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Attitudes to and awareness of Safety and Risk among Professional and Semi-Professional Footballers in Ireland: A Cross-Sectional Study

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Abstract: *This paper examines the attitudes towards safety and risk among professional and semi-professional footballers during the 2014 League of Ireland season. As part of a broader nationally-representative study examining occupational safety and health and concussion injury awareness among professional footballers, this study is the first and largest investigation of its kind in Ireland. A census survey using an anonymous questionnaire was provided to all clubs that were available in the League of Ireland clubs between March and May 2015. Permission to access players was provided by the Professional Footballers Association of Ireland. Participation was voluntary. At the time, there were 250 professional and semi-professional players within the League available to participate of which 149 footballers participated voluntarily and anonymously. Sixty per cent of the participants were employed on a semi-professional basis, and the majority of all participants were aged between 18 and 30. Analysis indicated that there were few significant associations between players' professional status and attitudes towards issues relating to safety management and risk taking. Players in general have an unacceptable level (<20%) of awareness concerning their clubs safety programs. The results have implications for stakeholders responsible for management of safety and risk in professional football clubs.*

Keywords: Risk management; risk attitude; safety communication; football; safety behavior; footballers; professional and semi-professional; quantitative

Introduction

As with all employers in Ireland, Irish professional and semi-professional football clubs have a duty of care under Irish occupational safety and health (OSH) legislation to carry out risk assessments of their activities (Government of Ireland, 2005) and communicate those risks to their employees via a consultation process built into their safety management systems or safety programs. While OSH management practices have been embedded into organizational management through international and national health and safety legislation and accident minimization global agendas (e.g. Vision Zero) they have yet to be completely adopted in elite sport organizational management practices (Heil, 1994; Ernst, 2003; Zwetsloot et al., 2017). In accordance with the Union of European Football Associations (UEFA) Club

Licensing and Financial Fair Play Regulations, the Football Association of Ireland (FAI), which is the national governing body for football in Ireland, introduced a licensing system in 2004. The purpose of this system was to ensure that clubs participating in the League of Ireland were maintaining appropriate standards in areas such as club safety, finance, and player welfare (FAI, 2019). The adoption of risk management processes within sports management (Fuller et al., 2012) and the provision of medical care and player safety and welfare support (Drawer and Fuller, 2002) are key aspects of the FAI's licensing system and regulations (FAI, 2019).

Professional athletes involved in high-performance sport are at a significantly higher injury risk in comparison to other professions due to the fact that the sporting performance is considered the product. This may lead to long-term health consequences as professional athletes expose themselves within risky environments (i.e. the sporting arena) leading to an elevated acceptance level of occupational risk compared to other professional occupations (Chen et al., 2019). Professional football, particularly at the highest levels of competition, is considered a tough, hyper-masculine, competitive, and physically-demanding occupation (Hulse et al., 2003; Roderick, 2006). Due to the high levels of risk associated with professional football, most players engage in risk-taking and aggressive behaviors often with cognizance of the potential impacts of such behavior (Zech and Wellman, 2007; McCrea et al., 2004; Drawer ad Fuller, 2002). Head trauma, concussion, pain, and injury are everyday occupational risks for players in general, and for professional football players in particular. They are occurrences that can have both short- and long-term health impacts (Guskiewicz et al., 2007) and can lead to the culture of professional football permitting players to compete while injured, and in many instances, neglecting injury or pain (Roderick et al., 2000; Hägglund et al., 2010). This may lead to an elevated risk of health-compromising behaviors (Miller 2009). Consequently, many professional football players accept greater risk of injury even when their support system and management programs suggest otherwise. Playing through injury in professional football is viewed by coaches, managers and fans as a reflection of tough character and steely determination. Missing a game due to injury can have considerable short-term consequences in terms of getting back into play, and more significant long-term implications in terms of securing a new professional contract (Roderick, 2006).

Currently, our understanding of professional football players' awareness of occupational risk is limited, and this awareness should be evaluated more rigorously (Miller, 2009). While many studies have focused on professional athletes' specific injury prevention techniques, most professional football players are unaware that sporting injuries are occupational injuries requiring responses determined by OSH practices. Professional football players' exposure to risky behaviors can result in a higher acceptance of risk compared to other occupations (Fuller and Drawer, 2004). In the UK, the overall injury risk in professional football is 1,000 times higher compared to other high-risk occupations, such as construction and mining. Most non-sporting workplaces have adopted OSH management practices to reduce risk to a level designated "As Low As Reasonably Practicable" (UK HSE, 2019). Under the Safety, Health and Welfare at Work Act (Government of Ireland 2015), Irish employees are responsible for notifying their employer of occupational injuries regardless of their occupation this Irish professional and semi-professional footballers should be informing their coaches and

management of any injuries that occur to them during training or competitive matches. An organization's OSH system will not be effective without a positive safety culture (Kim et al., 2016) that is transparent and has the engagement of employers and employees.

OSH management practices have been embedded into the vast majority of organizations via international and national health and safety legislation (EU OSHA, 2012), but not completely adopted in professional sports organizations (Fuller and Hawkins, 1997). Arguably, the adoption of OSH practices in professional football, particularly the successful processes used in communicating risk awareness and safety in similar high-risk occupations, could have highly-significant benefits for professional athletes and promote their long-term health and wellbeing (Heil, 1994). This could lead to the development of a safety plan consisting of shared values, attitudes, perceptions, and beliefs that drive both decisions and behaviors regarding safety. These can be reflected in human workplace behaviors in an organization as a part of its organizational culture (Cooper, 2000; Guldenmund, 2000).

Despite a considerable body of knowledge exploring safety, injury prevention (Van Mechelen et al., 2004; Finch, 2006), injury incidence, and types of injury in professional football (Miller, 2009), sports-related risk management principles (Fuller and Drawer, 2004) have tended to focus more on legal or insurance perspectives than on occupational or public health perspectives (Pfirmann et al., 2016; International Labor Office, 2008). This is important because risk management underpins OSH practices in most industries (International Labor Office, 2008). Despite limited evidence directly linking risk management to a reduction in sport injuries, the application of risk management models (i.e. risk identification, risk management, implementation and evaluation) and principles (Pfirmann et al., 2016) to the development of sports safety plans has been widely advocated internationally (Miller, 2009), including in Australia (Watson, 1996; Cotton, 1993). In particular, Abbott et al. evaluated sports safety-related risk management policies and infrastructure within a community football club in Australia, and argued that SafeClub as a training program was 'particularly effective at enabling sports clubs to lay the foundations for good risk management practices' (Abbott et al., 2008).

In recent years, there have been an increasing number of studies examining specific injury risk in football, notably concussion. National football associations and leagues in countries such as the Netherlands and Italy have undertaken this much-needed research. However, the significance of factors such as professional occupational status remains unclear. Moreover, despite a growth in studies examining concussion-reporting rates and practices with professional football players internationally, studies examining the occupational risks and attitudes towards safety, health and long-term wellbeing are few and in particular among Irish semi-professional and professional footballers are lacking completely. Finally, research examining personal safety program awareness and attitudes towards safety management among professional athletes has been limited in general (Chen at al., 2019). In response, the purpose of this study was to investigate the safety awareness and concussion-reporting frequencies of a cohort of Irish professional footballers. The factors impeding their injury awareness from achieving OSH standards are discussed from safety management, organizational, and individual perspectives. This research contributes to a better

understanding of how to build a positive safety culture, one that could reduce professional athletes' injury rate and improve their long-term wellbeing.

Materials and Methods

Research Questions

This research aims to evaluate attitudes of both professional and semi-professionals footballers towards their respective club safety programs and the risks that they can experience from playing football. From the quantitative paradigm, the attitudes and awareness of athletes towards their safety, injury and risk was studied, while this is considered qualitative data it was collected in a quantitative research process. The following research questions attempt to address these issues of awareness amongst the footballers:

(1) Are they aware that their clubs are using safety management system / programs?
(2) What is the footballer's attitude towards these safety management systems / programs provided by their club?
(3) Are there any differences in attitude amongst footballers within the level of professional status regarding their own safety and their fellow team-mates?

In particular this research question was to determine if there was a difference between footballers with full professional contracts or those on part-time professional contracts as "semi-professionals". Semi-professional footballers have the capacity to be employed in other sectors and thus can experience various OSH management systems and potentially increase their awareness of occupational risks and personal safety. This can give semi-professional footballers a wider perspective on OSH management which can impact their attitudes towards their club's safety management programs and procedures.

Research participants

In this study, the population size consists of both the professional and semi-professional footballers who play in the top two division of the League of Ireland which is thus organized by the Football Association of Ireland (FAI). The players are contained within two groups within this cohort, (1) professionals and (2) semi-professionals. The population size during this study consisted of a total 250 footballers, who were registered with the Professional Footballers Association of Ireland (PFAI), with the professional player population at 100 and semi-professionals at 150. The population size consists of male footballers between the age group of 18-39. There were two specific criterion (1) inclusion and (2) exclusion set by PFAI in order to grant access to the population. Within the inclusion criteria, participants were registered with a League of Ireland Football Club (LIFC) who were remunerated for playing in the club either with full professional contracts or semi-professional contracts, must be a member of PFAI and have played at least as professional or semi-professionals for at least one season prior to 2014. Conversely, players that were under 18 years of age, players that did not participate in playing football professionally prior to 2014 season and players that were on loan from non-league of Ireland Clubs were excluded from the study.

Research Tools

As the research had access to potentially all of the professional and semi-professional footballers in Ireland via the PFAI a census was considered to be an appropriate and manageable sample strategy. A survey of the population was carried out to achieve the results through the quantitative method for obtaining attitudes towards safety, awareness of safety management programs and procedures and self-reported concussion information (reported in Coffey et al., 2018). While conducting the survey, ethical approval was obtained from the University College Dublin (UCD) Human Research Ethics Committee prior to conduct this academic research study. Full ethical consideration in line with the UCD Human Research Ethics Policy and Guidance was maintained to eliminate vulnerability, conflict of interest and sensitive topics that would personally impact on the survey participants/samples.

The survey was granted permission upon review and approval by the PFAI and was an adapted questionnaire that was developed from four appropriate and validated questionnaires identified: the Occupational Safety Climate Questionnaire (OSCQ) (NRCWE, 2015); the Organizational Practices Questionnaire (QPQ) (Diaz-Cabrera et al., 2007); the Questionnaire Measuring Perception of Workplace Safety (QMPWS) (Hayes et al., 1998); and the Questionnaire on Occurrence of Concussion and Knowledge in Italian Football (QOCKIF) (Broglio et al., 2010), which was based on the Standardized Assessment of Concussion (SAC) (McCrea et al., 1998) questionnaire. The results of the concussion aspect of this study are reported in Coffey et al., (2018) and Buggy et al., (2018).

Due to population access permission restrictions from the PFAI, no questions were asked regarding actions or inaction by management or support staff, attitudes towards management or support staff, or attitudes towards or actions of peers in relation to safety. A pilot study was conducted on eight former professional footballers prior to implementing the survey. All participants in this study were informed in advance regarding the nature of the survey and given the right to choose not to participate and their identity were kept confidential. Participation and submission of the survey implied informed consent. Participation was completely anonymous.

Data Collection Techniques

Due to time constraints (all data was required to be gathered by mid-June 2015), a convenience sample within the census of willing and available league clubs was utilized to expedite the completion of the data collection process. This was due to the restricted ability of researchers to access teams during specified training schedules within the specified timeframe. Hard-copy questionnaires were distributed between April and June 2015 (five months after the conclusion of the 2014 season) at times convenient for the participating clubs at various locations across Ireland. To ensure spatial representativeness as well as population representativeness was achieved, it was ensured that teams from all four provinces in the country were accessed, in order to preclude an eastern region bias (where the majority of the population of the country lives). While it was the most efficient way to gain access to

as many players as possible in a short timeframe, this method of convenience sampling is acknowledged as a limitation to this research, as discussed later. The questionnaires were filled out prior to training sessions. A total of 149 players took part in the survey with an indicative response rate of 60%.

Analysis Procedures

Descriptive statistics supported to analysis the population's demographic profile, playing positions, frequency of concussions reported, and reasons for non-reporting. Within the quantitative framework, SPSS was used to measure the statistical analysis. In the analysis presented in this paper the independent variable was categorized as Professional Status (Professional Contract or Semi-Professional Contract). The analysis includes the Pearson's chi-squared test with Yates' correction and Fisher's exact test utilized for testing. Odds ratios (ORs) and confidence intervals (CIs) were reported. Pearson's chi-squared test was utilized for initial significance testing, and this was further analyzed by using Yates' correction and Fisher's exact test as necessary. Fisher's exact test was used when the chi-square criterion of a minimum cell number of five was not achievable. Any results of $p<0.05$ at the 95 percent confidence intervals (CI) were deemed significant. Further analysis were commented upon based on the merit of the 90 per cent CI results.

Results

The results indicate that over one third of the participants (n=54) were professional footballers (i.e. on a full-time professional contract) with the remaining (n=95) as semi-professional footballers (i.e. on a part-time professional contract). The age group of the sample participants were between 18a and 29a (years = a): n=35 (64.8 per cent) and n=80 (84.3 per cent), respectively. Within the age group thirty-four were between 30a and 39a. n=19 (55.8 per cent). A significant number of participants were within the age group from the 18a to 29a. This validated the reliability criteria indicated by a Pearson's chi-squared test (p=0.007, OR 2.9 (1.3-6.4)) furthermore, asserted by a Fisher's exact test (0.013) and Yates' correction (0.012) which all maintained to the 95 per cent confidence intervals (CI) required for quantitative analysis using the survey method. Initially it was considered that age may play a role in attitude towards safety management and risk, however there we no significant findings associated with age range and it was the analysis of professional status as the independent variable which produced the more interesting and significant results.

First, Table 1 indicates that the majority of participants, irrespective of their professional status, were unaware of their club's safety program. The semi-professional footballers had the poorer level of awareness, but not to a significant level. Given the consideration that semi-professional footballers could be exposed to other forms of safety management in their other part-time occupations this was an interesting finding. Upon reflection of their working environment (Table 2), the majority of participants considered their working environment to be safe and not risky. Semi-professional footballers that participated in the study regarded their work environment to be safe to a significantly greater level (91 per cent) than their full professional teammates (9 per cent), as indicated by a Pearson's chi-squared test (p=0.048,

OR 2.7 (1.0–8.0)). Interestingly, a third of all participants felt that they can be hurt easily in their working environment.

Table 1 *Footballer awareness of club safety programme (n = footballer)*

Player Status	Yes		No / Don't Know		Total		P Value	OR (95%CI)
	n	(%)	n	(%)	n	(%)		
Professional	11	(22.0)	39	(78.0)	50	(40.0)	0.52	1.3(0.5-3.3)
Semi-professional	13	(17.3)	62	(82.7)	75	(60.0)		
Total	24	(19.2)	101	(80.8)	125	(100.0)		

Table 2 *Footballer attitudes towards workplace safety practices (n = footballer)*

	Agree		Disagree / No Opinion		Total		P Value	OR(95% CI)
	n	(%)	n	(%)	n	(%)		
I consider my work environment to be dangerous								
Professional	1	(2.0)	49	(98.0)	50	(40.0)	0.066	5.8(0.9-133.3)
Semi-professional	8	(10.7)	67	(89.3)	75	(60.0)		
Total	9	(7.2)	116	(92.8)	125	(100.0)		
I consider my work environment to be safe								
Professional	39	(78.0)	11	(22.0)	50	(40.0)	0.048	2.7(1.0-8.0)
Semi-professional	68	(90.7)	7	(9.3)	75	(60.0)		
Total	107	(85.6)	18	(14.4)	125	(100.0)		
I consider my work environment to be risky								
Professional	9	(18.4)	40	(81.6)	49	(39.5)	0.94	1.0(0.4-2.8)
Semi-professional	12	(16.0)	63	(84.0)	75	(60.5)		
Total	21	(16.9)	103	(83.1)	124	(100.0)		
I consider my work environment to be unsafe								
Professional	1	(2.0)	48	(98.0)	49	(39.5)	0.24	3.4(0.4-83.2)
Semi-professional	5	(66.7)	70	(33.3)	75	(60.5)		
Total	6	(4.8)	118	(95.2)	124	(100.0)		
I could be hurt easily in my workplace								
Professional	20	(40.0)	30	(60.0)	50	(40.0)	0.57	4.0(0.1-591.7)
Semi-professional	20	(26.7)	55	(73.3)	75	(60.0)		
Total	40	(32.0)	85	(68.0)	125	(100.0)		

Second, footballers do consider their fellow footballers' attitudes to safety and risk. It is also apparent that most participants were cognizant of how other footballers act and react to safety, and whether or not other footballers take risks while playing (Table 3). More specifically, the majority of all participants felt that their fellow footballers look out for one another (82 per cent) and that they pay attention to safety rules (68 per cent). However, a greater majority (86 per cent) felt that their fellow footballers do not care about their own safety, and that a third of teammates take chances in relation to their own safety. This implies that the participants collectively consider their team safety, but take risks with their own safety. With regard to the influence of professional status, the only significant difference in attitude was observed in the finding that professional participants considered that their teammates ignored safety rules to a greater extent than semi-professional participants, as indicated by a Fisher's exact test (p=0.008, OR 4.0 (0.8–30.9)).

Table 3 *Footballer attitudes towards fellow player (teammates) safety practices (n = footballer)*

	Agree		Disagree / No Opinion		Total		P Value	OR(95% CI)
	n	(%)	n	(%)	n	(%)		
Teammates ignore the safety rules								
Professional	5	(10.0)	45	(90.0)	50	(40.0)	0.08	4.0(0.8-30.9)
Semi-professional	2	(2.7)	73	(97.3)	75	(60.0)		
Total	7	(7.2)	118	(92.8)	125	(100.0)		
Teammates don't care about safety								
Professional	1	(2.0)	49	(98.0)	50	(40.0)	0.80	1.3(0.1-40.4)
Semi-professional	2	(2.7)	73	(97.3)	75	(60.0)		
Total	3	(2.4)	122	(97.6)	125	(100.0)		
Teammates pay attention to the rules								
Professional	33	(66.0)	17	(34.0)	50	(40.0)	0.70	1.2(0.5-2.5)
Semi-professional	52	(69.3)	23	(30.7)	75	(60.0)		
Total	85	(68.0)	40	(32.0)	125	(100.0)		
Teammates look out for each other								
Professional	41	(83.7)	8	(16.3)	49	(39.5)	0.70	1.2(0.5-3.2)
Semi-professional	61	(81.3)	14	(18.7)	75	(60.5)		
Total	102	(82.3)	22	(17.7)	124	(100.0)		
Teammates take chances								
Professional	6	(40.0)	43	(60.0)	49	(39.5)	0.40	1.5(0.5-4.6)
Semi-professional	13	(26.7)	62	(73.3)	75	(60.5)		
Total	19	(32.0)	105	(68.0)	124	(100.0)		

Third, from a safety management perspective, the results regarding attitudes toward how well participant safety is managed are positive and encouraging (Table 4). In particular, all participants, irrespective of professional status, considered their safety to be managed appropriately. More specifically, all participants agreed – with the semi-professional footballers to a slightly greater but not significant level – that management is providing the right training, information, equipment, and conditions necessary to prevent or reduce accidents. This is in line with appropriate consultation and communication procedures within safety management systems that are mandated through legislation in Ireland (Government of Ireland, 2005).

Table 4 *Footballer attitudes towards the team management regarding their safety (n = footballer)*

	Agree		*Disagree / No Opinion*		*Total*		*P Value*	*OR(95% CI)*
	n	*(%)*	*n*	*(%)*	*n*	*(%)*		
Team management provides safety training								
Professional	*22*	*(44.0)*	*28*	*(56.0)*	*50*	*(40.0)*	*0.20*	*1.6(0.8-3.4)*
Semi-professional	*42*	*(56.0)*	*33*	*(44.0)*	*75*	*(60.0)*		
Total	*64*	*(51.2)*	*61*	*(48.8)*	*125*	*(100.0)*		
Team management provides safety information								
Professional	*23*	*(46.9)*	*26*	*(53.1)*	*49*	*(39.5)*	*0.90*	*1.0(0.5-2.2)*
Semi-professional	*39*	*(52.0)*	*36*	*(48.0)*	*75*	*(60.5)*		
Total	*62*	*(85.6)*	*62*	*(14.4)*	*124*	*(100.0)*		
Team management provides safety equipment								
Professional	*30*	*(66.0)*	*19*	*(34.0)*	*49*	*(39.5)*	*0.20*	*1.6(0.7-3.5)*
Semi-professional	*54*	*(69.3)*	*21*	*(30.7)*	*75*	*(60.5)*		
Total	*84*	*(68.0)*	*40*	*(32.0)*	*124*	*(100.0)*		
Team management provides safe conditions								
Professional	*40*	*(81.6)*	*9*	*(18.4)*	*49*	*(39.5)*	*0.50*	*1.3(0.5-3.5)*
Semi-professional	*64*	*(85.3)*	*11*	*(14.7)*	*75*	*(60.5)*		
Total	*104*	*(83.9)*	*20*	*(16.1)*	*124*	*(100.0)*		
Team managements safety programme prevents accidents								
Professional	*40*	*(81.6)*	*9*	*(18.4)*	*49*	*(39.5)*	*0.50*	*1.3(0.5-3.5)*
Semi-professional	*64*	*(85.3)*	*11*	*(14.7)*	*75*	*(60.5)*		
Total	*104*	*(83.9)*	*20*	*(16.1)*	*124*	*(100.0)*		

Discussion

This study represents the largest investigation to date into attitudes towards risk among semi-professional and professional Irish football players and has four main findings. First, a key finding was that the majority of footballers (80%) who participated in this study did not know if their football club had a safety program which has potential implications for the consultation processes mandated by Irish OSH legislation. Consequently, it is fair to conclude that safety awareness and management of safety information dissemination to players across League of Ireland football clubs needs to be addressed. It is concerning that fewer than one third of those surveyed knew that there was a safety program at their club. In the larger research context this is observed at a wider level as there is that currently no research regarding personal or team safety awareness in professional sports teams at present (Chen et al., 2019). This is an important omission because an overall lack of awareness of potential exposure to occupational hazards and risks threatens workers' well-being (Chatsiz et al., 2004) regardless of the risk environment of their profession.

The footballers in this study fall into the category of workers, and consequently a lack of awareness can threaten their long-term wellbeing. A previous study identified a lack of safety awareness among health care workers as one of the main reasons that they had the highest number of workplace injury claims in Australia (Abbott et al., 2008). OSH and risk awareness are the most important factors of work behavior; they are not only important for efficiency, productivity and behavior in general, but also for workers' safety (International Labor Organization, 2008). One of the most effective ways to improve OSH awareness and reduce risk is to ensure adequate education and training for those involved in the planning, managing or executing of a work-related task (Kozlovska and Strukova, 2013). Training and education programs play an important role in the enhancement of safety in the workplace and are critical factors in increasing safety awareness as well as raising awareness and changing attitude in relation to the management of long-term health and wellbeing post active occupational status i.e. retirement (Lawless et al., 2015). Ghani et al. argued that this is also true within a wide range of professional settings (Ghani et al., 2010). Papaleo et al. note that training on safety and prevention at work plays a key part in the management of occupational risks (Papaleo et al., 2013).

Second, although it seems apparent that the majority of the participants were unaware of a safety program at their club, they felt that appropriate safety practices were in operation which indicates a general cognizance of safety and risk in their unique working environment. Generally, the footballers who participated in the study, regardless of their professional status, demonstrated a positive attitude towards the management of their safety and acknowledged the roles that both fellow players and the management team play in managing team safety. The lack of significant difference between the professional and semi-professional footballers could indicate that while the semi-professional players may have experience of OSH management in their partner professions, they do not see any major difference in the way the football clubs manage their safety which is encouraging and indicates that their football clubs are fully cognizant of their obligations under Irish OSH legislation to their employees. There is an unfortunate lack of empirical research with respect

to the impact that safety management systems can have on the safety practices of employees in sporting working environments. Some studies that exist in the research argued that there is no one-size-fits-all program contributing to a better knowledge or understanding of risk and or injury consequences to professional athletes (Cournoyer and Tripp, 2014; Provvidenza et al., 2013). While football can be considered to be an environment where the risk of injury is high (Drawer and Fuller, 2002), there are very few working environments to which it can be compared from an occupational perspective (Timpka et al., 2006; Lipscomb et al., 2013).

Third, this study indicated that professional status does not have a significant bearing on attitudes towards safety management. Further research is needed to ascertain whether professional footballers perceive injuries as an occupational risk, and whether they appreciate that accepting such risks as occupational hazards can have long-term implications for their health (i.e. that cumulative sporting injuries can potentially lead to debilitating health conditions). A questionnaire may not be the most effective tool for exploring attitudes towards concussions; it has been argued that understanding players' views on self-reporting injuries requires qualitative research (Kokko et al., 2009).

Fourth, leadership plays a vital role in influencing the development of a safety culture. In OSH management, senior managers in the human resources department are charged with 'designing, fostering and nurturing' a safety culture (Sammer et al., 2010). In the sports context, coaching staff can foster a positive safety culture by encouraging injury-reporting habits through formal or informal means (Kroshus et al., 2014). Likewise, a lack of effective leadership can destroy a safety culture that is not properly implemented (Cooper, 2000). For example, some studies have found that coaches may exhibit a lack of injury identification knowledge (Borglio et al., 2010) and compound this by neglecting injury prevention programs (Norcross et al., 2016). Nevertheless, even if a team manager has adequate knowledge, the manager cannot promote a safety culture without effective communication. Communication concerns include not only access to safety knowledge but also the organization's preparedness and willingness to implement safety programs (Real, 2008) when employees raise them.

Employee participation engenders OSH as an integral component within an organizations culture and allows for the development of policies aimed at managing and controlling risk in the workplace (Covello, 2006). Ensuring that all employees' are actively engaged with OSH management is advocated through best practice management systems mandated by legislation (Robson et al., 2007), wherein an employees' opinions and ideas are considered as an asset in the internal communication process to understand the safety baseline in an organization. OSH risk communication includes vertical communication between employers and employees and horizontal communication among employees themselves (Bartels et al., 2010). In the footballing environment, like other professional sports, communication between coaches / management support staff and athletes has the potential to promote or undermine the attitudes of how their athletes consider risk and subsequent injuries and potentially their long-term health and wellbeing (Kroshus et al., 2015). Therefore, in football, footballers themselves should be considered to be key stakeholders when developing policies and management procedures / processes strategies to address health and safety issues. Consequently, the

communication between "employer" (management / coaches / medical) and "employee" (professional athlete) should be considered as a core facet of importance as part of organizational safety management within sporting organizations including football clubs.

Practical Applications

First, clubs should adopt risk management frameworks (Fuller et al., 2012) and safety specific training to improve their safety activities (Fuller and Davis, 2004). Specifically, SafeClub, a 'sports safety focused risk management training program', could be adopted by clubs based on adult learning principles and injury prevention concepts and models. As Abbott et al. (2008: 460) have argued, 'SafeClub effectively assisted community football clubs to improve their sport safety activities, particularly the foundations and processes for good risk-management practice, in a sustainable way'.

Second, because employers are responsible for informing employees of occupational hazards that they may face in the workplace (Cooper, 2000) as per their legislative obligations, players should be educated about playing conditions, hazardous sport-related factors and associated health effects (Fuller et al., 2012). This training can be incorporated as part of standard health and safety internal consultation procedures that are included within risk assessment processes regardless of whether a specific risk is in focus at a particular time e.g. concussion in recent years. This is important because, even if football clubs have an accurate understanding of the value of OSH and risk management practices, quite often management fails to communicate this knowledge effectively to players or related health-supporting staff (McKay et al., 2014) until a particular issue emerges e.g., negative media publicity associated with a particular injury. Communication issues include not only access to safety knowledge, but also an organization's preparedness to implement safety programs (Real, 2008) while listening to their workers' safety needs; such transparency in communication engenders trust. Consequently, clubs could adapt the communication mechanisms associated with OSH risk management and be observed as forward-thinking risk communicators rather than as reactive agents to emerging and unforeseen risks.

Third, clubs should provide training and educational initiatives on aspects of risk management and player injury awareness and safety issues to players, club owners, and, in particular, parents. Extending training to parents is important because parents are key stakeholders and a prime source of information for improving athlete injury awareness as their children transition from amateur to professional and semi-professional status. Finally, an ALARP standard could be considered when occupational risk assessment takes place for risk level communication in clubs.

Limitations and Avenues for Further Research

There are a number of issues to bear in mind when interpreting the results of this study. One methodological limitation is the sample size. In this regard, it must be noted that gaining access to professional football players and clubs normally presents difficulties for researchers, as professional football clubs are often quite wary of social science researchers

(Williams et al., 2016), particularly when exploring sensitive issues such as concussion. Moreover, it is often difficult to secure the cooperation of professional leagues, professional football associations and governing bodies. Consequently, concussion-related research in football utilizing professional football players, though growing (Williams et al., 2016; Nordström et al., 2014; Brener et al., 2003), remains limited.

A second limitation concerns recall error. Asking athletes to recall symptoms from the previous year, when they may not have been able to recognize them or were unwilling to report them, can lead to bias, which has implications for the internal validity of the study (Brener et al., 2003; Lee, 2008). However, this study was conducted as soon as the players returned to pre-season training, thus minimizing recall duration (Brener et al., 2003). Despite its limitations, retrospective recall does 'allow an athlete the opportunity to reveal symptoms that may not have been identified prospectively' (Delaney et al., 2002). However, mitigating measures to enhance validity and minimize self-reporting limitations, such as miscomprehension, measurement error, and conscious bias (Brener et al., 2003; King et al., 2014) were adopted. For instance, participants were provided with clear instructions and an overview of the rationale of the study. It was also assumed that participants were 'honest in their responses without a societal response bias' (Williams et al., 2016: 202). Situational limitations, such as confidentiality (Williams et al., 2016), were addressed by excluding coaches, managers and support staff. This, coupled with the anonymous nature of the survey, allowed the players to participate and answer truthfully without fear of potentially negative repercussions (Williams et al., 2016). This could be a factor in the higher reporting levels evidenced in this study. Finally, in 2018, the last-named author consulted with a 'critical friend', currently employed as a senior international physiotherapist, concerning the study's findings and their practical implications (Smith and McGannon, 2015). This 'co-participatory process' (Smith and McGannon, 2015: 8) between the last-named author and critical friend provided 'a practical opportunity to acknowledge' and 'explore with experts in the field the existence of contradictions and differences in knowing' (Smith and McGannon, 2015: 8, emphasis in original).

Further research is required to develop a quantitative instrument to measure OSH and risk awareness in professional football. An effective risk management strategy 'begins with an estimation and evaluation of the risks associated with the activity' (Drawer and Fuller, 2002: 450). Consequently, further research is required to collect 'epidemiological data of injuries to professional footballers on a risk-based format to evaluate (the) acceptability and tolerability of risk to people at work' (Drawer and Fuller, 2002: 446). Such future research should be linked to the guidance of national safety and health organizations and international advisory bodies. This future research is also needed to ascertain whether professional footballers perceive injuries during training and competition as an occupational risk, and whether they appreciate that accepting such risks can have long-term implications for their health.

Conclusion

This research is the first and largest investigation to date of the self-reported attitudes towards risk and safety management among Irish senior professional and semi-professional

footballers. The results have important implications for coaches, clinicians, parents, players, clubs and national governing bodies. In light of recent global disruption to all occupations and all professional sports due to the COVID-19 pandemic, the importance of risk management and occupational health awareness as an integral component within organizational management is significantly elevated. Ensuring that all professions, notably ones that are high risk such as professional sport, have adequate risk awareness procedures and occupational health and safety programs to ensure long-term health and wellbeing of their employees is now a crucial endeavor and one that needs to be considered with impetus moving forward as the world deals with the unprecedented social and economic ramifications of this global pandemic.

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