the contest is to maintain possession of the ball and score points; the team scoring the most points by the end of the game is declared the winner. In order to score points, the team must pass or kick the ball into the goal or over the crossbars. To pass the ball, a player can throw, toss, or kick the ball. One point is awarded by putting the ball over the other team’s crossbar by foot or fist; three points are awarded by putting a ball under the crossbar into the net by foot or hand. There are a referee and two linesmen to judge the game [2].

The hurling competition of the Gaelic Games (which has prehistoric origin) has been described as a combination of hockey, lacrosse, rugby, and soccer [2]. It is played by similar rules and scored as in the Gaelic football competition, except that a wooden stick (hurl) is used to strike and propel the ball (sliotar) into the net or over the crossbar of the opponent [2].

Players tax their bodies in running, kicking, hand tossing, tackling, and swinging the hurl (Figures 1-5). Lower extremity injuries are common. Also, concussions and injuries to the head and neck are common. Lacerations and contusions typically occur.



Figure 1: Gaelic football. Photo courtesy of the Seattle Gaels.



Figure 2: Gaelic camogie (the female version of hurling). Photo courtesy of the Seattle Gaels.



Figure 3: Members of the medical team consulting with an injured player. Photo by Michael Rosen (2016).



Figure 4: Member of the medical team treating the hand of an injured player. Photo by Michael Rosen (2016).



Figure 5: Member of the medical team treating the foot of an injured player. Photo by Michael Rosen (2016).

The following discussion focuses on player injuries sustained during the football and hurling competitions of the Gaelic Games North American Championship held over three days in Seattle, Washington, USA in 2016 (hosted by United States Gaelic Athletic Association) and summarizes the evaluation of 295 treated participants during and immediately after the competitions.

Discussion

The objective of this study was to determine the cause, mechanisms, and types of injuries identified by evaluating and treating numerous injured participants. The methods for the study were in notifying all participants and players that first aid (a medical tent) was available at the event, and players were encouraged to present to the medical personnel for consultation, evaluation, and treatment if they sustained an injury. Injured participants were questioned and examined by the event’s official medical team who were CITI (Collaborative Institutional Training Initiative) trained to treat the injured participants and collect data. Data collection was limited to injuries that occurred at the event; pre-event and post-event injuries were not included in the data set.

The results of the data collection included a total of 381 identified injuries. The event’s medical team evaluated and treated 295 participants with multiple injury sites (body areas). Some participants made multiple visits to the medical team. Lower extremity injuries totaled 64% (245 participants); upper extremity injuries, 17% (63 participants); spine (excluding cervical) and torso injuries, 10% (39 participants) head, face, and neck injuries, 4% (15 participants); and other injuries, such as contusion, concussion, and first aid, 5% (19 participants)-as depicted in Table 1 and Figure 6.

Head	3	Gluteus	5	Knee	43	Forearm	2	Contusion	2
Eye	1	Lower back	27	Foot	6	Elbow	4	Concussion	4
Neck	10	Leg	71	Ankle	49	Arm	2	Chest	7
Mouth	1	Hip	14	Achilles	9	Hands	24	First Aid	13
Upper back	5	Hamstring	45	Shoulder	26	Wrist	5	Plantar Fasciitis	3

Table 1: Number of injuries by body parts of participants. Data obtained during three days of the tournament.

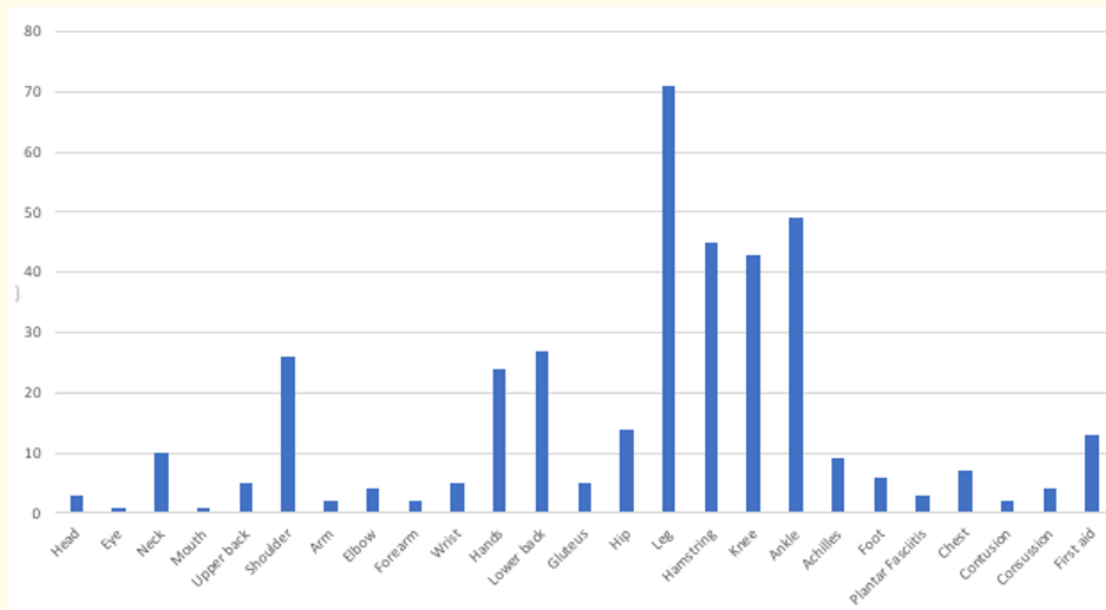


Figure 6: Number of injuries by body parts of participants. Data obtained during three days of the tournament.

The findings in this study were consistent with published studies by other authors. According to Murphy *et al.* (2012) and O’Connor *et al.* (2016), match-play injury rates have been reported to be higher than training-play injury rates [3,4]. Crowley *et al.* (2011) reported that lower limb injuries occurred more frequently than injuries to the upper limbs [5]. Malone *et al.* (2017) noted that the middle three positions (midfield, half-back, and half-forward) involved higher activity profiles compared to other position player groups [6].

In summary, at the 2016 Gaelic Games North American Championships, lower extremity injuries were most common. In general, extremity injuries outpaced injuries involving the spine (without cervical involvement), and torso injuries were identified. Head, face, and neck injuries occurred to a lesser degree. Also contusion, concussion, and first aid injuries were at risk to occur. Players at such competi-

tions have a higher risk of injury (three times more injuries occur) in the second half [7] or final quarter of games [8]. This comparatively higher later-game injury rate may be due to several factors. Players may not report some injuries in the first half as they desire to continue to play. Players may have less stamina in the latter half and quarter resulting in more mistakes. Players may take more risks to overcome a scoring deficit or protect a lead near the end of the game.

Conclusion

Although based in antiquity, the Gaelic Games is gaining a resurgence in popularity and participation globally. Two of the most rugged competitions of the Gaelic Games are football and hurling which involve unique skill sets and demands on the players' bodies, and can typically result in various injuries, primarily to the upper and lower extremities and torso. As the popularity of the Gaelic Games continues to grow, more injuries related to the sport will likely be experienced by participants and seen, diagnosed, and treated by medical staff on and off the pitch. By having a familiarity with these unique sports and the incidence and mechanism of injuries to the participants, the orthopedist, sports medicine specialist, and health care provider can better diagnose and treat such sports-related injuries. Also, with a greater understanding of the sport and its related injuries, researchers, trainers, and coaches can develop more effective training and practice methods and playing strategies and techniques to diminish the rate of injury in the Gaelic Games players [9].

Conflict of Interest Statement

The authors declare that this paper was written in the absence of any commercial or financial relationship that could be construed as a potential conflict of interest.

Acknowledgment

The authors wish to acknowledge Kinesio Taping Association International, Bastyr University IRB Board, Masa Integrative Clinic, Seattle Nature Cure Clinic, Masa Sasagawa ND, PhD, Calvin Kwan ND, Grace Chang ND, LAc, Thien Nguyen ND, LAc, Ashok Bhandari ND, Julieann Murella ND, LAc, Giulia Ricciardi

Supplementary Note

This study was approved as IRB exempt (#16-1566).

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Volume 10 Issue 8 August 2019

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