

Stakeholder perceptions of the relationship between rugby union, media, and masculine-influenced views about injury and concussion

Abstract

Rugby union, alongside other collision and contact sports, faces ever mounting pressure from increased recognition of concussive injuries and the risks they present to athletes, both in the short-term and long-term. Here, the media is a central component of increasing pressure for cultural change. This research analysed data from 524 self-selected survey respondents to examine rugby union fans' and stakeholders' perceptions of media portrayal of concussion and how it might influence their own perceptions. We found evidence of a complex and heterogenous relationship between perceptions of masculinity, views and attitudes toward mass media, and degree of involvement in rugby union. Specifically, partisans of the sport generally saw mass media as hostile, with coverage biased against rugby, allowing them to manufacture doubt regarding risk information, as well as maintaining their involvement in the sport. We conclude that critical commentaries from the media have the ability to challenge masculinities around concussion.

Introduction

In December 2020, it was revealed that former international rugby union players were suffering from early-onset dementia, with a large number poised to take legal action against their former employers and the governing bodies of the sport (Anderson *et al.*, 2020). This revelation brought the dangers involved with playing rugby into 'the public eye' and drew criticism of the governing bodies of rugby for allegedly denying the growing evidence that the sport has injury rates that are higher than other sports (Piggin, 2020). At the same time, there has been increased sociological focus on sporting injury. Here, athletes are often culturally expected to sacrifice their bodies in the pursuit of success, an act that may be seen as deviant in broader society, but normative in sport, and especially rugby (Anderson & White, 2017; Coupland, 2014; Hughes & Coakley, 1991).

Developed in the British Public-School system, rugby union has an enduring link to the formation of traditional masculinity in the United Kingdom (UK), and the sport has long prized the endurance of pain (Light & Kirk, 2000; Proctor, 2011; White & Anderson, 2017). Indeed, rugby union maintains strong associations with aggression and physicality, and it has long been associated with violence (Collins *et al.*, 2008). For example, Dunning (1986, p.81) identified rugby union as a combat sport that has traditionally embodied: "the expression of *macho* values in a relatively unbridled form". Even in the twenty-first century, the school system continues to play a central role in pushing boys towards hegemonically masculine sports, such as rugby union (Whigham *et al.*, 2019), reinforcing the pressure for boys to be tough and strong 'men' who ignore injury and sacrifice their bodies for the good of the team (Light & Kirk 2000; White & Hobson, 2017).

In line with this contention, Liston *et al.* (2018) found that amateur rugby union players underplayed and ignored the importance of concussion in an effort to be 'headstrong' and assimilate with the sporting culture. As a consequence, there continues to be under-reporting of concussion, with many parents, coaches, and young athletes believing that athletes are indestructible, while accepting that injury and concussion are just part of the game (Sanderson & Cassilo, 2019). Malcolm (2017, p.135) attributes the under-reporting of

concussion symptoms to: '(a) perceptions that their condition is not serious enough; (b) reluctance to leave the game and/or let down teammates; or (c) disbelief that a concussion has occurred'.

Compared to most other sports, rugby union has a relatively high injury rate (Griffin *et al.*, 2020), including at school level in the UK (Pollock *et al.*, 2017). For instance, Abernethy and MacAuley (2003) found that rugby union was responsible for 45% of school-sport injuries that required Accident and Emergency department attendance – more than three times higher than any other sport. As a result, a variety of safety measures have recently been introduced in rugby union with the aim to make it safer. Measures have included voluntary concussion training, post-concussion return-to-play protocols, as well as a pre-activity exercise movement control programme (Batten *et al.*, 2016; White *et al.*, 2018). Others have called for further action, including the removal of collision elements from compulsory lessons of school rugby union physical education to protect children from injuries (Pollock *et al.*, 2017; Sport Collision Injury Collective, 2016; White, 2020).

There are many stakeholders involved in the concussion debate (players, coaches, parents, medical professionals, sport governing bodies, and public health organisations) and hence the socio-cultural context is complex. Nevertheless, concussion has become a serious sporting and public health issue (Anderson & White, 2017; Benson, 2017), one in which the media plays an active role in influencing the opinions of fans and wider stakeholders involved in sport (White *et al.*, 2020). However, understanding the influence on attitude formation of story frames in sports media coverage of athletes and teams remains under-researched (Lewis & Weaver, 2015). In addressing this gap in knowledge, this research examines two key questions: (1) what are rugby fans and stakeholders' views on the potential risks of concussion in rugby union? and (2) what are rugby fans and stakeholders' perceptions of media coverage of concussion in rugby union? To do so, we analyse responses via an online survey of 524 self-selected participants, examining the relationship between rugby union, the media, and masculine-influenced views about injury and concussion.

Masculinity and sport

Organised team sport provides an avenue for displays of patriarchal structure, physical prowess, and heterosexual domination (Hargreaves, 1986; Pronger, 1990; Pringle, 2005; Adams, 2011; Murray & White, 2017). As a result, many note how it provides a vehicle that reinforces an orthodox or hegemonic form of twentieth century masculinity (Anderson & White, 2018). Connell's *Hegemonic Masculinity Theory* (1987) theorises this archetype of masculinity through her argument that multiple types of masculinities exist within a hierarchal structure, with one holding dominance over others. Connell (2005, P.77) defined hegemonic masculinity as the "configuration of gender practice which embodies the currently accepted answer to the problem of the legitimacy of patriarchy, which guarantees...the dominant positions of men and the subordination of women". Commenting on the structure and process of organised team sports, Connell suggests sport 'embeds definite social relations' (1995, p.54).

Under this practice, and despite the increased awareness of the severity of the injuries that are a part of playing rugby union, there is often an expectation that athletes are able to withstand and play sport despite their pain and injuries (Hughes & Coakley, 1991). Pierre Bourdieu (1993) states that physical sports (such as rugby union) require not just investment of effort, but also the acceptance of pain, suffering, and risk to the body itself. Indeed, Coakley, Hallinan, and McDonald (2011) claim that a strong, muscular, athletic body can be a source of social status as it is an indicator of self-control and discipline, while the ability to ignore pain is seen as a gauge of physical strength and is valued in (many) sports.

More so, it has been suggested that some seek to enhance their masculine and athletic identities by engaging in injurious and risky behaviours; particularly as they are often praised for doing so by fans and the media (Anderson & White, 2017; Sanderson *et al.*, 2014). As such, sport becomes a symbolic enactment and representation of warfare, reproduced via 'warrior narratives' (Adams *et al.*, 2010; Anderson & Kian, 2012). Adams *et al.*, (2010, p. 281) assert that: '... players who do not live up to the expected orthodox scripts of masculinity are often subordinated through physical dominance and ridicule'.

However, masculinity is not fixed and there are often multiple, intersecting versions that compete with the dominant, previously accepted hegemonic masculinity that will come into

existence at particular times and places (Connell & Messerschmidt, 2005). There is also evidence that boys and young men are today moving away from orthodox versions of masculinity that have been based on tenets such as violence, aggression, and misogyny (Light, 2007). In line with this, Anderson (2009, p.13) developed *Inclusive Masculinity Theory* to explain the changing nature of masculinities which he had witnessed, claiming this to be the norm for "White, middle class men; both inside and outside of sport". Given this shift away from hegemonic masculinity, it may be expected that there will be an associated move away from aggressive competitiveness, toughness (Wright & Clarke, 1999) and, most significantly in this paper, risking the body (Bowley 2013; Griffin *et al.*, 2020). Indeed, this has been the case in American Football with a year-on-year reduction in participation attributed to health concerns with the sport (Cantu & Hyman, 2012).

The media and concussion discourse

Media coverage of concussion has been investigated in several contact sports, including boxing (DeKosky *et al.*, 2013), Association football (White *et al.*, 2020), rugby union (McLellan & McKinlay, 2011), ice hockey (McGannon *et al.*, 2013; Kuhn *et al.*, 2016), and American football (NFL) (Anderson & Kian, 2012; Cassilo & Sanderson, 2016; Sanderson & Cassilo, 2019), where concussion incidence rates are high and worldwide visibility tends to be greater than other sports. Specifically, Ahmed and Hall (2017) explored the description of sports concussion in online sports news articles on ice hockey, American football, Association football, and rugby union. They found that mainstream media articles have the potential to widely influence public perceptions of concussion, to mediate misconceptions, and to increase knowledge.

It is not only the sporting press that is reporting on concussion in sport, but now these stories also feature in mainstream press reporting (Cassilo & Sanderson, 2016). This reporting is typically influenced by the values of the media organisation and/or the writers who frame stories by selecting which elements in a certain news story are presented (Lewis & Weaver, 2015). In this manner, the selection of certain aspects of reality to focus on makes them more salient, more noticeable, and more meaningful in any communication (Entman, 1993). Significantly, Sanderson *et al.* (2014) argue that media attitudes can be reflected at lower levels of the sport and can influence the decisions of youth coaches, parents, and children.

Therefore, the media can define a problem and shape public perceptions, and is particularly persuasive with public health issues (Cassilo & Sanderson, 2016; Sanderson & Cassilo, 2019). However, treading the line between sensationalising and minimising the risks and long-term implications of injury and concussion in sport is an ongoing challenge for the media. Nevertheless, Ventresca (2019) suggests that attention-grabbing headlines may serve to support efforts to influence stakeholders to make changes. There have also been some high-profile documentaries and films such as *Head Games*, *League of Denial*, and *Concussion* (White & Franks, 2019), which have brought public attention to the issue of chronic traumatic encephalopathy (CTE), a disease associated with repetitive brain trauma. As such, Anderson and Kian (2012) suggest that media coverage is now reducing the emphasis on the warrior narrative.

Opinions can also be perpetuated on social media sites, such as Twitter and Facebook, without regulation. Workewych *et al.* (2017) conducted a Twitter analysis to try to gauge the culture of concussion in sports, hypothesising that the data might aid understanding of public perceptions and misperceptions. They found that, while the scientific and medical communities consider concussion to be a form of traumatic brain injury, there is a misunderstanding of that among the public. Sullivan *et al.* (2012) also investigated opinions on Twitter, arguing that its use for education on concussion is a powerful one. It can heighten the impact of the issue and increase the number of people that could benefit from accurate reporting. In addition, Williams *et al.* (2014) recommend YouTube as an appropriate way of disseminating quality-controlled information on concussion in sport due to its global popularity and reach. However, debate in the area of social media suggests that there may not be enough regulation of online e-Health information (Ahmed & Hall, 2017). As such, the public has no way of knowing if it is accurate, misleading, or for commercial gain, and sources of concussion information may also have biases (Partridge, 2013).

Cleland (2011) argues that the relationship between consumers (fans and stakeholders) and the media has evolved since the advent of 'new' media due to its interactive nature. Media coverage (of many topics) is increasingly challenged and rejected as either biased or 'fake', inspired by political leaders globally (Nelson & Taneja, 2018). Furthermore, as most sporting

clubs and governing bodies have direct access to consumers via institutional websites and social media channels (and their own television channel in some cases), they are now able to counter unfavourable media coverage and to influence public discourse directly. As Cleland (2011) notes, sport consumers may not be passive audiences, who accept and absorb media information without question, while stakeholders that are already invested in the sport may challenge media information. Gunther and Liebhart (2006) highlight that 'partisans' (such as stakeholders and fans of a sport) tend to view news coverage of controversial issues in the mass media as biased against them – the hostile media effect. However, as noted at the start of this paper, the influence of sport media on attitudes towards concussion remains relatively unknown (Lewis & Weaver, 2015).

With disagreements between research, science, sport, and stakeholders, it is unsurprising that there are disconnects in the information provided by science and the media. Kuhn *et al.* (2016) discuss the case of Todd Ewen, a National Hockey League (NHL) player who committed suicide believing that he had CTE, yet no evidence of it was found post-mortem. They recognise the importance of the intermediary role the media plays in providing information to the public and recommend that researchers spend more time educating the media. Ahmed and Hall (2017) agree that the process of engagement between researchers, clinicians, and the media needs to be more extensive and consistent internationally. Provvidenza *et al.* (2013) also reviewed knowledge transfer and concussion education literature, finding that the media is a valuable way to draw attention to concussion and educate the public, while emphasising the importance of accurate information.

Given the historic (and current) overemphasis on men's sport in the media, it should not be surprising that sport media has been described as "a glorified package of what masculinity is and should be" (Messner, 2012, p.115). However, this depiction of masculinity has typically been relatively narrow, linked with nationalism, the glorification of warfare (Messner, 2012) and an associated acceptance of pain (Cranmer & Sanderson, 2018) and toughness, particularly in combat sports where there has been an overrepresentation of 'toxic masculinity' (Bowman, 2020). Therefore, the media has been complicit in constructing and maintaining hegemonic masculinity (Park, 2015). Although media representation of masculinities in rugby union remains underexamined, in a rugby league context, an orthodox

form of masculinity has been reinforced in media coverage against wider social trends towards inclusive masculinities (Murray *et al.*, 2016). Thus, we examined responses to media coverage from stakeholders to consider how masculinity is framed in relation to rugby, providing a vital comparative to Cranmer and Sanderson's (2018) examination of American football.

Methodology

An anonymous online survey was developed to collect stakeholder opinions on the media's reporting of concussion in rugby union. The survey instrument consisted of standard demographic questions and a series of open-ended and closed-ended questions asking opinions on media reporting of concussion and long-term brain injury in rugby. An example of the questions asked included: *There has been an increasing amount of media attention focusing on head trauma in rugby. What are your views on this increasing media attention?* Overall, we received a substantial response to the open-ended questions (~15,000 words for each question) and so it is the results from this data set that we present here.

As part of the survey, participants also identified their involvement with rugby, selecting multiple options from a list including: player, coach, spectator, and parent of players. 'Other' responses included former players and a sports therapist. The responses are provided in

Table 1.INSERT TABLE 1 ABOUT HERE

The total sample included 524 self-selected participants accessed via social media platforms and rugby union message boards in the UK between March and September 2016. The mean age of participants was 43.9 years (SD = 12.83). The gender breakdown was 481 males (91.8%) and 43 females (8.2%). Given that the survey was available online, there was an in-built bias as only those with access to the internet were able to complete it. However, with the popularity of internet-enabled smartphones and the availability of the internet in public places, we believe that this bias is acceptable. Furthermore, as participants took part voluntarily and anonymously by self-selecting to take the survey, more-traditional sampling errors were avoided (Cleland & Cashmore, 2014). University ethical approval for the study was granted in January 2016. Following the Association of Internet Researchers guidance (Internet Research Ethics 3.0, 2019), a participant information sheet was provided for all

participants to explain the study and allow participants to make an informed choice over whether to participate or not. Following data collection one participant withdrew their data from the study.

Data Analysis

Our approach to data analysis was based on subjective interpretation. Here, authors one, two and four independently analysed the survey answers manually (rather than via computer-assisted software) to allow a focus on meaning rather than quantity (St John & Johnson, 2000), an approach still favored by many social scientists (Davis & Meyer, 2009). Thematic analysis was used to summarise the data set (Sparkes & Smith, 2014), with each response coded. This involved giving meaning to responses that had relevance to the research question. Here, the researchers discussed each code and meaning before grouping it with similar words or phrases. During the coding process, common themes arose and were noted down. Each code was placed into a provisional category and reviewed once completed. Next, themes and codes were challenged by two additional 'critical friends' (Smith & McGannon, 2018), who questioned their relevance. This helped to ensure rigour in the analysis, with critical friends used to highlight different interpretations, as well as facilitating reflection through the challenging of beliefs (Cowan & Taylor, 2016). In terms of naturalistic generalizability (Smith, 2018), which refers to findings that correspond with the experiences of others, it is also likely that the reader will be able to recognise similarities and differences with their own perceptions of the relationship between rugby union, the media, and injuries and concussion. Overall, this process resulted in the emergence of three broad themes, namely: positivity toward increased awareness of concussion from the media, acceptance of the risk involved in sport, and us (rugby) versus them (media).

Discussion of Results

Awareness of concussion

Participants displayed an awareness of concussion, largely due to media coverage. However, they frequently attempted to mitigate the impact on rugby union as a sport by scapegoating and, for example, attributing blame for an increase in injuries to those running the sport or to processes involved with the modernisation of rugby union. Rugby union itself was

identified as having a higher potential for injury due to its physical nature. One participant stated that, “Playing rugby infinitely increases your risk of a potential concussion. The media is not over reacting” (48 year old, male, Coach, Official/Referee, Parent, Spectator), whilst others likened it to American football, claiming that rugby union was benefitting from the increased understanding of concussion:

The professionalism of the game has led to bigger "hits" from bigger players and at the same time has brought more science into the game from other sports, such as American football, who have studied such trauma and recovery for many years. It is vital that all participants realise that head trauma is not limited to the elite level but extends down to all levels where contact occurs, and may be even more important for young players whose physiology is still developing. (51 year old, male, Coach, Club volunteer, Parent)

The references to other sports, and concussion in the NFL in particular, indicates that the dangers of head trauma has diffused into the wider public consciousness. In some ways, this has been helped by coverage in popular documentaries and Hollywood films (Bell & Sanderson, 2016; Ventresca, 2019; White & Franks, 2019). Furthermore, it was identified that the media has an important role to play as it “holds the governing bodies to account on how they are looking after player welfare” (39 year old, male, Coach, Community volunteer, Parent).

This sentiment was echoed in a number of responses with the implication that the governing bodies of rugby union needed to be pressurised to act on concussion. These views are indicative of a perceived lack of preventative action by sporting bodies to remove dangers from sport (Anderson *et al.*, 2020). As one participant stated, “Whilst I like to think that the rugby authorities would look at this issue in the absence of media attention, I have greater faith in them doing so when put under the microscope” (40 year old, male, spectator), whilst another participant outlined:

With the increasing research into the effects of concussion. More awareness of the risks, will allow for more informed decisions on whether to play and what to look out for when playing. (26 year old, male, player, spectator)

However, these views were laden with nostalgia for earlier periods when rugby union was perceived to be ‘safer’ (or at least free from worries around concussion), with recent developments in the sport identified as contributing factors in the greater incidence of

injuries. As one participant stated: “The modern game is causing more concussions and the media is highlighting the dangers” (50 year old, male, coach, club volunteer, parent).

Despite this increased awareness, many participants believed there still to be insufficient knowledge about concussion in both society, and sport more generally. The following responses highlighted the difficulties that are posed with concussion and head trauma due to their relatively unseen nature:

In the past, it has always been an injury that people ignore or don't take as seriously as they should, so increasing awareness is a very good thing. (40 year old, male, Player, Coach, Official / Referee, Club volunteer, Parent, Spectator)

Other comments made reference to the lack of an earlier understanding of concussion in rugby union and the need for greater education on the risks involved in playing it. However, while these comments can be seen as indicative of a shift away from a hegemonic masculinity-influenced acceptance of pain and injury in sport (Cranmer & Sanderson, 2018), they also created a nostalgic view of rugby union that participants saw as more idyllic than the ‘modern game’. Nostalgic sentiments are significant as they can serve as unifying narratives that mask tensions that arise from crises, as Von Burg and Johnson (2009) detail in their analysis of discourses associated with steroids scandals in American baseball. In this context, nostalgia serves to defend the shift from hegemonic masculinity and ‘protects’ rugby union by scapegoating processes of modernisation in the sport.

Rugby union became a professional sport in 1995, and players have become bigger and stronger since that time, alongside a higher level of player injury since professionalisation (Malcolm & Sheard, 2002). Addressing this physical change, one particular response claimed that in the intervening time the players’ “bodies have grown and even backs [traditionally the smallest players on a team] in junior teams can be 17+ stone. 14 stone was heavy in my day” (60 year old, male, Official/Referee). The size of the modern players mean that the collisions involved were equivalent to “a head on car crash at 30mph” (46 year old, male, player, coach, official/referee, parent, spectator) or getting “hit by about 50 buses over the game” (24 year old, male, player, coach, spectator). Nevertheless, this greater risk was believed to be only relevant for the elite players and not youth or amateur players as, in the views of one respondent, the elite game involves “significantly higher speed collisions between

significantly heavier individuals, but with good technique vs lower speed collisions between typically lighter people versus the youth game” (48 year old, male, coach, parent).

In other cases, the increased awareness of concussion in rugby union and the greater media coverage were put forward as contributing factors in the rise in incidents of concussion. Here, it was argued that increased awareness meant players and officials were now able to identify cases of concussion, resulting in a greater prevalence of injury reporting in rugby and, in turn, the media, rather than increased rates of concussion resulting from changes in the physical nature of the sport. However, this increased knowledge was framed in a positive manner as it was believed to have resulted in improved player safety. One participant stated, “More awareness = better safety” (57 year old, male, Coach, Official / Referee, Spectator), whilst another participant noted “...due to the excellent work of the RFU to educate players and coaches I believe that the increased numbers are mainly due to players, coaches and parents being better educated and reporting concussion more often” (26 year old, male, Player, Coach, Official / Referee).

Other responses drew from personal involvement in rugby union and highlighted an increased awareness of the issues, particularly from parents. It was argued that the risks were acceptable if they were managed or by ensuring that participants, or their parents in the case of children, were aware of the risks:

Risk is inherent to all aspects of daily life. Entering into a sport assumes that the individual weighs that risk. For children, the parent makes that choice. The sport should not change because of the risk. Risks should be mitigated as much as possible however they can never be removed. (49 year old, male, Coach, Parent, Spectator)

As was discussed by Bell and Sanderson (2016), the attitude of parents was an important factor in whether children were or were not allowed to play American football. However, in contrast to parents defending their right to let children play American football, our participants believed that the increased media coverage was now leading to better-informed parents. As such, parents are able to make more educated decisions when it comes to their children playing rugby, as Sanderson *et al.* (2014) found to be the case. Concurring with this, one participant stated that, “The media coverage has resulted in greater knowledge at grass roots level [of the sport], with the RFU headcase programme helping to educate coaches and

parents” (42 year old, male, Player, Coach, Club volunteer, Parent), whilst another participant added:

If you are better informed you can weigh up the risks. Rugby is a risky sport and I have talked this through with both sons. As a coach I am fully aware of what I have to do to minimise the possible dangers. (48 year old, male, Coach)

Acceptance of the risk involved in sport

In light of the responses to this study, and contrary to the findings of Sanderson *et al.* (2014), the media may not be able to change the hyper-masculine culture of some sports (Ventresca, 2019). Indeed, rugby was identified by one participant as having a “culture of bravado that shrugs off injury and will play on, often to their longer-term detriment” (51 year old, male, Coach, Player). It was also evident across the data that some participants believed that the risk of injury and concussion were part of the game, reflective of traditional notions of masculinity (Messner, 2012; Park, 2015). The fact that rugby union is a contact sport was a prominent feature, but the dangers involved were seen to be outweighed by the benefits of playing. For example, rugby union was believed to develop a number of beneficial skills and characteristics, often associated with typical masculine values in addition to providing aesthetic qualities. By way of illustration was this response, “rugby is a great sport for many reasons, I have seen young lads develop into sociable responsible and ‘all rounders’ as a direct result of playing rugby” (56 year old, male, Coach, Club volunteer), whilst another participant concurred:

I played rugby, as did (and still do as adults) both my sons. One has had a number of concussions. I am clear that the benefits to them (in terms of social development, character development, moral education, physical fitness and sheer pleasure) has greatly outweighed the risks. (61 year old, male, Parent, Spectator)

Here, the characteristics that were claimed to be developed through rugby are those that were prized in the early twentieth century and which are tied to orthodox versions of masculinity (Anderson, 2009). These views were often based on recollections of the respondents’ own playing careers.

In other responses, there was a tendency to blame injuries on poor technique, suggesting that the laws of the game had been modified to minimise injury risk. Therefore, injuries were the

fault of individuals. Poor technique was cited as being an issue with the 'modern' game as exemplified by one participant who claimed:

[there] seem to have been less incidents of head injuries previously when players avoided contact and had better tackling techniques. Hopefully the media focus can reduce this and make rugby the game it was. (57 year old, male, Official/Referee)

Alternatively, injuries were attributed to "... schools rugby, as opposed to club mini/junior rugby" (56 year old, male, Official/Referee). This response went on to suggest that the training involved in clubs was at a higher level, and so the fault lay with poor coaching in schools. In this manner, injury is positioned as a fault of the players not adhering to correct training, or the teachers not imparting correct techniques, as opposed to the inherent dangers of the sport that are widely recognised (Griffin *et al.*, 2020). The lack of liability for the sport was further strengthened when reference was made to the measures that have been taken to manage the risks, as one participant claimed: "there are risks in everything we do... risks can be managed " (50 year old, male, Coach, Rugby Educator).

As is apparent above, the risk of injury in rugby was often linked back to those inherent in everyday life. Activities such as walking down the street, motorcycle riding, and driving a car were put forward as more dangerous than playing rugby. In many comments, there was a pervading sense that the media had a disproportionate focus on risk and injury in rugby. For example, this participant stated:

The first thing we teach kids is how to fall, how to take a tackle safely, and also correct head position. All sports involve risk, rugby is just fronting up to it. (47 year old, male, Coach, Official / Referee, Parent)

Not all of our participants accepted this view, with some challenging the culture and acceptance of risk in rugby union. Some participants claimed that the risks were actually disproportionate to the level of risk that is 'acceptable' in society. One response highlighted that in rugby there was "a regular risk of trauma that can go unseen" (52 year old, female, Sports Therapist) and the repetitive nature of head injuries was acknowledged by some as increasing the likelihood of serious issues, as indicated here: "few everyday activities involve putting your head in danger of serious impact, then continuing to do so after being hit" (31 year old, male, Player).

It should be noted that many people are willing to accept a degree of risk in everyday life (Adams, 1995). Fuller (2007, p. 185) stated that ‘a high level of risk does not make a risk unacceptable per se; people will accept risks that are taken on a voluntary basis that are up to 1,000 times higher than risks taken on a non-voluntary basis’. These comments also reflect a critique on the lack of risk in everyday life and a fear of risks. It was claimed that “Generally as a society we are getting too risk averse” (45 year old, male, Coach, Official / Referee, Spectator) and “We do not and cannot live wrapped up in cotton wool” (56 year old, male, Coach, Club volunteer). Sport has been regarded as one of the last bastions of male hegemony, and a defence against a perceived ‘effeminising’ of society (Clayton & Harris, 2009). Indeed, the civilising of society has reduced the avenues for men to display their manliness and to demonstrate physical superiority over others (Muir *et al.*, 2020).

Yet, it is worth noting that stronger in-group identities have been found to influence perceptions of and attitudes toward risk information. In a study on parental attitudes towards children playing contact American football, Boneau, Richardson and McGlynn (2020, p.44) drew attention to the “different football identities” that families may possess, as well as differences in approaches to child involvement in the sport. They argue that those more invested in American football are less likely to heed risk information that highlights dangers associated with participation; a finding which may explain the different attitudes present within rugby stakeholders. Boneau *et al.* (2020) do, however, note that increased awareness of the risks involved with playing American football were causing tensions in families, suggesting a shift in attitudes in some areas of this sporting culture.

Us (rugby) versus Them (media)

When risk information is presented via mass media, the hostile media effect suggests that partisans of the sport, as we have in this study, are more likely to view it as biased against them (Gunther & Liebhart, 2006). Across our data, and in line with this contention, the media was widely recognised as playing a key role in shaping public views, but the validity and accuracy of reporting were frequently questioned by a number of participants. Indeed, there was a deep reluctance from some respondents, typically those actively involved in the sport (such as players, coaches and teachers) to acknowledge the potential dangers involved in rugby union. For many, media coverage of injuries was believed to be sensationalism and

inaccurate (see Kuhn *et al.*, 2017). The motivations of the media and the perceived “sensationalising” and “scaremongering” (both terms were frequently used) was attributed to a desire to “sell a story” by “using the increased number in concussions to their advantage” (26 year old, male, Player, Coach, Official / Referee). Another participant claimed that “Headlines sell papers, so it is an attractive story with some shock value. Most people I know involved in the game are not influenced by the media” (22 year old, male, Coach, Teacher). These comments downplayed concussion in rugby, claiming that the media was over-reporting a small number of negative events and creating the perception that concussion was rife within the sport, as shown here:

It can seem from the way things are reported that no one cares about player welfare. You can be left with a perception that all players are suffering from regular concussions at all levels of the sport. (38 year old, male, Player, Coach, Club volunteer)

In addition to scepticism of the media, some participants went further and claimed that risk information about concussion was factually incorrect. At the same time, comments were made about the role of a “select few scientists” in the media, reflective of continued distrust of and attacks against academics and medical professionals who are reporting on the dangers that are involved in some sports (Malcolm, 2018). These views are also indicative of an increasing trend to question the veracity of media reporting, in no small part fuelled by attacks on the media by leading politicians and the rise in “fake news” (Nelson & Taneja, 2018). As identified by one participant, the “RFU and local county bodies need to supplement this [media] information with fact-based information for the grass roots to put everything into perspective” (52 year old, male, Former player and former referee). Here, the implication is again that media reporting is not based on facts or research. The below comment also questioned the knowledge and integrity of medical experts without knowledge of the sport:

Scare-mongering and unsupported theorisation help no-one. Those who have been involved in rugby for upwards of 50 years do not take kindly to one-off "statements" - actual, objective research will be recognised, ideally by people who understand and have been involved in the game. "Statements" by "doctors" never aware of the reality of rugby are disingenuous. (64 year old, male, Coach, Official / Referee, Spectator, Community volunteer, Rugby Educator)

It was also recognised that media coverage had the potential to damage the reputation of rugby, as has been discussed in relation to American football (Sanderson & Cassilo, 2019). For

some individuals, the survival of the sport was seen to be more important than the safety of players. There was a parochial, protectionist tone at times, with an evident worry for the future of the sport. One response made their passion for the sport explicit and stated their worry that media reporting had the potential of “irremediably changing the sport we love” (30 year old, male, Player, Spectator). Again, these discussions were underpinned by a distrust of the media reporting that was exaggerating the dangers for players at most levels of the sport:

Obviously rugby is a collision sport and maintaining safety of players is crucial but there is a risk of media attention causing rugby to change as a sport in terms of safety and regulations. Also, players may be more inclined to lie about their welfare in order to be allowed to play (21 year old, male, Player, Coach, Club volunteer)

The last comment not only reveals a lack of awareness of the potential dangers that can result from a single head trauma (Sariaslan *et al.*, 2016), but it also shows a perception that sub-elite players would be willing to risk their health for the sport.

On the other hand, several responses emphasised a perceived safety-first attitude and inbuilt trustworthiness that would help to ensure the safety of players. One participant stated that “Even when I was playing several years ago, if the captain thought a player had concussion he would substitute that player. I feel the sport always has protected the player” (45 year old, male, Parent, Spectator).

Overall, it was argued that the governing bodies of the sport needed to do more to present positive messages and attitudes toward player safety that would counter the negative messages in the media. In the words of one respondent, it was claimed that “the RFU must do more to manage the media” (52 year old, male, Coach); suggesting that negative images relating to concussion can be minimised through better media coverage. Interestingly, one participant indicated that supposedly biased media reporting was because

The media over hype everything. There is potential risk in rugby as it is a contact sport. Those involved should be educated through rugby channels. (35 year old, male, Coach, Official / Referee, Club volunteer, Parent, Spectator),

whilst another participant argued:

Awareness is key. Media attention helps this. If a player is seriously injured or dies on the field due to a lack of awareness that would be far worse for everyone involved and have a hugely damaging affect [sic] on the game. The game needs to do more to use the media to positively show how rugby is dealing with this and how rare serious injury is in comparison to other sports or pastimes. (45 year old, male, Coach)

As noted in this last comment, media attention was framed as being unfair, and the situation in rugby was frequently compared to other sports. Responses were quick to highlight deficiencies in other sports, attempting to deflect attention away from rugby, a tactic that is frequently used in response to a 'crisis' (Cassilo & Sanderson, 2018). An example of this narrative from one participant includes "Horse riding exposes riders to risk. Heading the ball in football exposes players to risk and all sports expose players and participants to risk." (49 year old, male, Coach, Parent, Spectator). Similarly, another claimed that "rugby considers head injury far more than other sports in which it can occur, such as football. Young people still ski without helmets and this is far more risky" (37 year old, male, Coach, Teacher). Related to the protection of the sport previously mentioned, these responses highlight the deep cultural investment in the sport held by some of the participants. This investment explains the deflection tactics found in the data, representing responses to a perceived crisis facing the sport.

Conclusion

Recent changes to media reporting of injuries and concussion, along with changes to the sport of rugby union, indicate that it has become a more health-conscious game. Such a change is reflective of shifts in societal views of masculinity and the acceptance of risk and injury. In this paper, we sought to explore two questions; what are rugby fans' and stakeholders' views on the potential risks of concussion in rugby union? and what are rugby fans' and stakeholders' perceptions of media coverage of concussion in rugby union? Here, we found evidence of a complex and heterogenous relationship between perceptions of masculinity, views and

attitudes toward mass media, and degree of involvement in rugby union. Nevertheless, and far from being a reinforcer of orthodox masculinity as Murray *et al.* (2016) reported in rugby league, the media was found to play an important role in highlighting the dangers involved in sport, as well as challenging these interpretations.

In addition, this study has revealed that historical notions of masculinity still resonate with many rugby union fans and stakeholders, making them more likely to accept pain and injury within the sport. These individuals believed that injuries and concussion are not only acceptable in sport, but should also be seen as part of everyday life. Such beliefs are contrary to a documented softening in masculinities within Western societies and, significantly, mean that these fans and stakeholders are resistant to changes within rugby union. At the same time, our participants frequently engaged in scapegoating, via nostalgic sentiments, as well as attributing blame to those running the sport, or the modernisation of rugby union, as they attempted to shift away blame for increased injury incidence from rugby union itself.

Although there have been changes in the media reporting of concussion in sport, this study demonstrated that many participants are resistant to the representation of concussion and injury from the media, particularly those who are currently more invested in rugby union via involvement as players, coaches, or teachers. These partisans of the sport see the mass media as hostile and their coverage as biased against rugby union, allowing them to manufacture doubt regarding risk information and maintain their involvement in the sport. As shown, some respondents either remain unaware of the seriousness of concussion or refuse to accept the evidence that has been presented to document the dangers involved. Indeed, in a number of instances, media reporting was viewed as an attack on rugby union and a threat to its existence, reminiscent of fears that have been shown to exist in American football.

Concerningly, the perceived threat to the sport is likely to result in considerable entrenchment by fans and stakeholders and by challenging evidence relating to the consequences of concussion, they are creating an environment in which the health and wellbeing of players are put at risk. These views can, at times, be subtly presented, with individuals arguing that rugby union protects players via rule changes. However, when these stakeholders hold official roles within rugby union, their challenge of risk information and

ability to shape organisational communication presents a potentially dangerous climate. As such, the media has to retain a critical commentary, whilst offering gradual changes and education to consumers. Commentaries which are seen as attacks on the status quo, risk being dismissed, instead of being recognised.

Bibliography

Abernethy, L., & MacAuley, D. (2003). Impact of school sports injury. *British Journal of Sports Medicine*, 37(4), 354.

Adams, A., Anderson, E., & McCormack, M. (2010). Establishing and challenging masculinity: The influence of gendered discourses in organized sport, *Journal of Language and Social Psychology*, 29(3), 278-300. doi:10.1177/0261927X10368833

Adams, J. (1995). *Risk*. Routledge

Adams, M. L. (2011). *Artistic Impressions: Figure Skating, Masculinity, and the Limits of Sport*. Toronto University Press.

Ahmed, O. H., & Hall, E. E. (2017). "It was only a mild concussion": Exploring the description of sports concussion in online news articles. *Physical Therapy in Sport*, 23, 7–13. doi:10.1016/j.ptsp.2016.07.003

Anderson, E. (2009). *Inclusive Masculinity: The Changing Nature of Masculinities*. Routledge.

Anderson, E., & Kian, E. M. (2012). Examining media contestation of masculinity and head trauma in the National Football League. *Men and Masculinities*, 15(2), 152–173. doi:10.1177/1097184x11430127

Anderson, E., & White, A. (2017) *Sport, Theory and Social Problems: A Critical Introduction: 2nd Edition*. Routledge.

Anderson, E., White, A. J., & Parry, K. D. (2020). *Tackling in children's rugby must be banned to curb dementia risks*. The Conversation. <https://theconversation.com/tackling-in-childrens-rugby-must-be-banned-to-curb-dementia-risks-151879>.

Association of Internet Researchers. (2019). *Internet Research: Ethical Guidelines 3.0*. Available at: <https://aoir.org/ethics/>

Batten, J., White, A. J., Anderson, E., & Bullingham, R. (2016). From management to prevention: The new cure for sports concussion, *British Journal of Sports Medicine*, 50(21). doi:bjsports-2015-095949

Bell, T. R., & Sanderson, J. (2016). A hit on American Football: A case study of bottom-up framing through Op-Ed readers' comments. *International Journal of Sport Communication*, 9(4), 499–518. <https://doi.org/10.1123/ijsc.2016-0075>

Benson, P. (2017). Big Football: Corporate social responsibility and the culture and colour of injury in America's most popular sport. *Journal of Sport and Social Issues*, 41(4), 307–334.

Boneau, R. D., Richardson, B. K., & McGlynn, J. (2020). "We Are a Football Family": Making sense of parents' decisions to allow their children to play tackle football. *Communication & Sport*, 8(1), 26–49.

Bourdieu, P. (1993). How can one be a sports fan? In: S. During (Ed.), *The Cultural Studies Reader*. London: Routledge. Pp. 339-355.

Bowley, B. (2013). Soft boys, tough boys and the making of young sporty masculinities at a private boys' school. *Agenda*, 27(3), 87-93.

Bowman, P. (2020). In toxic hating masculinity: MMA hard men and media representation. *Sport in History*, 40(3), 395-410.

Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.

Cantu, R., & Hyman, M. (2012). *Concussions and our kids: America's leading expert on how to protect young athletes and keep sports safe*. Houghton Mifflin Harcourt.

Cassilo, D., & Sanderson, J. (2016). "I Don't Think It's Worth the Risk.": Media Framing of the Chris Borland Retirement in Digital and Print Media. *Communication & Sport*, 6(1), 86–110. doi:10.1177/2167479516654513

Clark, M., & Guskiewicz, K. (2016). Sport-Related Traumatic Brain Injury. In D. Laskowitz, & G. Grant (Eds.), *Translational Research in Traumatic Brain Injury* (Chapter 2). CRC Press/Taylor and Francis Group.

Clayton, B., & Harris, J. (2009). Sport and Metrosexual Identity: Sports media and emergent sexualities. In: J. Harris & A. Parker (Eds.), *Sport and Social Identities*. Basingstoke: Palgrave Macmillan. Pp. 132-149

Cleland, J. (2011). The media and football supporters: a changing relationship. *Media, Culture & Society*, 33(2), 299–315.

Cleland, J., & Cashmore, E. (2014). Fans, Racism and British Football in the Twenty-First Century: The Existence of a 'Colour-Blind' Ideology. *Journal of Ethnic and Migration Studies*, 40(4), 638-654.

Cleland, J., Dixon, K., & Kilvington, D. (2020). *Online research methods in sport studies*. Routledge.

Coakley, J., Hallinan, C., & McDonald, B. (2011). *Sports in Society 2: Sociological Issues & Controversies*. McGraw-Hill.

Collins, C.L., Fields, S.K., & Comstock, R.D. (2008). When the rules of the game are broken: what proportion of high school sports-related injuries are related to illegal activity?, *Injury Prevention*, 14(1), 34-38. doi:10.1136/ip.2007.017277

Connell, R. W. (1987). *Gender and power: Society, the person and sexual politics*. Stanford University Press.

Connell, R. W. (1995). *Masculinities: First Edition*. Polity Press.

Connell, R. W. (2005). *Masculinities: Second Edition*. Polity Press.

Connell, R. W., & Messerschmidt, J. W. (2005). Hegemonic Masculinity: Rethinking the concept. *Gender & Society, 19*(6), 829-859. doi:10.1177/0891243205278639

Coupland, C. (2014). Organizing masculine bodies in rugby league football: groomed to fail. *Organization, 22*(6), 793-809. doi:10.1177/1350508413517409

Cranmer, G. A., & Sanderson, J. (2018). "Rough Week for Testosterone": Public commentary around the Ivy League's decision to restrict tackle football in practice. *Western Journal of Communication, 82*(5), 631-647.

Davis, N. W., & Meyer, B. B. (2009). Qualitative Data Analysis: A procedural comparison. *Journal of Applied Sport Psychology, 21*(1), 116-124.

DeKosky, S. T., Blennow, K., Ikonovic, M. D., & Gandy, S. (2013). Acute and chronic traumatic encephalopathies: pathogenesis and biomarkers. *Nature Reviews Neurology, 9*(4), 192–200. doi:10.1038/nrneurol.2013.36

Dunning, E., (1986). Sport as a Male Preserve: Notes on the social sources of masculine identity and its transformations. *Theory, Culture & Society, 3*(1), 79–90.

Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication, 43*(4), 51-58.

Fraas, M. R., & Burchiel, J. (2016). A systematic review of education programmes to prevent concussion in rugby union. *European Journal of Sport Science, 16*(8), 1212–1218. doi:10.1080/17461391.2016.1170207

Fuller, C. W. (2007). Managing the risk of injury in sport. *Clin J Sport Med, 17*(3), 182-187.

Griffin, S. A., Panagodage Perera, N. K., Murray, A., Hartley, C., Fawkner, S. G., P T Kemp, S., Stokes, K. A., & Kelly, P. (2020). The relationships between rugby union, and health and well-being: a scoping review. *British Journal of Sports Medicine*, 55(6), 319–326. <https://doi.org/10.1136/bjsports-2020-102085>

Gunther, A. C., & Liebhart, J. L. (2006). Broad reach or biased source? Decomposing the hostile media effect. *Journal of Communication*, 56(3), 449-466.

Guskiewicz, K. M., Teel, E., & McCrea, M. C. (2014). Concussion: Key stakeholders and multidisciplinary participation in making sports safe. *Neurosurgery*, 75 suppl_4, S113-S118.

Hargreaves, J. (1986). *Sport, Power and Culture: A Social and Historical Analysis of Popular Sports in Britain*. Cambridge, UK: Polity Press.

Hughes, R., & Coakley, J. (1991). Positive deviance among athletes: the implications of overconformity to the sport ethic. *Sociology of Sport Journal*, 8(4), 307-325.

Karimipour, N., & Hull, K. (2017). Minimised, not medicalized: Media framing of concussions in the NFL on ESPN.com. *Journal of Sports Media*, 12(2), 45–77. doi:10.1353/jsm.2017.0010

Kennard, M., McLellan, T., & McKinlay, A. (2017). Sports media representations of concussions in the National Rugby League. *Australian Psychologist*, 53(1), 97–102. doi:10.1111/ap.12272

Kuhn, A. W., Yengo-Kahn, A. M., Kerr, Z. Y., & Zuckerman, S. L. (2016). Sports concussion research, chronic traumatic encephalopathy and the media: repairing the disconnect. *British Journal of Sports Medicine*, 51(24), 1732–1733. doi:10.1136/bjsports-2016-096508

Lewis, N., & Weaver, A. J. (2015). More than a game: Sports media framing effects on attitudes, intentions, and enjoyment. *Communication & Sport*, 3(2), 219–242.

Light, R. (2007). Re-examining Hegemonic Masculinity in High School Rugby: The body, compliance and resistance. *Quest*, 59(3), 323-338. doi:10.1080/0036297.2007.10483556

Light, R., & Kirk, D. (2000). High school, rugby, the body and the reproduction of masculinity, *Sport, Education and Society*, 5(2), 163-176.

Liston, K., McDowell, M., Malcolm, D., Scott-Bell, A., & Waddington, I. (2018). On being 'head strong': The pain zone and concussion in non-elite rugby union, *International Review for the Sociology of Sport*, 53(6), 668-684. doi:10.1177/101290216679966

Malcolm, D. (2017). *Sport, medicine and health: The medicalization of sport?* Routledge.

Malcolm, D. (2018). Concussion in sport: Public, professional and critical sociologies. *Sociology of Sport Journal*, 35(2), 141-148.

Malcolm, D., & Sheard, K. (2002). "Pain in the Assets": The effects of commercialization and professionalization on the management of injury in English Rugby Union, *Sociology of Sport Journal*, 19(2), 149-169.

McDonald, H., Karg, A. J., & Lock, D. (2010). Leveraging fans' global football allegiances to build domestic league support. *Asia Pacific Journal of Marketing and Logistics*, 22(1), 67-89.

McGannon, K. R., Cunningham, S. M., & Schinke, R. J. (2013). Understanding concussion in socio-cultural context: A media analysis of a National Hockey League star's concussion. *Psychology of Sport and Exercise*, 14(6), 891-899. doi:10.1016/j.psychsport.2013.08.003

McLellan, T. L., & McKinlay, A. (2011). Does the way concussion is portrayed affect public awareness of appropriate concussion management: the case of rugby league. *British Journal of Sports Medicine*, 45(12), 993-996. doi:10.1136/bjsm.2011.083618

Messner, M. (2012). Reflections on communication and sport: On men and masculinities. *Communication & Sport*, 1(1-2), 113-124. doi:10.1177/2167479512467977

Mirer, M., & Mederson, M. (2017). Leading with the head: How NBC's football night in america framed football's concussion crisis, a case study. *Journal of Sports Media*, 12, 21-44.

Muir, K., Parry, K. D., & Anderson, E. (2020). Masculinity and Inclusive Rugby in the United Kingdom. In R. Magrath, J. Cleland, & E. Anderson (Eds.), *The Palgrave Handbook of Masculinity and Sport*. Berlin: Springer International Publishing. Pp. 323-340.

Murray, A., & White, A. (2017). Twelve not so angry men: Inclusive masculinities in Australian contact sports. *International Review for the Sociology of Sport*, 52(5), 536-550. doi:10.1177/1012690215609786

Murray, A., White, A., Scoats, R., & Anderson, E. (2016). Constructing masculinities in the National Rugby League's footy show. *Sociological Research Online*, 21(3), 11. <http://www.socresonline.org.uk/21/3/11.html>.

Nelson, J. L., & Taneja, H. (2018). The small, disloyal fake news audience: The role of audience availability in fake news consumption. *New Media & Society*, 20(10), 3720–3737.

Park, M. K. (2015). Race, Hegemonic Masculinity, and the “Linpossible!”: An analysis of media representations of Jeremy Lin. *Communication & Sport*, 3(4), 367-389.

Parry, K.D. (2012). Game of two passions: a football fan's autoethnography. *Qualitative Research Journal*. 12(2): 238 - 250.

Parry, K.D., Jones, I., & Wann, D.L. (2014). An Examination of Sport Fandom in the United Kingdom: A Comparative Analysis of Fan Behaviors, Socialization Processes, and Team Identification. *Journal of Sport Behavior*, 37(3), 251-267.

Partridge, B. (2013). Dazed and confused: Sports medicine, conflicts of interest, and concussion management. *Journal of Bioethical Inquiry*, 11(1), 65–74. doi:10.1007/s11673-013-9491-2

Piggin, J. (2020). *England Rugby CEO makes “unbelievable” claims about rugby injuries*. Physical Activity Politics. <https://physicalactivitypolitics.com/2020/12/12/england-rugby-ceo-makes-unbelievable-claims-about-rugby-injuries/>.

Pollock, A. M., White, A. J., & Kirkwood, G. (2017). Evidence in support of the call to ban the tackle and harmful contact in school rugby: a response to World Rugby, *British Journal of Sports Medicine*, 51, 1113-1117. doi:10.1136/bjsports-2016-096969

Pringle R. (2005). Masculinities, sport, and power: A critical comparison of Gramscian and Foucauldian inspired tools. *Journal of Sport and Social Issues*, 29(3), 256-278. doi:10.1177/0193723505276228

Proctor, H. (2011). Masculinity and social class, tradition and change: the production of ‘young Christian gentlemen’ at an elite Australian boys’ school, *Gender and Education*, 23(7), 834-856. doi:10.1080/095402353.2010.549114

Pronger, B. (1990). *The Arena of Masculinity: Sports, Homosexuality, and the Meaning of Sex*. St. Martin’s Press.

Providenza, C., Engebretsen, L., Tator, C., Kissick, J., McCrory, P., Sills, A., & Johnston, K. M. (2013). From consensus to action: knowledge transfer, education and influencing policy on sports concussion. *British Journal of Sports Medicine*, 47(5), 332–338. doi:10.1136/bjsports-2012-092099.

Sanderson, J., & Cassilo, D. (2019). “I’m Glad I Played When the Country Still Had Gonads”: Pop Warner’s Kickoff policy change and the framing of health and safety initiatives in football. *Journal of Sports Media*, 14(1), 1-22. doi:10.1353/jsm.2019.0002

Sanderson, J., Weathers, M., Grevious, A., Tehan, M., & Warren, S. (2014). A Hero or Sissy? Exploring media framing of NFL quarterbacks injury decisions. *Communication & Sport*, 4(1), 3–22. doi:10.1177/2167479514536982

Sariaslan, A., Sharp, D. J., D'Onofrio, B. M., Larsson, H., & Fazel, S. (2016). Long-Term outcomes associated with traumatic brain injury in childhood and adolescence: A nationwide swedish cohort study of a wide range of medical and social outcomes. *PLOS Medicine*, *13*(8), e1002103.

Sport Collision Injury Collective. (2016). Open Letter: Preventing injuries in children playing school rugby. Retrieved from: www.sportcic.com/resources/Open%20Letter%20SportCIC%20March1st%202016.pdf

St John, W., & Johnson, P. (2000). The pros and cons of data analysis software for qualitative research. *Journal of nursing scholarship: an official publication of Sigma Theta Tau International Honor Society of Nursing*, *32*(4), 393–397.

Sullivan, S. J., Schneiders, A. G., Cheang, C.-W., Kitto, E., Lee, H., Redhead, J., ... McCrory, P. R. (2012). "What's happening?" A content analysis of concussion-related traffic on Twitter. *British Journal of Sports Medicine*, *46*(4), 258–263. doi:10.1136/bjism.2010.080341

UK Physical Activity Expert Group. (2016) Response to Sports Collision Injury Collective (SCIC) Letter for UK CMOs. Retrieved from: <http://www.sportcic.com/resources/UK%20CMOs%20response%20to%20open%20letter%20on%20preventing%20injuries%20in%20children%20playing%20school%20rugby.pdf>

Ventresca, M. (2019). The Curious Case of CTE. *Communication & Sport*, *7*(2), 135-156. doi:10.1177/2167479518761636

Von Burg, R., & Johnson, P. E. (2009). Yearning for a past that never was: Baseball, steroids, and the anxiety of the American dream. *Critical Studies in Media Communication*, *26*(4), 351-371

Whigham, S., Hobson, M., Batten, J., & White, A. J. (2019). Reproduction in physical education, society and culture: the physical education curriculum and stratification of social class in England. *Sport, Education and Society*, *25*(5), 493–506. <https://doi.org/10.1080/13573322.2019.1619545>

White, A. J. (2020). #BanTackling: An issue of athlete welfare for why tackling should be removed from physical education and school sport. In: M. Lang (Ed.), *Routledge Handbook of Athlete Welfare*. London: Routledge.

White, A. J., & Anderson, E. (2017). Making Men in the 21st Century: Meterosexuality and Bromance in Contemporary Rugby. In: J. Nauright, & T. Collins (Eds.), *The Rugby World in the Professional Era*. London: Routledge. Pp.67-78.

White, A. J., & Franks, B. (2019). Film Review: Concussion. *International Review for the Sociology of Sport*, 54(8), 1020–1024. <https://doi.org/10.1177/1012690219839909>

White, A. J., & Hobson, M. (2017). Teachers' stories: physical education teachers' constructions and experiences of masculinity within secondary school physical education, *Sport, Education and Society*, 22(8), 905-918. doi:10.1080/13573322.2015.1112779

White, A. J., Batten, J., Robinson, S., & Anderson, E. (2018). Tackling in physical education rugby: An unnecessary risk?, *Injury Prevention*, 24(2). doi:10.1136/injuryprev-2017-042672

White, A. J., D. Parry, K. D., Humphries, C., Phelan, S., Batten, J., & Magrath, R. (2020). Duty of Karius: Media Framing of Concussion Following the 2018 UEFA Champions League Final. *Communication & Sport*. doi:10.1177/2167479520948048

Williams, D., Sullivan, S. J., Schneiders, A. G., Ahmed, O. H., Lee, H., Balasundaram, A. P., & McCrory, P. R. (2014). Big hits on the small screen: an evaluation of concussion-related videos on YouTube. *British Journal of Sports Medicine*, 48(2), 107–111. doi:10.1136/bjsports-2012-091853

Workewych, A. M., Ciuffetelli Muzzi, M., Jing, R., Zhang, S., Topolovec-Vranic, J., & Cusimano, M. D. (2017). Twitter and traumatic brain injury: A content and sentiment analysis of tweets pertaining to sport-related brain injury. *SAGE Open Medicine*, 5, 1–11. doi:10.1177/2050312117720057

Wright, J., & Clarke, G. (1999). Sport, the media and the construction of compulsory heterosexuality: A case study women's Rugby Union. *International Review for the Sociology of Sport*, 34(3), 227-243. doi:10.1177/101269099034003001

Table 1. Involvement with rugby union

Option	Frequency
Coach	292
Spectator	197
Parent of player	177
Official / referee	176
Player	154
Club volunteer	134
Teacher	108
Rugby Educator (Coaching, Refereeing, Safeguarding)	47
Community Volunteer	33
Other	32
Employee of the Rugby Football Union	10

SURVEY QUESTIONS

1. There has been an increasing amount of media attention focusing on head trauma in rugby. What are your views on this increasing media attention?

2. There has been a suggestion that concussions can cause long-term brain diseases (such as Chronic traumatic encephalopathy). Were you aware of these risks before they were published in the media?

2.a. Do you have any comments on this:

3. Many everyday activities involve a risk of injury. Therefore, do you feel the media is over-reacting to the potential risks of concussion in rugby?

3.a. Please explain further:

4. World Rugby has hinted at changing the laws around the tackle to reduce the likelihood and severity of head trauma. Is this a move you would support?

4.a. Please explain further:

5. England Rugby have launched the Rugby Safe programme in an attempt to improve player safety in the sport. Do you think they are doing enough to make the game safe for participants?

5.a. Please explain your thoughts:

6. England Rugby have been investing in the training of all those involved in the game (including parents, players, teachers, coaches and officials) through the online Headcase initiative. Have you undertaken any training on concussion in rugby?

6.a. If you answered yes, please tell us about the training and how useful it has been for you:

7. Are you aware of what to do if you suspected someone had concussion?

7.a. If yes, please outline some of the key-points:

8. Have you experienced, or witnessed, a concussion as a result of participation in rugby?

8.a. Please tell us about that:

9. Your age:

10. Your gender:

11. How are you currently involved in rugby?

11.a. If you selected Other, please specify:

12. Please let us know any further comments you have on injury, head trauma, risk and safety within rugby?