“SOMEONE TO TALK TO”: INFLUENCE OF PLAYER WELFARE PROVISION ON MENTAL HEALTH IN PROFESSIONAL RUGBY LEAGUE PLAYERS

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Declarations of interest: none.

Key words: player welfare; mental health; elite athletes; rugby football league; athletic identity

This is the final version, as accepted for publication in the Journal of Clinical Sport Psychology.
Abstract

Player welfare is an important development in supporting elite athletes during their professional careers. Little is known about how player engagement with player welfare provision impact on mental health. Over two consecutive years, professional rugby football league (RFL) players were invited to complete an anonymous online survey assessing psychological stress, athletic identity, and attitudes to player welfare provision. Findings indicate that nearly half of respondents experienced symptoms of anxiety and depression. Multivariate analyses suggest that higher psychological stress and athletic identity and less knowledge and less positive attitudes to RFL mental health support is associated with worse mental health, whereas older age is associated with better mental health. The study has identified some key variables to focus on in developing player care and support management, and also suggest directions for future research guiding player welfare support, especially regarding increasing positive attitudes to mental health supports.
Introduction

Common mental health disorders (CMDs) include different types of depression and anxiety disorders (Stansfeld et al., 2016). They are associated with a range of emotional, cognitive, behavioural and physical symptoms, and cause substantial emotional distress and interfere with daily function. They are a major public health problem and a major source of disability globally (Stansfeld et al., 2016). The prevalence of CMDs in the general population is around 15% (McManus, Bebbington, Jenkins, & Brugha, 2016), and although generally less debilitating than major psychiatric disorders, due to their relatively high prevalence, the consequences and cumulative cost of CMDs to society is great (Kendrick & Pilling, 2012).

In recent years, there has been an increasing focus on and interest in the mental health and wellbeing of elite athletes (Rice et al., 2016). Although studies have confirmed that physical activity confers positive effects on mental health (e.g., Harvey, Hotopf, Øverland, & Mykletun, 2010), it has also been suggested that experience of performing at an elite sporting level is associated with the potential for negative mental health outcomes. Elite sport is stressful, and athletes face many diverse demands as a consequence of the competitive and challenging environment within which they perform (Mellalieu, Neil, Hanton, & Fletcher, 2009; Nicholls, Holt, Polman, & Bloomfield, 2006). This can increase the possibility of experiencing symptoms of anxiety and depression through overtraining, injury and burnout (Rice et al., 2016). Furthermore, there is evidence of elite athletes having an increased risk of other mental health problems, including eating disorders (e.g., Joy, Kussman, & Nattiv, 2016), body image disorders (Kong & Harris, 2015), alcohol misuse (Lisha & Sussman, 2010) and suicide (Baum, 2005; Rice et al., 2016).

Despite the known demands and stressors that athletes face, research on the mental health of athletes is scarce (Hughes & Leavey, 2012; Reardon & Factor, 2010; Sebbens,
One particular sport where there is a significant lack of evidence on prevalence of symptoms related to CMD is professional rugby league. A recent Australian study of players in the National Rugby League (NRL) and the National Youth Competition (NYC) found an overall prevalence of depression of 12.6% and prevalence of generalized anxiety disorder of 14.6% pre-season, and prevalence of depression of 10% and generalized anxiety disorder of 10% in-season (Du Preez et al., 2017). Rugby league is a high injury risk, collision sport played in over 50 countries worldwide (Gabbett, 2005). Recent research suggests that there may be a greater risk of mental health problems experienced by elite athletes who are injured (Rice et al., 2016). Furthermore, there is evidence that relative to non-contact sport athletes, athletes engaged in contact sports are less willing to seek help for mental health problems (Martin, 2005). Masculine norms associated with competition, aggression, and toughness may limit the willingness to speak out about mental health problems, and perpetuate the assumption that there is low prevalence of CMDs in elite athletes (Reardon & Factor, 2010).

Recent figures suggest that rates of CMDs in elite athletes are equivalent to the general population (Gulliver, Griffiths, Mackinnon, Batterham, & Stanimirovic, 2015; Rice et al., 2016), although one study found higher rates of depression in male U-21 footballers than in the general population (Junge & Feddermann-Demont, 2016). It has also been suggested that what may be diagnosed as depression in the general population may be diagnosed as overtraining in elite athletes, suggesting similarities in symptoms between overtraining and depression. Whether overtraining is a symptom or cause of depression is not clear (Schwenk, 2000). There is further evidence suggesting sub-groups of elite athletes are at increased risk of experiencing mental health problems (Gulliver et al., 2015), therefore, further research into the mental health of elite athletes is warranted.

**Parameters of stress**
Participating in sport at elite level places athletes at risk for CMD, due to the immense pressures of the sporting environment. Previous research has identified a range of stressors to which athletes are exposed, such as injury, making a physical error, making a mental error, watching other competitors, weather conditions, pressure to perform, goals and expectations, fear of failure, lack of form, and difficulties balancing sport and non-sport commitments (McKay, Niven, Lavallee, & White, 2008; Mellalieu et al., 2009; Nicholls et al., 2006; Nicholls & Polman, 2007; Noblet & Gifford, 2002; Thelwell, Weston, & Greenlees, 2007; Woodman & Hardy, 2001). However, for an event or situation to be considered stressful, it must be perceived as stressful (Lazarus & Folkman, 1984). The impact of stressors depends on an initial appraisal of the stressor as perceived as being threatening or demanding and a perception of lack of appropriate resources to manage the stressor (Lazarus & Folkman, 1984). Previous research on elite rugby players has focused on acute sport-related stressors during competition or training (Nicholls, Backhouse, Polman, & McKenna, 2009; Nicholls et al., 2006), in an attempt to identify the types of stressors present. The current study is concerned with the extent to which psychological stress influences mental health, rather than exploring the influence of specific stressors.

Stress is a known risk factor for depression (e.g., Kessler, 1997), and excessive psychological stress might influence the wellbeing (Neil, Hanton, Mellalieu, & Fletcher, 2011), injury risk (Ivarsson et al., 2017), and performance (Nicholls, Polman, & Levy, 2012) of athletes. Thus, it is imperative that those involved in supporting athletes (e.g., coaches, welfare managers, governing bodies) have an understanding of athletes’ experiences of stress and the potential consequences of experiencing stress, so that appropriate and effective interventions can be developed to help athletes cope effectively (McKay et al., 2008).

Athletic identity
An athlete’s identity may also have an influence on their perception of stress and manifestations of CMDs. Athletic identity refers to the degree to which an individual identifies with the athlete role, functioning as a sport-specific component of an individual’s self-concept (Brewer & Cornelius, 2001). Athletic identity can be conceptualised as the combination of cognitive, affective, social and behavioural aspects of identifying with the role of the athlete (Brewer, Van Raalte, & Linder, 1993; Murphy, Petitpas, & Brewer, 1996). This sport-role identification is viewed as an important correlate of athlete behaviour (Grove, Lavallee, & Gordon, 1997), and is associated with the development of a salient self-identity, with positive effects on athletic performance and a greater likelihood of long-term engagement in exercise behaviour (Sparkes, 1998). However, elite athletes with strong athletic identities may not explore other aspects of the self (i.e., academic, social; Brewer & Cornelius, 2001), and so become solely focused on athletic development (Horton & Mack, 2000). Thus, developing a strong athletic identity can have adverse consequences, including risk of psychological and social distress, such as depression (e.g., Doherty, Hannigan, & Campbell, 2016), anxiety and low self-esteem (Carless & Douglas, 2009; Stephan & Brewer, 2007), an inability to develop a healthy, multifaceted identity (Coakley, 1992), social isolation and/or reduced social activity (Horton & Mack, 2000), burnout and sports disengagement (Gustafsson, Kenttä, & Hassmén, 2011), as well as difficulties adjusting to identity crises such as injury, unanticipated retirement or team de-selection (Samuel & Tenenbaum, 2011; Sanders & Stevinson, 2017). A study of male college football players found that those with higher levels of athletic identity reported higher levels of conflict with societal gender role expectations, and more stigma and negative attitudes toward help-seeking (Steinfeldt, Steinfeldt, England, & Speight, 2009). Therefore, in studies of athlete mental health, athletic identity appears to be an important construct to consider, as it can influence emotional and social adjustment throughout an athlete’s career.
**Help-seeking**

Help-seeking tends to be highly stigmatised within sport, and there is evidence that athletes underutilise mental health services, despite a need for these services (e.g., Steinfeldt & Steinfeldt, 2012; Watson, 2006). Athletes have a tendency to minimise signs of weakness (Reardon & Factor, 2010), and the sporting culture with its emphasis on being mentally tough, showing no signs of weakness, and fighting through the pain may be partially to blame (Baum, 2005). Recent qualitative studies have found that stigma, shame, fear, difficulty in or unwillingness to express emotion, lack of problem awareness and low mental health literacy were important barriers to help-seeking in elite athletes (Gulliver, Griffiths, & Christensen, 2012; Wood, Harrison, & Kucharska, 2017).

**Player welfare**

Although research relating to athlete mental health and welfare has considered some of the pressures athletes are faced with, and their potential consequences (e.g., Adie, Duda, & Ntoumanis, 2008; Gorczynski, Coyle, & Gibson, 2017; Hughes & Leavey, 2012), little research has addressed other aspects of rugby players’ welfare or the implications of attitudes towards or levels of engagement with player welfare policies and the impact on mental health. In 2010, the Rugby Football League (RFL) introduced new guidelines to address players’ welfare, alongside their coaching and performance development. Since 2011, it has been compulsory for all clubs to employ a Player Welfare Manager (PWM), who is responsible for player welfare support through signposting players to external agencies (e.g., Sporting Chance, careers coaches) that can provide appropriate support. The term player welfare as used by the RFL is synonymous with terms used in other sports, e.g., ‘player development’ in Rugby Union and ‘player engagement’ in National Football League (NFL), where the focus is on supporting players in achieving a sport/life balance during their careers.
and making a smooth transition out of the game following retirement. The RFL Player Welfare Policy aims to ensure that players are mentally resilient, flexible and able to maintain their finances whilst planning for retirement by engaging in educational opportunities and having a comprehensive understanding of various addictions, substance abuse, and mental health and their relevance to their profession. Thus, player welfare is multifaceted, and the mental health of players needs to be considered concurrently with player engagement with policies, programmes and managers to evaluate how these may impact on the mental health of elite rugby league players. It would be expected that the salience of welfare and individual’s engagement with player welfare policies would impact on an individual’s mental health, although various factors may negatively influence attitudes to help-seeking.

The aim of the present study was to examine the direction and strength of a number of correlates related to mental health; namely, psychological stress, athletic identity and attitudes to player welfare managers and policies. The results from the study have the potential of identifying correlates of mental health, which in turn helps develop a comprehensive understanding of rugby league players’ mental health and wellbeing, which underpin the development of care and support management, which can in turn facilitate performance gains (Rice et al., 2016).

Methods

Participants

For survey 1, 77 professional rugby players (mean age = 25.75, SD = 4.28) completed the survey. For survey 2, 169 professional rugby players (mean age = 25.01, SD = 4.67) completed the survey. For both surveys all respondents were recruited from Super League rugby clubs in the United Kingdom (UK) and one club based in France.

Measures
**Mental health scale.** For this survey, the five-item Mental Health Index (MHI-5) of the 36-item Short Form health survey (SF-36) (Ware Jr. & Sherbourne, 1992) was used to assess current general mental health problems. It is a brief screening questionnaire for depression and anxiety disorders, and is a simple, and valid tool, with good specificity and sensitivity for detecting mood disorders in the general population (Cuijpers, Smits, Donker, Ten Have, & de Graaf, 2009; Rumpf, Meyer, Hapke, & John, 2001). It requires respondents to consider events in the past month (e.g., “How much of the time in the previous 4 weeks have you felt so down in the dumps that nothing can cheer you up”), and responses are on a six-point scale from 1 (all of the time) to 6 (none of the time). After coding, adding, and transforming, MHI-5 scores range from 0 (worst) to 100 (optimal mental health). Psychometric properties have been established (Rumpf et al., 2001). For the current sample, Cronbach’s alpha was .82 for survey 1, and .76 for survey 2. Various cut-offs have been suggested to identify caseness, with a score of 72 or less indicating mental health problems, while a score of 60 or less indicates severe mental health problems (Thorsen, Rugulies, Hjarsbech, & Bjorner, 2013; Van Leeuwen, Van Der Woude, & Post, 2012).

**Psychological stress scale.** In this survey, the 10-item Perceived Stress Scale (PSS-10) was used to assess the extent to which situations in life are perceived as stressful (Cohen, Kamarck, & Mermelstein, 1983; Cohen & Williamson, 1988). Items tap how unpredictable, uncontrollable, and overloading respondents find their lives, and respondents were asked to reflect on events over the past month (e.g., “In the last month, how often have you felt that you could not cope with all the things you had to do”). The responses are on a 5-point scale ranging from 0 (never) to 4 (very often), and a higher score indicates greater psychological stress. Validity and reliability have been established (Cohen et al., 1983; Lee, 2012). For the present sample, Cronbach’s alpha was .85 for survey 1, and .81 for survey 2.
Athletic identity scores. The seven-item Athletic Identity Measurement Scale (AIMS; Brewer & Cornelius, 2001) was used to assess the extent to which players identify with the athlete role. The scale requires respondents to indicate the extent to which they agree to statements relating to aspects of identification (e.g., social identity, exclusivity, and negative affectivity) with the athlete role. The responses are on a scale from 1 (strongly disagree) to 7 (strongly agree), and higher scores indicate stronger identification with the athlete role. Sound psychometric properties have been established (Brewer & Cornelius, 2001; Visek, Hurst, Maxwell, & Watson, 2008). For the current sample, Cronbach’s alpha was .72 for survey 1 and .76 for survey 2.

Player welfare questionnaire. A survey consisting of five subsections, relating to knowledge of and attitudes to RFL club welfare managers and policies (six items, Cronbach’s alpha .95), financial advice and education (four items, Cronbach’s alpha .94 for survey 1, and .91 for survey 2), mental health supports (seven items, Cronbach’s alpha .92 for survey 1 and .87 for survey 2), life style issues (11 items, Cronbach’s alpha .92), and life after rugby (three items, Cronbach’s alpha .85) was constructed. Respondents were asked to rate each statement (e.g., “My club has a welfare manager”, “I know how to access counselling, Sporting Chance and other mental health services should I need to”) on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree), and a higher score indicates higher agreement.

In survey 2, three additional items were added to the club welfare managers and policies subsection (Cronbach’s alpha .93), one additional item added to the life style issues subsection (Cronbach’s alpha .90), and one additional item added to the life after rugby subsection (Cronbach’s alpha .90).

1 Copies can be requested from the corresponding author.
Procedure

Between January and March 2015 and again between January and March 2016 we conducted a cross-sectional internet-based survey of Super League rugby clubs in the UK, including one club based in France. Participant inclusion criteria included being a professional ruby player and playing for one of the Super League rugby clubs. All procedures were reviewed and approved by the host institutions’ ethics panel.

All first team squad members of the full time Super League Rugby clubs were invited to take part in the survey by the club’s player welfare manager. There were no formal sessions to complete the survey. Participants completed an anonymous, self-administered 20-minute online survey in self-selected locations. Each survey was made available for a period of six weeks, and players received regular reminders from their player welfare manager.

Statistical analyses

Due to the anonymous nature of the surveys, data from each survey were separately analysed to ensure independence of observations. Bivariate correlation analyses were conducted to assess the variables which were correlated with the MHI-5 scores, and the statistically significant variables were subsequently entered into multiple regression analyses. Only participant responses with full scores on the MHI-5 were included in the analyses. A priori power analyses suggested a minimum sample size requirement of 84, to achieve 80% power to detect a medium effect size with four predictor variables, and a minimum requirement of 91 with five predictor variables.

Results

Descriptive statistics
For survey 1 the following descriptive statistics can be noted. Responses were returned from 13 out of 14 clubs, and 106 players accessed the survey. Of these, 7 (6.6%) did not consent to take part in the survey, and of the 99 respondents who consented to take part in the survey, 77 players completed the full survey (72.6%). There were no statistically significant differences in age or playing experience between those who did not complete the survey and those who did, $ps > .05$.

The majority of players were single and nearly half had children. The average professional career was 7.29 years ($SD = 6.34$). Although the PSS-10 is not a diagnostic instrument and therefore does not have score cut-offs, the mean psychological stress scores reported by players ($M = 15.51$, $SD = 6.50$) is on par with normative data from the United States of America reported for adults in the same age range ($M = 17.46$, $SD = 7.31$), and males ($M = 15.52$, $SD = 7.44$) (Sheldon Cohen & Janicki-Deverts, 2012). The mean mental health score in survey 1 was 73.04 ($SD = 18.00$). Using a cut-off score of 72 or less, suggests 45.5% of players experience symptoms of depression and anxiety disorders, while using a cut-off score of 60 or less suggests 27.3% of players experience severe symptoms of depression and anxiety disorders. This compares with 13.2% of men in the general population in England having common mental health disorders, comprising different types of depression and anxiety (McManus et al., 2016).

For survey 2, responses were returned from 14 out of 16 clubs, with 206 players accessing the survey. Four did not consent to take part in the survey (1.9%), and of the 202 respondents who started it, complete responses were returned by 169 (82%). There were no statistically significant differences in age or playing experience between those who did not complete the survey and those who did, $ps > .05$.

The descriptive statistics are very similar to survey 1, with over half the respondents being single, and two-thirds having children. The average professional career was 6.04 years
(SD = 4.64). The mean PSS-10 score (M = 14.04, SD = 5.83) is lower than that reported by respondents in 2015, while the mean mental health score (M = 74.41, SD = 15.81) is higher than the score reported in survey 1, indicating better mental health. Using a cut-off score of 72 or less, suggests 38.5% of players experience symptoms of depression and anxiety disorders, while using a cut-off score of 60 or less suggests 23.7% of players experience severe symptoms of depression and anxiety disorders. See Table 1 for a summary of descriptive data.

Predicting mental health survey 1

Age, psychological stress, athletic identity and attitudes towards player welfare managers and policies subscale scores were entered into a multiple regression model in which MHI-5 scores were the outcome variable.

The model was statistically significant (F(4, 60) = 43.76, p < .001) and accounted for 75% of variance in mental health (adjusted R² = .73). Psychological stress was the strongest predictor of mental health scores (β = -.73), followed by athletic identity (β = -.23), and age (β = .15). These results suggest that the higher the psychological stress, and the more players identify with the athlete role, the worse the mental health, whereas older age is associated with better mental health.

Predicting mental health survey 2
As the results from survey 1 suggested age and athletic identity are important correlates of mental health, the data for the second survey were analysed using a hierarchical multiple regression. In the first step, age and athletic identity were entered, $F(2, 153) = .15, p = .86$ and explained 1% of the variance of mental health. In the second step, psychological stress scores, attitudes towards player welfare managers and policies and attitudes towards mental health support were entered. The model was significant, $F(5, 150) = 31.15, p < .001$, and explained an additional 50% of the variance of mental health ($F$ change $(3, 150) = 51.71, p < .001$). Overall, the model accounted for 51% of variance in mental health ($\text{adjusted } R^2 = .49$).

Two of the five predictors were statistically independently associated with mental health scores. Psychological stress was the strongest correlate of mental health ($\beta = -.73$), followed by knowledge of and attitudes towards RFL mental health supports ($\beta = -.16$). These results indicate that the higher the psychological stress and the less knowledge of and less positive attitudes towards RFL mental health support, the worse the mental health.

Discussion

The results of our two-year survey suggest that rates of CMDs may be higher in professional rugby league players than in the general population of men. Our findings indicate that 45.5% of respondents to survey 1 and 38.5% of respondents to survey 2 experienced symptoms of common mental health disorders, while 27.3% of respondents to survey 1 and 23.7% of respondents to survey 2 experienced severe symptoms of common mental disorders. This compares with 13.2% of CMD in the general population of men in England (McManus et al., 2016), and 15.2% of CMD in the general population of men
globally (Steel et al., 2014). While previous studies have indicated that elite athletes experience a broadly comparable risk of common mental health disorders as the general population (Du Preez et al., 2017; Gorczynski et al., 2017; Reardon & Factor, 2010; Rice et al., 2016), our results suggest rugby league players may constitute a sub-group of athletes at increased risk for mental health problems (Gulliver et al., 2015). Why elite rugby players would be at increased risk for mental health problems cannot be answered by data from the current survey. Perhaps the increased risk of injury is one reason for this (Gulliver et al., 2015; Mainwaring, Hutchison, Bisschop, Comper, & Richards, 2010). There is evidence that injury rates are higher in rugby league than in most other collision sports (see Gabbett, 2005), and higher at elite level than at amateur level; attributed to the high playing intensity at elite level (Gabbett, 2005). We did not include any measure of injury or player fatigue, and further research exploring the relationship between injury, player fatigue and mental health is warranted.

Interestingly, there are also suggestions that psychosocial factors influence occurrence of, reaction to, and prevention of sport injuries (Maddison & Prapavessis, 2005; Williams, 2001). Specifically, how athletes respond to stress depends on an interaction between cognitive factors, physiological reactions (e.g., muscle tension), and attentional factors (e.g., increased distractability). The interaction of these variables can increase an athlete’s susceptibility to injury by influencing coordination and flexibility along with interfering with the detection of important environmental stimuli (Maddison & Prapavessis, 2005). Elite athletes may be at a particular risk of experiencing high levels of chronic stress (Nicholls et al., 2009; Noblet, Rodwell, & McWilliams, 2003). Indeed, perceived psychological stress emerged as the strongest correlate of mental health in both surveys, such that the higher the psychological stress, the worse the mental health of players. While previous research among professional rugby players has emphasised sport-related stressors (Nicholls et al., 2006), a
recent study of rugby union players identified a range of sport and non-sport stressors, including friends, sport training and recreation, which differed across rest, training and match days (Nicholls et al., 2009). The findings of the present study add to this literature by demonstrating that perceived psychological stress has a significant negative association with mental health in elite rugby league players.

It should be noted that we used a generic, non-specific measure of perceived stress, rather than one focused exclusively on sport-related stressors or non-competitive stressors. The measure of psychological stress used assesses how unpredictable, uncontrollable, and overloaded players find their lives (Cohen & Williamson, 1988). In doing so, we have assessed a global, broad and rigorous representation of perceived stress encountered by elite rugby league players, and have not limited assessment to competitive stressors, organisation-related stressors or life stressors, for which previous literature has been criticised (Nicholls et al., 2009). While an understanding of the specific stressors elite athletes face is important in order to develop stress prevention strategies, our findings highlight the importance of assessing psychological stress as an interaction between perceived demands and perceived coping ability. The results suggest that attention should be paid to perceived stress levels in elite athletes, as higher stress levels are associated with reduced mental health. Thus, the consequences of experiencing excessive levels of psychological stress can be significant, and influence not only mental health and emotional well-being, but also sporting performance and injury risk (Nicholls et al., 2009; Maddison & Prapavessis, 2005). As such, perceived psychological stress is damaging not just for the individual player, but can also negatively influence team success (Williams et al., 2016).

Athletic identity and older age emerged as independent correlates of mental health in survey 1, but not in survey 2. It is likely this reflects the differences in sample size and other cohort effects between the two survey times, and serves to underline the importance of
prospectively investigating correlates of mental health in elite athletes. Additionally, although speculative, it is possible that changes made to RFL player welfare on the basis of findings from the 2015 survey may have influenced responses, and can partially explain the differences in significant independent correlates of mental health. That less knowledge of and less positive attitudes towards RFL mental health support is associated with worse mental health in survey 2, even when other correlates are controlled for, would suggest this. However, we are unable to infer any changes in responses to changes in RFL policy from the data collected here, as no attempt was made to track responses from players across the two surveys.

Nevertheless, attitudes to and knowledge of RFL mental health support emerges as a significant independent correlate of mental health, and is an important and novel finding. While controlling for all other variables, positive attitudes to and knowledge of mental health supports is associated with better mental health. This suggests that, while it can be difficult to protect elite athletes from ‘undue risk’, increasing positive attitudes towards mental health supports and mental health literacy, may serve to increase help-seeking behaviour, reduce stigma and thus reduce mental health disorders (Bauman, 2016; Coyle, Gorczynski, & Gibson, 2017; Gulliver et al., 2012). The extents to which attitudes to and knowledge of mental health support predict help-seeking in elite athletes remain to be assessed. However, a recent Australian study found that a brief mental health literacy workshop, delivered to coaches and support staff working with elite athletes, was successful in increasing knowledge of CMDs and confidence in ability to help someone experiencing a mental health problem (Sebbens et al., 2016). The authors suggest that even a very brief intervention can aid in promoting early intervention and timely referral of elite athletes with mental health concerns to appropriate professionals. Future research is required to further explore this.

**Implications for interventions**
While previous research suggests that elite athletes are as likely to experience CMDs as the general population, our results indicate that some elite athletes may be more likely to experience CMDs than the general population. This study has identified some risk factors to mental health in elite rugby league players, namely perceived psychological stress, athletic identity, age, and attitudes to mental health support.

There is no universal solution to addressing mental health in elite sport. All sports have different needs, due to different organisational structures; however, the results from the present study provide additional knowledge of what factors may be important to consider in designing prevention and treatment programmes. Importantly, by developing interventions focused on improving attitudes towards and knowledge of mental health supports, those involved in supporting elite athletes could help improve athletes’ help-seeking behaviour (Coyle et al., 2017). Recent studies have found that curriculum-based mental health awareness programmes increased mental health knowledge and intentions to offer support in coaching staff (Breslin, Haughey, Donnelly, Kearney, & Prentice, 2017) and in athletes (Breslin et al., 2018). Results from other studies provide evidence for knowledge-based interventions aimed at increasing mental health literacy or reducing stigma (e.g., Sebbens et al., 2016; Wood et al., 2017; Gulliver et al., 2012). It is imperative that early detection and prompt access to high-quality, evidence-based interventions is available for elite athletes with mental health needs (see e.g., Rice et al., 2016).

What is clear is that sport needs to be proactive in supporting elite athletes. In the UK, sporting organisations are encouraged to have a mental health action plan and to sign up to a mental health charter, such as the ‘Mental Health Charter for Sport and Recreation’ (Mind, Professional Players Federation, & Sport Recreation Alliance, 2017) to establish and embed mental health within their organisations. The recent Mental Health and Elite Sport Action Plan (Department for Digital, Culture, Media & Sport, 2018) is further aimed at
improving mental health support to elite athletes, including training for coaches and support staff to identify the signs of poor mental health. Finally, further methodologically rigorous intervention studies are required to provide an empirical evidence base of effective interventions to increase mental health in elite athletes.

**Limitations**

The following limitations should be noted. Firstly, the survey was voluntary, so we cannot rule out response bias, with players interested in player welfare choosing to respond to the survey or those with perceptions of stigma choosing not to participate, thus potentially reducing the generalizability of results. The survey link was distributed to all player welfare managers across the 16 RFL Super League teams, who encouraged players to complete the survey. While we have no way of knowing if all players were made aware of the survey, there was a potential participant pool of over 400 contracted elite players. Nevertheless, the samples in both studies closely match the entire population of RFL players on the basis of age and playing experience. Secondly, our *a priori* power analysis suggested a minimum sample of 84 to adequately power the regression analyses, but for Survey 1 our final sample fell slightly short of this (N = 77), possibly inflating the variance accounted for. Finally, the study employed a cross-sectional design, so no causal inferences can be made. While important correlates of mental health have been identified, the predictive power of these would be strengthened by longitudinal research.

**Conclusion**

In conclusion, elite rugby league players appear to be at greater risk than men in the general population of experiencing CMDs. Key correlates identified include psychological stress, athletic identity, age, knowledge of and attitudes towards RFL mental health supports. As pointed out by Rice and colleagues (2016) it is imperative that further high-quality
epidemiological and intervention studies are conducted to ensure that the assessment and management of the mental health needs of elite athletes’ is on par with their physical needs.

Acknowledgements: We gratefully acknowledge the insightful comments of Prof Peter Clough on a previous draft of this paper.

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

References


Carless, D., & Douglas, K. (2009). ‘We haven’t got a seat on the bus for you’or ‘all the seats are mine’: narratives and career transition in professional golf. *Qualitative research in sport and exercise, 1*(1), 51-66.


Cuijpers, P., Smits, N., Donker, T., Ten Have, M., & de Graaf, R. (2009). Screening for mood and anxiety disorders with the five-item, the three-item, and the two-item Mental Health Inventory. Psychiatry Research, 168(3), 250-255.


Williams, S., Trewartha, G., Kemp, S. P., Brooks, J. H., Fuller, C. W., Taylor, A. E., . . .


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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration playing rugby</td>
<td>7.29 (6.34)</td>
<td>1-26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Stress</td>
<td>15.51 (6.50)</td>
<td>2-35</td>
<td></td>
<td>0-40</td>
</tr>
<tr>
<td>Mental health symptoms (MHI-5)</td>
<td>73.04 (18.00)</td>
<td>20-100</td>
<td></td>
<td>0-100</td>
</tr>
<tr>
<td>Athletic Identity</td>
<td>37.69 (6.02)</td>
<td>24-49</td>
<td></td>
<td>7-49</td>
</tr>
<tr>
<td>Player WFM Policies</td>
<td>25.23 (4.63)</td>
<td>6-30</td>
<td></td>
<td>6-30</td>
</tr>
<tr>
<td>Financial Advice</td>
<td>14.20 (4.03)</td>
<td>5-20</td>
<td></td>
<td>4-20</td>
</tr>
<tr>
<td>Mental Health</td>
<td>27.09 (5.19)</td>
<td>14-35</td>
<td></td>
<td>7-35</td>
</tr>
<tr>
<td>Lifestyle</td>
<td>42.08 (8.52)</td>
<td>23-55</td>
<td></td>
<td>11-55</td>
</tr>
<tr>
<td>Rugby End</td>
<td>11.40 (2.56)</td>
<td>5-15</td>
<td></td>
<td>3-15</td>
</tr>
</tbody>
</table>
Table 2. Demographic information for survey 2 (n = 168)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N (%)</th>
<th>Mean (SD)</th>
<th>Range</th>
<th>Possible Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td>24.89 (4.62)</td>
<td>17-36</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>100</td>
<td>(60)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/Living as married</td>
<td>63 (38)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced/Separated</td>
<td>2 (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No children</td>
<td>111</td>
<td>(66)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have children</td>
<td>57 (34)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration playing rugby</td>
<td></td>
<td>6.02 (4.64)</td>
<td>1-20</td>
<td></td>
</tr>
<tr>
<td>Perceived Stress</td>
<td></td>
<td>14.04 (5.83)</td>
<td>2-29</td>
<td>0-40</td>
</tr>
<tr>
<td>Mental health symptoms (MHI-5)</td>
<td></td>
<td>74.41 (15.81)</td>
<td>24-100</td>
<td>0-100</td>
</tr>
<tr>
<td>Athletic Identity</td>
<td></td>
<td>37.51 (6.21)</td>
<td>18-49</td>
<td>7-49</td>
</tr>
<tr>
<td>Player WFM Policies</td>
<td></td>
<td>37.87 (7.17)</td>
<td>10-45</td>
<td>6-45</td>
</tr>
<tr>
<td>Financial Advice</td>
<td></td>
<td>13.78 (3.85)</td>
<td>4-20</td>
<td>4-20</td>
</tr>
<tr>
<td>Mental Health</td>
<td></td>
<td>26.42 (5.13)</td>
<td>8-35</td>
<td>7-35</td>
</tr>
<tr>
<td>Lifestyle</td>
<td></td>
<td>46.16 (8.50)</td>
<td>23-60</td>
<td>12-60</td>
</tr>
<tr>
<td>Rugby End</td>
<td></td>
<td>14.95 (3.43)</td>
<td>4-20</td>
<td>4-20</td>
</tr>
</tbody>
</table>
Table 3. Multiple regression analysis results for correlates of mental health survey 1

<table>
<thead>
<tr>
<th>Model</th>
<th>$R^2$</th>
<th>$\beta$</th>
<th>B</th>
<th>SE</th>
<th>CI 95% (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>- .73***</td>
<td>-2.04</td>
<td>.19</td>
<td>-2.42 / -1.66</td>
<td></td>
</tr>
<tr>
<td>AIMS$^a$</td>
<td>-.23**</td>
<td>-.73</td>
<td>.23</td>
<td>-1.19 / -.27</td>
<td></td>
</tr>
<tr>
<td>WF policy</td>
<td>.12</td>
<td>.48</td>
<td>.28</td>
<td>-.08 / 1.04</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.15*</td>
<td>.64</td>
<td>.31</td>
<td>.01 / 1.26</td>
<td></td>
</tr>
</tbody>
</table>

Note. Statistical significance: * p < .05; ** p < .01; *** p < .001

$^a$AIMS = Athletic identity
Table 4. Hierarchical multiple regression analysis results for correlates of mental health survey 2

<table>
<thead>
<tr>
<th></th>
<th>R²</th>
<th>β</th>
<th>B</th>
<th>SE</th>
<th>CI 95% (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.04</td>
<td>.14</td>
<td>.28</td>
<td>-.28/.42</td>
<td></td>
</tr>
<tr>
<td>AIMS</td>
<td>-.01</td>
<td>-.02</td>
<td>.22</td>
<td>-.44/.41</td>
<td></td>
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<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>.51***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.02</td>
<td>.06</td>
<td>.20</td>
<td>-.35/.46</td>
<td></td>
</tr>
<tr>
<td>AIMS</td>
<td>.06</td>
<td>.15</td>
<td>.16</td>
<td>-.15/.46</td>
<td></td>
</tr>
<tr>
<td>Stress</td>
<td>-.73***</td>
<td>-2.00</td>
<td>.17</td>
<td>-2.33/-1.67</td>
<td></td>
</tr>
<tr>
<td>WM Policies</td>
<td>.11</td>
<td>.23</td>
<td>.14</td>
<td>-.05/.52</td>
<td></td>
</tr>
<tr>
<td>MH Support</td>
<td>-.16*</td>
<td>-.47</td>
<td>.21</td>
<td>-.88/-0.07</td>
<td></td>
</tr>
</tbody>
</table>

Note. Statistical significance: * p < .05; ** p < .01; *** p < .001

AIMS = Athletic identity