Mental Health Literacy, Help-Seeking, and Mental Health Outcomes in Women Rugby Players

Shakiba Oftadeh-Moghadam [a, *] and Paul Gorczynski [a]

School of Sport, Health and Exercise Science, University of Portsmouth, Spinnaker Building, Cambridge Road, Portsmouth, PO1 2ER, United Kingdom [a]

*Corresponding author. Shakiba Oftadeh-Moghadam

Email address: Shakiba.moghadam@port.ac.uk

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Abstract

Within rugby, a plethora of research has focused on male rugby players, with some recent attention being directed to examining their mental health. Such attention has not been evident for their female rugby counterparts. The aims of this study were to ascertain levels of mental health literacy (MHL) and explore demographic differences in United Kingdom semi-elite rugby players who identified as women, and examine whether MHL is associated with better mental health outcomes and general help-seeking intentions. In total, 208 semi-elite women rugby players completed an online multi-section questionnaire measuring MHL, general help-seeking intentions, distress, and well-being. Overall, most players scored a low rating of well-being, however those who indicated a previous mental health problem exhibited significantly higher levels of MHL. Players were more likely to display general help-seeking intentions towards an intimate partner or a friend than a healthcare professional. High levels of distress were reported in 64.4% of players, particularly those who had been previously medically diagnosed with a mental disorder and bisexual rugby players. MHL was significantly, positively correlated with general help-seeking intentions, but not significantly correlated with distress or well-being. This study is the first to examine MHL in women rugby players and suggests that strategies devised by multi-disciplinary teams of experts to help promote, engage and offer tailored mental health support to women rugby players would be beneficial. Further investigations exploring the determinants of, and barriers to, MHL amongst women rugby players would be worthwhile to better understand and support players throughout their sporting career.

Introduction

Mental health symptoms and disorders in elite sport has gained a great deal of attention in the last few years (Reardon et al., 2019). Mental health is defined as "a state of well-being in which every individual realises his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community" (World Health Organisation, 2001, p.1). Recent research has revealed that elite athletes are not resistant to poor mental health, which can adversely influence their well-being and performance (Foskett & Longstaff, 2018; Gorczynski et al., 2017b). Competing in an elite sport can be stressful and expose athletes to demands such as media scrutiny, sudden and prolonged injuries, and unexpected retirement (Gorczynski et al., 2019). In spite of these challenges, few athletes seek professional help for mental health symptoms and disorders. Lack of willingness to seek professional help may stem from several factors. Firstly, athletes may have a poor understanding of recognising mental health issues and are uncertain of where they should seek professional mental health guidance (Coyle et al., 2017). Secondly, public and self-stigma attached to mental health symptoms and disorders may prevent athletes from seeking help due to fears of negative stereotypes, such as being perceived as "weak minded", which may, in turn, diminish their sporting reputation (Reardon et al., 2019). Accordingly, evidence-based strategies are required to address the causes of poor mental health in elite athletes and provide supportive resources that are embedded across various sporting organisations (Reardon et al., 2019). One way to achieve this is through mental health promotion strategies (Gorczynski et al., 2019). One such strategy is mental health literacy (MHL). Here, MHL refers to an individual's knowledge and beliefs about mental health and how they influence one's intentions to seek support (Jorm et al., 1997). MHL is a strategy committed to promoting mental health knowledge and positive attitudes toward mental health and ensuring mental health inequities

are addressed through the removal of barriers to seek support (Gorczynski et al., 2019). Further to this, Rickwood et al.'s (2005) theory of help-seeking conceptualises help-seeking as a process initiated by one's awareness of mental health symptoms and disorders, and appraisal of having a problem that may require intervention. This theory highlights the pertinent relationship between MHL and help-seeking, as individuals with higher levels of MHL are more likely to portray and act on help-seeking intentions and recommend professional help to others (Cheng et al., 2018). Within sport, MHL focused interventions have successfully improved the recognition of mental health symptoms and disorders, increased professional referral knowledge, reduced stigma and enhanced general help-seeking intentions (Breslin et al., 2017b). Gorczynski et al. (2020a) suggested that MHL focused interventions should be grounded in behavioural theory, stages of development, and deep understanding of cultural and social issues related to sport participation. One group who may benefit from such intervention, are semi-elite women rugby players.

Within the realm of sport psychology, the concept of mental health symptoms and disorders amongst elite athletes has gained a great deal of discussion, with recent epidemiological evidence suggesting that mental health symptoms and disorders in elite athletes are prevalent (Gorczynski et al., 2020a). However, within rugby, only a handful of researchers have focused on common mental disorders including anxiety, major depressive disorder, sleep disturbance, eating disorders, adverse nutrition and alcohol use in rugby players. Gouttebarge and colleagues (2017b) have found that the prevalence of symptoms of anxiety and depression seems slightly higher (30%) in professional rugby players in comparison to other occupational populations (e.g., working professionals). Gouttebarge et al. (2017b) was the only study to include women rugby players in their participant pool. Brown et al. (2017) found that male players who were forced to retire were twice as likely to report symptoms of distress in comparison to those who retired voluntarily. Whilst

Gouttebarge et al. (2016) suggested that prevalence of common mental disorder symptoms are high amongst retired male rugby players but only when associated with a higher number of life events (e.g., "Death of spouse") and a higher level of rugby career dissatisfaction. McMillan et al. (2017), Gouttebarge et al. (2017a) and Decq et al. (2016) examined exposure to repeated brain injury (concussion) in male rugby players and revealed athletes who reported a history of four or five concussions (17% in Rugby) were approximately 1.5 times more likely to report symptoms of common mental disorders in comparison to former professional athletes reporting no concussions. More recently, Kola-Palmer et al. (2019) and Nicholls et al. (2020) highlighted that elite male rugby players appear to be at greater risk than men in the general population in experiencing common mental disorders. Kilic et al. (2019) found that male rugby players who have sustained concussion or severe injuries are up to two times more likely to develop symptoms of distress, adverse alcohol use or anxiety/depression than those without a history of concussion and/or severe injuries. A narrative review that investigated the mental health of rugby players (Moghadam & Gorczynski, 2020), found limited research on the mental health of rugby players who identified as women, suggesting that future research should prioritise the examination of women rugby player's mental health and well-being to better inform interventions, like MHL.

Women competing in sports traditionally considered "male dominated" (e.g., boxing, judo) may experience being marginalised and stereotyped, whilst others may also face unequal training opportunities and resources (Blodgett et al., 2017). Sexualisation, traditional gender roles, religion and ethnic beliefs all dictate the opportunities presented to women athletes (Pfister, 2010). For example, some professional women athletes are forced to train outside of their native countries and may struggle to find a support network and cultural understanding from their new teammates (Castaldelli-Maia et al., 2019). On top of these unique, gender specific challenges, women athletes are more likely to report depressive

symptoms, social anxiety and eating disorder symptoms increasingly more than their male counterparts (Gorczynski et al., 2017a). Previous research has highlighted that athletes have shown greater perceived public stigma compared to non-athletes, whilst public stigma, self-stigma and lack of MHL were highlighted as predominant barriers to elite athletes seeking mental health support (Castaldelli-Maia et al., 2019). Similarly, recent research with professional male rugby football league players revealed that help-seeking was associated with better MHL, whereas perceived barriers to help-seeking included lower MHL and stigma (Kola-Palmer et al., 2020). However, such exploration has not been established from the prospect of women rugby players.

Previous research has shown that individuals who identify as lesbian, gay, bisexual, transgender or queer (LGBTQ+) have substantial disparities in health and access to health care worldwide, with all ages of the LGBTQ+ reporting worse physical and mental health outcomes than cisgender and heterosexual people due to stress. Research on LGTBQ athletes is scarce. Kroushus and Daveron (2016)'s study with college student-athletes illustrated that sexual minority student-athletes had a higher risk of experiencing mental health difficulties than their nonathlete peers. Additionally, those from diverse ethnicities experience considerable barriers to accessing mental health services for reasons such facing double social stigma (based on ethnic minority status and on experiencing mental illness) (Karadzhov & White, 2020). A useful framework for understanding diverse populations' help-seeking attitudes is Cauce et al.'s (2002) Model for Mental Health Help Seeking, which explains three interconnected aspects of help seeking: (a) problem recognition, (b) decision to seek help, and (c) service selection. A key assumption of this model is that cultural worldviews, including those shaped by race/ethnicity and gender, are vital in the help-seeking process and influence all three domains of the model. For example, race/ethnicity may influence (a) whether certain issues are perceived as mental health related, (b) help-seeking

intentions, and (c) what types of services are acceptable (Cheng et al., 2018). These demographic differences are crucial in understanding the disparities that may exist within women rugby players and may lead to strategies that promote all forms of inclusivity and mental health support within a sporting environment.

The aforementioned inequalities coupled with heightened exposure to mental disorders, places women rugby players in a vulnerable, high-risk sub-category of athletes. Participation levels in rugby are at an all-time high with 2.7 million women rugby players world-wide (England Rugby, 2019), however despite this unprecedented growth, the academic research in this population is minimal. The mental health of women rugby players is neglected as this area of research has not been investigated thoroughly and therefore requires research to better understand this population, followed by rigorous, high-quality intervention-based studies. Accordingly, the purpose of this study was to ascertain levels of MHL, general help-seeking intentions, distress and mental well-being, and explore demographic differences in United Kingdom (UK) semi-elite rugby players who identified as women. A secondary aim was to examine whether MHL in the participant population is associated with better mental health outcomes and intentions to seek help.

Methodology

Participants

A total of 208 women participated in the study. Demographic information is available in Table 1.

Measures

In addition to demographic information, the following scales were used: Mental Health Literacy Scale; The General Help Seeking Questionnaire; Kessler Psychological Distress Scale; and The Warwick-Edinburgh Mental Well-Being Scale.

Mental Health Literacy Scale (MHLS)

The MHLS is a 35-item MHL questionnaire (O'Connor & Casey, 2015), which assesses the following six aspects of MHL: disorder recognition, knowledge of help-seeking information, knowledge of risk factors and causes, understanding of self-treatment, awareness of professional treatments available, and attitudes toward promoting positive mental health or help-seeking behaviour (e.g., "To what extent do you think it is likely that Personality Disorders are a category of mental illness"). The lowest score on the MHLS is 35 and the highest is 160 with higher scores indicating greater MHL. The MHLS has a good internal consistency and test-retest reliability ($r = .797$, $p < .001$) (O'Connor & Casey, 2015). Cronbach's alpha in the current sample was .818. Questions nine and ten in the MHLS were modified to be specific to the UK context, where "Australia" was switched with "UK."

The General Help-Seeking Questionnaire (GHSQ)

In accord with previous research examining MHL (Gorczynski et al., 2017b), one question ("If you were having a personal or emotional problem, how likely is it that you would seek help from the following people?") from the GHSQ was used to assess participants' intentions to seek help for mental health problems (Wilson et al., 2007). The participants scored their level of intention to seek help from various individuals (e.g., friend, mental health care professionals, intimate partner) on a scale of one (extremely unlikely) to seven (extremely likely). The higher the score, the higher the intention to seek help for mental health problems. Previous research has shown the GHSQ has a satisfactory test-retest reliability ($r = .92$) and is a flexible measure of general help-seeking intentions that can be applied to a range of contexts (Wilson et al., 2007). Moreover, the GHSQ has been shown to be significantly correlated to seeking access to counselling ($r_s = .17$, $p < .05$) (Wilson et al., 2007).

Kessler Psychological Distress Scale 10 (K10)

The K10 (Kessler et al., 2002) is a measure of psychological distress which involves 10 questions (e.g., "During the last 30 days, about how often did you feel worthless?") about the frequency an individual experiences different emotional states in the most recent four-week period, with a five-level response scale. The participants scored their level of agreement on the scale of one (none of the time) to five (all of the time) with higher scores representing higher levels of distress. The total scores range from 10 to 50 with scores under 20 signifying that an individual is likely to be well. As indicated by the Australian Bureau of Statistics (2007) the K10 has been shown to have good discriminant validity and good reliability (Kessler et al, 2002) and a satisfactory internal consistency. Cronbach's alpha in the current sample was .789.

The Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)

The WEMWBS (Tennant et al., 2007) is a 14-item scale which helps determine how frequently individuals experience different forms of mental well-being through five response categories with scores ranging from 14-70 (higher scores indicate greater mental well-being). Participants were asked how often they experienced different forms of positive mental health (e.g., "I've been feeling confident") on a scale of one (none of the time) to five (all of the time). The WEMWBS has a good internal consistency and good test-retest reliability (r = .83) (Tennant et al., 2007). Cronbach's alpha in the current sample was .947.

Procedures

This study was based on Gorczynski et al.'s (2017b) research examining mental health literacy and mental health outcomes in UK university students and was conducted between April 2019 and October 2019. Once ethical approval was obtained from the University of Portsmouth's Ethical committee, UK based rugby clubs were contacted via email outlining the aims of the study. Overall, 362 rugby clubs were contacted through snowball sampling. Contacts were found in the England Rugby Clubs directory handbook.

Out of 362 rugby clubs, 130 clubs did not respond, whilst 93 emails were no longer functioning. Consequently, 139 rugby clubs agreed to circulate the invitation via their contacts and/or social media platforms, providing a response rate of 38.4%. However, the overall response rate was unknown and significantly smaller than 38.4% as not all members of each club participated.

For clubs who indicated an interest, an invitation email was sent informing the gatekeepers about the independence of the project, and that the club was simply facilitating access to players. Along with this, a web link of the multi-section questionnaire was distributed to the rugby players as well as a participant information sheet and a consent form. Participants were made aware that the multi-section questionnaire would take approximately 10 minutes to complete. Participants were also informed of the inclusion and exclusion criteria. Consequently participants had to be an active UK based semi-elite (club's first team or at a higher level, for example premiership level) rugby player who identified as a woman, be 18 years or older, and able to read and comprehend texts fluently in English. If players were non-UK semi-elite rugby players and did not identify as a woman, they were excluded from the study. No players were excluded from the study as they all met the inclusion criteria. The term semi-elite was derived from Swann et al. (2015, p.11), whereby "*semi-elite* athletes are those whose highest level of participation is below the top standard possible in their sport (e.g., in talent-development programs, competing at second-tier standard or below, etc.)". Once participants provided their consent, they were able to complete the multi-section questionnaire on Google forms.

Data Analysis

To ascertain levels of MHL, general help-seeking intentions, distress and mental well-being, and explore demographic differences descriptive statistics were conducted. In line with previous research (Gorczynski et al., 2017b) differences in mental health measures were

explored using analyses of variance (ANOVA) for different demographic factors, including sexual orientation, level of education, ethnicity, number of years spent competing in semi-elite rugby, family history of poor mental health and previous medical diagnosis of a mental disorder. For results that yielded significant outcomes, Bonferroni post hoc analysis was conducted to determine further relationships. The one-way ANOVA is a robust test against violations of normality and can tolerate violations (Kim, 2013). Consequently, a visual inspection of Q-Q plot, which are appropriate to interpret in case of medium sized samples (e.g., $n < 300$) (Ghasemi & Zahediasl, 2012) were used to determine normal distribution. Upon inspection the Q-Q plots revealed that the data was normally distributed. To examine whether MHL in the participant population is associated with better mental health outcomes and intentions to seek help, Pearson's correlations were used, as well as Partial correlations controlling for each demographic variable.

Previous research examining the same phenomena in a different population gathered between 80-300 participants (Gorczynski et al., 2020c; Sullivan et al., 2019). For the purpose of this study, this project aimed to recruit 200 participants to gain a better understanding of the mental health literacy of women rugby players. The sample size could also be determined by using the formula for a cross-sectional study, i.e., sample size (n) = $Z^2\ p\ q/d^2$ (Charan & Biswas, 2013). Where n is the sample size, Z is the statistic corresponding to the level of confidence, i.e., 1.96–95% confidence interval (CI), p is expected prevalence (obtained from same studies or a pilot study), and d is the precision (corresponding to effect size).

Results

MHLS Overall

The mean score for MHL was 132.28 (SD = 9.99, range = 100.00 - 151.00, 95% CI = 130.91 - 133.64). All means and standard deviations, for each measure, is presented in Table 2. No significant differences in MHL scores were observed between heterosexual/straight

participants, bisexual participants, gay woman/ lesbian participants and the other category, $F(4, 203) = 1.20$, $p = .31$. In terms of participants' level of education, no significant differences in MHL were detected between high/secondary school, A Level, undergraduate, Masters, and PhD level of education, $F(4, 203) = 2.05$, $p = .09$. No significant differences in MHL were seen between the White, Mixed, Asian, and Black ethnicities, $F(3, 204) = 0.51$, $p = .68$. No significant differences in MHL were seen in the number of years participants competed in semi-elite rugby, $F(6, 201) = 1.08$, $p = .37$. MHL scores were significantly higher in participants who had a history of poor mental health in their family in comparison to those who did not and those who were not aware, $F(2, 205) = 3.22$, $p = .04$. Bonferroni post hoc tests were conducted and none of the paired comparisons were significant at the 0.05 significance level. There was a significant difference in the participants who indicated a previous medical diagnosis of a mental disorder to those who hadn't been diagnosed with a mental disorder, $F(2, 205) = 15.09$, $p < .001$. The Bonferroni post hoc analyses revealed that participants who indicated a previous medical diagnosis scored significantly higher MHL scores than those who had not been diagnosed with a mental disorder.

GHSQ overall

The mean score for general help-seeking intention was 34.12 ($SD = 7.96$, range = 14.00 - 54.00, 95% $CI = 33.03 - 35.20$). Participants indicated they would be more likely to display general help-seeking intentions towards an intimate partner ($M = 5.43$, $SD = 1.76$) or a friend ($M = 5.25$, $SD = 1.60$), and least likely to display such intentions towards a formal religious leader ($M = 1.39$, $SD = 1.03$). Overall, there were no significant differences in help-seeking intentions between participants' sexual orientation, $F(4, 203) = 2.10$, $p = .08$, as well as their level of education, $F(4, 207) = 0.07$, $p = .99$. No significant differences were observed between the various ethnicities, $F(3, 204) = 0.76$, $p = .52$, along with the number of years participants competed in semi-elite rugby, $F(6, 201) = 0.78$, $p = .59$. No other

significant differences were noted between those with a history of poor mental health in their family, $F(2, 205) = 0.64$, $p = .53$, and participants with previous medical diagnosis of a mental disorder, $F(2, 205) = 0.11$, $p = .90$.

K10 Overall

The mean score for distress was 29.15 (*SD* = 4.24, range = 22.00 - 47.00, 95% *CI* = 28.57 - 29.73). In total, 208 individuals indicated a score of high (*n* = 134, 64.4%) or very high (*n* = 74, 35.6%) levels of distress (in the most recent four-week period). There was a significant difference between sexual orientation in the K10 scores, $F(4,203) = 2.88$, $p = .02$. Post hoc Bonferroni tests revealed that participants who identified as bisexual were significantly more likely to experience distress than those who identified as heterosexual, or gay woman/lesbian. No significant differences were observed in the participant's level of education, $F(4,203) = 2.04$, $p = .09$, ethnicity, $F(3,204) = 2.27$, $p = .08$ and the number of years they competed in semi-elite rugby, $F(6,201) = 0.41$, $p =. 87$. However, there was a significant difference between participants' history of poor mental health in their family in the K10 scores, $F(2,205) = 6.09$, $p =. 003$. Post hoc Bonferroni tests highlighted that those who indicated a history of poor mental health in their family were significantly more distressed than those who had no previous history of poor mental health in their family, or who did not know of such history. Additionally, there was a significant difference in participants' K10 scores amongst those who indicated a previous diagnosis of a mental disorder and those who didn't indicate such diagnosis, $F(2,205) = 9.92$, $p < .001$. Post hoc Bonferroni tests revealed that individuals who were previously medically diagnosed with a mental disorder were significantly more likely to experience distress than those with no previous medical diagnosis of a mental disorder.

WEBMWBS Overall

The mean score for well-being was 44.88 (*SD* = 12.38, range = 14.00 - 70.00, 95% *CI* = 43.18 - 46.57). Although bisexuals indicated the lowest levels of well-being in comparison to heterosexuals and gay woman/lesbian participants, these differences were not significant, $F(4, 203) = 1.93$, $p = .11$. Participants who had obtained a Masters degree scored significantly higher well-being scores than participants who'd gained high/secondary school qualifications, A level qualifications, undergraduate degree/s, and PhD degree/s, $F(4, 203) = 2.84$, $p = .03$. However, the Bonferroni post hoc tests revealed no further significant differences between the paired comparisons at the 0.05 significance level. No significant differences were seen in participants' ethnicity, $F(3, 204) = 0.07$, $p = .98$ and the number of years they competed in semi-elite rugby, $F(6, 201) = 0.75$, $p = .61$. Participants who didn't identify previous family history of poor mental health scored significantly higher well-being scores than participants who indicated a family history of poor mental health, and those who didn't know, $F(2, 205) = 3.51$, $p = .03$. The Bonferroni post hoc tests revealed no further significant differences between the paired comparisons. There was a significant difference between participants' WEBMWBS scores and those who indicated a previous diagnosis of a mental disorder and those who didn't indicate such diagnosis, $F(2, 205) = 6.281$, $p = .002$. The post hoc Bonferroni tests highlighted that individuals with previous medical diagnosis of a mental disorder experienced significantly lower levels of well-being than those with no previous diagnosis of a mental disorder.

Correlations between MHL, General Help-Seeking Intentions and Mental Health Outcomes

MHLS was significantly positively correlated with GHSQ total score, indicating higher MHLS scores were associated with greater intentions to seek help. GHSQ total score was significantly negatively correlated with K10, and significantly positively correlated with WEMWBS, indicating that individuals who showed greater help-seeking intentions had

lower levels of distress and higher levels of well-being, respectively. No significant relationships were found between MHLS and K10, and MHLS and WEMWBS, indicating that levels of MHL were not significantly associated with levels of distress or well-being. All correlations and their respective significant values are reported in Table 3.

Partial correlations were run to determine the strength of relationships between mental health outcomes, while controlling for each demographic factor. Small, negative, and significant partial correlations between K10 and GHSQ scores were found, while controlling for age, sexual orientation, ethnicity, years competing, level of education, history of poor mental health in the family, and a previous diagnosis of a mental disorder, respectively. Regarding K10 and WEMWBS, large, negative, and significant partial correlations were found while controlling for age, sexual orientation, ethnicity, years competing, level of education, history of poor mental health in the family, and a previous diagnosis of a mental disorder, respectively. The relationship between K10 and WEMWBS was moderate, negative, and significant while controlling for mental health rating. For MHLS and GHSQ, small, positive, and significant partial correlations were found while controlling for each demographic variable investigated separately. For the relationship between MHLS and WEMWBS, small, positive, and significant partial correlations were found while controlling for mental health rating, history of poor mental health in the family, and a previous diagnosis of a mental disorder, respectively. Between GHSQ and WEMWBS, moderate, positive, and significant partial correlations were found while controlling for each demographic variable investigated separately. For all partial correlations, please see Table 3.

Discussion

The purpose of this study was to ascertain levels of MHL, general help-seeking intentions, distress and mental well-being, and explore demographic differences in UK semi-elite rugby players who identified as women. A secondary aim was to examine whether MHL

in the participant population was associated with better mental health outcomes and general help-seeking intentions. Overall, those who indicated a previous medical diagnosis of a mental disorder exhibited significantly higher levels of MHL. No other factors were associated with any significant differences in MHL. The rugby players were more likely to display general help-seeking intentions towards an intimate partner or a friend rather than a healthcare professional. Additionally, players with previous medical diagnosis of a mental disorder reported lower levels of well-being than those with no previous medical diagnosis. Those who identified as bisexual reported higher levels of distress than those who identified as heterosexual or gay woman/lesbian. Furthermore, players who indicated a history of poor mental health in their family exhibited higher levels of distress than those who didn't indicate such history in their family. Participants who indicated a medical diagnosis of a mental disorder exhibited significantly higher levels of distress than those with no previous medical diagnosis. No other factors were associated with any significant differences in distress or well-being. Although MHL was significantly positively correlated with general help-seeking intentions, it was not significantly correlated with distress or well-being. Fluctuations in the partial correlations showed that experiencing a somewhat good or excellent mental health rating while completing the questionnaires may have had an impact on examined variables MHLS, K10, WEMWBS, and GHSQ.

Mental Health Literacy and General Help-Seeking Intentions

Women rugby players had higher levels of MHL (132.3) than other populations, including UK female (129.2) and male medical students (124.5; Marwood & Hearn, 2019), UK sport coaches (123.10; Gorczynski et al., 2020b), athletic staff in intercollegiate sport (131.48; Sullivan et al., 2019) and university and high school students (104-127, Gorczynski et al., 2020c; Gorczynski et al., 2017). Although women rugby players' MHL scores were higher than those reported in previous studies, it is not clear if they are significantly different

with respect to knowledge, attitude, and intentions to seek support. In line with previous findings (Gorczynski et al., 2020b; Gorczynski et al., 2017b), rugby players with greater overall MHL scores were more likely to display help-seeking intentions. Previous research that has examined help-seeking intentions in athletes has similarly highlighted that athletes are generally aware of where to gain professional mental health guidance due to the promotion of mental health campaigns (e.g., Rugby Players Association's Lift the Weight Campaign) (Breslin et al., 2017a). In support of previous research (Marwood & Hearn, 2019; O'Connor & Casey, 2015) individuals who indicated a previous medical diagnosis of a mental disorder scored better on the MHLS, suggesting that those with previous direct experience with mental illness have greater levels of MHL. This may in part be due to the player's exposure to mental health guidance as a result of their personal diagnosis and attempt at understanding their symptoms and management strategies (Marwood & Hearn, 2019). This may also be the case for those who noted mental health problems within their family.

Randomised controlled trial research is required to ascertain the levels of MHL and its relationship with help-seeking in a wider, more diverse population which includes semi-elite to world-class elite women rugby players from multiple nations. Such research will help better understand players' mental health needs based on their cultural values and ethnic identities.

Mental Health Literacy and Distress and Well-Being

Rugby players within this study indicated high (64.4% of players) or very high (35.6% of players) levels of distress with 35.6% of the players having had a previous mental disorder diagnosis and 20.2% rating their mental health as "Somewhat Poor". The lack of relationship between MHL and distress and well-being requires further examination as levels of distress are extremely high within this population despite the above-average MHL mean

score. It is worth noting that bisexual rugby players had low scores on the well-being questionnaire and higher scores on the distress questionnaire, suggesting that this sub-section of women rugby players warrant further attention to better understand the disparity in scores in comparison to those who did not identify as bisexual. Similarly, Kroshus and Davoren (2016) noted that gender and sexual minority athletes are at a higher risk of experiencing mental health problems than their heterosexual counterparts, whilst Krane et al. (2010) highlighted that the mental health needs of LGBTQ+ athletes has to be centralised within sports to better support this population of athletes.

Future Research and Implications

Following Gorczynski et al.'s (2020a) eight-step recommendations for improved practice and research in MHL interventions, future research should consider the development of a MHL intervention which is established on the basis of engaging with women rugby players to better understand the barriers they experience within their sporting careers. Such efforts should foster collaboration by way of sharing collected data, engaging with coaches and support staff and in turn triangulating each source of information to help enhance evidence-based practice. Furthermore, researchers have recently advised that such interventions should move forward from cross-sectional studies and consider theoretically driven interventions in all aspects of design and analysis (Shannon et al., 2019). Such research should also consider conducting longitudinal experimental design, in which allocation to groups is randomised. Based on the findings of this study, future research should draw specific attention to recruiting transgender rugby players and those who are from diverse ethnicities as these populations are scarce and underrepresented within the realm of rugby and academic research.

Certain limitations to the present study must be noted. First, all participants were UK based semi-elite rugby players, who had mainly experienced training in UK rugby clubs, thus

limiting the generalisability of these findings to women rugby players across other nations. Future research should prioritise recruiting a wider (e.g., professional, grass root players), internationally focused female population. Second, due to the nature of cross-sectional studies, only relationships may be assumed from these results and not causation, consequently, future research examining MHL should adopt longitudinal studies and investigate different formats of interventions against control groups. Third, this study relied on self-report measures, where social desirability may have had an impact on answers given. This calls for future research to explore social desirability and strategies to reduce it in future questionnaire designs. However, this study is the first to examine MHL in women rugby players, consequently the results will pave the way for forthcoming research and provide a baseline to assess future cross-sectional and intervention-based studies. Despite a small sample size, particularly in participants from diverse ethnicities and sexual minorities, the detailed demographic data gathered from this study will aid the design of future studies and interventions.

Conclusion

The findings revealed that MHL is associated with better general help-seeking intentions, however high levels of distress were reported in 64.4% of players, particularly those who had been previously medically diagnosed with a mental disorder and bisexual players. Strategies need to be devised by multi-disciplinary teams of experts such as psychiatrics, sport psychologists, social workers, and other health care professionals to help promote, engage, and offer tailored mental health support to women rugby players. Ultimately, further investigations need to explore the determinants of, and barriers to, MHL and well-being amongst rugby players who identify as women to better understand and thus support the players throughout and after their sporting career.

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Table 1

Participant Demographic Information

Characteristics	*M* (*SD*)	*N* (%)
Age	25.34 (5.92)	
Years competing		
Less than one year		18 (8.7)
One year		19 (9.1)
Two years		33 (15.9)
Three years		30 (14.4)
Four years		22 (10.6)
Sexual orientation		
Heterosexual/Straight		118 (56.7)
Bisexual		42 (20.2)
Gay Woman/ Lesbian		41 (19.7)
Prefer not to say		4 (1.9)
Mental health rating		
Excellent		19 (9.1)
Somewhat Good		69 (33.2)
Average		61 (29.3)
Somewhat Poor		42 (20.2)
Poor		17 (8.2)
Level of education		
High/Secondary School		10 (4.8)
A Level		55 (26.4)
Undergraduate		110 (52.9)
Masters		28 (13.5)
PhD		5 (2.4)
Ethnicity		
White		195 (93.8)
Mixed ethnicity		7 (3.4)
Asian		1 (.5)
Black		5 (2.4)
History of poor mental health in family		
No		91 (43.8)
Yes		73 (35.1)
Do not know		44 (21.2)
Prefer not to say		
Previous diagnosis of a mental disorder		
No		131 (63.0)
Yes		74 (35.6)
Prefer not to say		3 (1.4)

Table 2

Means and Standard Deviations for Mental Health Outcomes

Years competing	<1 year	1 year	2 years	3 years	4 years	5 years	6 years or more
N	18	19	33	30	22	23	63
MHLS	133.78 (9.32)	130.74 (11.26)	128.91 (8.29)	133.97 (10.35)	134.05 (9.08)	133.39 (9.62)	132.25 (10.76)
GHSQ	34.28 (8.91)	34.79 (6.37)	32.42 (8.22)	36.33 (8.24)	35.00 (7.98)	33.22 (8.16)	33.71 (7.83)
K10	29.39 (4.00)	29.11 (4.46)	29.18 (4.84)	28.27 (3.59)	28.68 (3.34)	29.83 (4.54)	29.43 (4.46)
WEMWBS	45.83 (9.04)	44.53 (12.32)	43.73 (12.57)	47.30 (10.90)	48.09 (13.33)	42.04 (14.01)	44.06 (12.93)

Sexual orientation	Heterosexual/ straight	Bisexual	Gay woman/lesbian	Prefer not to say	Other
N	118	42	41	4	3
MHLS	131.40 (10.53)	134.63 (8.86)	132.85 (9.40)	126.50 (9.29)	134.00 (9.85)
GHSQ	35.18 (7.96)	32.21 (7.40)	33.93 (7.23)	30.50 (15.18)	26.33 (8.62)
K10	28.66 (4.35)	30.93 (4.59)	28.76 (2.99)	31.00 (4.55)	26.67 (3.22)
WEMWBS	45.29 (12.53)	41.52 (11.19)	48.07 (12.69)	37.50 (12.04)	41.67 (9.29)

Mental health rating	Excellent	Somewhat good	Average	Somewhat poor	Poor
N	19	69	61	42	17
MHLS	133.37 (7.81)	131.07 (10.38)	129.90 (10.00)	136.50 (8.32)	134.06 (11.49)
GHSQ	38.16 (9.52)	35.43 (7.65)	31.93 (7.75)	34.74 (6.86)	30.53 (7.96)
K10	27.84 (1.98)	27.03 (2.17)	28.69 (3.42)	31.26 (4.65)	35.71 (5.41)
WEMWBS	56.26 (13.47)	52.51 (8.99)	42.07 (9.19)	37.36 (8.09)	29.82 (11.23)

Level of education	High/secondary school	A level	Undergraduate	Masters	PhD
N	10	55	110	28	5
MHLS	130.40 (9.06)	132.56 (9.05)	131.32 (10.76)	136.86 (8.366)	128.40 (6.58)
GHSQ	35.10 (9.47)	34.29 (8.94)	34.06 (7.61)	33.68 (7.46)	33.80 (6.14)
K10	30.70 (3.97)	30.27 (4.87)	28.75 (3.96)	28.14 (3.78)	28.20 (3.70)
WEMWBS	37.50 (8.96)	42.27 (11.99)	46.45 (13.11)	47.71 (10.04)	37.60 (5.32)

Ethnicity	Mixed	Asian	Black	White
N	7	1	5	195

MHLS	129.00 (9.47)	124.00	131.60 (10.36)	132.46 (10.03)
GHSQ	30.29 (8.28)	40.00	35.20 (5.22)	34.19 (8.01)
K10	28.86 (4.98)	40.00	28.60 (2.88)	29.12 (4.20)
WEMWBS	45.86 (14.55)	40.00	44.80 (13.52)	44.87 (12.37)
History of poor mental health in family	No	Yes	Do not know	
N	91	73	44	
MHLS	130.97 (9.26)	134.64 (9.86)	131.07 (11.11)	
GHSQ	34.41 (7.97)	34.48 (8.44)	32.91 (7.12)	
K10	28.03 (3.46)	30.19 (4.90)	29.75 (4.05)	
WEMWBS	47.41 (11.54)	43.16 (13.83)	42.48 (10.70)	
Previous diagnosis of a mental disorder	No	Yes	Prefer not to say	
N	131	74	3	
MHLS	129.54 (9.77)	136.93 (8.67)	137.00 (7.00)	
GHSQ	34.16 (8.22)	34.12 (7.42)	32.00 (12.29)	
K10	28.19 (3.60)	30.78 (4.77)	31.00 (4.58)	
WEMWBS	47.10 (12.68)	41.30 (11.09)	36.00 (3.00)	

Table 3

Correlations and Partial Correlations Controlled for Demographic Variables Between MHLS, K10, WEMWBS, and GHSQ

	Pearson r MHLS	Partial r Age	Partial r Years competing	Partial r Sexual orientation	Partial r Mental health rating	Partial r Level of education	Partial r Ethnicity	Partial r History of poor mental health in family	Partial r Previous diagnosis of a mental disorder
K10	.09	.10	.09	.09	.03	.11	.09	.08	.04
WEMWBS	.13	.13	.13	.13	.27**	.12	.13	.14*	.19**
GHSQ	.17*	.16*	.17*	.18*	.20**	.17*	.17*	.17*	.18**

	Pearson r K10	Partial r Age	Partial r Years competing	Partial r Sexual orientation	Partial r Mental health rating	Partial r Level of education	Partial r Ethnicity	Partial r History of poor mental health in family	Partial r Previous diagnosis of a mental disorder
MHLS	.09	.10	.09	.09	.03	.11	.09	.08	.04
WEMWBS	-.53**	-.53**	-.53**	-.54**	-.31**	-.52**	-.54**	-.52**	-.51**
GHSQ	-.15*	-.14*	-.15*	-.15*	-.06	-.16*	-.15*	-.14*	-.15*

	Pearson r WEMWBS	Partial r Age	Partial r Years competing	Partial r Sexual orientation	Partial r Mental health rating	Partial r Level of education	Partial r Ethnicity	Partial r History of poor mental health in family	Partial r Previous diagnosis of a mental disorder
MHLS	.13	.13	.13	.13	.27**	.12	.13	.14*	.19**
K10	-.53**	-.53**	-.53**	-.54**	-.31**	-.52**	-.54**	-.52**	-.51**
GHSQ	.37**	.36**	.37**	.37**	.33**	.38**	.37**	.36**	.37**

	Pearson r GHSQ	Partial r Age	Partial r Years competing	Partial r Sexual orientation	Partial r Mental health rating	Partial r Level of education	Partial r Ethnicity	Partial r History of poor mental health in family	Partial r Previous diagnosis of a mental disorder
MHLS	.17*	.16*	.17*	.18*	.20**	.17*	.17*	.17*	.18**
K10	-.15*	-.14*	-.15*	-.15*	-.06	-.16*	-.15*	-.14*	-.15*
WEMWBS	.37**	.36**	.37**	.37**	.33*	.38**	.37**	.36**	.37**

* Correlation is significant at the 0.05 level
** Correlation is significant at the 0.01 level