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Introduction

In recent years growing concern has been expressed about the long-term health risks associated with concussion in sport in general and in rugby union in particular. Concussion is the only injury that the International Rugby Board (IRB) seeks to define and, along with blood injuries, the only injury which is subject to specific regulation (Malcolm, 2009). World Rugby currently has a four-pronged risk management strategy for concussion based on prevention (through law changes), education (for administrators, clinicians, coaches, match officials, parents and players), deployment of injury management protocols, and exploratory research. Current regulations stipulate that (adult) players with concussion or suspected concussion should be immediately removed from training/play and should rest for one week before undergoing a 6-phase graduated-return-to-play (GRTP) programme. Despite such precautions, in March 2016 the Sport Collision Injury Collective (SCIC), a group of approximately 70 academics and health experts, published an open letter recommending a ban on contact in compulsory, school-organized, rugby union in the UK and Ireland (SCIC, 2016).

The SCIC campaign met with an almost unremittingly hostile reception from the rugby community. Prominent in the mediated response was a downplaying of published research on rates of injury in the game and an often-peremptory dismissal of the SCIC's proposed ban. One internal e-mail from a rugby football union in the British Isles to its members specifically advised recipients not to be drawn into discussions about research on the numbers or details of injuries in schools, to focus on the positive benefits of the game and to emphasise that any perceived injury risk

was mitigated by attendance at various coaching courses and the implementation of new or age-adapted rules of play. In this communication (copy forwarded privately to authors), the SCIC was portrayed as being removed from the real world of rugby: “We feel that those who are passionate about the game, its values and benefits will be the best placed to respond, more so than those from the ‘ivory tower’”. In doing so, it reinforced the supposed disconnect between academic research and the “real world” of sport. Tellingly though, academic research (Piggin and Pollock, 2016) has forced the Chief Executive of World Rugby, Brett Gosper, to “acknowledge” and “apologise” for the organization’s response to the SCIC (Raftery, 2016) which included “erroneous and misleading” representations of sports injury data.

In seeking to defend rugby in this manner, the omnipresence of risk was cited by seasoned sports media commentators as evidence that academics knew nothing of “the real game”. Francis (2016), a former Irish international rugby player, noted that “there is risk attached to all sport ... To sanitise any of these games is to take the essence completely out of them ... Contact is what they [young boys] seek”. Writing also in the Sunday Independent, Conlon (2016) observed that “rugby’s insiders are more inclined to shrug their shoulders and rationalise what has happened, it’s not as bad as it looks, it’s within the rules, it’s part of the game, etc. etc.” Some suggested that the proposed ban on contact in school rugby was even more dangerous in its effects than the game in its current state (e.g. <https://goo.gl/F9nRxQ>; <https://goo.gl/MX5K4N>; <https://goo.gl/Ei8m5u>). In short, those who claimed to understand the game best, and were involved with and emotionally attached to the game, sought to protect it from criticism by normalizing the existence of risk.

Paradoxically, then, the argument of those who opposed the proposed ban centred on the very acceptance of risk and the normalisation of injury that the SCIC campaign sought to challenge (see, for example, O'Reilly, 2016). Rarely, for instance, did the defendants of the game note that rule changes (notably restrictions on the height of tackling and the reduction of contact between airborne players) have already been invoked to mitigate the risks of concussion injuries.

Given the ambivalent – even hostile – response to these initiatives on the part of many people involved in rugby, the central object of this paper is to examine the attitudes towards, and knowledge of, concussion amongst non-elite rugby players in Ireland and, specifically, to explore the frames of reference within which non-elite adult players perceive, give meaning to and manage concussion. This paper argues that while the literature already demonstrates that rugby players have a relatively high tolerance of pain and injury per se, they exhibit a notable irreverence towards head injuries, which, in turn, both undermines the application of concussion protocols and may ultimately fuel an organizational response that is at best overly defensive and at worst foolish. On a practical level, adding to knowledge of how concussion is viewed and managed “on the ground” will provide a more effective basis for the formulation of policy designed to reduce the risk of serious head injuries in rugby.

Rugby, risk and concussion

Rugby union is “the most popular high-impact collision sport and the third most popular team contact sport worldwide” (Pollock, 2014: 6) and is becoming “more

physical, quicker and (with) ... more frequent and forceful contact events” (Hendricks and Lambert, 2010: 119). Perhaps not surprisingly it also has a relatively high injury rate generally, including a high incidence of head injuries. In 2013, the Irish Rugby Union Players Association completed a survey indicating that 67% of members had sustained a concussion during their playing career, with 46% experiencing two to three incidents (<http://www.the42.ie/rugby-concussion-player-survey-1241570-Dec2013/>). In Baker et al.’s (2013) sample of 133 under-20 players on the Irish national academy system, just under half (n=64) reported sustaining at least one concussion. Recent research into injuries in senior schoolboys’ rugby in Ireland found that concussion was one of the most common injuries (Archbold et al, 2016) and also carried the most significant time out from play. This study also found that senior schoolboy teams (n=28) experienced approximately three concussions per team per season.

Playing rugby union entails the use of ritualised physical violence “in the form of a ‘play-fight’, ‘mock battle’ or physical struggle” (Dunning, 2008: 245). It is imbued with traditions enacted before, during and after matches that function to perpetuate norms associated with the tolerance of pain and injury (Liston et al. 2006) and particular forms of manliness.¹ From a relatively young age male rugby players learn to normalize pain and to accept playing with injury as part and parcel of the game (see, for example, Fenton and Pitter, 2010); indeed, as the comment by Francis, cited earlier, indicates, for many players and fans alike, it is precisely because of the bellicosity, risk pain and self-sacrifice which it entails, that rugby is seen as an arena par excellence for young men to demonstrate their masculinity (Dunning, 2008). As

in other combat and collision sports, players are exposed to particular forms of social support and sanctioning that foster the acceptance and normalization of injury. In some cases, this social support can insulate players from attaining an understanding of what Safai (2003) has called 'sensible risks', especially where coaches and significant others with strong attachment to the sport ethic (Hughes and Coakley, 1991) exert authority or control. Indeed, those players whose self-identification is deeply attached to, and embedded in, the game may be particularly susceptible to this type of control, and to the acceptance of risk and injury as "part of the game".

To date only one sociological study has examined concussion practices in rugby union. In this, Malcolm (2009) demonstrated that the rugby community sometimes circumvented, and sometimes openly rejected, precautionary initiatives. For example, he notes that the relatively cautionary IRB regulation – which at the time required any player diagnosed with concussion to cease playing and training for three weeks – met with resistance from players and coaches and thus to "a rejection of treatment protocols" (Malcolm, 2009: 201). Furthermore, Malcolm found that most club doctors in professional rugby effectively rejected the IRB guidelines and their underlying precautionary philosophy, and that many go to considerable lengths to avoid offering a diagnosis of concussion, with the loss of the player's services which this would entail. One doctor said "It's best not to diagnose it" while a physiotherapist said "you take them off if you suspect it [concussion], but we don't use the c-word unless we have to" (Malcolm, 2009: 204). Malcolm (2009: 205) thus concluded that a rule which was designed to protect players' health has actually had "the unintended consequence of leading clinicians to avoid the diagnosis of

concussion” because clinicians “come to diagnose concussion in a way that they know will be acceptable to others” (Malcolm, 2009: 201), i.e. to coaches and players. In this particular context, performance-related sporting criteria came to override medical guidelines as club doctors replaced medical/clinical definitions of concussion with a lay understanding and definition of it dominant in the sport subculture. This is, perhaps, not surprising given the epistemological and clinical uncertainties surrounding concussion (Malcolm, 2009). In addition, “clinical and existential reactions to uncertainty play to and play off each other in all sorts of ways” (Adamson, 1997: 154). In particular, the lack of effective healthcare that a clinician can offer, balanced against the threat to a player’s career that diagnosis potentially entails, means that players’ incentives to seek consultation are relatively weak.

Amateur rugby in Ireland

Although Irish national rugby teams have enjoyed considerable success on the world stage of late, non-elite (amateur) rugby in Ireland has a low public profile and the last two annual reports of the Irish Rugby Football Union (IRFU) highlight a decrease in the numbers of registered adult male players. The All-Ireland men’s national league consists of 50 teams organised across five divisions. Clubs receive some local media coverage but few outside the locality are aware of, or take an interest in, their sporting successes or failures. However, club players themselves hold their respective competitions in high regard. Being a club rugby player is intensely salient to the identities of those involved.

In Irish rugby, one response to concern about concussion has been a focus on education which, it is claimed, is “at the heart of driving awareness and cultural change” about concussion (McLoughlin, 2014: 2). The IRFU’s Recognise and Remove concussion campaign features educational and guidance materials, a concussion roadshow and a standardised protocol for on-field emergencies in rugby. One might therefore anticipate a growing awareness of, and knowledge about, the dangers of training and playing with concussion on the part of amateur club players as well as accompanying changes in their behaviours.

However, it should also be noted that provision of sports medicine within the amateur game is limited and variable. Some All-Ireland league clubs utilise the services of a physiotherapist (either in a paid part-time or voluntary role), but s/he does not always attend league games, especially those involving long distances and travel times. No amateur clubs employ full-time physiotherapists and the medical support offered at training and matches is frequently intermittent. Consequently, for advice in relation to concussion, players often have to rely on coaches, family doctors or emergency medicine departments. The social relations in which these physiotherapists are enmeshed also constrain their ability to control and supervise players under medical treatment, including decisions about what treatment is provided. For instance, physiotherapists will typically receive self-referrals from players and treatment is generally conducted just before and/or during training sessions. In this respect concussion is an exemplar of injury per se, with the GRTP often not monitored, potentially leading to more serious cases of multiple concussive injuries. Approaches to concussion also feature a desire, on the part of

players, coaches and physiotherapists, to ease the additional administration of diagnosis compared with other injuries. The variable presence of medical personnel pitch-side during amateur games is also important when considering the assessment of head injuries, as is the broader epistemological and clinical uncertainty within medicine about concussion. Thus, while there may be an increasing awareness of the injury, the overall effect of the IRB's conservative protocols has probably been to dampen rather than heighten the actual reporting of symptoms to medical personnel (Malcolm, 2009).

Research Context and Design

The study identified two clubs that competed at the upper and lower ends of amateur rugby in Ireland. In light of the expectation that players' lived experiences of concussion would be layered with emotions, meaning and values, an interpretive approach was chosen to facilitate an understanding of the frames of reference within which players define and respond to concussion. The use of semi-structured interviews permitted a space and flexibility for the articulation of distinctive views and experiences, making the maintenance of confirmability (Lincoln and Guba, 1985) an achievable quality criterion.

Rapport was established with the interviewees on the basis of the research team's familiarity with rugby union, some of the co-authors having played it and with connections to the game in Ireland. Clubs agreed to be involved on the assurance of anonymity and in the interests of better understanding the culture surrounding concussion. It was equally important however to maintain an appropriate level of

detachment during interviews to ensure that descriptive saturation was reached at the point where the “new” (Rebar et al., 2011) that was discovered did not add anything to the overall story that emerged. The sample comprised of 20 males, 18 of whom were students, and two in full/part-time employment. As befits the socio-economic profile of the game, all were from what might broadly be described as a middle class background.

Interviews, lasting between 45 and 75 minutes, were held with players and their head coaches (who were also former players). Clubs were selected to represent the spectrum of this level of the game in Ireland. One club (hereafter given the pseudonym Ironmen) is comprised of adult, youth and mini-rugby sections and has previously competed in the top amateur division in Ireland where rolling player substitutions are permitted. The second, Brigadiers, also has a range of age sections and competes at a lower divisional level in Ireland that permits between two and five substitutions in various competitions. Substitution regulations have the effect of reinforcing the concealment of concussion since the expectation of “playing on” is even more important where replacements are limited, and only those with “serious” injuries are substituted. There follows an outline of interviewees’ self-reported concussion profiles in amateur club rugby, set within the wider context of injury experiences and the cultural practices within club rugby. Following the interpretation of these data, the discussion examines some of the implications for understanding pain parameters in amateur rugby including the policy approaches and responses to concussion.

Players' Understanding and Experiences of Concussion

Indicative of, and reinforcing the existing evidence about, the prevalence of concussion, all 20 interviewees had witnessed this (mild) traumatic brain injury, more than half having witnessed five or more incidents in their careers. Just under two thirds of the sample (n=13) had been diagnosed with a concussion injury and more than half (n=11) had experienced the injury more than once. Only one of the 20 interviewees had not experienced concussive-like symptoms. Considered in the light of Pollock's (2014: 152-155) overview of concussion studies in rugby union, the experiences of players interviewed here were not unusual, either in terms of the reported experiences of adult players worldwide or of younger players. Taking other Ireland-based studies (e.g. Baker et al, 2013; Fraas et al., 2014) of injuries together with Pollock's international overview, this research confirms the high incidence of concussion in rugby union.

INSERT TABLE ONE HERE

Those who had been diagnosed with a concussive injury (n=13) showed greater awareness of, and knowledge about, the condition than those who had not (n=7). This illustrates that the apparent increases in the incidence of concussion, highlighted consistently in current epidemiological research, are inextricably intertwined with changing public understandings of the condition. However, those with experience of concussion relayed some very tangible implications for daily living. One interviewee with a history of multiple concussions (Ironmen Nine) described the effect of post-injury symptoms on his daily life as follows: "I had to

take breaks from driving lessons because physically I couldn't concentrate because my head was so sore. I was experiencing headaches, drowsiness and I was constantly tired". Others, current players and coaches alike, listed a range of symptoms they associated with the injury, most reflecting the inaccurate perception that concussion involved instant cognitive impairment. Perceived symptoms included: loss of consciousness and dizziness (Ironmen one); slow reactions and grogginess (Ironmen Three); confusion and disorientation (Ironmen Six); fuzzy eyesight (Brigadiers Two); and, post-injury mood swings and a short temper (Brigadiers Five). The two coaches were evidently focused on immediately visible symptoms and whether players were "actually awake: are they conscious or not? Are they coherent?" (Brigadiers Head Coach); "Do they have dizziness, light-headedness, sore head, blurred vision, memory loss?" (Ironmen Head Coach). For the seven who had been diagnosed with concussion, their lack of knowledge was very evident. Two players put it as follows: "I've no idea ... something to do with the brain?" and "No idea" (Ironmen Two; Ironmen Eleven).

One consequence of these varied levels of knowledge about, and lived experiences of, concussion was that interviewees had mixed interpretations of the recommended return to play protocol (RTP). These interpretations revealed a lay (medical) understanding framed within a functional view of injury that emphasised not the clinical symptoms or the health risk but, rather, the playing time lost as a result of injury. Some Brigadiers' players were unclear about the RTP: "What I know of, I think it's three and a half weeks. Don't really know any more" (Brigadiers One); "I think I'd be lying if I said I knew how long it was exactly" (Brigadiers Five). For another who

had experienced concussive symptoms, the formal RTP was in fact less relevant than his own personal assessment of readiness to return; “Is it meant to be four to six weeks or something like that? I’m not one hundred per cent. I sort of waited until I felt a wee bit okay in myself and just went back” (Brigadiers Four).

If interviewees who had never been diagnosed showed little knowledge of the symptoms or the nature of concussion, those who had displayed an irreverent attitude through their attempt to downgrade or ignore their symptoms, and/or willingness to continuing playing and training. In one case, a player had not only been concussed during play but had also received a broken eye socket, nose and cheekbone. Despite these injuries, he returned to training the following day, recalling:

The only thing I remember was ... I can just remember the contact and the next thing I know, I’m rolling about on the ground. That day I was sick multiple times, and I went back to training the next day. (Ironmen Twelve)

In his view, it was the damage to his nose and cheekbone that forced him off the field rather than the brain trauma. Similarly, another player reported playing on after experiencing symptoms but only being clinically diagnosed with concussion four days later when he sought medical advice at the local hospital:

I was playing in a cup game, a clash of heads. I was out for a while. I woke up with a bit of a sore jaw ... I played on. I had a bit of starry vision. I just ... kept drinking water. I went home and felt a bit sick, went back to work on Monday and by the middle of the week I was starting to feel pretty groggy.

Wednesday I went to hospital and that's when I was diagnosed with concussion. (Brigadiers Four) (emphasis added).

Another interviewee, Ironmen Nine, described his own and others' disregard of symptoms while playing at school:

I'd been hit on the first play ... I actually went off the pitch and was sick. I came back onto the pitch and I just didn't want to go off after that ... I wanted to be part of it. Everyone wants to be part of a big win. I was sick the whole game. I took the week off school, the next week probably. I said I was just sick but I wasn't. My head was just in pieces. (emphasis added)

Such attitudes to concussion appear to be common in rugby in Ireland; in the 2013 survey by the Irish Rugby Union Players' Association, 45% of respondents indicated that they had hidden or underplayed a concussion in order to return to the field of play. In Baker et al's 2013 study, only just over half of those who had sustained a concussion (36 out of 64) had sought medical attention, while 54% said they would not report a concussion to their coach and only 18% indicated they would report it to a medical professional. Commonly cited as reasons why players behave in this way include the perception that the condition is not particularly serious, the reluctance to leave the game and/or let down teammates and the disbelief that a concussion has occurred (e.g. Fraas et al., 2014).

There was also a lack of reflection about the consequences of playing on after concussion. 19 of the 20 interviewees displayed an almost irreverent attitude to concussion, the one exception being a part-time physiotherapist. Indicative of this irreverence was the expressed preference for concussion over other injuries, which,

in turn, was rationalised in terms of the period of absence from the game. As Ironmen Ten put it: “I’d rather the concussion ... just a shorter time period of recovery ... you’re not really thinking about [anything longer] when you’re just looking to recover quickly and get back as soon as possible”. Brigadiers One agreed: “If I had to go between having a concussion or a muscle tear or something like that, I would probably rather have the concussion ... I think it’s just the way rugby players probably look at it in a way”.

The importance of downplaying, ignoring or denying the injury was a recurring theme of interviews, with little or no evidence of a culture of precaution when it came to concussion. Referring to the standard on-field tests for concussion, Ironmen Eight said: “it’s very easy to bluff your way through a test” and, as his coach put it: “I think there’ll be players at all clubs that if they got concussed or slightly concussed, they would still play on and they would probably work the system because they know what to do and they know what to say about concussion” (Ironmen Coach). Players even went so far as to proffer denial in order to facilitate a timely RTP: “I find you can maybe lie to yourself a bit and say ‘actually it’s not that bad’” (Brigadiers Four). This was in line with the frequently rehearsed mantra of putting “your body on the line”, “for your badge and the people around you”. Being strong in this context meant having the will to play on even in the face of a conscious diminishing of cognition: “I’ve taken bangs to the head. That’s part and parcel of the game. Your cognitive function goes down a bit when you’ve had concussion so you’re just reverting back to more of a primal state. You’re thinking ‘I need to play on here’” (Brigadiers Four).

It was thus clear that interviewees demonstrated a poor understanding of the symptoms or potential consequences of concussion and that, rather than approaching the injury cautiously, and with some degree of “sensible risk taking” (Safai, 2003), concussion was managed by downplaying, denying or concealing its symptoms and “playing on”. Post-injury consequences such as sleep disturbances, irritability and mood swings were hidden from others. Being a rugby player required a tolerance of pain and injury and being sufficiently strong in body and mind to withstand the consequences of this. These normative aspects of the culture of risk are best captured in what we might analogously term being head strong, that is, exhibiting a certain wilfulness that derived, not from stubbornness or obstinacy (the more common and individualistic interpretations), but rather from within the subculture of rugby, that is, originating in the level of commitment made by players to each other and to the game. Being head strong signals the wilfulness displayed by players to conceal concussion and to “play on”, but also the distinctive irreverence shown to concussion above other injuries. This wilfulness includes the psychological armouring required of interviewees to play through the injury, an armouring that even led one player to describe himself as functioning in a primal state, i.e. below the level of conscious cognition. Being head strong is also a useful construct to consider the implications of the stigma that is perceived to be associated with cognitive sequelae post-injury.

Wider Injury Profiles

Interviewees were also invited to discuss their wider injury profiles in order to better contextualise the frames of reference within which players defined and managed

concussion. Players' discussions of their wider injury profiles brought out very clearly the functional view of injury, which, we suggest, is important for an understanding of players' attitudes towards concussion specifically. Self-reported injuries were those which resulted in time loss of at least one week, including missed competitive games, and which occurred over the course of their adult careers (ranging from one to ten seasons).

INSERT TABLE TWO HERE

This wider injury profile reveals frequent physical trauma, from "split head" and strained muscles, "dead legs" (a numbing blow to the upper leg), a shoulder "stinger" (an intensely painful neurologic event), bruised ribs, groin and hamstring strains through to ligament injuries and broken bones.

The views expressed by the interviewees in relation to these injuries were broadly consistent with normative practices reported elsewhere in rugby union (Howe, 2004; Malcolm and Sheard, 2002; Liston et al, 2006). Foremost in these was not just an expectation that players would willingly expose themselves to the risk of injury and be injured from time to time, but also that, when injured, they would continue to play with pain and injury for the "good of the team". Indeed, there was a near universal acceptance in both clubs that playing with pain and injury was a socially valued practice because it demonstrated their commitment to the game and to the team. Interviews were replete with eulogies of moral courage, taking physical risks, tolerating pain and injury and meeting these expectations as part of the culture of

rugby. Some rationalized their behaviour in relation to sporting values, as in the following examples: “I would still do it [play through serious injury] because we won the league at the end of the year so everything was worth it you know” (Ironmen Coach); “They don’t want to let the team down by coming off easily you know” (Ironmen Nine); “It’s character building” (Brigadiers Coach). Others expressed explicitly masculinist values: “the tough men of the squad don’t really want to show weaknesses ... Don’t be soft, there’s no point in going off here” (Ironmen Nine); “You man up and play on ... players don’t take too much notice of their pain and will play through it” (Ironmen Four).

The second aspect of the players’ frame of reference, which is particularly important in understanding their attitudes towards concussion specifically, is a functional interpretation of injury, whereby time loss is the key criterion used to classify severity. Major injuries were: “those things that would stop you playing, shoulders particularly” (Ironmen Two); “it’s how long it keeps you out of the sport that would determine how serious it is” (Brigadiers Four), and “broken arms, broken legs, dislocated shoulders – they’re all the same. They all take time out of the game to recover” (Ironmen Nine). Those injuries that did not result in game time loss were accorded a different profile (see table three) and were regarded as less severe. The logic of this functional understanding of injury was clear: it was not that a player was unable to play because the injury was serious; rather, the injury was serious because the player was unable to play (Malcolm and Sheard, 2002). While a pulled muscle or shoulder injury would almost inevitably result in a withdrawal from play, it was often possible to continue playing after a concussive injury. By (this) definition, therefore,

concussion was a less serious injury and one about which players were less concerned. It is this functional definition of injury, which, we suggest, underpins the irreverent attitude of many players towards concussion, an attitude that involves the denial and concealment of symptoms, a denial of their seriousness and the reluctance to report symptoms to medical staff.

INSERT TABLE THREE HERE

Sports subcultures, medicine and the treatment of concussion

There is an abundance of literature which indicates that sport is characterised by a culture of “playing hurt” which emphasises continuing to play through pain and injury even at the risk of exacerbating the injury and further damaging one’s health (Young, 1993; Roderick et al, 2000; Theberge, 2007). Moreover, it is clear that, as a study by Liston et al. (2006) indicated, and as this work confirms, this cultural pattern is not confined to elite sport but also characterises, to a significant degree, mass participation sport. Clearly this presents problems for both medical practitioners and those involved in health education programmes designed to encourage players to adopt a more conservative attitude towards injuries involving what Safai has called “sensible risk taking”.

As Freidson (1970) noted in his classic work on medical practice, the major constraint on medical practitioners is the practice situation within which they work. Drawing upon Freidson’s work, it has been argued that club medical staff in sport are heavily constrained by the fact that they work within a context in which the key values are lay performance-related sporting values, rather than health-related clinical values

(Malcolm 2006; Waddington, 2012). This practice situation is one which constrains clinicians to orient themselves primarily towards the demands of their lay clientele – that is the players, coaches etc. – rather than towards the community of medical practitioners and this orientation is likely to constrain them to make both ethical and clinical compromises that they would not be required to make in other practice situations. Examples of such compromises are well documented in the literature (Waddington, 2000, Scott, 2012) with a particularly striking example being Malcolm's (2009) finding, cited earlier, that club medical staff in rugby have allowed sporting performance criteria to override medical guidelines in relation to concussion.

The practice situation within which club medical staff work means that, even at the elite level where medical staff are employed on a permanent basis, the voice of clinical medicine is likely to be muted and subservient to the louder and more insistent demands of sporting performance. And if this is the situation at elite clubs, then, at the level of non-elite clubs – as in the case of rugby clubs in this study – the clinical voice is likely to be not only muted but more or less absent. As we noted earlier, not all clubs use the services of a physiotherapist and where they do, this service is usually quite limited. This was acknowledged by a consultant (Ryan) in emergency medicine in Ireland in his 2014 presentation to Dáil Éireann's Joint Committee on Health and Children in which he said, "the majority of people getting head injuries in sport occur among a group of weekend warriors and school children for which this country does not have the capacity to provide a medic or even a paramedic or an allied health carer" (Joint Committee on Health and Children, 2014:

29). Within this situation, the dominance of sporting-related values and the marginalisation of clinical values are likely to be more or less unchallenged.

Of course, the centrality of the culture of playing hurt will not only impact upon the ways in which players define, give meaning to and respond to concussion, but to injuries in general. There are, however, two key respects in which concussion is different from most other injuries. First, few injuries have the same potential for serious damage to one's health, or even death, as in the recent cases of Ben Robinson and Kenny Nuzum in Ireland. It is for this reason that, as noted earlier, sports governing bodies and the rugby authorities in particular operate a notably more conservative approach towards brain trauma than any other injury. Second, the functional definition of injury used by rugby players elevates (rather than dampens) the level of risk in relation to concussion significantly more than in the case of many other injuries. As we noted earlier, the functional definition of injury used by players leads them to define the seriousness of injuries not in terms of clinical symptoms or the associated health risk but, rather, in terms of sport-related criteria centred on the loss of playing time as a result of injury. And while many soft tissue injuries such as pulled muscles or damaged tendons frequently necessitate an immediate withdrawal from play and a possible absence of several games, it is often possible to continue playing even after being concussed, to disguise the symptoms and, if necessary, to "bluff your way through the test" as illustrated by former Irish international, Brian O'Driscoll (2015). This functional definition of injury underpins what we describe here as an irreverent attitude of players towards concussion, that is to say, despite recent educational campaigns and a growing awareness of

concussion there appears to be a still widely held view among rugby players that concussion is not a serious injury but “just a bang on the head that can be run off”. But what are the implications of our analysis for concussion-related policy within rugby? And might there be a potential divergence between the intentions and outcomes of this policy? These are the questions to which we now turn.

Policy implications

There is growing recognition that unintended consequences are an everyday feature of social life, both inside and outside of sport. Within sport there is, for example, widespread recognition that anti-doping policy has generated a number of unintended consequences – in this case collateral harms – including the fact that it has constrained athletes to use more dangerous but less detectable drugs, and to use additional masking drugs to conceal their use of performance-enhancing drugs (Waddington, 2016). Equally, the introduction of gloves in boxing, ostensibly designed to protect participants’ faces, has also protected the participants’ hands thus facilitating more frequent and forceful punching with a commensurate increase in the risk of head injuries (Murphy and Sheard, 2006). It would be foolish to imagine that concussion-related policies within rugby would be free of such unplanned outcomes. For example, two possible policy responses include stricter rule enforcement (e.g. a greater willingness to remove symptomatic players) and an increasing emphasis on consistency in medical provision around concussion in amateur rugby. However, stricter rule enforcement could unintentionally reinforce players’ reliance upon their own lay medical understanding and self-assessment, precisely because of the widespread commitment to playing hurt and the

concealment of concussion while, as we have noted, the IRB guidelines on medical provision have led doctors to accept the definition of concussion held by players and coaches in order to avoid conflict with playing and coaching staff (Malcolm, 2009).

Alternatively, as noted earlier one response to concern about concussion in rugby has been a focus on education. The effectiveness of concussion campaigns has yet to be independently verified in the British and Irish contexts but it is clear that a great deal of thought needs to be given to such campaigns, for any campaign based on the assumption that players' behaviour will be changed simply by the provision of information about health risks is unrealistic. As those involved in health promotion campaigns in the wider society have long recognised, changing health-related behaviour is a complex process and providing information about the health dangers associated with particular practices is not only unlikely, on its own, to have a major impact, but may even be counterproductive by leading to denial and avoidance of the message (Naidoo and Wills, 2000). Pill and Stott's (1990) study of changes in health-related behaviours showed the importance of precipitating life events and – very significantly – the minor role of health concerns, while one might also note that information about the health risks associated with smoking has had a very limited impact in changing smokers' behaviour (Heikkinen et al., 2010). Experience from public health campaigns suggests that the provision of information is unlikely to change players' behaviour significantly because there is a discord between such information and key values and cultural practices – in particular those associated with being “head strong” and playing hurt – both of which are deeply institutionalised within the game.

A useful analogy can be drawn here with the provision of anti-doping education to athletes. Bette (2004: 109) has pointed out that doping cannot be understood as the action of ignorant or ill-informed athletes who simply require more or better information; indeed, he suggests that, given the constraints of top-level sport, “many athletes look upon doping as a rational choice of action”. Rather, “because doping results from a social context, the context that produces doping must be changed. Anti-doping is, therefore, best seen as ‘context management’” (Bette, 2004: 109-110). In much the same way the actions of players who ignore or circumvent messages or protocols relating to concussion should not be seen as the actions of ignorant or ill-informed players who simply require better or more information, but as actions which, from the perspective of the players themselves, make sense not least because, within the cultural context of rugby, they generate personal and social rewards (e.g. identity affirmation). As in the case of anti-doping campaigns, education about concussion might best be seen as a process of context management involving the necessary problematisation of wider discourses associated with the normalization and rationalisation of playing hurt, and of what constitutes sensible risk-taking. What might such a policy look like? We do not claim to be in a position to offer detailed policy proposals, but it may be useful to spell out some general principles and to indicate the kind of knowledge that could form the basis of more effective policy. In this regard, a recent policy initiative from the United States has generated some interesting pointers.

In U.S. youth sport where school district policy was changed to include a concussion plan, it was found that “educational efforts alone did not prove to be consistently

effective” and an “inconsistency gap” existed in levels of understanding of concussion (Adler and Herring, 2011: S469-470). A key finding was that individual administrators or coaches appeared to be the crux upon which school district policy succeeded or failed. This suggests that careful consideration needs to be given to the question of who is best placed to deliver the relevant policy message. But this in turn raises other questions, for it may be the case that different people are best placed to deliver the message to different groups and, indeed, that different groups may be more effectively targeted with different messages. In other words, it may be useful to think in terms not of a single message about health but of differentiated messages targeted at different groups. The logic behind this is clear: different groups may be involved in rugby in different ways and differentially committed to the culture of risk within the sport. For example, would the same message be equally effective when targeted at a fourteen-year-old schoolgirl and a 35-year-old male with a young family? And might this message have more resonance if passed on by those with greater or lesser social distance from the intended recipients? In the case of child or teenage players, is the message best targeted at the youngsters themselves or at their parents, or both? What is the best message to deliver? Who are the best people to deliver it? And what is the best medium for the delivery? Again the analogy of anti-doping education may be useful. The British Medical Association (2002: 215) has noted that there are several key issues that need to be addressed in order to make athlete education programmes more effective in relation to doping and the same issues may be held to apply to education about concussion.

1. Selecting the appropriate target groups, which might include governing bodies, various categories of athletes (such as junior, senior, veteran, male, female), coaches, parents, PE teachers, team/squad doctors, sponsors, etc.
2. Determining the attitudes towards, and knowledge of, concussion on the part of the various groups. What are their existing sources of information and how reliable are they?
3. Determining the medium or combination of media (text, video or phone apps for example, along with face-to-face workshops), appropriate for different groups.
4. Determining the “voice” best suited to different groups (for example doctors, celebrity rugby players, players or the family of players who have suffered serious concussion, other role models for younger or older players, professionals in training and development and so on).
5. Agreeing the message, or combination of messages, likely to be the most effective. These might include, for example, not just damage to one’s own health but also long term responsibility to one’s family, responsibility to set good examples of safe play for younger players, loss of occupation or income as a result of serious injury etc.

Conclusion

There is no suggestion that the problem of changing players’ behaviour in a way that encourages them to take only “sensible risks” can be resolved simply or quickly. The central problem is that within rugby, players’ decisions about risk and concussion are framed by an institutional structure and a set of cultural values which prioritise sporting over health-related values and which reward serious risk taking. The

evidence from public health campaigns suggests that merely emphasising health values is unlikely to bring about major change in behaviour. The challenge here is one of “context management”; more specifically the challenge is to develop different frames of reference – perhaps, for example, emphasising long term responsibilities to one’s family, or responsibilities as a senior player for encouraging safe practice among younger players – which might encourage more sensible risk taking. If this is to be done, then we need to know more about the different contexts, both inside and outside of rugby, within which different groups operate in order that messages can be made more consistent with the constraints and values of those contexts.

Notes

¹ Although Liston (2014) has noted that females, as part of the process of being accepted as “real” rugby players, have taken on these norms to the extent that they too learn to accept and expect pain and injury.

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