Sport Management Review 21 (2018) 72–85

Contents lists available at ScienceDirect

Sport Management Review

journal homepage: www.elsevier.com/locate/smr

Full Length Article

A mixed methods analysis of disciplinary incidents in men's soccer

Colin J. Deal*, Kurtis Pankow, Theo A. Chu[1], Shannon R. Pynn, Christine L. Smyth, Nicholas L. Holt

Faculty of Physical Education and Recreation, University of Alberta, Edmonton, Alberta, Canada

ARTICLE INFO

Article history:
Received 17 October 2016
Received in revised form 11 April 2017
Accepted 12 April 2017
Available online 2 May 2017

Keywords:
Referees
Officials
Abuse
Aggression
Qualitative
Quantitative
Mixed methods

ABSTRACT

The purposes of this study were to (a) document the frequency and types of disciplinary incidents directed toward men's soccer referees and (b) examine stakeholders' perceptions of factors that contributed to such incidents. A two phase sequential mixed methods approach was used. In phase one, a provincial soccer organization's disciplinary files from 2010 to 2015 were subjected to a document analysis. Descriptive statistics for frequency and type of incident over time were calculated. In phase two, individual semi-structured interviews were conducted with 10 players, 9 referees, and 3 disciplinary committee members. Results from the document analysis showed that 98 incidents were reported over the five-year period, with the most incidents occurring in 2015. Incidents occurred more frequently in indoor versus outdoor soccer, and the highest number of incidents was reported at the lowest competitive tiers of play. Qualitative data showed that factors at different levels of social ecology contributed to the occurrence of incidents. Microsystem level factors, which appeared to directly contribute to the occurrence of incidents, were players' and coaches' lack of knowledge, coaches' attitudes, physical environment (indoor versus outdoor soccer), inconsistent refereeing, referees' communication, number of officials, and importance of game (score, stage of season). At a broader exosystem level, the training and mentoring of referees, rule changes, and the disciplinary procedure were associated with incidents. At the macrosystem level, cultural background and discrimination were distally associated with incidents. These findings provide information that may be used by sport organizations to inform educational efforts to reduce disciplinary incidents.

1. Introduction

Sport policies and programs in many countries, including Australia (Australian Sports Commission, 2015), Canada (Canadian Heritage, 2012), and the United Kingdom (Department for Culture, Media and Sport, 2015), have goals to increase levels of participation. Sport officials play a central role in the achievement of such goals (Cuskelly & Hoye, 2013). However,

* Corresponding author at: Faculty of Physical Education and Recreation, 1-100 University Hall, Van Vliet Complex, University of Alberta, Edmonton, AB T6G 2H9, Canada.
E-mail address: deal@ualberta.ca (C.J. Deal).
[1] Theo A. Chu is now at the Department of Kinesiology and Physical Education, Wilfrid Laurier University, Waterloo, Ontario, Canada

http://dx.doi.org/10.1016/j.smr.2017.04.002
1441-3523/

sport organizations face challenges in attracting and retaining officials, and declining numbers of sport officials have been reported (e.g., Australian Bureau of Statistics, 2010; Sabaini, 2001; Statistics Canada, 2013). One reason officials drop-out of sport is because they experience criticism, abuse, and/or aggressive behavior from athletes, coaches, and spectators (Dell, Gervis, & Rhind, 2014; Folkesson, Nyberg, Archer, & Norlander, 2002; Friman, Nyberg, & Norlander, 2004; VanYperen, 1998; Warner, Tingle, & Kellet, 2013). In the current study, we sought to shed light on some of these issues by examining disciplinary incidents in men's amateur soccer games played in a Canadian province from 2010 to 2015.

More specifically, the purposes of this study were to (a) document the frequency and types of disciplinary incidents directed toward men's soccer referees and (b) examine stakeholders' perceptions of factors that contributed to such incidents. Disciplinary incidents were defined as incidents involving players that were reported by referees to the sport governing body disciplinary committee.[2] These incidents were classified (by the sport governing body) in categories of persistent criticism, foul and abusive remarks, unsportsmanlike conduct, threatening an official, incidental physical contact toward an official, deliberate physical contact toward an official, and deliberate violent contact toward an official.

1.1. Frequency and effects of disciplinary incidents

Whereas previous research has documented infractions (i.e., yellow and red cards) in professional levels of soccer (e.g., Buraimo, Forrest, & Simmons, 2010; Dohmen, 2008), we were unable to locate any previous research documenting the frequency of disciplinary incidents toward officials in amateur soccer leagues across extended time periods. This may be because studies at lower levels of soccer have sampled officials themselves, documenting the incidents they have personally experienced. For example, Folkesson et al. (2002) examined aggression and threat among 107 Swedish provincial soccer referees. The authors differentiated between verbal aggression (i.e., utterances expressed toward the referee that are experienced as unpleasant, such as swearing, words of abuse, and verbal defamation) and physical aggression (i.e., actions through which soccer players or coaches intentionally attack a referee, such as pushes, kicks, or punches). Threat pertained to "verbal threat of impending physical aggression" (p. 319). They found that 63.3% of referees had been exposed to verbal aggression, 15% had experienced direct physical aggression, and 35.1% had been threatened with physical aggression. However, these percentages may be misleading. Whereas 63.3% of referees may have been exposed to verbal aggression at some point in the careers, this percentage does not reveal how frequently such incidents occur. The lack of data on the frequency by which incidents occur may be because it is difficult to access records from amateur sport organizations.

Disciplinary incidents toward officials are an important topic to investigate. For instance, reported sources of stress among sport officials include verbal abuse from players/coaches, fear of physical harm, and interpersonal conflict/confrontation, along with other factors such as fear of failure, fear of making a wrong call, previous mistakes, time pressures, and the presence of a referee assessor (Neil, Bayston, Hanton, & Wilson, 2013; Rainey, 1994, 1995; Voight, 2009). In a study with 421 Canadian ice hockey officials with various levels of certification, threats of physical abuse were perceived to be among the most stressful events (Dorsch & Paskevich, 2007). In another study, Swedish referees reported that aggressive behaviors from players and coaches were more difficult to cope with than aggressive behaviors from spectators (Folkesson et al., 2002). However, the literature is far from clear. For instance, Mascarenhas, Collins, and Mortimer (2005) suggested existing research shows that officials "experience no more than a moderate amount of stress" (p. 364). Indeed, a study of 22 professional and semi-professional Australian football referees showed that, while they experienced abuse, they routinely reframed it and considered it to be a normal part of their role that was not particularly aversive (Kellet & Shilbury, 2007). These somewhat contradictory findings may reflect the fact that little is known about the frequency of such disciplinary incidents. They may be infrequent, but very challenging events when they do occur.

1.2. Factors contributing to disciplinary incidents

A small number of researchers have examined factors associated with disciplinary incidents. In one study, Folkesson et al. (2002) showed that younger referees were exposed to more aggression and threat than older referees. In another study, Friman et al. (2004) interviewed seven Swedish provincial soccer referees about their experiences of threats and aggression. Sources of threat included criticisms from players, coaches, and spectators. Referees' reactions to aggression and threats included decreased concentration, performance, and motivation. Strategies for managing situations included communicating to parties concerned, not taking things personally, and filing complaints to appropriate authorities. Interestingly, participants perceived that aggression and threats stemmed from players' and coaches' lack of knowledge of the laws of the game.

Referees themselves may have an influence on the occurrence of disciplinary incidents. In an experimental study with male soccer players, Simmons (2010) found that ratings of fairness and correctness of a decision were significantly higher when players received an explanation for a decision compared to when they did not. Furthermore, ratings of referee fairness were significantly higher when the decision was communicated calmly rather than angrily. Certain social forces also influence the decisions of soccer referees. For example, a study of professional soccer in Germany showed that referees tended to favor the home team in terms of allowing more goals, penalty kicks, and stoppage time at the end of games when

[2] The referees in this study received payments for officiating games (regardless of competitive level) so were not, strictly speaking, volunteers. Disciplinary committee members were volunteers. Players were amateurs and did not receive financial compensation to play.

the score margin was close and the home team was in a losing position (Dohmen, 2008). Furthermore, crowd proximity to the field of play was also associated with referring quality, leading Dohmen to conclude that, "referee quality is impaired when the crowd is closer and social pressure is arguably experienced as more intense by the referee" (p. 422).

Similarly, Buraimo et al. (2010) looked at yellow and red cards issued by referees in English and German professional soccer leagues. Again, home teams received fewer cards than away teams. By conducting a minute-by-minute analysis of decisions during games, Buraimo et al. established that foul play was induced by a losing position. Crowd proximity also played a role. For instance, in Germany, teams that played on pitches surrounded by a running track (therefore meaning the crowd is far from the field of play) attracted more cards than teams with less distance between crowd and pitch. Additionally, teams favored to win games had a higher probability of receiving a red card when playing away rather than at home.

Officiating in sport is influenced by a complex web of factors. In addition to the social forces noted above, researchers have shown other factors that influence officials' decisions include crowd noise and size (e.g., Downward & Jones, 2007; Nevill et al., 2002), length of officiating experience (Lane, Nevill, Nahid, & Balmer, 2006), foul differential (in basketball) (Anderson & Pierce, 2009), sequential decisions (Brand, Schmidt, & Schneelock, 2006), and even uniform color (Hagemann, Strauss, & Leißing, 2008). Furthermore, Dell et al. (2014) found a range of factors influenced soccer referees' intentions to quit the game. Factors were reported at an organizational level (e.g., lack of organizational support, training, and feedback on performance), a personal level (e.g., psychological impact and intention to quit), and game-related factors (e.g., psychological and physical intimidation from players and coaches).

1.3. Theoretical framework

As these previous studies demonstrate, officials are part of a broad social system that includes personal, contextual, and organizational factors (e.g., Dell et al., 2014). Thus, to understand factors associated with disciplinary incidents, it may be useful to consider different levels of social ecology. Accordingly, we adapted ecological systems theory (Bronfenbrenner, 2005; Bronfenbrenner & Morris, 1998) to frame the analysis for this study. From this perspective, human behavior is viewed as a function of interactions between individuals and features of their social ecologies (i.e., social contexts). The individual is at the center of the ecological model (which is typically displayed as a series of concentric circles). Individuals interact with several different levels of social ecological systems, ranging from more proximal microsystems to more distal macrosystems.

The *microsystem* is the most proximal social ecology surrounding the individual, and it refers to the settings and groups that most immediately and directly influence behavior. It includes the patterned activities, roles, and interpersonal relations personally experienced in a setting (Bronfenbrenner & Morris, 1998). Sporting events, such as soccer games, can be viewed as a microsystem (Holt, Tamminen, Black, Sehn, & Wall, 2008). Behaviors in microsystems are influenced by more distal levels of ecology. The *exosystem* is a broader social setting, such as policies in a workplace or (in sport) the policies of a governing organization (e.g., a league or sport association). Microsystems are connected with exosystems via what Bronfenbrenner referred to as the mesosystem (which can be thought of as an interface intended to reflect interactions and relationships between the micro- and exosystem, rather than a defined ecological context per se). The *macrosystem*, the most distal level of social ecology, refers to the culture in which individuals live. Finally, the *chronosystem* is the patterning of individual development, events, and social circumstances over time.

Interactions between individuals and their microsystem are presumed to have the most direct influence on behavior and, in turn, individuals can exert the most direct reciprocal influence on their microsystem (e.g., events during a soccer game may influence a referee and the referee can also influence events during a game). More distal factors can have an indirect influence on behavior and individuals have less reciprocal influence on distal factors. For instance, at an exosystem level, referees' behaviors may be influenced by league disciplinary procedures but referees may only have a small influence on the procedures. At a macrosystem level, referees may be influenced by sociocultural norms but have little influence on these norms. Thus, an ecological approach provides an organizing framework for analyzing factors at different levels of social ecology that influence behavior in sport (Holt, Deal, & Smyth, 2016).

It should be noted that while Bronfenbrenner's work was initially introduced as a theory of child development, it has since been adapted and used to study a range of issues. It has proved particularly useful as an analytic framework for the study of behaviors that are influenced by a range of individual and social factors, such as youth sport (Holt et al., 2008) and physical activity (e.g., Lee et al., 2015; Spence & Lee, 2003). It was useful for the current study because a sporting event (e.g., a game) is not an isolated system; it is part of a wider system of related social ecological factors.

2. Method

2.1. Design and procedure

Our research group was approached by a member of the Provincial Sport Organization (PSO) executive regarding concerns over the number of disciplinary incidents toward referees occurring in men's amateur soccer. After agreeing to conduct an independent study, research ethics board approval was obtained. This study was conducted using a two-phase sequential mixed methods design (Teddlie & Tashakkori, 2009). First, members of the research team reviewed disciplinary incident files and completed a document analysis. In the second phase, a group of purposefully sampled participants were interviewed.

Table 1
Participation Demographics.

ID	Gender	Age	Role	Years of Experience	Highest Level of Competition	Lowest Level of Competition	Highest Level of Education
P01	Male	21	Player	12	Major League	Premier	High school
P02	Male	23	Player	18	Major League	Major	High school
P03	Male	23	Player	17	Premier	Tier 4	Undergraduate degree
P04	Male	23	Player	16	Tier 2	Tier 4	High school
P05	Male	20	Player	14	Premier	Tier 4	Undergraduate degree
P06	Male	21	Player	16	Tier 1	Tier 1	High school
P07	Male	22	Player	10	Premier	Tier 3	High school
P08	Male	26	Player	20	Major League	Tier 4	Undergraduate degree
P09	Male	21	Player	15	Major League	Tier 4	High school
P10	Male	25	Player	17	Tier 2	Tier 4	Undergraduate degree
DC01	Female	61	DCM	5	Not Applicable	Not Applicable	Undergraduate degree
DC02	Male	55	DCM	3	Not Applicable	Not Applicable	Graduate degree
DC03	Female	48	DCM	2	Not Applicable	Not Applicable	High school
R01	Female	50	Referee	39	Not Applicable	Not Applicable	High school
R02	Male	59	Referee	10	Not Applicable	Not Applicable	Graduate degree
R03	Female	33	Referee	10	Not Applicable	Not Applicable	High school
R04	Male	65	Referee	20	Not Applicable	Not Applicable	Graduate degree
R05	Male	36	Referee	4	Not Applicable	Not Applicable	Undergraduate degree
R06	Male	64	Referee	38	Not Applicable	Not Applicable	High school
R07	Male	36	Referee	18	Not Applicable	Not Applicable	Undergraduate degree
R08	Male	43	Referee	8	Not Applicable	Not Applicable	Graduate degree
R09	Male	38	Referee	13	Not Applicable	Not Applicable	Undergraduate degree

Note. DCM = Disciplinary Committee Member.

2.2. Document review and analysis

The research team was granted access to disciplinary files kept by the PSO from 2010 to 2015. Three members of the research team conducted the document review in-person at the PSO's offices (due to confidentiality concerns the disciplinary files were not allowed to leave the PSO's offices). Files contained copies of the referee's incident report, which included written evidence of the circumstances surround the incident, the infraction (i.e., type of incident), and the on-field decision (i.e., yellow or red card), player name, team name, tier of play, and the date of incident. The files also included a document outlining the outcome of the hearing and disciplinary actions taken.

A member of the research team reviewed each incident file. The researcher recorded the date of the incident and tier of play from the referee's incident report. The types of incident(s) and disciplinary action taken (e.g., suspension and/or fines) were recorded directly from the hearing outcome document. Incidents were coded as occurring in either indoor or outdoor soccer based on the date of the incident.[3] If we were unable to find missing data in the incident file, a member of the PSO's staff was asked to review the electronic back-up of the file and provide the missing data. We were unable to determine the tier of play for 10 incidents because this information had not been noted on the hard copies or electronic back-ups. If a member of the research team was unsure of how to record data from an incident, a second researcher reviewed the file. In the event that the first two researchers did not agree on coding, a third researcher reviewed the file. The researchers discussed the source of the disagreement then recorded the majority decision. Frequencies were calculated for number of incidents per year, type of incident, proportion of incidents that occurred in indoor versus outdoor soccer, and tier of play. Means and standard deviations were calculated for suspensions and fines.

2.3. Recruitment

Participants were purposefully sampled from three groups: referees, players, and disciplinary committee members. Sampling criteria for referees and players were that they must have been involved in, or witness to, an incident in which an official was abused during a men's soccer game. In order to recruit referees and players, information about the study (including the sampling criteria) and a call for volunteers was posted on the PSO's website and through its regular communication channels (e.g., e-mail, social media) with teams and referees. Initial participants were also invited to distribute recruitment materials among their own networks. Any interested participants contacted the first author and interviews were arranged. The first author used information provided by the PSO to directly contact members of the

[3] Soccer is played year-round in Alberta. Outdoor (11 versus 11) soccer is played only during the summer months. During the winter months a version of indoor soccer is played. This version differs from the international futsal game in that it is played 7 versus 7 on an artificial turf surface the size of an ice hockey rink. The indoor soccer season spans October through April and the outdoor soccer season spans May through September. Players and referees typically participate in indoor and outdoor soccer.

disciplinary committee. Participation in this study was voluntary, anonymous, and confidential. All participants provided written informed consent.

2.4. Participants

Prior to commencing the study, we estimated that approximately 10 referees and 10 players would enable us to attain adequate data saturation, which is broadly consistent with guidelines for sample size in qualitative research (e.g., Guest, Bruce, & Johnson, 2006). As there were only five disciplinary committee members, we simply sought to recruit as many as possible. Nine referees (2 females, 7 males) participated in the study (the gender balance in the sample reflects the prevalence of male referees in the region we studied). They were between 33 and 65 years old ($M = 47.1$, $SD = 12.8$) and had refereed for an average of 17.8 years ($SD = 12.7$, range: 4–39 years). All referees officiated men's soccer games in the province and held qualifications at district ($n = 3$), regional ($n = 3$), provincial ($n = 1$), national ($n = 1$), and international ($n = 1$) levels of certification.

Ten male players participated in the study. They were, on average, 22.5 years old ($SD = 1.9$) and had an average of 15.5 years ($SD = 2.9$) experience playing soccer (including youth soccer). Players had played across multiple tiers (i.e., competitive levels) of men's soccer in the province, from tier 4 (lowest standard) to 'major league' (highest standard amateur level). Several players had played at different tiers during their careers. For instance, six participants had played as low as tier 4 and four had competed as high as major league.

Three members of the PSO's disciplinary committee were also interviewed (2 females, 1 male). These individuals review disciplinary reports, adjudicate hearings, and impose sanctions. To be eligible, disciplinary committee members must have served on the committee for at least two of the past five years. Committee members ranged from 48 to 61 years old ($M = 54.7$, $SD = 6.5$) and had served on the committee for between two and five years ($M = 3.3$, $SD = 1.5$). A summary of demographic information is provided in Table 1.

2.5. Interviews

Interviews with players and referees were conducted in a private office at the university. Interviews with disciplinary board members were conducted at the offices of the PSO. All interviews were audio recorded and lasted 50 minutes on average. A conversational interview guide (Rubin & Rubin, 2012) was developed. The interview guide was tailored to referees, players, and disciplinary committee members as necessary. Each interview guide was comprised of four main sections. The first section contained introductory questions to establish rapport and obtain demographic information in a conversational manner. The second section formed the main body of the interview guide and included a main question asking participants to describe an incident they had experienced (observed, been part of, or adjudicated) in which an official was the victim of verbal or physical abuse. A number of follow up questions (e.g., Do you recall what led up to the incident? What were the other players doing at that time?) were included to elicit a more detailed recollection from participants. This main question and follow-up question protocol was repeated for any other incidents the participants had experienced.

The third section of the interview guide contained questions designed to understand findings from the document analysis. In this section, a finding from the document review was shared with the participant (e.g., that approximately two-thirds of incidents occurred in tiers three and four) and the participant was asked how the finding fit with their experiences and to offer possible explanations (e.g., Do you have any thoughts as to why this was the case?). Participants were also asked similar questions to provide their perspectives on the occurrence of incidents on indoor versus outdoor soccer. The final section of the interview guide consisted of two concluding questions. Participants were first asked to explain what they would do to reduce disciplinary incidents. For the final question participated were asked to discuss any other information that they believed would help us to understand more about disciplinary incidents and why they occur.

2.6. Interview data analysis

Recordings were transcribed verbatim using a professional transcription service, yielding 399 single-spaced pages of data. Participants were sent a copy of their transcript to review and add or remove any information. Three participants made minor corrections to transcripts. No participants choose to add new information or to remove information. Identifying information was removed from the transcripts and participants were assigned a code. Transcripts were uploaded into NVivo 11 for data analysis.

Transcripts were analyzed following the thematic analysis procedure described by Braun and Clarke (2006). First, the lead researcher read each transcript multiple times to gain familiarity with the data and to begin the second step of generating initial codes pertaining to the content of the transcripts. The third step consisted of grouping similar codes into themes. Fourth, the themes were reviewed and compared against each other to ensure each theme contained coded segments sharing common features (i.e., internal homogeneity) and were distinct from other themes (i.e., external heterogeneity). Fifth, themes were carefully examined to identify their key defining features and named.

During the fifth stage, the ecological model was used to organize the themes from more proximal to more distal levels. That is, we used the model as a guide for identifying factors at different levels of social ecology that influenced the occurrence of disciplinary incidents and created categories that reflected key components of the ecological system (cf. Lee et al., 2015). Most proximal factors were coded at the microsystem level, and included factors within the context of games themselves (cf. Holt et al., 2008) that appeared to have the most direct influence on the occurrence of incidents. Exosystem-level factors associated with disciplinary incidents were largely governed by the league and PSO. Macrosystem-level factors reflected sociocultural influences that had a distal influence on the occurrence of incidents.

An inter-rater reliability procedure was conducted by a second researcher who reviewed each theme and agreed with over 90% of the original coding. The researchers discussed disagreements until 100% agreement was reached. At this point we also decided we had adequate data saturation and that no further data collection was necessary. The fact that we had perspectives from members of three groups (i.e., players, officials, and coaches) along with quantitative and qualitative data provided opportunities for data triangulation. Finally, the researchers selected quotes that best represented the findings to prepare the results, which were discussed, reviewed, and edited by all members of the team. During the final phase of the analysis some re-organization of the themes by level of social ecology occurred.

3. Results

3.1. Quantitative data

During the five-year period there were approximately 11,000 +/− 5% games per year, for a total of 55,000 +/− 5% games played total. A total of 98 disciplinary incidents were reported. Of the 55,000 total games, approximately 30,000 were indoor games and 25,000 were outdoor games (estimates provided by PSO). A total of 54 incidents were reported in indoor and 44 incidents were reported in outdoor soccer. Furthermore, indoor games last for 50 minutes (2 × 25 minutes halves) whereas outdoor games last for 90 minutes (2 × 45 minutes halves). Therefore, we estimate that approximately 1,500,000 minutes of indoor soccer was played during the time period studied versus 2,250,000 minutes of outdoor. Hence, disciplinary incidents were far more frequent in indoor soccer than outdoor soccer. There was, on average, an incident every 27,778 minutes in indoor and an incident every 51,136 minutes in outdoor.

An examination of the incidents by the year in which they occurred showed, despite the fact that approximately the same number of games were played each year, there was an increasing trend from four incidents in 2010 (approximately one incident in every 2750 games) to 27 incidents in 2015 (approximately one incident in every 407 games) (Fig. 1). These incidents involved players from at least 80 different teams (with three incident reports not including the offender's team). The majority of incidents (56.12%) occurred in tiers three and four, the lowest levels of competition (Fig. 2). Disciplinary incidents frequently contained two or more different types of offences in the same incident (e.g., offender was accused of foul or abusive remarks in addition to deliberate physical contact with an official). The most frequently reported offences (Fig. 3) were foul or abusive remarks (i.e., offensive, insulting, or abusive language; $n = 56$), followed by threatening an official (i.e., threatening, attempting to intimidate, or intimidating a referee or people close to a referee; $n = 29$), deliberate violent conduct (i.e., striking or spitting at an official; $n = 25$), and deliberate physical contact with an official (i.e., shoving or grabbing an official; $n = 16$).

Disciplinary actions included suspensions ranging from 0 to 134 games ($n = 82$, $M = 18.55$, $SD = 22.61$), and/or fines from $75 to $300 ($n = 18$, $M = 234.72$, $SD = 55.00$), and in seven cases alternative disciplinary actions (e.g., offender required to

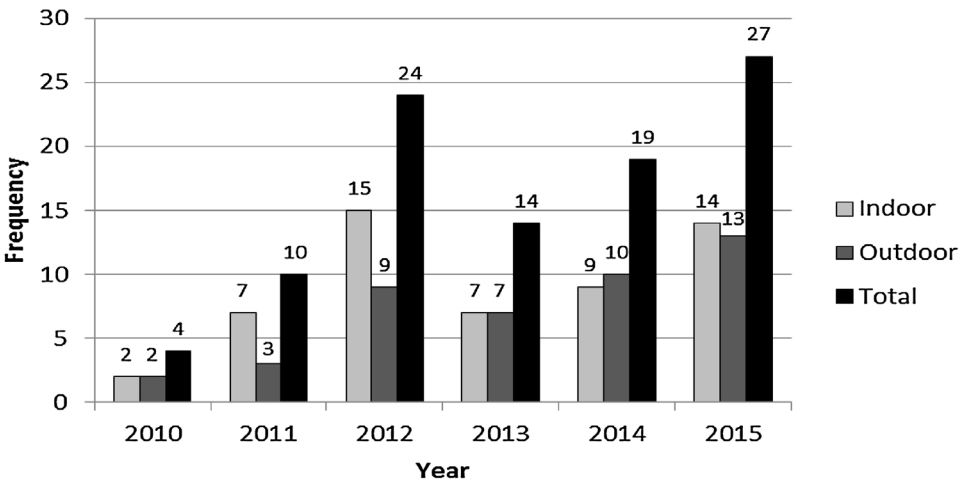

Fig. 1. Absolute frequency of reported disciplinary incidents by year.

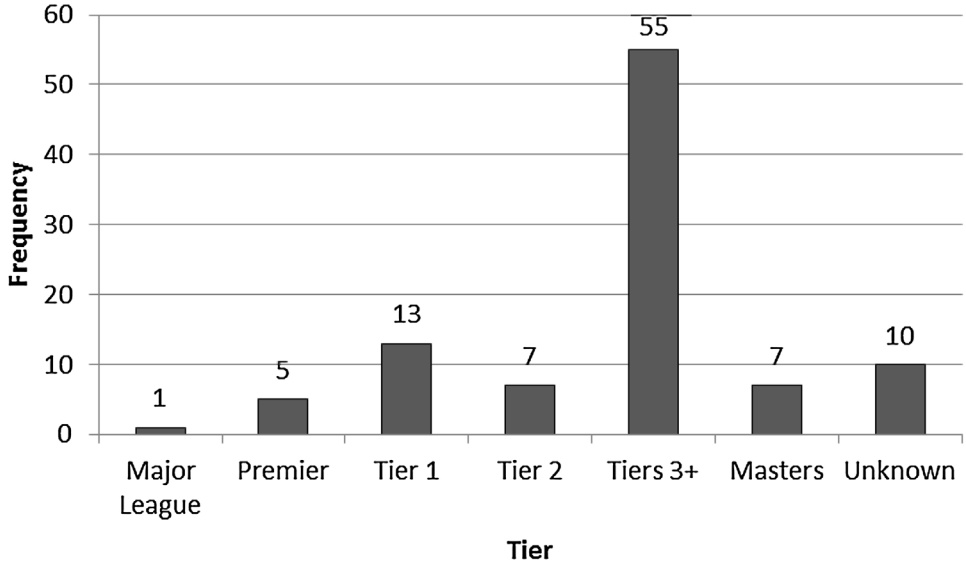

Fig. 2. Absolute frequency of reported disciplinary incidents by tier of play.

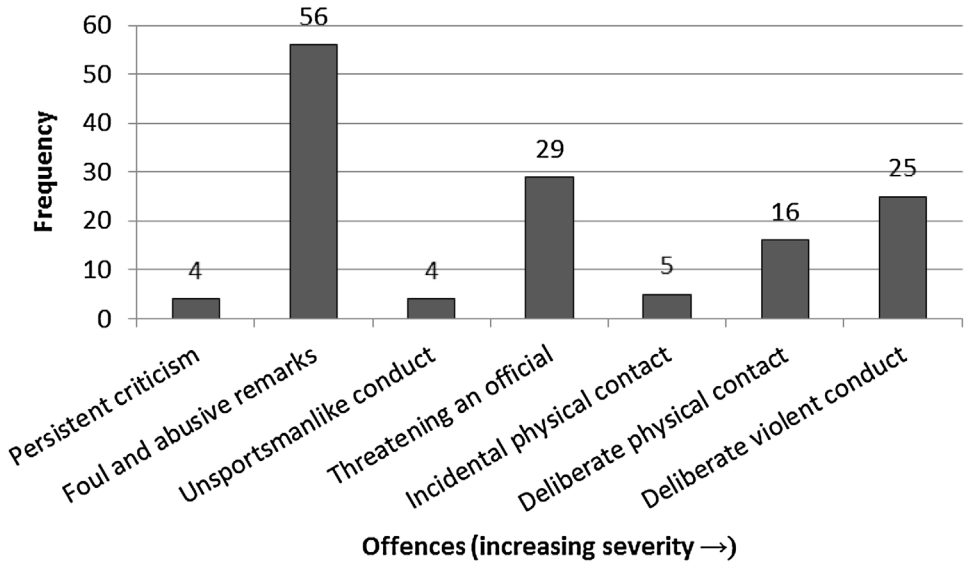

Fig. 3. Absolute frequency of reported offences.

take an officiating course before being permitted to return to play) were taken. In 16 cases the offender received an indefinite suspension. Players could receive more than one disciplinary action (e.g., a suspension plus a fine) for a single incident.

3.2. Qualitative data

The interview data were coded around levels of social ecology beginning with the most proximal (microsystem level) and ending with the most distal (macrosystem level). An overview of the themes is provided in Table 2.

3.2.1. Microsystem level

The microsystem level referred to attitudes, behaviors, and knowledge that created patterned interpersonal interactions that appeared to directly lead to the occurrence of disciplinary incidents. Interpersonal interactions between agents (i.e.,

Table 2
Summary of Themes from Qualitative Analysis.

Ecological Level	Themes	Primarily reported by
Microsystem		
	Players lacked knowledge of laws of the game	Players, referees, and DCMs
	Coaches' lack of knowledge of the laws of the game	Players, referees, and DCMs
	Coaches' attitudes	Players, referees, and DCMs
	Physical environment (indoor vs outdoor soccer)	Players, referees, and DCMs
	Inconsistent refereeing	Players
	Referees' communication	Players and referees
	Number of officials	Players and referees
	Game importance (score and stage of season)	Players
Exosystem		
	Training and mentoring of referees	Referees and DCMs
	Rule changes	Players and referees
	Disciplinary procedure	Players, referees, and DCMs
Macrosystem		
	Cultural backgrounds	Players and referees
	Discrimination	Referees

Note. DCMs = Disciplinary Committee Members.

players, coaches, and referees) were an important feature of these findings at the microsystem level. Participants from all three groups suggested *players lacked knowledge of laws of the game*. For instance, Player 9 (P09) said, "some of the players don't understand the game or they don't know how to play properly then they take it out on the ref because they think they're in the right." Participants also made reference to *coaches' lack of knowledge of the laws of the game*. Specifically, as one participant explained, "when you have a coach that doesn't quite understand the game, [who is] not going to be supporting the referee and is only going to be supporting their players, then that becomes an issue" (Disciplinary Committee member; DC03).

Participants from all three groups reported that *coaches' attitudes* had an influence on the occurrence of disciplinary incidents. A disciplinary committee member (DC02) suggested that, "The team picks up the attitude of the coach. If the coach is a belligerent son of a bitch, the team's going to be a belligerent son of a bitch team and I see the correlation immediately." Similarly, a referee said, "I've seen this happen. Coaches lose their composure and then the players think 'Yeah he's right and the referee is stupid"' (Referee; R02). On the other hand, participants also said that coaches can play an important role in preventing the occurrence of disciplinary incidents. A player said:

> From the coach's perspective, definitely try and calm your player down and tell him not to approach a ref. Just tell him to change and go home after the game. Tell a player it's not worth it to get a suspension for yelling at the ref or threatening the ref. (P05)

Another microsystem factor discussed by the all three groups was the *physical environment* in which games took place. It is important to note that all players and referees played/officiated both indoor and outdoor soccer (nearly all outdoor teams also compete during the indoor season). There was a general perception (consistent with the findings from the document analysis) that disciplinary incidents were more frequent during indoor soccer games. Participants offered several reasons for this. A disciplinary committee explained, "Indoor we see a lot more claims of referee abuse in indoor soccer. Outdoor soccer the field's much larger, a lot more running, the center ref [head official] is distanced from the play" (DC02). The confined space of indoor soccer was frequently cited as contributing to incidents. One player explained, "I think just because you're on the bench and you're right there with the ref. I think it's easier to yell at the ref in indoor 'cause of the smaller field" (P09). Participants also suggested that the speed of the game varied from indoor to outdoor. One referee said, "Indoor. Everything is happening in sprint speeds, as opposed to outdoor when you're loping and can move more slowly. The dynamism of the indoor game certainly has the potential to translate into a lot more physicality . . . " (R06). Another referee said the speed of the indoor game could influence refereeing decisions. He said, "Indoor you have to make [decisions] twice as quick. You don't have the luxury of blowing a whistle, running up to him, then making a decision" (R04).

Players thought that referees themselves also influenced the occurrence of disciplinary incidents, specifically if they were *inconsistent*. One player recalled a time when a certain type of challenge/tackle "was being called consistently all game and then they [officials] didn't call it. [Removing] stuff like that [i.e., inconsistency] will really help players from getting mad and verbally abusing the ref" (P05). Building on the idea of reducing player frustration, players and referees praised referees who took the time to *communicate* and explain their decisions as opposed to simply making a call and walking away. One referee explained why this may be the case, saying, "I think you might actually find that players and coaches respect referees more because of that [communicating decisions], because they're showing that human side of the game" (R03).

Another microsystem issue reported by players and referees was the lack of sufficient *numbers of officials*, especially at lower tiers of competition. At higher tiers (i.e., tier 1 and major league), there would be at least three officials (head referee and two assistant referees for outdoor). At lower tiers there was often just one referee. When asked what the other officials could have done when an incident occurred, one lower-tier player responded incredulously when he said, "Other officials? It was just the one official" (P02). Referees also commented on the consequences of not having assistant referees. One referee said, "unless you're division one men's or higher you don't get assistants, which . . . puts us into even more problems. You don't have a support, if there is anything that happens on the field, you're by yourself" (R01). Furthermore, a player provided insight as to how a full set of officials could be useful. He said, "I'd like to see side-line refs [i.e., assistant referees] just because they're useful and, they let the ref on the field be a little more exact" (P08).

Finally (at the microsystem level), factors relating to the *importance of the game* (score and stage of season) also contributed to the occurrence of disciplinary incidents. In terms of the score, players said that incidents were more likely to occur during close games (i.e., when the score differential was close). One player described an incident during a close game when the referee did not call a perceived foul, which lead to a goal. He said, "They [players] just went off on the ref just because . . . it was such a close game, such a tight battle, and it just looked like [the foul] was so blatant" (P03). In terms of the stage of the season, a player said:

> It [incident] was towards the end of the season . . . I think we were in second place trying to push for first. If we lost we were dropping down to third or fourth place, so I just feel like emotions were running high . . . it was just kind of heat of the moment. (P04)

3.2.2. Exosystem level

Themes coded at the exosystem level included broader organizational aspects that influenced the occurrence of events (albeit, apparently in a less direct or immediate way than microsystem factors). These factors largely fell under the purview of the league or PSO. The *training and mentoring* of new referees was frequently mentioned by referees and disciplinary committee members. One referee highlighted the problem:

> . . . it's gotten where these younger referees are [told] 'here's your whistle, here's your badge, a couple of cards, go out there and referee.' And the only real feedback they get is probably from their friends that they signed up and went through the course with . . . . (R07)

Participants suggested that, in addition to basic training and certification, referees would benefit from a mentoring system. A disciplinary committee member said, "I'd probably spend a lot more time with referee training. I would probably mentor referees with more senior experienced referees for at least a couple games until they get a feel for the game" (DC02).

Rule changes during the course of this project were negatively appraised by players and referees. That is, during the early part of the research (and for indoor games only) referees had a 'blue card' option, which was essentially a 'warning' for offences that did not warrant a yellow or red card. The removal of the blue card, for all but delay of games (i.e., taking too long to restart the game following a stoppage of play), reduced referees' ability to manage games. For example, one player remarked that, "I feel like they need that blue card as a warning or else people just don't listen and you let all these little calls go, then that's when tempers start flaring and people start getting upset when there's no cards" (P06).

Members of all three groups also reported the *disciplinary procedure* itself was a concern. While the procedure may not directly lead to a specific incident per se, it was certainly a factor more broadly associated with incidents. Referees said that, at times, the procedure was so ineffective that some referees do not report incidents in which they have been abused. Partially this was because "I don't think some officials wanna do the paperwork, I think it's viewed as a hassle because then first you have to do it and then you have to send it in and then you never know what happens anyways" (R02). As R02 alluded to, there was a lack of transparency in the procedures, even from the referees' perspective. One said, "I'd like to make the discipline more transparent . . . I think it might help everybody realize that if you know that 'Joe' got a [suspension] because he was doing this, and this is what he got . . . " (R04). Sometimes players did not appear for hearings, in which cases "they just get dealt with in absentia" (DC02). But referees also failed to attend the hearings, which was a problem because the disciplinary committee would then go "strictly by their written report" (DC03). Players also expressed concern with relying on written reports. One player who personally attended a hearing said, "I think it's kind of like a weird situation where it's a 'he said she said' type of thing . . . it's kind of really hard to say without impartial witnesses" (P01).

3.2.3. Macrosystem level

The most distal influence reflected some stereotypes. Players and referees thought players had differing perceptions of foul play stemming from their *cultural backgrounds*. It should be noted that many of the soccer teams were historically based around cultural groups. One player explained, "Players who grew up somewhere else and think that certain fouls are not a foul . . . or it could be just how involved the ref is that they're not used to" (P04). A referee reported some cultural stereotypes that he thought related to soccer. He said "South American players are gonna argue and gesture and gesticulate . . . If I get a Germanic person they're usually the opposite, they don't say too much, don't usually argue back with you at all, at least not openly anyway" (R04). We also received examples from referees of *discrimination*. One (African Canadian) referee shared an experience in which he was accused of favoring one team over the other because of the racial composition of the teams. He said that a predominantly African ethnic team "accused me of an inferiority complex, [saying

that] I wanted to please the White team" (R08). One referee described how learning more about other cultures could help referees understand members of other cultural groups and prevent incidents from occurring, "You treat certain cultures different than others, and what's accepted and what's not. And what is offensive in some and what is not . . . I think having more of that information would be helpful, because we live in such a multicultural area" (R03).

4. Discussion

The purposes of this study were to (a) document the frequency and types of disciplinary incidents directed toward men's soccer referees and (b) examine stakeholders' perceptions of factors that contributed to such incidents. In the subsequent sections of this paper we discuss the key results from the document analysis and then examine the findings from the qualitative data by ecological level and their contribution to theory. We then go on to consider implications for sport management before discussing strengths and limitations of the study along with potential avenues for future research.

4.1. Discussion of findings

Looking at the results from the document analysis, 98 incidents were reported over the five-year period, ranging from 4 incidents in 2010 to 27 incidents in 2015. This descriptive information makes a contribution to the literature because previous studies of disciplinary incidents in soccer have either focused on infractions in professional soccer (e.g., Buraimo et al., 2010; Dohmen, 2008) or, in the case of studies of amateur soccer, sampled officials themselves rather than the occurrence of incidents across leagues (e.g., Folkesson et al., 2002). Our year-by-year analysis revealed changes in the frequency of incidents over time. In 2012, there was an increase in reported incidents (accounted for by an increase of incidents involving foul and abusive remarks). This may be the result of policy implemented that year by the PSO mandating an automatic red card and minimum two-game suspension for players who made foul or abusive remarks. Thus, the spike in incidents in 2012 was likely a consequence of enhanced enforcement.

Foul and abusive remarks were the most frequently reported incidents (56 incidents), following by threatening an official (29 incidents), deliberate violent conduct toward an official (25 incidents), and deliberate physical contact with an official (16 incidents). Some of these incidents may constitute criminal acts. Indeed, some sport organizations have adopted legislation to specifically protect sports officials from such acts (Chiafullo, 1998). One notable concern from a referee recruitment and retention perspective is that more incidents occurred at lower tiers of play. It is likely that younger, or less experienced, referees officiated games at lower competitive tiers. This finding is compatible with previous research showing that younger referees and those with lower levels of certification are exposed to more aggression, threat, and stress than older and more experienced referees (Dorsch & Paskevich, 2007; Folkesson et al., 2002).

Our qualitative findings provide some important insights that help explain the quantitative data concerning the higher frequency of incidents at lower levels of play. At the *microsystem level*, results showed that players' and coaches' lack of knowledge of the laws of the game influenced the occurrence of disciplinary incidents toward referees, which is consistent with a finding from Friman et al.'s (2004) study with Swedish soccer referees. Furthermore, incidents were more frequent in indoor soccer, which has some unique rules that differ from outdoor soccer. Participants perceived that the circumstances surrounding the indoor game (e.g., smaller field, confined space, faster game) led to more incidents. Research in professional soccer shows that the proximity of the crowd can influence referees' decision-making (Buraimo et al., 2010; Dohmen, 2008). Whereas we did not examine crowd proximity, our findings do suggest that the smaller field and confined space of indoor soccer contributed to incidents.

Microsystem factors concerning the referees themselves were perceived to contribute to the occurrence of disciplinary incidents (i.e., inconsistent refereeing, referees' communication, and number of officials at games). Previous research shows that players perceive the fairness and correctness of decisions to be higher when they receive an explanation for a decision, and when referees communicate calmly (Simmons, 2010). Improving referees' training – particularly in terms of their communication with players – could play a role in reducing the occurrence of disciplinary incidents in the future (Bar-Eli, Levy-Kolker, Pie, & Tenebaum, 1995; Thatcher, 2005). The issue of number of officials at games is challenging, especially for indoor games and at lower tiers of play where there are typically fewer officials for each game. Sport organizations face challenges in attracting and retaining officials (Australian Bureau of Statistics, 2010; Deacon, McClelland, & Smart, 2001; Dell et al., 2014; Statistics Canada, 2013; VanYperen, 1998); nonetheless, our findings highlight the value of having a full crew of officials, especially at lower tiers of competitive play.

Other microsystem level factors related the importance of the game itself (i.e., close score, late stage of the season) were perceived by players to contribute to disciplinary incidents. A close score margin influences referees' decisions in professional soccer leagues (Buraimo et al., 2010; Dohmen, 2008). Similarly, players are more anxious during critical moments in games (including trailing in a game by a close margin or defending a close lead; Dunn & Nielsen, 1996). It is therefore plausible that game-related factors influence both referees and players and create circumstances in which disciplinary incidents are more likely to occur. Sport organizations may wish to consider assigning their most experienced officials to important games that take place between close rivals toward the end of a season.

At the *exosystem level*, participants questioned the training and certification of referees and suggested that mentoring could be useful for improving consistency and plausibly minimizing some conditions that lead to disciplinary incidents. Similarly, there is need for training and mentoring to improve the retention of officials (e.g., Ridinger, 2015; Warner et al.,

2013). Thus, mentoring and training, with a focus on communicating decisions, appear to be important areas for training younger or less experienced referees. Furthermore, the removal of the blue card in indoor for offences other than delay of game was perceived to contribute to increased occurrence of disciplinary incidents, apparently because it limited referees' ability to control games. The impact of rule changes have been studied in relation factors such as injury rates in youth ice hockey (Emery et al., 2010) and professional rugby (Eaves, Hughes, & Lamb, 2008). However, the impact of rule changes on the occurrence of disciplinary incidents in soccer does not appear to have been examined in the literature previously. Although we are unable to draw firm conclusions from our findings, the results suggest that rule changes may influence the occurrence of disciplinary incidents and this is an important issue to consider from a sport management perspective.

Also at the exosystem level, participants expressed concerns about disciplinary procedures, including a lack of transparency and clarity about the outcomes of disciplinary meetings. These issues reflect notions of organizational justice, which refers to members' perceptions of fairness within an organization (Cohen-Charash & Spector, 2001). There are various types of organizational justice, including distributive justice (perceived fairness of outcomes), procedural justice (perceived fairness of the process of making outcome decisions), interpersonal justice (perceived fairness of the interpersonal treatment when delivering outcomes), and informational justice (perceived fairness of explanation or justification of outcomes). Our findings suggest a lack of procedural justice (i.e., concerns about the process), interpersonal justice (i.e., concerns about the perceived fairness when cases were adjudicated in absentia), and informational justice (i.e., lack of transparency about what and how suspensions were handed out). Interestingly, a study of amateur and semi-professional officials from Hong Kong showed no direct effects of distributive justice on job satisfaction and career commitment (Kim, 2016). However, the Kim (2016) study focused only on distributive justice and our current findings highlight the need to consider the other types of justice (i.e., procedural, interpersonal, and informational) in relation to disciplinary procedures in sport.

Findings at the *macrosystem level* revealed cultural stereotypes and race influenced disciplinary incidents. For instance, some referees applied cultural stereotypes to players from different ethnic backgrounds. Whereas these factors may not have directly led to a particular incident, they may have increased tension during games, indirectly leading to incidents (which is why they were coded at the most distal ecological level). It should be noted that many soccer teams in the area studied are organized around cultural groups. Indeed, many teams are named for a particular country or cultural group and – especially at the lower tiers of play – are predominantly or entirely comprised of players from that group. These macrosystem level factors may not be something to include in interventions because they are difficult to modify, but increasing understanding of cultural differences may nonetheless be important.

Finally, at the *chronosystem level* (as previously noted), the documentary analysis depicted changes over a five year period, and the qualitative data highlighted some historical factors (enhanced enforcement and rule changes) that may have influenced disciplinary incidents. Our analysis did not focus on how the changing nature of social relationships (e.g. between officials and players) may have unfolded over time, and how these relationships influenced the occurrence of disciplinary incidents. In the future, longitudinal studies may be useful for understanding such chronosystem level factors.

4.2. Theoretical implications

The use of an ecological systems perspective (Bronfenbrenner, 2005; Bronfenbrenner & Morris, 1998) revealed that factors at several different levels of social ecology were perceived to influence the occurrence of disciplinary incidents. Theoretically, factors at the microsystem level have the most direct effects on behavior. Our results appear to support this proposition and also revealed that complex interpersonal interactions between referees, coaches, and players created conditions that led to disciplinary incidents. Fundamentally, these insights may be useful because they suggest that efforts to reduce disciplinary incidents toward officials in sport must be multifaceted. However, it should be noted that some important features of the ecological model were not used in our analysis, and these omissions may provide avenues for future research. For instance, we were unable to establish such direct causality, nor firmly demonstrate which factors should be manipulated to create positive change (although findings consistently point to the importance of educational initiatives).

Additionally, reciprocity between levels of social ecology is assumed in an ecological approach. We did not, however, thoroughly examine reciprocal nature of interactions, other than within the microsystem level. When using ecological approaches it is difficult to examine all aspects of a model in detail (Holt et al., 2016), but the current study suggests this model may be an appropriate lens for future research examining factors associated with the occurrence of disciplinary incidents in sport. We also contribute to a growing body of literature showing that ecological approaches can be used to study sporting contexts (e.g., Holt et al., 2008, 2016) and may be useful for future applications in sport management research.

4.3. Practical implications

The results of this study have several implications for sport managers. The most problematic areas are *lower competitive tiers* of *indoor soccer*. Initiatives to educate players and officials that focus on lower levels of indoor soccer would likely have the most impact on the reduction of disciplinary incidents. More specifically, key areas for intervention include targeting players' and coaches' lack of knowledge of the laws of the game, considering new rules (or reinstating

old rules such as the blue card) for indoor soccer, improving referees' communication and understanding of game importance.

Referee education may be particularly important for reducing the occurrence of disciplinary incidents. If referees have greater awareness of the influence their communication has on players, and better communication skills, conflicts between referees and players may be reduced (Bar-Eli et al., 1995; Thatcher, 2005). Historically, referee training has tended to focus on knowledge of the rules (Mellick, Fleming, Bull, & Laugharne, 2005) rather than communication skills training. Referees tend to develop communication skills informally, through their experience of refereeing (MacMahon, Helsen, Starkes, & Weston, 2007) and advice from colleagues and mentors (Mellick et al., 2005). Mellick, Mascarenhas, and Fleming (2012) suggested communication skills training for referees could include conflict management and resolution, language (voice control) practice, and role playing giving decisions to players, coupled with video analysis and maintaining reflective journals. Other research shows that when referees appear calm and confident explaining decisions players have increased perceptions of referees' fairness (Simmons, 2010). Some of these components of communication skills training could be adopted by sport organizations and integrated into referee training and mentoring programs. Enhanced training and mentoring may also improve the recruitment and retention of officials (Ridinger, 2015; Warner et al., 2013).

We observed that disciplinary committee members did not comment on several themes, such rule changes and number of officials. They may have lacked first-hand experience of these issues, and our findings suggest disciplinary committee members would benefit from educational initiatives. Education for disciplinary committee members could focus on increasing their understanding of the range of factors associated with the occurrence of disciplinary incidents and the key areas that require attention (e.g., lower tiers of play, indoor soccer). Furthermore, some of the findings concerning the disciplinary process may imply a need for greater organizational support. Indeed, studies have shown that officials perceive a lack of organizational support in Canadian youth ice hockey (Forbes & Livingston, 2013) and Australian football (Kellet & Warner, 2011). Yet, an intervention that examined the efficacy of an organizational support program in increasing intention to continue officiating found that perceived organizational support was not a significant predictor of post-study intention to continue (Cuskelly & Hoye, 2013). In fact, officials in the organizational support group perceived reduced organizational support following the intervention, which may have been because the intervention heightened their (unrealized) expectations for support from their organization. Taken together, these findings and the current research suggest that organizational support interventions should specifically target issues in order to provide more clarity not just for referees, but also for players, coaches, and disciplinary committee members. The current findings may be useful as they highlight specific issues that may be targeted from a practical perspective.

4.4. Strengths, limitations, and avenues for future research

Strengths of this study included our partnership with the PSO, which enabled us to have complete access to disciplinary files over a five-year period. In using a sequential mixed methods design we were able to triangulate disciplinary incidents with participants' perceptions of factors that contribute to the occurrence of such incidents. Methodological limitations included the fact we were restricted to the information recorded in disciplinary files, which did not include some data that may have been useful (e.g., age/experience of referees who were victims of incidents). The number of reported incidents of abuse did not allow us to conduct more sophisticated statistical analyses beyond reporting descriptive statistics. Interviews were retrospective, which means the results may be influenced by recall bias. There may have been sampling bias in that individuals who had particularly strong views about disciplinary incidents volunteered to participate in the study. Additionally, the sample of participants interviewed was relatively small, and while all had witnessed or dealt with disciplinary incidents, we did not obtain multiple perspectives about any particular incident. Only two female referees were interviewed. This is representative of the gender balance of officials in the region studied, but did not allow for the analysis of potential gender differences. This is an important area for future research because female officials may face unique barriers (e.g., Tingle, Warner, & Sartore-Baldwin, 2014). Furthermore, controlled and natural experiments examining how educational initiatives or rule changes influence behavior represent important research directions.

4.5. Conclusion

Sport organizations (e.g., leagues and PSOs) may be able to intervene on some of the relatively modifiable findings revealed in this study by providing educational initiatives. Given that amateur sport organizations often have limited time and resources, the findings are useful because they highlight specific settings that require attention (i.e., lower tiers of play and indoor games) and may produce the most significant benefits. In this vein, our analysis may be useful for other organizations, showing the importance of considering specific contextual factors (e.g., competitive tier) in isolating concerns and targeting interventions. Our study revealed specific issues that could be targeted by organizations. For instance, lower tier players and coaches require more knowledge of the laws of the game. Referees may benefit from enhanced training and mentoring, focused on communication strategies and initiatives to help them understand more about game circumstances which contribute to disciplinary incidents occurring. It is possible that improved educational efforts, not just for referees but also for players, coaches, and disciplinary committee members, may reduce disciplinary incidents and perhaps improve the recruitment and retention of officials at lower tiers of play (also see Ridinger, 2015; Warner et al., 2013). Our findings suggest that interventions should focus on microsystem level factors, which theoretically have the most direct influence on

behaviors. Educational initiatives should be explored by sport organizations seeking to reduce disciplinary incidents toward referees, and the effects of such initiatives could be carefully examined by researchers.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

Anderson, K. J., & Pierce, D. A. (2009). Officiating bias: The effect of foul differential on foul calls in NCAA basketball. *Journal of Sports Sciences*, *27*, 687–694. http://dx.doi.org/10.1080/02640410902729733.
Australian Bureau of Statistics (2010). *Involvement in organized sport and physical activity. (Cat. no. 6585.0)*. Canberra: Commonwealth of Australia.
Australian Sports Commission (2015). *Play. Sport. Australia. The Australian Sports commission's participation game plan*. Canberra: Commonwealth of Australia.
Bar-Eli, M., Levy-Kolker, L., Pie, J. S., & Tenenbaum, G. (1995). A crisis-related analysis of perceived referees' behavior in competition. *Journal of Applied Sport Psychology*, *7*, 63–80. http://dx.doi.org/10.1080/10413209508406301.
Brand, R., Schmidt, G., & Schneeloch, Y. (2006). Sequential effects in elite basketball referees' foul decisions: An experimental study on the concept of game management. *Journal of Sport & Exercise Psychology*, *28*, 93–99. http://dx.doi.org/10.1123/jsep.28.1.93.
Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*, 77–101. http://dx.doi.org/10.1191/1478088706qp063oa.
Bronfenbrenner, U., & Morris, P. (1998). The ecology of developmental processes, In R. M. Lerner, & W. Damon (Eds.), *Handbook of child psychology Vol 1: Theoretical models of human development* (pp. 993–1028). (5th ed.) New York: Wiley.
Making human beings human: Bioecological perspectives on human developmen. In U. Bronfenbrenner (Ed.), (2005). Thousand Oaks, CA: Sage.
Buraimo, B., Forrest, D., & Simmons, R. (2010). The 12th man? Referring bias in English and German soccer. *Journal of the Royal Statistical Society. Series A (Statistics in Society)*, *173*, 431–499. http://dx.doi.org/10.1111/j. 1756-1221.2004. tb00075.x.
Canadian Heritage (2012). *Involvement in organized sport and physical activity. (Cat. no. 6585.0)*. Ottawa: Canada: Canadian Heritage.
Chiafullo, C. M. (1998). From personal foul to personal attack: How sports officials are the target of physical abuse from players, coaches, and fans alike. *Seton Hall Journal of Sport Law*, *8*, 201–227.
Cohen-Charash, Y., & Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes*, *86*, 278–321. http://dx.doi.org/10.1006/obhd.2001.
Cuskelly, G., & Hoye, R. (2013). Sports officials' intention to continue. *Sport Management Review*, *16*, 451–464. http://dx.doi.org/10.1016/j.smr.2013.01.003.
Deacon, J., McClelland, S., & Smart, D. (2001). Rink rage. *Maclean's*, *114*(13), 20–24.
Dell, C., Gervis, M., & Rhind, D. (2014). Factors influencing soccer referee's intentions to quit the game. *Soccer & Society*, *17*, 109–119. http://dx.doi.org/10.1080/14660970.2014.919275.
Department for Culture, Media & Sport (2015). *Sporting future: A new strategy for an active nation*. London: HM Government.
Dohmen, T. J. (2008). The influence of social forces: Evidence from the behavior of football referees. *Economic Inquiry*, *46*, 411–424. http://dx.doi.org/10.1111/j.1465-7295.2007.00112.x.
Dorsch, K. D., & Paskevich, D. M. (2007). Stressful experiences among six certification levels of ice hockey officials. *Psychology of Sport & Exercise*, *8*, 585–593. http://dx.doi.org/10.1016/j.psychsport.2006.06.003.
Downward, P., & Jones, M. (2007). Effects of crowd size on referee decisions: Analysis of the FA cup. *Journal of Sports Sciences*, *25*, 1541–1545. http://dx.doi.org/10.1080/02640410701275193.
Dunn, J. G. H., & Nielsen, A. B. (1996). A classificatory system of anxiety-inducing situations in four team sports. *Journal of Sport Behavior*, *19*(2), 111–131.
Eaves, S. J., Hughes, M. D., & Lamb, K. L. (2008). Assessing the impact of the season and rule changes on specific match and tactical variables in professional rugby league football in the United Kingdom. *International Journal of Performance Analysis in Sport*, *8*(4), 104–118.
Emery, C. A., Kang, J., Shier, I., Goulet, C., Hagel, B. E., Benson, B. B., . . . Meewisse, W. H. (2010). Risk of injury associated with body checking among youth ice hockey players. *Journal of the American Medical Association*, *303*, 2265–2272. http://dx.doi.org/10.1001/jama.2010.755.
Folkesson, P., Nyberg, C., Archer, T., & Norlander, T. (2002). Soccer referees' experience of threat and aggression: Effects of age, experience, and life orientation on outcome of coping strategy. *Aggressive Behavior*, *28*, 317–327. http://dx.doi.org/10.1002/ab.90028.
Forbes, S. L., & Livingston, L. A. (2013). Changing the call: Rethinking attrition and retention in the ice hockey officiating ranks. *Sport in Society*, *16*, 295–309. http://dx.doi.org/10.1080/17430437.2013.779854.
Friman, M., Nyberg, C., & Norlander, T. (2004). Threats and aggression directed at soccer referees: An empirical phenomenological psychological study. *The Qualitative Report*, *9*(4), 652–672.
Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, *18*, 59–82. http://dx.doi.org/10.1177/1525822X05279903.
Hagemann, N., Strauss, B., & Leißing, J. (2008). When the referee sees red. *Psychological Science*, *19*, 769–771. http://dx.doi.org/10.1111/j. 1467-9280.2008.02155.x.
Holt, N. L., Tamminen, K. A., Black, D. E., Sehn, Z. L., & Wall, M. P. (2008). Parental involvement in competitive youth sport settings. *Psychology of Sport and Exercise*, *9*, 663–685. http://dx.doi.org/10.1016/j.psychsport.2007.08.001.
Holt, N. L., Deal, C. J., & Smyth, C. L. (2016). Future directions for positive youth development through sport. In N. L. Holt (Ed.), *Positive youth development through sport* (pp. 229–240). London: Routledge.
Kellet, P., & Shilbury, D. (2007). Umpire participation: Is abuse really the issue? *Sport Management Review*, *10*, 209–229. http://dx.doi.org/10.1016/S1441-3523(07)70012-8.
Kellet, P., & Warner, S. (2011). Creating communities of practice that lead to retention: The social worlds and communities of umpires. *European Sport Management Quarterly*, *11*, 471–494. http://dx.doi.org/10.1080/16184742.2011.624109.
Kim, S. (2016). Perceived organizational support as a mediator between distributive justice and sports referees' job satisfaction and career commitment. *Annals of Leisure Research*, *13*, 1–19. http://dx.doi.org/10.1080/11745398.2016.1147363.
Lane, A. M., Nevill, A. M., Ahmad, N. S., & Balmer, N. (2006). Soccer referee decision-making: 'Shall I blow the whistle?'. *Journal of Sports Science and Medicine*, *5*(2), 243–253.
Lee, H., Tamminen, K. A., Clark, A. M., Slater, L., Spence, J. C., & Holt, N. L. (2015). A meta-study of qualitative research examining determinants of children's independent active free play. *International Journal of Behavioral Nutrition and Physical Activity*, *12*, 5. http://dx.doi.org/10.1186/s12966-015-0165-9.
MacMahon, C., Helsen, W. F., Starkes, J. L., & Weston, M. (2007). Decision making skills and deliberate practice in elite association football referees. *Journal of Sports Sciences*, *25*(1), 65–78. http://dx.doi.org/10.1080/02640410600718640.
Mascarenhas, R. D., Collins, D., & Mortimer, P. (2005). Elite refereeing performance: Developing a model for sport science support. *The Sport Psychologist*, *19*, 364–379. http://dx.doi.org/10.1123/tsp.19.4.364.
Mellick, M., Mascarenhas, D., & Fleming, S. (2012). Decision making and decision communications in elite rugby union referees: An inductive investigation. *Sport & Exercise Psychology Review*, *8*(2), 19–30.

Neil, R., Bayston, P., Hanton, S., & Wilson, K. (2013). The influence of stress and emotions on association football referees' decision-making. *Sport and Exercise Psychology Review*, *9*(2), 22–41.
Nevill, A. M., Balmer, N. J., & Williams, A. M. (2002). The influence of crowd noise and experience upon refereeing decisions in football. *Psychology of Sport & Exercise*, *3*, 261–272. http://dx.doi.org/10.1016/s1469-0292(01)00033-4.
Rainey, D. (1994). Magnitude of stress experienced by baseball and softball umpires. *Perceptual and Motor Skills*, *79*, 255–258. http://dx.doi.org/10.2466/pms.1994.79.1.255.
Rainey, D. (1995). Sources of stress among baseball and softball umpires. *Journal of Applied Sport Psychology*, *7*, 1–10. http://dx.doi.org/10.1080/10413209508406296.
Ridinger, L. L. (2015). Contributors and constrains to involvement with youth sports officiating. *Journal of Amateur Sport*, *1*, 103–127. http://dx.doi.org/10.17161/jas.v1i2.4946.
Rubin, J. J., & Rubin, I. S. (2012). *Qualitative interviewing: The art of hearing data*, (3rd ed.) Thousand Oaks, CA: Sage.
Sabaini, D. (2001). *How to get and keep officials. Racine*. WI: National Association of Sport Officials. Retrieved from http://www.donaldcollins.org/uploads/7/7/2/3/77230529/specreptconf_copy.pdf.
Simmons, P. (2010). Communicative displays as fairness heuristics: Strategic football referee communication. *Australian Journal of Communication*, *37*(1), 75–94.
Spence, J. C., & Lee, R. E. (2003). Toward a comprehensive model of physical activity. *Psychology of Sport and Exercise*, *29*, 747–762. http://dx.doi.org/10.1016/s1469-0292(02)00014-6.
Statistics Canada (2013). *Sport participation 2010 (Cat. no. CH24-1/2012E-PDF)*. Ottawa: Canada: Statistics Canada.
Teddlie, C., & Tashakkori, A. (2009). The fundamentals of mixed methods research. In C. Teddlie, & A. Tashakkori (Eds.), *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioural science* (pp. 19–39). Thousand Oaks, CA: Sage.
Thatcher, J. (2005). Stress, challenge, and impression management among sports officials. *Sport & Exercise Psychology Review*, *1*(1), 26–35.
Tingle, J. K., Warner, S., & Sartore-Baldwin, M. L. (2014). The experience of former women officials and the impact on the sporting community. *Sex Roles*, *71*, 7–20. http://dx.doi.org/10.1007/s11199-014-0366-8.
VanYperen, N. (1998). Predicting stay/leave behavior among volleyball referees. *The Sport Psychologist*, *12*, 427–439. http://dx.doi.org/10.1123/tsp.12.4.427.
Voight, M. (2009). Sources of stress and coping strategies of U.S. soccer officials. *Stress and Health*, *25*, 91–101. http://dx.doi.org/10.1002/smi.1231.
Warner, S., Tingle, J. K., & Kellet, P. (2013). Officiating attrition: The experiences of former referees via a sport development lens. *Journal of Sport Management*, *27*, 316–328. http://dx.doi.org/10.1123/jsm.27.4.316.