



Evaluating a standardised tool to explore the nature and extent of foot and ankle injuries in amateur and semi-professional footballers



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ABSTRACT

Background: Most studies of football injuries include professional players and data have been collected in without a single validated, standardised tool. We aimed to develop a new standardised questionnaire for assessing injuries among non-professional footballers and pilot its use.

Method: A questionnaire was developed using input from footballers, healthcare professionals and triangulation from the literature. The new tool was piloted among players representing amateurs and semi-professionals. Their comments were used iteratively to improve the instrument.

Results: The development phase produced a 33-item questionnaire collecting quantitative and qualitative data. In the pilot phase, 42 questionnaires were distributed, 34 (81%) returned. Respondents reported total of 273 football-related injuries, 114 affecting the foot/ankle (70 at the ankle and 44 at the foot). In total, 44% of respondents had suffered one or more foot/ankle injuries in the past 12 months.

Conclusion: We developed a new standardised tool which we found to be well-completed by young male footballers in semi-professional and amateur settings with an excellent response rate. Our results suggested that foot/ankle injuries were common, larger studies in non-professionals are needed to identify risk factors for injury and develop pragmatic advice for prevention.

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What this study adds

- A new, simple, self-administered tool to identify intrinsic risk factors for football related injuries
- Potential new risk factors for football related injuries
- High numbers of foot and ankle injuries in amateur and semi-professional players

1. Introduction

Association football or Soccer is one of the most popular sports worldwide, with 4% of the world's population actively involved and represents one of the UK's most popular sports alongside athletics and cycling [1]. In England, football-related injuries are second only to rugby league in terms of prevalence, and for professional

footballers, the levels of injury are approximately 1000 times greater than for industrial occupations generally regarded as high risk e.g. construction [2]. There is an estimated frequency of 10–35 injuries per 1000 player-hours and a performance-limiting injury occurs every 0.8–2 matches [3]. Approximately 86% of football injuries occur in the lower extremity, with the ankle and foot accounting for between 11–17% and 5–6% of injuries respectively [2,4]. In particular, foot injuries to high profile players in the Premier league have been widely reported in the Press [5–7], with these injuries often keeping key players out of league and International competition for several weeks.

Many factors have been considered when studying foot and ankle injury mechanism in footballers. However, epidemiology is often poorly reported with little standardisation of methodology, differing definitions of what constituted an injury [8], lack of consistency in data collected (demography, football-specific factors such as types of boots worn), variable attention to the role of psychological factors. Moreover, most studies have been carried out with professional football clubs, yet semi-professional and amateur players make up the vast majority of those playing football at a competitive level. Our aim was to develop and pilot a new standardised

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questionnaire suitable for use among a range of non-professional footballers that could inform how frequently foot and ankle injuries occurred in these settings and determine possible risk factors. Our ultimate aim is to inform a simple pragmatic evidence-based prevention initiative which could be recommended to the majority of clubs despite the lack of sophisticated medical facilities available to larger professional organisations.

2. Methods

2.1. Questionnaire development

A literature search revealed no papers that included a questionnaire of suitable sensitivity & specificity that could be used for this study. The Union of European Football Associations (UEFA) have developed a model to which epidemiological studies on football injuries should be based [9] and was considered, but this suggests a classification approach whereby the severity of an injury is determined by the length of absence from playing. This approach requires considerable recall accuracy or access to accurate club medical records and was not appropriate for a retrospective study amongst footballers without regular medical support, particularly when more than one injury was being considered. In light of this, a new questionnaire was developed by generating items from footballers both professional and amateur, as well as a range of health professionals (rheumatologists, physiotherapists and podiatrists). Items generated were then triangulated with the literature. We tested the questionnaire in three stages, firstly an amateur football team completed the questionnaire, commented on ease of understanding and areas they felt were missing. Following minor modifications to the format, questionnaires were distributed to semi-professional footballers and returned to health professionals for their input. The final questionnaire (Appendix 1) enquired about demographic data, football specific data (position played, type of football boots etc.); general information about type and number of injuries as well as specific data regarding foot or ankle injuries.

2.2. Subjects and setting

A range of amateur and semi-professional teams were identified locally and invited to participate. The teams consisted of an amateur team and two semi-professional teams playing in the UK Blue Square Premier Division. A sample of male footballers currently in the first-team squad for three teams in the South-East of England was selected. Ethical approval was granted from Brighton and Sussex Medical School Research Governance and Ethics Committee.

2.3. Data collection

We tested different approaches of collection of data so as to respond to real-life practical challenges and maximise the response rate. One team were given the questionnaire on a coach journey to an away match, whereas the other two teams completed the questionnaires either at the beginning or end of training sessions – all questionnaires were distributed by the teams' physiotherapist. Each footballer (total $n = 42$) received a covering letter, questionnaire and consent form, the latter two returned to the researcher in a pre-paid reply envelope.

2.4. Statistical analysis

Data were extracted and entered into SPSS v16.0. Categorical data were summarised using frequency counts and percentages. Continuous data were summarised by means (\pm standard deviations).

3. Results

3.1. Questionnaire

Following discussion with football players, healthcare professionals and triangulation with the literature, a simple, short questionnaire was developed (Appendix 1). In the pilot study, 42 players from three clubs (two semi-professional and one amateur) were invited to complete a questionnaire. In total, 34 replies were received, giving a response rate of 81%. We planned to validate the questionnaire responses against club records but we found marked heterogeneity. One club had no records and the two others showed such inconsistency in recording of injuries that an attempt at validation in this way at non-professional teams seems unlikely to be useful.

3.2. Demographic data

In total, responses were received from 2 goalkeepers, 14 defenders, 15 midfielders and 3 strikers. They ranged in age between 16 and 36 years (mean 24 years) and 23 were semi-professional and 11 amateur. Between them, they reported 2–23 years of football experience (Table 1).

3.3. Epidemiology of football-related injuries

The footballers reported a total of 273 injuries, 114 of these at the foot or ankle (42%). All of the 34 subjects had experienced at least one injury during their career. Across the three teams, the two semi-professional teams had accumulated the highest overall

Table 1
Demographic data comparing semi-professional and amateur players.

Demographic variable	Total ($n = 34$)	Semi-professional players ($n = 23$)	Amateur players ($n = 11$)	p value
Age				
Range	16–36	16–39	21–24	0.216
(Mean: SD)	(24: 4.9)	(24.8: 5.8)	(22.5: 0.8)	
Height (cm)				
Range	162–200	173–200	162–190	0.05
(Mean: SD)	(179.3: 8.1)	(182.1: 6.8)	(174: 8)	
Weight (kg)				
Range	65–101	70–101	65–90	0.059
(Mean: SD)	(77.7: 84)	(79.7: 8.6)	(73.8: 6.6)	
BMI				
Range	21.4–28	21.4–28	21.6–27.5	0.454
(Mean: SD)	(24.12: 1.5)	(24: 1.5)	(24.4: 1.6)	
Number of years in club football	2–23	4–23	2–18	0.709
		(11.3: 5.5)	(10.7: 4.2)	

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