

Interprofessional collaboration in sports medicine: Findings from a scoping review

Simon Fletcher, Anthony P. Breitbach, Scott Reeves

Fletcher, S, Breitbach, AP, Reeves, S. (2017). Interprofessional collaboration in sports medicine: Findings from a scoping review. *Health, Interprofessional Practice & Education* 3(2):eP1128.
Available at: <https://doi.org/10.7710/2159-1253.1128>

© 2017 Fletcher et al. This open access article is distributed under a Creative Commons Attribution License, which allows unrestricted use, distribution, and reproduction in any medium, providing the original author and source are credited.

HIPE is a journal published by Pacific University | ISSN 2641-1148

Interprofessional Collaboration in Sports Medicine: Findings from a Scoping Review

Simon Fletcher PhD *Centre for Health and Social Care Research, Kingston and St Georges University London, United Kingdom*

Anthony P. Breitbach PhD, *ATC Doisy College of Health Sciences, St. Louis University, USA*

Scott Reeves PhD *Centre for Health and Social Care Research, Kingston and St Georges University London, United Kingdom*

Abstract

BACKGROUND Sports medicine has grown from a special interest area in healthcare to an established profession in its own right. Containing many specialties and a range of professional inputs there are complex dynamics at work which often dictate the provision of care. Whilst interprofessional interventions have been successfully applied in more mainstream healthcare contexts there has been no equivalent application in sports medicine.

PURPOSE We seek to map the literature to explore interprofessional collaboration, interaction and tension in sports medicine.

METHOD The study utilised a scoping review methodology followed by a thematic analysis.

DISCUSSION & CONCLUSIONS The review located 13 studies which provided an insight into a number of key themes which affect interprofessional collaboration (IPC) in a variety of athletic contexts. All of these themes relate to IPC. The structured introduction of interprofessional education programmes for sports medicine professionals and others, will enable a response to the numerous challenges identified in the review.

Received: 01/26/2017 Accepted: 03/20/2017

© 2017 Fletcher, et al. This open access article is distributed under a Creative Commons Attribution License, which allows unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Implications for Interprofessional Practice

- By scoping the sports medicine literature it has been possible to identify the extent of how healthcare interprofessional practices are visible within a sporting context.
- This review has enabled the identification of key areas (e.g. dominance, status, negotiation and professionalization) which can affect interprofessional relations within sports medicine.
- By providing a detailed understanding of the various processes affecting interactions in sports medicine, this paper can help inform future education and practice activities.

Introduction

Interprofessional collaboration (IPC) has been developed in response to divisions, tensions and challenges which face providers in mainstream healthcare contexts. It has become a conventional aspect of clinical work over recent decades (Gorman, 1998; Leathard, 2003; Øvretveit, Mathias, & Thompson, 1997; World Health Organization 2010) and continues to influence healthcare practice on a number of levels. Rooted in the improvement of provision and the increase in standards of care, IPC can be understood as, “a type of interprofessional work which involves different health and social care professions who regularly come together to solve problems or provide services” (Reeves, Lewin, Espin, & Zwarenstein, 2010, p.8). It has been instrumental in emphasizing the importance of mutual cooperation, enhanced understanding, and interprofessional respect and has been shown to improve outcomes for a range of stakeholders (Zwarenstein, Goldman, & Reeves, 2009).

Sports medicine is concerned with the care and well-being of athletes and those engaged in physical activity. As a result, the sports medicine field demands effective collaboration between the respective disciplines and professions. Representing both an academic and professional field, also operating on behalf of a number of national and international governing bodies, sports medicine has been recognised as invaluable to

the maintenance of safety and good practice throughout every level of sport (McLatchie, 2010). Although this paper focuses on elite sports medicine, the message and intention of this work remains consistent across the sporting context.

Sports medicine has now become a widely used and firmly established healthcare specialisation, however, the academic exploration of its various professional dynamics has been relatively sporadic. While Waddington (1996) identified this, and contributions have since been made (Griffin, Chung, Tzortziou-Brown, & Morrissey, 2011; Pabian, Oliveira, Tucker, Beato, & Gual, 2016), there has been a continued focus on medical treatment in the pursuit of enhanced athletic performance. Indeed the division which has been created by a requirement for high-level medical input and demand for superior performance has positioned the sports medicine practitioner in a professional dilemma. As Waddington (1996, p. 177) argues: “many aspects of this development can be understood as a conjuncture involving on the one hand, processes of medicalisation and, on the other, the increasing competitiveness of modern sport.” There is, then, increased scope for interprofessional interaction between medical practitioners and athletes; however the intentions of both are likely to diverge.

Pressure to play and, in turn, perform and the potential danger which this poses to the athlete’s wellbeing,

has been particularly visible in contemporary professional football (soccer). The football club doctor must navigate the line between *appropriate* care and match preparation. Yet this compromise is rarely identified by playing staff and coaches alike, who largely demand that ‘match-fitness’ is preserved regardless of the medical implications. Carter (2009) has explored this, and reports on disputes arising between managers and doctors. Club physician at Leeds United, Ian Adams resigned on four separate occasions because of arguments with the manager, Don Revie, over the fitness of players. Revie played them against Adam’s advice. This has been followed by a chain of similar conflicts, each of which have had a significant effect on the identity and status of the medical professional in a sporting context.

This has undoubtedly influenced the development of sports medicine and the collaborative activity of its practitioners. Sports medicine is, by requirement, collaborative, demanding cooperation between different practitioners (physicians, physiotherapists, athletic trainers) to provide the care required by high performing athletes. Indeed, Cullen and Batt (2005, p. 250) state that: “our strengths lie in our multidisciplinary approach and the ‘broad church’ of our specialty.” However, these authors go on to note that to date many sports doctors based in the United Kingdom work in *isolation*, in spite of great efforts to engage with the expertise offered by their sports medicine colleagues. There is, then, evidence to suggest that the realities of practice present a number of difficulties.

There is still some uncertainty over the status of a discipline which is comprised of a number of diverse specialties. Reynolds and Tansey (2009) argue that the essentially multidisciplinary nature of the field makes it difficult to define a medical specialty niche. However, they also acknowledge that the overlapping nature of these disciplines could be a potential strength. Whereas both points could hold validity, it is clear that the struggle to define the *identity* of the sports medic, will have consequences for professional interaction.

The need for sports medicine teams to implement an interprofessional approach has been discussed in recent academic work. Ardern et al. (2016) and Courson et al. (2014) have developed consensus statements which surround approaches to collaboration in sports medicine. Both papers maintain on some level that in

order for safety to be enhanced for a range of patient/athletes, there needs to be an alternative model where more rigorous methods of performance evaluation are put in place in a way which both encourages and benefits from IPC. Pabian, Oliveira, Tucker, Beato, and Gual (2016) use concussion management in sport to reinforce the need for coherent professional collaboration, also recognising the potential fragility of inter-professional relations in this context. They argue that subtle variations in jurisdiction guidelines and practice acts can confuse roles and responsibilities. They also contend that all members of the sports medicine team must be aware of their local professional practice guidelines as well as the strengths and limitations of each other’s training. Clear communication policies must be established and strictly followed.

Breitbach and Richardson (2015) have commented on the pedagogic conditions which exist in athletic training and whether interprofessional education (IPE) and/or interprofessional practice (IPP) can be structurally and successfully implemented in a way which replicates its introduction in more ‘conventional’ healthcare contexts. However, despite IPC in athletic training/sports medicine being an identifiable necessity, its introduction will be far from straightforward. Perrin (2015) states that:

...many entry-level ATPs [athletic training programs] exist in institutions where there are few if any linkages to the other health care professions. Athletic training students need to be educated along with and beside other students in the health care professions. (p. 325)

In addition to base level structural challenges is the contention that IPE and IPP approaches have lacked a contextual appreciation of inevitable division and been either utopian or insubstantial.

Given this background context, this paper presents the results from a scoping review of the sports medicine literature which aimed to explore the nature of IPC between different professions involved in sporting activities.

Methods

A scoping review methodology was employed to ‘capture an image’ of this particular field, to help gauge its development to date and its projected direction

(Arskey & O'Malley, 2005). Unlike systematic reviews, scoping reviews do not seek to assess the quality of the literature, and neither is it guided by a particular question. It rather seeks to prepare for a transition towards more in depth reviewing, or indeed if significant gaps are revealed, further exploration. Levac, Colquhoun, and O'Brien (2010, p. 1) suggest that the intention of a scoping review could be to "examine the extent, range and nature of research activity, determine the value in undertaking a full systematic review, summarizing and disseminating research findings, or identify gaps in the literature." Given that we seek to explore an issue which has been relatively underexplored, our use of a scoping review to identify areas which can be critically developed will be of value here. Arskey and O'Malley devised a six-step framework for interpretative literature reviews (see Table. 1), and this paper has been broadly informed by this.

Identifying the research question

Given the nature of the context outlined above, this scoping review aimed to broadly address the following questions:

1. What are the factors that affect the way different

professionals collaborate together in sports medicine?

2. How have these factors promoted and/or inhibited IPC in a sporting medicine context?

Identifying relevant studies

Developing the research questions discussed above, a search strategy was devised and then applied to four electronic databases. Key search terms were applied to Medline, PubMed, Scopus and BEI (British Educational Index), once this offered an indication of the feasibility of various associated keywords we were able to devise and apply a final search strategy. Key terms included: *interprofessional, sports medicine, collaboration, sports doctors, sports physicians, multi-disciplinary and athletic trainers*. The search included studies from 2000 to the present. This decision was motivated by the chronological development of sports medicine. The field gained momentum from the late 1990s onwards. Having performed the search 293 sources were identified. We also performed a hand search of ten journals which have published sports medicine studies. This search also included studies from 2000 onward, and the journals were selected in order of

Table 1. Overview of the framework for conducting a scoping study

Review Stage	Description
1: Identifying the research question	Identifying the research question provides the roadmap for subsequent stages. Relevant aspects of the question must be clearly defined as they have ramifications for search strategies. Research questions are broad in nature as they seek to provide breadth of coverage.
2: Identifying relevant studies	This stage involves identifying the relevant studies and developing a decision plan for where to search, which terms to use, which sources are to be searched, time span, and language. Comprehensiveness and breadth is important in the search. Sources include electronic databases, references lists, hand-searching of key journals, and organizations and conferences. Breadth is important; however, practicalities of the search are as well. Time, budget and personal resources are potential limiting factors and decision need to be made upfront about how these will impact the search.
3: Study selection	Study selection involves <i>post hoc</i> inclusion and exclusion criteria. These criteria are based on the specifics of the research question and on new familiarity with the subject matter through reading the studies.
4: Charting the data	A data-charting form is developed and used to extract data from each study. A 'narrative review' or 'descriptive analytical' method is used to extract contextual or process oriented information from each study.
5: Collating, summarizing, and reporting results	An analytical framework or thematic construction is used to provide and overview of the breadth of the literature but not a synthesis. A numerical analysis of the extent and nature of studies using tables and chart is presented. A thematic analysis is then presented. Clarity and consistency are required when reporting results.
6: Consultation (optional)	Provides opportunities for consumer and stakeholder involvement to suggest additional references and provide insights beyond those in the literature.

descending impact factor as of 2015. The results from these searches (n=345) were combined with the database results – see Figure 1.

Study selection

We adopted the following inclusion criteria in order to remain consistent with the intentions of the study. The selected papers will have included: a substantive focus on sports medicine, some form of empirical study, and issues related to IPC.

Charting the data

All materials generated from database searches (n=293) and additional searches (n=345) were reviewed independently by two members of the review team to determine if they met the inclusion criteria. The full text article (n=53) was obtained if the abstract met these criteria. These articles were then screened independently by two reviewers to determine if they met the final inclusion criteria. Any discrepancies or disagreements were resolved through collaborative cross-comparison of ‘reasons for inclusion/exclusion’ on the respective abstraction sheets. Following this procedure, 13 studies were finally included into this review. (See Figure 1.)

Collating, summarizing, and reporting results

Key information from all included studies was abstracted to enable the identification of study aims, research design, methods, and reported issues related to IPC. Given the contextually diverse nature of the included studies, a thematic approach to the analysis was employed (Mays, Pope, & Popay, 2005). This allowed the emergence of key issues (themes) from the literature, enabling in addition an insight into the characteristics of sports medicine and the scope for an application of interprofessional approaches.

Results

Results from the analysis and synthesis of the included studies are presented in two main sections. The first section provides an overview of these studies. The second section presents the key themes emerging from the included studies, covering a variety of elements such as dominance, status, negotiation, and professionalization. Collectively these themes provide an insight into the interprofessional dynamics embedded in a range of athletic contexts.

Overview of studies

Table 2 contains information on the study design, specifics on the data collected, as well as insights into the included studies and into the participants involved. As this table indicates, most studies employed a case study design (n=5) with the remainder employing ethnography (n=4) or phenomenology (n=4). In relation to data collection, all of the studies used semi-structured interviews with six studies using this approach alone. The remainder combined interviewing with participant or non-participant observations, questionnaires, and in one instance, focus groups. The studies involved a range of sports medicine professions. Club/Sports doctors (n=9), physiotherapists (n=11), and chiropractors (n=2) were utilised. Three studies used coaching input, and the spread of athletic professionals across all studies included gymnasts, footballers, rugby players, wrestlers, rodeo riders, and intercollegiate student athletes.

Key emergent themes

This section of the results presents six themes (professionalization, professional dominance, status imbalances, interprofessional negotiation, confidentiality, and compromise and competition) to enable an insight into the interprofessional issues affecting contemporary sports medicine.

Theme 1: Professionalization.

We refer to professionalization as a sociological process in which occupational groups transition through specialist education and professional body regulation towards becoming higher status professional groups (Freidson, 1988). Three of the 13 studies explored professionalization in sports medicine (Theberge, 2008, 2009; Waddington, Roderick, & Naik, 2001). Theberge (2008) explored the role of the ‘newly professionalised’ chiropractor in an elite sport healthcare team and reported significant interprofessional tension over ‘the scope and content of practice’ and ‘the nature of the patient-practitioner relationship’. The introduction of chiropractic to established sports healthcare teams was deemed to be disruptive on many levels as there remained doubts about the abilities of these practitioners to contribute to the interprofessional team working which was regarded as essential to the functioning of collaborative sports healthcare. The chiropractor’s professional status, having moved to a ‘legitimate’ member

Figure 1. Searching and screening results

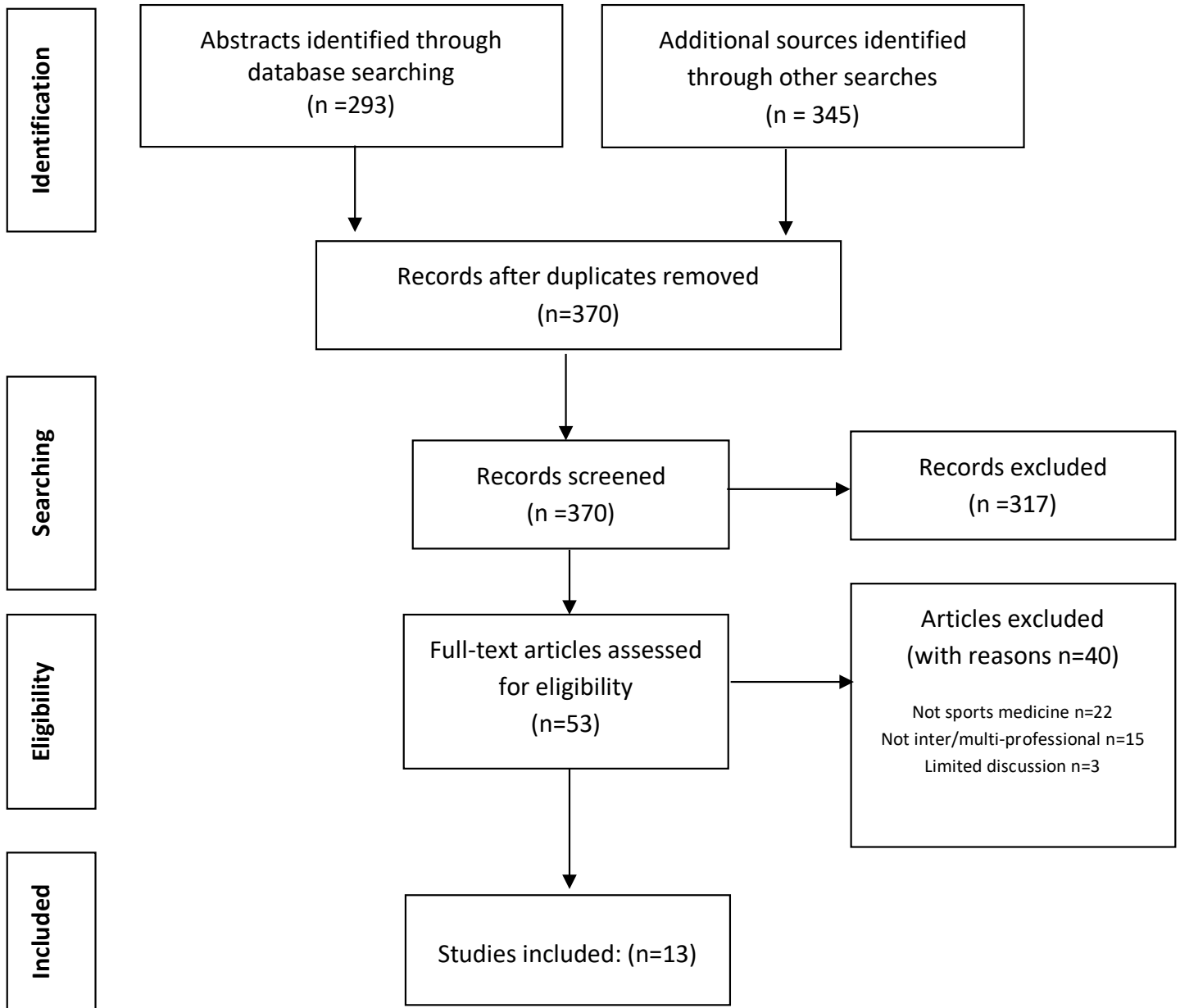


Table 2. *Overview of included studies*

Author	Study Design	Country	Data collected	Participants
Kerr, 2012	Ethnography	New Zealand	Observations and interviews (amount unspecified)	Gymnasts, Coaches, Competition Judges, Administrators, Scientists (participant numbers unspecified)
Kortaba, 2001	Ethnography	USA	2 years of observations and 15 interviews with Rodeo cowboys (amount unspecified with wrestlers)	Sports doctors, Professional Wrestlers, Rodeo Riders (participant numbers unspecified)
Malcolm, 2006	Phenomenology	England	19 Interviews and 34 questionnaire responses	9 Rugby Club Doctors, 10 Physiotherapists (interviewees), Club Doctors, Coaches, Playing Staff Physiotherapists (questionnaire respondents, unspecified)
Malcolm, 2009	Phenomenology	England	42 Interviews	9 Rugby Club Doctors, 7 Coaches, 16 Playing Staff, 10 Physiotherapists
Malcolm and Scott, 2011	Case Study	England	28 Interviews	14 Rugby Club Doctors and 14 Physiotherapists
Malcolm and Scott, 2014	Phenomenology	England	41 questionnaires, 28 interviews	21 Sports Doctors and 20 Physiotherapists (questionnaires) 14 Sports Doctors, 14 Physiotherapists (interviews)
McEwan and Taylor, 2010	Case study	England	12 interviews	2 Sports Doctors, 3 Physiotherapists, 1 Sports Rehabilitator, 1 Elite Athlete, 1 Coach, 1 Performance Director, 3 Academics
Safai, 2003	Case study	Canada	6 Interviews, 2 focus groups	Sports Physicians, Physiotherapists, Medical Directors, Intercollegiate Student Athletes (breakdown unspecified)
Scott, 2012	Phenomenology	England	28 Interviews	14 Rugby Club Doctors and 14 Physiotherapists
Theberge, 2008	Ethnography	Canada	35 Interviews	11 Physicians, 10 Physiotherapists, 6 Athletic Therapists, 8 Chiropractors
Theberge, 2009	Ethnography	Canada	35 Interviews	11 Physicians, 10 Physiotherapists, 6 Athletic Therapists, 8 Chiropractors
Waddington, Roderick and Naik, 2001	Case study	England	49 Interviews, 58 questionnaires	12 Football Club Doctors, 10 Physiotherapists, 27 Current and Former Professional Footballers (interviewees), 58 Club Doctors (questionnaires)
Waddington, Roderick, 2002	Case study	England	49 Interviews, 58 questionnaires	12 Football Club Doctors, 10 Physiotherapists, 27 Current and Former Professional Footballers (interviewees), 58 Club Doctors (questionnaires)

of the sports healthcare team was still subject to some doubt. In order to combat this, chiropractors have begun to adhere to situation-specific rules, a characteristic of professionalization (Abbott, 1988). Theberge (2008) states:

the commitment to an athlete-centred model of practice, and its grounding in a focus on performance, may be seen as 'rules' that condition the practice of sports medicine. In a context of consumer demand for their services, these rules have enabled chiropractors to secure a meaningful place in the system of sports medicine professions. (p. 30)

This analysis enables us to identify a preliminary inter-professional negotiation in an environment which is subject to constant change. Theberge (2009) reinforces the importance of this conditional behaviour by developing an approach to the professional boundaries which surround chiropractic involvement in sports healthcare teams. The make-up of sports medicine, itself a profession yet comprised of many specialties, and its complex and ill-defined professional boundaries presents challenges for those professional groups (such as chiropractic) who attempt to enter this environment. Although some negotiation has taken place in order to respond to initial marginalisation, the differing levels of perceived and actual professionalization requires some collaborative effort which accepts and then looks beyond professional insecurity and conditional bargaining in an effort to encourage a more egalitarian team.

Waddington, Roderick and Naik (2001) undertook an analysis of the methods of appointment and qualifications of club doctors and physiotherapists in English professional football. They report numerous discrepancies in the methods of selection, appointment and retention of club doctors and physiotherapists. The reasons for this are complex although there is a strong sense that the voluntary and often informal roots of the clinician's attachment to a football club have remained influential in an era in which a standard of professionalism is required throughout organisations which are now corporate entities. Being collaborative in this environment is difficult if poor practice is visible from recruitment stages. Interprofessional approaches enable a shared understanding of professional definitions, bringing clarity to interaction with reference to

the cultural or historical 'baggage' which often affects collaborative effort.

Theme 2: Professional dominance.

This term describes structural relationships different professions have with one another in relation to power imbalances, issues of trust, suppression of competing professions, and subordination of less established professions. Two studies reported issues of dominance between various sports professionals and clinicians (Kerr, 2012; Malcom, 2006). Kerr (2012) explored the challenges in integrating sports scientists and medics into an elite New Zealand gymnastic context. Reporting instances of overt authority, sports coaches quite openly and deliberately wish to retain full control of their athletes and resist practitioners that may interfere. The study presents the difficulties which practitioners from 'outside' have when entering an established athletic environment, especially when a member of a particular profession holds such power. The dominance of coaching staff suggests significant interprofessional disparities and leaves sports medicine in a position which must engender adaptability and regeneration. The formal introduction of interprofessionalism can enable adaptability to be more coherently realised, acting as a bridge between the characteristics of a particular profession and the collective understanding of efficient team functioning (Hall, 2005).

The second study, Malcolm (2006) explored the role of sports physicians in English professional rugby union. He reported a similar system of dominance in place, as the coaches (or managers) were reported to overrule the diagnoses and advice put forward by qualified sports doctors. Specifically, Malcolm noted that there were significant tensions in this setting, as the status which physicians wielded outside a rugby club was undermined by a coach who, though less formally qualified in sports, was still more valued, authoritative, and powerful. In addition, Malcolm reported that the relative power which physiotherapists had over doctors in this setting was due largely to the value placed on the profession by its members and those within a rugby club 'network.'

Whereas this indicates that the sports medicine practitioner is subject to marginalisation, that relative isolation in this instance can be beneficial in interprofessional terms. MacNaughton, Chreim, and Bourgeault

(2013) suggest that autonomy can be an important element of efficient team functioning. They contend that ensuring that all providers have an appropriate level of autonomy allows health professionals the respect of their profession and their knowledge within the team. Autonomy may enhance participation and make a role more meaningful and rewarding. This allows for an acknowledgment that there will be inequalities in power, status, and role and begins to point to a sophisticated utilisation of contextual dominance narratives.

Theme 3: Status imbalances.

Two of the included studies discussed the notion of status imbalances (Kortaba, 2001; Scott, 2012). We refer to status here as the position or rank different professions occupy within society. As such it is different to professional dominance which is a more complex structural relationship. Kortaba (2001) attempted to conceptualise sports medicine as occupational healthcare by exploring the role of the sports doctor in both professional wrestling and rodeo in North America. Given the hazardous nature of the activities, the acceptance of injury and inevitable compromise of an athlete's health makes medical diagnoses dependent on contextually redefined standards of safety and care. This undermines sports doctors who do not enter into this 'agreement' and continue to prioritise the safety of athletes as they would if they were in mainstream healthcare. Kortaba (2001) states that:

culturally both kinds of athletes operate within subcultures that value highly the ability to live with pain, to perform in spite of injuries, and to respond to injuries in stoic fashion. The most prominent health care workers in both worlds share the athlete's culture and shape the actual delivery of health care accordingly. (p. 777)

The requirement for sports doctors to fundamentally change approaches to practice is clearly a source of interprofessional tension. A combination of the loss of status which would previously have been a predictable and stable characteristic of professional membership, with the need to adopt and adapt to contextual conditions will require an understanding of perception which can be fostered under interprofessional collaborative dialogue. Scott (2012) approaches status, and perceptions of status, by discussing the tension between medical qualification and lay opinion in Brit-

ish Olympic healthcare provision. As referred to in the work of Malcolm (2006), the coaches, and their various subordinates, will dismiss or undermine medical expertise in favour of less scientific, but more contextually potent lay knowledge. Thereby further redefining (or diminishing) medical status within a challenging, established athletic environment. The contention that sports medicine itself can have a marginalising effect presents a more complex challenge to status which appears relatively difficult to overcome. Although this is a conventional interprofessional conflict in the way that the historical development and cultural appropriation of one profession creates incompatibility with another, the notion that sports medicine can contribute to the perpetuation of an exclusionary system diminishes the profession considerably. It is possible here, through the use of interprofessional approaches to confront the myriad preconceptions which inhabit each of these examples.

Theme 4: Interprofessional negotiation.

Two studies reported instances of negotiation between professionals and between professionals and athletes (Malcolm & Scott, 2011; Safai, 2003). Malcolm and Scott (2011) explored organisational change in sports medicine and identified a need for negotiation amongst members of professional groups in order to process new notions of professional control. These authors found that:

the negotiation of occupational roles is both enabled by the absence of *de facto* professional boundaries in the specific practice context, and constrained by *de jure* jurisdictional claims of the dominant (medical) profession. Everyday practice is shaped by the negotiation of new professional relationships as well as a *renegotiation* of inherited professional jurisdictions. (p. 518)

Safai (2003) explored the negotiations which take place between sports clinicians and injured athletes in Canadian intercollegiate sport. Related to injury, and its influence on participation and performance, the notion of mediated risk features heavily in this study. She states that: "the responses indicate that sport medicine clinicians are influenced by, and influence, a 'culture of risk', and thus negotiate with athletes within that culture" (pp. 137). Although this initiates an interprofessional dialogue between clinicians and

athletes, the way in which this negotiation is directed by a 'culture of risk' implies that these interactions and agreements are not without the combined threat of real danger and the dissolution of professional identity (Safai 2003). The benefits of utilising interprofessional approaches stems from the way in which these negotiations are situated. Rather than being embedded in agenda, they have the intention of improving practice at their core. They are then, far less corrupted than the interactions we have seen in the contexts depicted above.

The implication in these papers that negotiation is a constant also supports the contention that forms of interprofessional interaction, and the recognition of collaboration, are very much in evidence in sports medicine. Whilst it is inconsistent and enacted amongst a great deal of conflict and professional tension, this embryonic identification is encouraging.

Theme 5: Confidentiality.

The notion of confidentiality has represented a distinct source of fracture between medicine and sport. Two of the included studies (Waddington & Roderick; 2002, Malcolm & Scott, 2013) explore this issue. The first, Waddington and Roderick (2002) use English professional football as an example, reporting that although there are extensive guidelines which cover practitioner/patient relationships, the culture of revelation, and (increasingly) intense media involvement in the sport makes any implementation of these challenging. This has a marginalising influence on a number of levels, and serves to threaten and in some cases sever professional relationships between practitioners and the clubs and players. The second study, Malcolm and Scott (2013) reiterates the largely sporadic application of guidelines and call for a wider investigation into the factors which constrain clinicians in elite sport from conforming to recommendations for best ethical practice relating to patient confidentiality. They report that evidence has emerged to suggest that strategic negotiations and a 'loose' or 'informal' interprofessional system has been used in response to this. There has been a recognition here that sports medicine is a unique practical context and one in which complex methods of professional interaction are required. Malcolm and Scott (2013) draw attention to the interpersonal strategies adopted by sports medics as a means of mediating the challenging ethical demands of the role. They state

that:

the complexity of such interpersonal strategies stems from the recognition that the requirements of sports medicine may exceed those of 'standard medicine.' A key case in point is the balance between harm and welfare in elite sport. (p. 3)

By exploring these strategies, and then aligning them with equivalent or complimentary interprofessional approaches it becomes possible to respond to ethical challenges in a way which can foster legitimacy whilst guidelines fail.

Theme 6: Compromise and competition.

Two studies evoked compromise and competition (between professionals). Based in a professional rugby union context, Malcolm (2009, p. 205) states that in addition (and perhaps a response) to dominance and status there has been a certain professional compromise displayed between practitioners and playing staff. As performance is prioritised, the respective perceptions of injury and diagnosis must align with this in a way which maintains both professional relations and in a broad sense, the safety of the athletes. Using concussion as an example, Malcolm (2009) describes how a universal, though not necessarily correct, definition of the condition enables sports medics to maintain a sense of professional credibility, notions of a duty of care and a position within the athletic context, by adapting their treatment and diagnoses accordingly. Stating (2009, p. 205) that, "the strategy of individualizing cases and allowing sporting performance criteria to dictate 'fitness to play' decisions, effectively minimises the potential for interpersonal conflict and thus preserves the clinicians' professional status by facilitating the continuation of a collaborative relationship with the patient/player." Although this may not be satisfactory for either practitioner or player there is clearly a need for all parties to accept the environmental challenges which a 'cultural clash' such as this provokes.

McEwan and Taylor (2010) explored notions surrounding meritocracy and democracy in sports medicine and physiotherapy. They describe a cycle of power, resistance and compliance within and between these professions, and imply that the competitive necessity which this environment encourages can be

both productive, creating a vibrant culture of intervention, and fragile. They state that: “sports medicine has been characterised by a number of competing occupational positions with certain professional groups occupying privileged positions. These have allowed them to orchestrate and control the acceptance and entry into professional engagement” (p. 88). Increasing specialisation and the growing commercialisation of elite sport makes competition a key feature of contemporary sports medicine. There are sharp parallels here with the marketization of healthcare and a need to become interprofessionally sensitive will, if it has not already, become strongly apparent.

Discussion

This scoping review explored the literature related to the formation, development and dynamics of sports medicine and how IPC was identified and discussed. The emergent themes have identified a number of findings which help to illuminate the complex nature of IPC within a sporting context.

Exploring the professionalization of sports medicine has specifically enabled a detailed investigation of the multi-faceted interprofessional dynamics within this setting. The need for complex, elite level sports medicine teams allows an insight into role distribution, professional hierarchies and the capacity to situate these teams alongside those operating in more conventional healthcare contexts. Although there are distinct characteristics resident in sports medicine, its professionalization allows us to make broad comparisons with mainstream healthcare (Evetts, 1999; Saks, 1999; Baker, Egan-Lee, Martimianakis, & Reeves, 2011; Reeves, Lewin, Espin, & Zwarenstein, 2010). For example, examining chiropractors Therberge (2008, 2009) offered insight into the way in which sports medicine has paralleled the interprofessional team dynamics seen in conventional healthcare (Dimas, Lourenco, & Rebelo, 2016). Rather than gain a straightforward, uncontested entry into a practical sports medicine environment, chiropractors have had to conditionally adapt in order to achieve acceptance. Whilst this indicates that sports medicine contexts, and its associated members are becoming more identifiable and interprofessionally aware, there is increasing and at times problematic complexity surrounding role, contribution and professional boundaries.

Whereas professional dominance exists in conventional healthcare (Baker, Egan-Lee, Martimianakis, & Reeves, 2011), the evident tension between athletic and medical knowledge, and the differing perceptions around their value, presents particular difficulties for the sports medicine practitioner. There appears to be limited understanding or acknowledgement of the benefit of medical input in a variety of athletic contexts. Any resistance to collaboration likely stems from a combination of suspicion of a professional who comes from outside of the long-established sports networks and a simultaneous assumption from the medical practitioner that straight forward entry will be guaranteed. Although professional dominance will probably always exist in a broad-based discipline which is still undergoing development, the enforced isolation of various professionals in this instance is conducive to IPC (Sims, 2011). The professional autonomy which is naturally encouraged here helps to reinforce individual professional identities (Wackerhausen, 2009), leading in part to a more enriching interprofessional exchange. Within both these themes (professionalization and professional dominance) it is possible to identify the complexity of the environment in which sports medicine practitioners must operate. Whilst they should practically adapt in order to mediate the tension between a variety of professional intentions, there is also value in remaining professionally distinct. IPC can respond to this tension, as exposure will educate practitioners, athletes, coaches and others to function in a way which is of mutual benefit (WHO, 2010).

There was also evidence of status imbalances in sports medicine. Whereas the professional dominance, discussed above, stemmed largely from role insecurity and a general fear that some practitioners were encroaching on a firmly established professional territory, status imbalances are subtly distinct from this. Although these are linked again to competing knowledge bases, they differ in the way that traditional notions of authority and expertise are not only questioned but actually realigned in sports medicine. Unlike in conventional healthcare settings where physicians have a very visible professional status (Reeves, Lewin, Espin, & Zwarenstein, 2010), in sports medicine they are disregarded if they do not have the relevant athletic experience. Though professional dominance could be viewed as a reactionary measure in response to territorial encroachment by more formally ‘qualified’ profes-

sionals, the status imbalances which we discuss here represent a more difficult barrier to overcome. Being professionally collaborative enforces mutual reliance in a way which undermines these ideas. In a healthcare workforce report, Colvin and Taylor (2012), it was concluded that coherent and equal collaboration regularly took place between nurses and physicians at operational levels, however problems lay at organisational levels where traditional notions of role and knowledge level stifled interprofessional intervention. It seems the most effective way to overcome counterproductive preconceptions is by introducing a variety of practitioners to learn about each other through the use of interprofessional education (IPE) (Haynes, Hand, & Pearce, 2000; Barr, Koppel, Reeves, Hammick, & Freeth, 2005; Reeves et al., 2016). Although there will inevitably be tensions which surround traditional hierarchies, such as nurse and physician or as noted above doctor and sports coach, a system which encourages regular professional contact as well as opportunities for interprofessional learning may gradually reverse these perceptions.

Interprofessional negotiation represents an encouraging emergent theme. Whereas professional adaptation is mentioned above, this often takes place at the expense of professional identity and results in a relatively unsatisfactory compromise between parties. Interprofessional negotiation is more positive and mutually beneficial than this, as the process involves educational cross party engagement. Interprofessional negotiation, rather than professional negotiation, can also negate the difficulties associated with compromised safety in sports medicine diagnoses (Reeves et al., 2009). We have drawn attention to the problematic reality which affects sports doctors when a pressure to make the athlete/patient 'match fit' can undermine a thorough medical assessment. This is responded to through the use of interprofessional negotiation, as patient safety comprises a major aspect of any interprofessional interaction. Whereas there has been discussion of 'bargaining' between professionals in this context, an interprofessional negotiation is both different and preferable here. Rather than diminishing the identity of both parties, it compliments respective strengths.

The idea of confidentiality in sports medicine is a complex one. Linked with professionalism, the notion of medical confidentiality is realigned in elite athletic contexts. Although the protection of the patients' identity

is a guiding principle in conventional healthcare, the performance or result is given priority in sports medicine. Confidentiality in this environment refers to the strategic publication of injury, the multiple levels upon which athlete/patient relationships operate and the disingenuous culture of revelation which follows sport at the highest levels. By 'becoming interprofessional', a more ethically recognisable interpretation of confidentiality, which reasserts the simple prioritisation of patient safety, can be encouraged (Hunt & van der Arend, 2002; Tait, 1992). Recent work from Malcolm (2016) on clinics in sports medicine emphasises the need to contextualise ethical practice. Notions of best practice in sports clinics are often enacted within particular and diverse social settings and this has led to a broad spectrum of interpretation relating to confidentiality. Malcolm (2016) concludes that although a variety of policy recommendations have been made which encourage greater conformity in best practice, there is a need to develop this collective approach further. This can be achieved through the coherent implementation of professional collaboration yet the recognition of professional and contextual distinction should be embedded within this.

Compromise and competition perhaps represents a collective culmination of the emergent themes. The two are inextricably linked in a way which identifies both the need for and existence of IPC in sports medicine. There must be compromise from all concerned yet this should not be at the expense of professional identity or patient safety. Similarly, the healthy competition which is natural and inevitable in sports medicine should be utilised, yet not if it creates an atmosphere in which perceptions of status and the reinforcement of hierarchy are encouraged in response to this. One could suggest that some form of interprofessional learning programme will enable the sports doctors, athletes, coaches, and a number of other key actors to both communicate and understand the respective contribution which each professional makes (Priest, Sawyer, Roberts, & Rhodes, 2005; Luetscha & Rowettb, 2016). There is added value here in the way that interprofessional dynamics in sports medicine have yet to be applied or explored to any great extent. Taking influence from the educational interventions which have proved so effective in healthcare contexts will not only engage sports medicine practitioners, but also encourage an athletic environment which is more egalitarian and professionally aware.

Limitations

There are two key limitations to this review. First, only English-language articles were considered for inclusion in this work. As such, this review did not include potentially relevant materials written in other languages and published in non-English speaking countries. Secondly, the review searched for materials published from 2000, which means any papers published before this date will not have been included.

Conclusion

This paper presented the results from a scoping review of the sports medicine literature that explored the nature of collaboration between different professions involved in sporting activities. It located 13 studies which provided an insight into a number of key themes (e.g. dominance, status, negotiation, professionalization) which affect IPC in a variety of athletic contexts. Utilising a scoping review enables us to explore how these fields have interlinked, and revealed the exploratory potential of a thematic analysis. Reviewing the literature in a way which benefits from a structured, methodological approach and an ongoing, iterative analysis can potentially reveal the processes behind interprofessional interactions, and the practical implications of using an interprofessional approach.

Funding

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

References

- Abbott, A. (1988). *The system of professions*. Chicago: University of Chicago Press.
- Ardern, C., Glasgow, P., Schneiders, A., Witvrouw, E., Clarsen, B., Cools, A., ... Bizzini, M. (2016). 2016 Consensus statement on return to sport from the First World Congress in Sports Physical Therapy, Bern. *British Medical Journal*. <https://doi.org/10.1136/bjsports-2016-096278>
- Arksey, H., & O'Malley, L., (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, 8(1), 19–32. <https://doi.org/10.1080/1364557032000119616>
- Baker, I., Egan-Lee, E., Martimianakis, M. A., & Reeves, S. (2011). Relationships of power: Implications for interprofessional education. *Journal of Interprofessional Care*, 25(2), 98-104. <https://doi.org/10.3109/13561820.2010.505350>
- Barr, H., Koppel, I., Reeves, S., Hammick, M., & Freeth, D. (2005). *Effective interprofessional education: Argument, assumption and evidence*. Oxford: Blackwell. <https://doi.org/10.1002/9780470776445>
- Breitbach, A. P. & Richardson, R. (2015). Interprofessional education in practice in athletic training. *Athletic Training Education Journal*, 10(2), 170-182. <https://doi.org/10.4085/1002170>
- Carter, N. (2009). Mixing business with leisure? The football club doctor, sports medicine and the voluntary tradition. *Sport in History*, 29(1), 69-91. <https://doi.org/10.1080/17460260902775227>
- Colvin, H., & Taylor, R. (2012). *Planning committee on workforce resilience programmes, Board on health sciences policy*. Institute of Medicine.
- Courson, R., Goldenberg, M., Adams, K., Anderson, S., Colgatell, B., Cooper, L., ... Turbak, G. (2014). Inter-association consensus statement on best practices for sports medicine management for secondary schools and colleges. *Journal of Athletic Training*, 49(1), 128-137. <https://doi.org/10.4085/1062-6050-49.1.06>
- Cullen, M., & Batt, M. (2005). Sport and exercise medicine in the United Kingdom comes of age. *British Journal of Sports Medicine*, 39, 250-251. <https://doi.org/10.1136/bjism.2005.019307>
- Dimas, I., Lourenco, P., & Rebelo, T. (2016). The effects on team emotions and team effectiveness of coaching in interprofessional health and social care teams. *Journal of Interprofessional Care*, 30(4), 416-422. <https://doi.org/10.3109/13561820.2016.1149454>
- Evetts, J. (1999). Professionalisation and professionalism: Issues for interprofessional care. *Journal of Interprofessional Care*, 13(2), 119-128. <https://doi.org/10.3109/13561829909025544>
- Freidson, E. (1988). *Profession of medicine: A study of the sociology of applied knowledge*. Chicago: University of Chicago Press.
- Gorman, P. (1998). *Managing multi-disciplinary teams in the NHS*. London: Kogan-Page Hall.
- Griffin, C., Chung, C., Tzortziou-Brown, V., & Morrissey, D. (2011). Evaluation of an interprofessional multimedia musculoskeletal examination teaching resource: A qualitative study. *British Journal of Sports Medicine*, 45(2): 78-89. <https://doi.org/10.1136/bjism.2010.081554.20>
- Hall, P. (2005). Interprofessional teamwork: Professional cultures as barriers. *Journal of Interprofessional Care*, 19(S1), 188-196. <https://doi.org/10.1080/13561820500081745>

- Haynes, R., Hand, C., & Pearce, S. (2000). Teamwork after introduction of interprofessional services in a general practice. *Journal of Interprofessional Care*, 14(4): 409-410. <https://doi.org/10.1080/13561820020003964>
- Hunt, G., & van der Arend, A. (2002). Treatment, custody, support: An exploratory qualitative dialogue to map the ethics of interagency co-operation in hospital emergency departments in the UK and the Netherlands. *Journal of Interprofessional Care*, 16(3), 211-220. <https://doi.org/10.1080/13561820220146658>
- Kerr, R. (2012). Integrating scientists into the sports environment: A case study of gymnastics in New Zealand. *Journal of Sport and Social Issues*, 36(1), 3-24. <https://doi.org/10.1177/0193723511433863>
- Leathard, A. (2003). *Interprofessional collaboration: From policy to practice in health and social care*. Hove: Brunner-Routledge. <https://doi.org/10.4324/9780203420690>
- Levac, D., Colquhoun, H., & O'Brien, K. K. (2010) Scoping studies: Advancing the methodology. *Implementation Science*. doi:10.1186/1748-5908-5-69. <https://doi.org/10.1186/1748-5908-5-69>
- Luetscha, K., & Rowettb, D. (2016). Developing interprofessional communication skills for pharmacists to improve their ability to collaborate with other professions. *Journal of Interprofessional Care* 30, 458-465. <https://doi.org/10.1186/1748-5908-5-69>
- MacNaughton, K., Chreim, S., & Bourgeault, I. (2013). Role construction and boundaries in interprofessional primary healthcare teams: A qualitative study. *BMC Health Services Research*, 13, 486. <https://doi.org/10.1186/1472-6963-13-486>
- Malcolm, D. (2006). Unprofessional practice? The status and power of sports physicians. *Sociology of Sport Journal*, 23, 376-395. <https://doi.org/10.1123/ssj.23.4.376>
- Malcolm, D. (2009). Medical uncertainty and clinician-athlete relations: The management of concussion injuries in rugby union. *Sociology of Sport Journal*, 26, 191-210. <https://doi.org/10.1123/ssj.26.2.191>
- Malcolm, D. (2016). Confidentiality in sports medicine. *Clinics in Sports Medicine*, 35(2), 205-215. <https://doi.org/10.1016/j.csm.2015.10.006>
- Malcolm, D., & Scott, A. (2011). Professional relations in sport healthcare: Workplace responses to organisational change. *Social Science and Medicine*, 72, 513-520. <https://doi.org/10.1016/j.socscimed.2010.11.016>
- Malcolm, D., & Scott, A. (2013). Practical responses to confidentiality dilemmas in elite sport medicine. *British Journal of Sports Medicine*, 48, 1410-1413. <https://doi.org/10.1136/bjsports-2013-092458>
- Mays, N., Pope, C., & Popay, J. (2005). *Systematically reviewing qualitative and quantitative evidence to inform management and policy-making in the health field*. *Journal of Health Service Research Policy*, 10(1), 6-20. <https://doi.org/10.1258/1355819054308576>
- McEwan, I. & Taylor, W. (2010). 'When do I get to run on with the magic sponge?' The twin illusions of meritocracy and democracy in the professions of sports medicine and physiotherapy. *Qualitative Research in Sport and Exercise*, 2(1), 77-91. <https://doi.org/10.1080/19398440903510178>
- McLatchie, G. R. (2010). *Sport and exercise medicine--the state of play*. *Scottish Medical Journal*, 55(2), 3-4. <https://doi.org/10.1258/rmsmj.55.2.3>
- Øvretveit, J., Mathias, P., & Thompson, T. (1997). *Interprofessional working for health and social care*. London: MacMillan Press. <https://doi.org/10.1007/978-1-349-13873-9>
- Pabian, P. S., Oliveira, L., Tucker, J., Beato, M., & Gual, C. (2016). Interprofessional management of concussion in sport. *Physical Therapy in Sport*. <https://doi.org/10.4085/1004323>
- Perrin, D. (2015). Seeking greater relevance for athletic training education within American higher education and the health care professions. *Athletic Training Education Journal*, 10(4), 323-327.
- Priest, H., Sawyer, A., Roberts, P., & Rhodes, S. (2005). A survey of interprofessional education in communication skills in health care programmes in the UK. *Journal of Interprofessional Care*, 19(3): 236-250. <https://doi.org/10.1080/13561820500053447>
- Reeves, S., Rice, K., Gotlib Conn, L., Miller, K-L., Kenaszchuk, C., & Zwarenstein, M. (2009). Interprofessional interaction, negotiation and non-negotiation on general internal medicine wards. *Journal of Interprofessional Care*, 23(6), 633-645. <https://doi.org/10.3109/13561820902886295>
- Reeves, S., Lewin, S., Espin, S., & Zwarenstein, M. (2010). *Interprofessional teamwork for health and social care*. Oxford: Wiley-Blackwell. <https://doi.org/10.1002/9781444325027>
- Reeves S., Fletcher S., Barr H., Birch I., Boet S., Davies N., McFadyen A., Rivera J., & Kitto S. (2016). A BEME systematic review of the effects of interprofessional education. *Medical Teacher*, BEME Guide No. 38(7): 656-668. <http://dx.doi.org/10.3109/0142159X.2016.1173663>
- Reynolds, L. A. & Tansey, E. M. (2009). *The Development of Sports Medicine in Twentieth-Century Britain*, London: Wellcome Trust Centre.
- Safai, P. (2003). Healing the body in the "Culture of Risk": Examining the negotiations of treatment between sport medicine clinicians and injured athletes in Canadian intercollegiate sport. *Sociology of Sport Journal*, 20, 127-146. <https://doi.org/10.1123/ssj.20.2.127>

Saks, M. (1999). The wheel turns: Professionalization and alternative medicine in Britain. *Journal of Interprofessional Care*, 13(2), 129-138. <https://doi.org/10.3109/13561829909025545>

Scott, A. (2012). Sport and exercise medicine's professional project: The impact of formal qualifications on the organisation of British Olympic medical services. *International Review for the Sociology of Sport*, 49(5), 575-591.

Sims, D. (2011). Reconstructing professional identity for professional and interprofessional practice: A mixed methods study of joint training programmes in learning disability and social work. *Journal of Interprofessional Care*, 25(4), 265-271. <https://doi.org/10.3109/13561820.2011.571352>

Tait, I. (1992). A shared record for primary care. *Journal of Interprofessional Care*, 6(2), 149-153. <https://doi.org/10.3109/13561829209014929>

Theberge, N. (2008). The integration of chiropractors into healthcare teams: A case study from sports medicine. *Sociology of Health and Illness*, 30(1), 19-34. <https://doi.org/10.1111/j.1467-9566.2007.01026.x>

Theberge, N. (2009). 'We have all the bases covered' Constructions of professional boundaries in sport medicine. *International review for the sociology of sport*, 44(2-3), 265-281. <https://doi.org/10.1177/1012690209104795>

Wackerhausen, S. (2009). Collaboration, professional identity and reflection across boundaries. *Journal of Interprofessional Care*, 23(5), 455-473. <https://doi.org/10.1080/13561820902921720>

Waddington, I. (1996). The development of sports medicine. *Sociology of Sport Journal*, 13, 176-196. <https://doi.org/10.1123/ssj.13.2.176>

Waddington, I., Roderick, M., & Naik, R. (2001). Methods of appointment and qualifications of club doctors and physiotherapists in English professional football: Some problems and issues. *British Journal of Sports Medicine*, 35, 48-53. <https://doi.org/10.1136/bjism.35.1.48>

Waddington, I., & Roderick, M. (2002). Management of medical confidentiality in English professional football clubs: Some ethical problems and issues. *British Journal of Sports Medicine*, 36, 118-123. <https://doi.org/10.1136/bjism.36.2.118>

World Health Organization. (2010). *Framework for action on interprofessional education and collaborative practice*. Geneva: WHO.

Zwarenstein M., Goldman J., & Reeves S. (2009). Interprofessional collaboration: Effects of practice-based interventions on professional practice and healthcare outcomes. *Cochrane Database Syst Rev*. 8(3). <https://doi.org/10.1002/14651858.CD000072.pub2>

Corresponding Author

Simon Fletcher, PhD
Research Associate

Centre for Health and Social Care Research
Kingston and St Georges University London
St Georges Hospital
Cranmer Terrace
London
SW17 0RE
United Kingdom

Simon.Fletcher@sgul.kingston.ac.uk