



An Investigation into the Effectiveness of the Current Concussion Guidelines in the English Rugby Union

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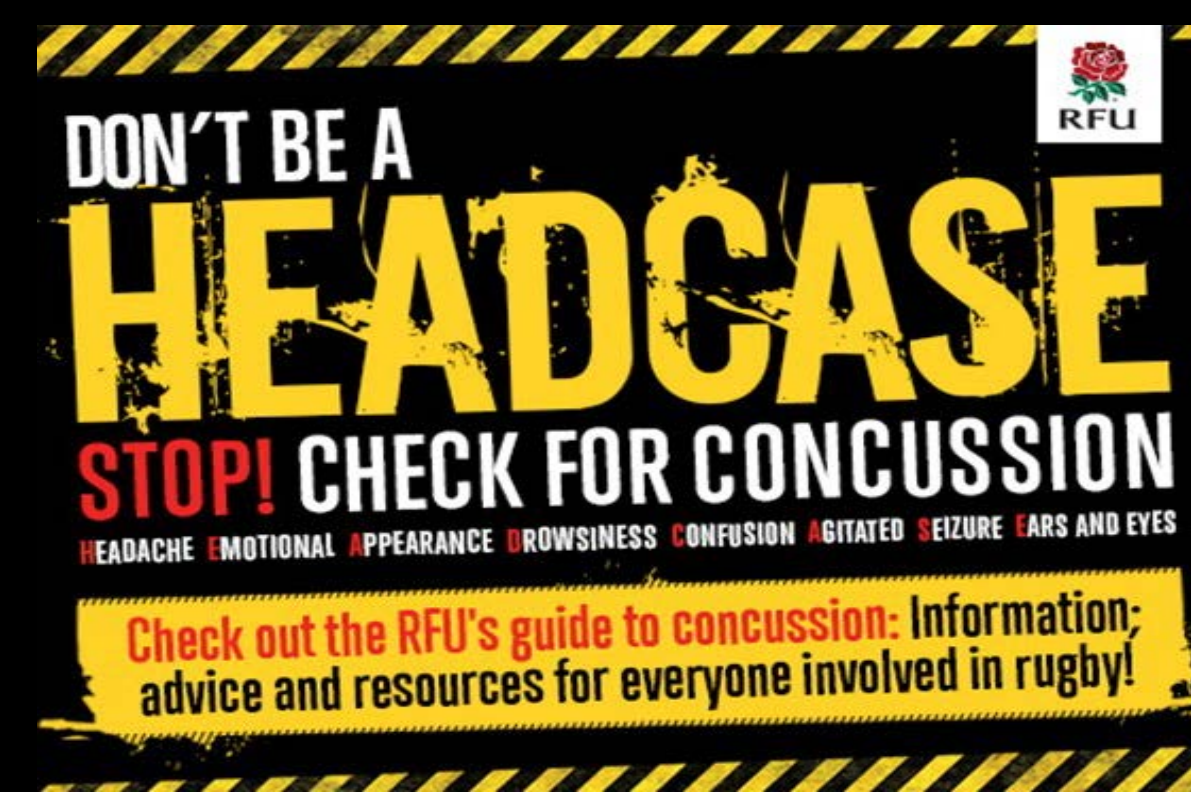


Figure 1: BrainLine (2017)

Figure 2: RFU 'HEADCASE' (RFU, 2017)
Background image: Cleary and Stafford (2017)

Introduction

A concussion can occur as a result of a direct head injury or from an injury that causes an acceleration/ deceleration force to the brain. It affects the brain function but does not result in any structural damage such as brain tissue damage or bleeding into the brain (Raferty and Targett, 2011). Signs and symptoms of a concussion may include headaches, dizziness, vacant expression, vomiting, inappropriate behaviour and loss of consciousness.

During the Rugby World Cup in 2015, there were 12.5 concussions during 1000 player-match-hours (Fuller *et al.*, 2017).

From trying to ban contact in school rugby (Pollock *et al.*, 2017) to the attention of a professional rugby player being knocked out twice in the same international game in 2015 (Morton, 2015), the media has given greater attention to player concussion in recent years.

Diagnosing a concussion is difficult, even for medically trained professionals. There is no 'gold standard' method to assess concussion, as well as there being some limitations on the exact definition (McCrory *et al.*, 2017).

There is evidence of long-term consequences linked to concussion, such as the neurodegenerative disease, chronic traumatic encephalopathy (CTE). Originally, CTE was only found in former boxers, but has now been reported in other contact sports, including a case in rugby union (Calderwood *et al.*, 2016). The occurrence of CTE emphasises the importance of efficient concussion guidelines. It is crucial a player is diagnosed correctly and receives appropriate treatment.

Morton (2015) refers to several problems that have occurred due to incorrect diagnosis and guidance, such as players returning to play too early.

The purpose of this study is to investigate the effectiveness of the current concussion guidelines in the English Rugby Union. Research from the project will highlight any changes that need to be made to the current concussion guidelines, and will provide players and physiotherapists with greater knowledge on the topic.

Literature Review

In England, the Rugby Football Union (RFU) introduced an online 'HEADCASE' training module to educate individuals through its 'recognise, remove, recover, return'.

Batten *et al.* (2016) found only 14% of teachers, who regularly coach rugby, had received any training on concussion management. This backs up Davies (2016) report that standards at some English schools are not safe enough, although they believe it is improving due to the introduction of new interventions.

Pitch-side assessment has improved over the years, with the introduction of the Sport Concussion Assessment Tool (SCAT) during the Second International Conference on Concussion in Sport in 2004 (Yango-Kahn *et al.*, 2016). SCAT is a combination of various concussion measurements and has been supported by several sporting associations (Morton, 2015). In 2016, the fifth international conference was held to collate previous research. During this, the fifth and most recent SCAT test was introduced; SCAT5 (McCrory *et al.*, 2017).

Players may not show signs and symptoms of concussion till 48 hours after the head injury. Fuller *et al.* (2017) found video analysis beneficial for diagnosing a concussion during the Rugby World Cup in 2015. It also allowed the medical team to evaluate their own work. Of the forty-nine concussions found, thirty-nine were first assessed during matches. Two players presented symptoms 36-48 hours' post-match. Initial pitch-side assessments cannot rule out concussion if the players do not show signs immediately. The paper concludes that there is a need for more understanding surrounding delayed-onset concussion.

Cross *et al.* (2016) found professional players that suffered at least one concussion, were 60% more likely to suffer another time-loss injury within the same season. In addition, 38% of players reported a recurrence of symptoms or did not match their baseline neurocognitive test during the graduated return to play. There is a suggestion of an increased focus on active rehabilitation.

Fraas *et al.* (2014) found that only 45% of elite Irish players reported their concussion throughout a season. There were several reasons for not reporting, with 95.1% noting they did not think it was serious enough, 78.0% not realising it was a concussion and 85.4% not wanting to be removed from the game. Further education is necessary to highlight the potential risks, as well as improved diagnosis methods. With 78.0% not realising it was a concussion at the time, this supports Fuller *et al.* (2017) that symptoms can show up to 48 hours' after the head injury.

Method

Quantitative and qualitative research will be collected through interviews with two physiotherapists at professional clubs, and two physiotherapists from amateur clubs.

Online questionnaires distributed to players of these four clubs seek to discover their views and opinions surrounding concussion.

Data will be analysed using thematic analysis and SPSS.

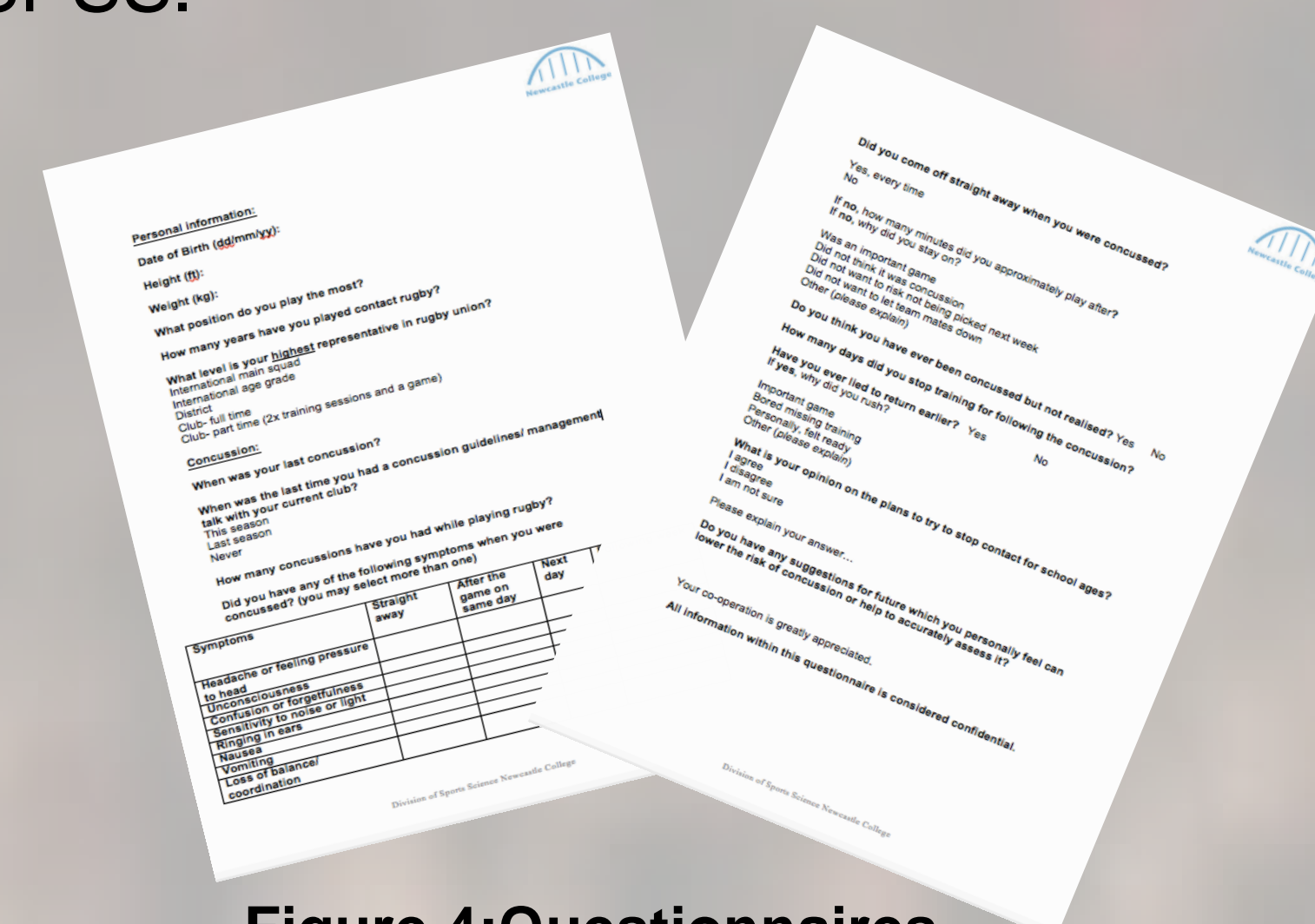


Figure 4: Questionnaires

Expected Findings

It is predicted that concussion diagnosis may be more accurate at more developed clubs as Fuller *et al.* (2017) refers to the benefits of video reviews and the analysis of delayed symptoms.

Following the continuous improvements of guidelines (McCrory *et al.*, 2017), the physiotherapists should have experienced changes throughout their career. It is also expected that the literature will provide scientific reasons for the changes.

Underreporting rates may impact guidelines. Solutions to this will be beneficial for the research.

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Figure 3: SCAT 5 (McCormy *et al.* 2017)