

1 **Mental Health Literacy Intervention to Reduce Stigma toward Mental Health**

2 **Symptoms and Disorders in Women Rugby Players: A Feasibility Study**

3

Abstract

This feasibility study aimed to evaluate the effectiveness of an educational intervention on stigma toward mental health symptoms and disorders, mental health literacy, and help-seeking intentions among UK semi-elite women rugby players. Seven semi-elite women rugby players participated. An A-B-A single-case experimental research design was used to assess stigma toward mental health symptoms and disorders, mental health literacy, and help-seeking intentions at baseline, intervention, and follow-up phases. The intervention was successful in enhancing the player's mental health literacy and reducing stigmatising attitudes towards seeking professional psychological help. Acknowledging the study's small sample size, the findings revealed that there is a need for scaffolding to support future developments, advancements and maintenance of mental health support within women's rugby. Practical implications of future findings from a larger scale study may lead to policy reformation across the game to inform and improve systemic mental health support for women rugby players.

Key words: help-seeking, mental health, well-being, female athletes, contact sports, gender

31

Introduction

32 An increasing number of scholars have explored the prevalence and treatment of
33 mental health symptoms and disorders in athletes (Rice et al., 2016; Reardon et al., 2019),
34 concluding that athletes are subjected to both career-specific and general factors that may
35 lead to mental health symptoms and disorders (Reardon et al., 2019). A meta-analysis, which
36 selected data symptoms of distress, sleep disturbance, anxiety/depression and alcohol misuse,
37 identified a prevalence of anxiety and depression symptoms in elite athletes as 34%
38 (Gouttebauge et al., 2019), which is more than double that identified in the general population
39 (15.7%; McManus et al., 2016). If left untreated, mental health symptoms and disorders can
40 lead to physical, psychological, social, functional and occupational difficulties (Zivin et al.,
41 2015). Consequently, seeking professional psychological help is essential for the prevention,
42 early detection and treatment of (and recovery from) mental health symptoms and disorders
43 (Gulliver et al., 2012a).

44 Despite the aforementioned negative outcomes, mental health help-seeking is low
45 among athletic populations (Wahto et al., 2016). There are myriad factors which may
46 contribute to athletes' lack of engagement in help-seeking. Athletes may be fearful of their
47 teammates' and coaches' negative reactions upon seeking mental health help, and appearing
48 "weak" (Gulliver et al., 2012b; Lopez & Levy, 2013). There may be concerns about losing
49 their place in a starting team or the removal of their contract altogether (Bauman, 2016).
50 Athletes may even mask their insecurities due to the constant pressures of performing to a
51 high standard (Breslin et al., 2019). Public and self-stigma have also been reported to act as
52 barriers to help-seeking among athletes (Bauman et al., 2016; Castaldelli-Maia et al., 2019).
53 On top of these factors, other barriers include low levels of mental health literacy (MHL;
54 Gulliver et al., 2012b), denial of any mental health symptom difficulties (Uphill et al., 2016),

55 a lack of accessible mental health services (Lopez & Levy, 2013), and a lack of willingness to
56 expresses emotions (Gulliver et al., 2012b).

57 A recent systematic review by Oftadeh-Moghadam and Gorczynski (2022) revealed
58 that the prevalence of mental health symptoms in rugby players ranged from 6% for
59 depression to 68.8% for alcohol use/misuse, with one study comprising of women rugby
60 players. Cross-sectional research has shown that 60% of semi-elite women rugby players
61 experience high levels of distress in their careers (Oftadeh-Moghadam & Gorczynski, 2021).
62 Given high levels of distress amongst women rugby players, mental health promotion
63 strategies may be required to aid players in seeking guidance from healthcare professionals
64 and better understand their mental health. One strategy to help raise awareness of mental
65 health is in the form MHL training, which may enable rugby players to have a better
66 understanding of mental health, increase their awareness of symptoms of mental disorders
67 and address players' intentions to seek professional help (Oftadeh-Moghadam & Gorczynski,
68 2022).

69 MHL refers to an individual's knowledge and beliefs about mental health and mental
70 health symptoms and disorders and may influence one's intentions to seek support (Jorm et
71 al., 1997). Research has shown that improvements in MHL may be associated with improved
72 help-seeking intentions amongst women rugby players (Oftadeh-Moghadam & Gorczynski,
73 2021). Kola-Palmer et al. (2020) also noted that help-seeking was associated with better
74 MHL and higher perceived psychological stress in professional male rugby players. In a
75 series of interviews with women rugby players, Oftadeh-Moghadam et al. (2022) explained
76 that players noted the importance of raising awareness about mental health symptoms and
77 disorders, treatment and self-awareness through educational routes. In other words, the rugby
78 players noted the importance of increasing players' MHL. MHL interventions have proven
79 successful within other sporting settings. For example, Vella et al.'s (2021) study with male

80 adolescents who participated in community-based sports clubs revealed that their MHL
81 focused intervention showed significant benefits in depression literacy, anxiety literacy,
82 intentions to seek help from formal sources, confidence to seek mental health information,
83 resilience, and well-being, as well as a decrease in stigmatising attitudes towards mental
84 health symptoms and disorders. Similarly, Liddle et al.'s (2021) MHL intervention (Help Out
85 a Mate) with male adolescents from a community football club reported significant increases
86 in knowledge of signs and symptoms of mental illness, intentions to provide help to a friend
87 who may be experiencing a mental health problem, and attitudes that promote problem
88 recognition and help-seeking. However, Ojio et al.'s (2021) cross-sectional study with
89 Japanese male rugby players revealed that although the players needed mental health support,
90 educational approaches encouraging players to seek support did not necessarily increase help-
91 seeking. Nonetheless, such evidence is currently limited, if not absent, with women athletes,
92 particularly women rugby players and thus warrants investigation.

93 Rugby is fundamentally considered as a masculine sport. It portrays the masculine
94 virtues of physicality, competitiveness and ingenuity (Tovia, 2014). Women's involvement in
95 rugby contradicts these values as the concept of femininity comprises cooperativeness,
96 emotional responses, gentleness, and passivity, all qualities that are not considered in rugby
97 (Crawley et al., 2008). To date, rugby is considered as a patriarchal, male-dominated sport
98 that represents the values and elements of male culture (Tovia, 2014), and depicts women
99 rugby players as non-conformists in the eyes of society. Various aspects of rugby (e.g.,
100 contact sport) and the culture of rugby encourage the violation of traditional feminine gender
101 roles (Fallon & Jome, 2007), which may place women rugby players in a predicament.
102 Women rugby players are not only exposed to the abovementioned risks of participating in
103 rugby (e.g., high rates of injury, concussion), however, the added pressures of societal
104 expectations, and fighting for their existence in a male-dominated sport is a further gender-

130 intervention, where session one focused on MHL, session two focused on the concept of
131 empathy, session three focused on counter stereotyping, and session four focused on contact
132 with another player's experience with mental health symptoms and disorders. The tasks
133 outlined in Chow et al.'s (2020) sessions were also used within this intervention; however,
134 they were tailored to suit the context of rugby. Oftadeh-Moghadam and Gorczynski's (2021)
135 work with semi-elite women rugby players was also used to help guide the intervention.
136 Ultimately, the intervention delivered information on mental health symptoms and disorders,
137 challenged beliefs and attitudes about mental health symptoms and disorders and aimed to
138 remove barriers to help-seeking (Gorczynski et al., 2021). This intervention was educational
139 in nature, not therapeutic.

140 **Study Design**

141 The A-B-A single case experimental research design method was chosen to examine
142 the feasibility and acceptability of the MHL intervention in this population before proceeding
143 to conduct a larger-scale study. By utilising a small sample size, single case experimental
144 designs enable researchers to examine the efficacy, feasibility and acceptability of a
145 particular intervention and its components in a rigorous and resource-efficient manner before
146 employing a larger randomised controlled design (Gorczynski, 2013). Feasibility studies are
147 conducted with flexible methods and help assess the research and the intervention process
148 (Arain et al., 2010). Essentially, the main objectives of a feasibility study, such as the current
149 study, focus on the (a) evaluation of recruitment capability and resulting sample
150 characteristics, (b) evaluation and refinement of data collection procedures and outcome
151 measures, (c) evaluation of the acceptability and suitability of the intervention and study
152 procedures, (d) evaluation of the resources and ability to manage and implement the study
153 and intervention, and (e) evaluation of participant responses to the intervention through
154 primary measures (Orsmond & Cohn, 2015). Following a feasibility study, researchers are

155 then able to identify strategies to address any noted challenges, address the specific needs of
156 participants, and revise components of the intervention prior to designing a larger scale study
157 to formally evaluate intervention outcomes (Orsmond & Cohn, 2015).

158 **Pedagogical Approach**

159 Due to the online nature of the intervention, the creation of engaging material was
160 essential. In line with e-learning pedagogy, the intervention was designed and driven with
161 purpose and clear achievable objectives (Clark & Mayer, 2016). With this in mind, Violante
162 and Vezzetti (2015) suggested that material should be visually stimulating, and designed to
163 support the learners' purpose and objectives. Additionally, the content of e-learning platforms
164 was designed with convenience in mind (e.g., accessed across multiple devices). This allowed
165 participants to download and engage with learning and the materials when it was convenient,
166 and feel autonomous and confident with their learning process. Consequently, the
167 aforementioned points were factored in during the proposal of the intervention. Moreover,
168 informed by constructivist pedagogy (von Glasersfeld, 1990), which depicts learning as
169 creating knowledge rather than receiving it, and facilitating learning through discourse (Holt-
170 Reynolds, 2000), the primary researcher centred learning around educational discussions with
171 the participants. In this sense, participants became "active learners" and were invited to
172 discuss topics/questions and engage in informative discourse. This approach provided
173 autonomy to the learner and helped increase their confidence in their knowledge base and
174 understanding of taught topics (Holt-Reynolds, 2000).

175 **Theoretical Underpinning of Content Design**

176 Alongside a pedagogical approach which instilled confidence, behaviour change was
177 critical to this intervention. Essentially, the intervention aimed to improve the participant's
178 MHL and their attitudes towards seeking/receiving professional psychological help.
179 Consequently, the intervention was planned with the four-pillars of Bandura's (1977) self-

180 efficacy theory in mind. Self-efficacy theory refers to an individual's belief in their own
181 capacity to execute a behaviour necessary to produce a specific outcome (Bandura, 1977).
182 This theory conceptualises four experiences critical to the development of an individual's
183 self-efficacy: performance accomplishments (e.g., past performances in a specific
184 activity/previous engagement in a particular behaviour), vicarious experiences (e.g.,
185 visualisation of self, observation of others, specifically those who are demographically
186 similar to one's self), forms of social persuasion (e.g., self-talk, feedback, persuasion from
187 others), and physiological and emotional states (e.g., aspects of cognitive and somatic
188 anxiety, feeling anxious or relaxed in a given situation, rapid heart rate, sweating; Schunk,
189 2012).

190 In addition to concentrating on self-efficacy, it was important to address participants'
191 attitudes towards seeking and receiving professional psychological help. According to
192 the theory of reasoned action (Ajzen & Fishbein, 1977) a person's behaviour is determined
193 by their intention to perform the behaviour and this intention is, in turn, a function of their
194 attitude toward the behaviour and subjective norms. The best predictor of behaviour is
195 intention or instrumentality (the belief that behaviour will lead to the intended outcome).
196 Instrumentality is determined by three factors: 1) their attitude toward the specific behaviour,
197 2) their subjective norms, and 3) their perceived behavioural control (Silverman et al., 2016).
198 The more favourable the attitude and the subjective norms, and the greater the perceived
199 control an individual possesses, the stronger the person's intention to perform a given
200 behaviour (e.g., in this case, seeking/receiving professional psychological help; Breslin et al.,
201 2019). Each intervention session was designed with these two theories in mind. The
202 description of each intervention session can be accessed by contacting the corresponding
203 author.

204 **Participants**

205 Convenience sampling was used to recruit participants for this study. The primary
206 researcher emailed 15 women, semi-elite rugby players, through personal contacts. Out of the
207 15 rugby players contacted, 14 replied, and seven agreed to participate in the study. The
208 remaining seven were unable to attend the intervention sessions due to other commitments.
209 All participants were able to withdraw from the intervention at any given point during the 10
210 weeks. Missing a session would have resulted in rescheduling whenever it suited the
211 participant.

212 Individuals had to meet the following criteria to participate in the study: (i) identity as
213 a woman, (ii) 18 years or older, and (iii) compete at a semi-elite level for a UK based and
214 affiliated rugby club (i.e., club's first team or at a higher level at the premiership level). The
215 term semi-elite was derived from Swann et al. (2015, p.11) whereby "semi-elite athletes are
216 those whose highest level of participation is below the top standard possible in their sport
217 (e.g., in talent-development programmes, competing at second-tier standard or below, etc.)".
218 All participants provided their consent to partake in the study. Ethical approval was obtained
219 from the lead author's institutional Science and Health Faculty Ethics Committee.

220 In total, seven semi-elite women rugby players participated in the study with a mean
221 age of 26 years ($SD = 5.39$ years, Range = 18 – 33 years) from various UK based affiliated
222 rugby clubs. Four participants self-identified as bisexual, whilst one identified as a gay
223 woman/lesbian and the remaining two participants identified as heterosexual/straight. In
224 terms of ethnicity, three participants were from Mixed/Multiple ethnic groups, while another
225 three participants were White, and one participant was Asian/Asian British. All participants
226 were educated to an A-level/High school level with three participants graduating with an
227 undergraduate degree, and two had obtained Master's degrees. All participants had competed

228 in semi-elite rugby for two years or more. Regarding previous medical diagnosis of a mental
 229 disorder, five participants indicated no medical diagnosis of a mental disorder, while two
 230 participants indicated a previous medical diagnosis of a mental disorder. Pseudonyms were
 231 created for all participants to protect their identities. Participant demographic information is
 232 presented in Table 1.

233

Table 1

Participant Demographic Information

Participant	Age	Sexual orientation	Ethnicity	Level of education	Years competing in semi-elite rugby	Previous medical diagnosis of a mental disorder
Saffi	26	Bisexual	White (English)	Masters	2	No
Rachel	33	Heterosexual/Straight	Asian/Asian British (Indian)	Masters	3	Yes
Marjan	32	Bisexual	White (English)	Undergraduate	3	No
Emily	26	Bisexual	Mixed/Multiple ethnic group (White and Asian)	Undergraduate	6	No
Sarah	26	Gay Woman/Lesbian	Mixed/Multiple ethnic group (White and Asian)	Undergraduate	4	No
Layla	18	Bisexual	White (English)	A level/ High School	3	No
Catherine	21	Heterosexual/Straight	Mixed/Multiple ethnic groups (White and Black Caribbean)	A level/ High School	4	Yes

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236 Measures

237 Participants had to complete the following scales one week before the start of the
238 intervention (baseline phase), on the last intervention session (intervention phase) and four
239 weeks after the end of the intervention (follow-up phase): Mental Health Literacy Scale
240 (MHLS; O'Connor & Casey, 2015); The Attitudes Toward Seeking Professional
241 Psychological Help Scale–Short Form (ATSPPH-SF; Fischer & Farina, 1995); Social Stigma
242 for Receiving Psychological Help scale (SSRPH; Komiya et al., 2000); The Self-Stigma of
243 Seeking Help Scale (SSOSH; Vogel et al., 2005).

244 MHLS

245 The MHLS is a 35-item MHL questionnaire (O'Connor & Casey, 2015), which
246 assesses the following six aspects of MHL: disorder recognition, knowledge of help-seeking
247 information, knowledge of risk factors and causes, understanding of self-treatment,
248 awareness of professional treatments available, and attitudes toward promoting positive
249 mental health or help-seeking behaviour. The lowest score on the MHLS is 35 and the highest
250 is 160 with higher scores indicating greater MHL. The MHLS has good internal consistency
251 and test-retest reliability ($r = .80$; O'Connor & Casey, 2015). The MHLS has been used in a
252 similar context in Oftadeh-Moghadam and Gorczynski's (2021) cross-sectional study with
253 UK women rugby players. Cronbach's alpha in the current sample was .871. Questions nine
254 and 10 in the MHLS were modified to be specific to the UK context, where "Australia" was
255 switched with "UK."

256 ATSPPH-SF

257 The ATSPPH-SF relies on 10 items scored on a 4-point scale (from 0 'strongly
258 disagree' to 3 'strongly agree') to examine attitudes toward seeking psychological help from
259 a professional (e.g., 'I would want to get psychological help if I were worried or upset for a
260 long period of time'; Fischer & Farina, 1995). Based on the score of each item (reversed

261 scoring for negatively worded items), a total score ranges from 0 to 30. Higher scores
262 indicate more positive attitudes to professional psychological help-seeking (Wilson et al.,
263 2005). The ATSPPH-SF has been validated in English, and displays good psychometric
264 properties (test–retest reliability: 0.80; Elhai et al., 2008; Fischer & Farina, 1995; Hackler et
265 al., 2010). Cronbach’s alpha in the current sample was .822.

266 ***SSRPH***

267 Items on this measure are rated on a 4-point Likert-type scale, ranging from 0
268 (strongly disagree) to 3 (strongly agree; Komiya et al., 2000). Total scores on the SSRPH
269 range from 0 to 12, with higher scores representing a greater perception of public stigma (i.e.,
270 a belief that society perceives seeking help for mental health treatment as undesirable and
271 individuals who seek help are socially unacceptable; Corrigan, 2004). Cronbach’s alpha in
272 the current sample was .79.

273 ***SSOSH***

274 Items on this measure are rated on a 5-point Likert-type scale, ranging from 1
275 (strongly disagree) to 5 (strongly agree; Vogel et al., 2005). Total scores on the SSOSH range
276 from 10 to 50, with higher scores representing greater self-stigma (i.e., an individual believes
277 he or she is socially undesirable for seeking mental health treatment; Corrigan, 2004). Vogel
278 et al. (2005) found that SSOSH scores were related to measures of public stigma (from .46 to
279 .48), attitudes toward seeking professional psychological help (from $-.54$ to $-.63$), and
280 willingness to seek counselling (from $-.34$ to $-.38$), thus supporting the convergent validity
281 of the measure. Cronbach’s alpha in the current sample was .84.

282 ***Session Evaluation Questionnaires***

283 In line with Chow et al.’s study (2020), participants in this study were also asked to
284 complete a brief evaluation questionnaire at the end of every session to examine intervention
285 acceptability. The evaluation questionnaires comprised three questions assessing levels of

286 engagement, helpfulness and effectiveness of each session and their respective content. Each
 287 component was rated on a scale of 1 to 5, where 1 = very unengaging/unhelpful/ineffective
 288 and 5 = very engaging/helpful/effective. Mean scores were calculated for each question at the
 289 end of the intervention.

290 **Data Collection**

291 This study occurred over 10 weeks. The first week consisted of collecting
 292 demographic information (age, sexual orientation, ethnicity, level of education, years
 293 competing in semi-elite rugby and previous medical diagnosis of a mental disorder) and
 294 participants' responses to all questionnaires. The second week consisted of collecting
 295 participants' responses to all questionnaires again. Baseline measures therefore occurred over
 296 the first two weeks. The intervention started on the third week and continued through weeks
 297 four, five and six. In week six (the last intervention session), participants completed all
 298 questionnaires again. Week 10 marked the follow-up period and participants were required to
 299 complete all questionnaires. Table 2 illustrates the data collection and intervention schedule.

Table 2

Data Collection and Intervention Schedule

	Baseline		Intervention						Follow-up	
Week	1	2	3	4	5	6	7	8	9	10
Demographic information	X									
MHLS	X	X				X				X

ATSPPH-SF	X	X	X	X
SSRPH	X	X	X	X
SSOSH	X	X	X	X

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The primary researcher conducted all the necessary sessions and recruited all

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participants. The primary researcher was a doctorate student, with an MSc in Sport and

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Exercise Psychology, and had previous experience in conducting research as well as teaching

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within higher education (Associate Fellow of the Higher Education Academy).

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Data Analysis

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In line with the data analysis approach adopted by Gabana et al. (2022), repeated

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measures analysis of variance (ANOVA) was used to compare each measure's mean scores

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across each study phase. An alpha level of 0.05 was used for statistical tests. A post hoc

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Bonferroni correction test was employed for results that yielded significance. An adjusted p-

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value of 0.017 was used to reduce the chance of making a Type I error (Howell, 1992). The

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magnitude of effect sizes was evaluated using the partial eta squared (η_p^2 ; small = 0.01;

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medium = 0.06; large = 0.14; Richardson, 2011).

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Results

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Feasibility

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Attendance

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Participants attended all designated intervention sessions and fulfilled each session's

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objectives. The results for all measures are outlined below. Table 3 shows mean scores and

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standard deviations across each intervention phase.

320 Mental Health Literacy Scale (MHLS)

321 A repeated measures ANOVA determined that overall MHLS mean scores differed
322 significantly across the three phases $F(2, 12) = 7.70, p = .007, \eta_p^2 = .56$. Post hoc Bonferroni
323 correction showed no further significant results between baseline to intervention ($p = .053$),
324 baseline to follow-up ($p = .138$), and intervention to follow-up ($p = .702$). However, mean
325 scores increased from baseline to intervention and baseline to follow-up but decreased from
326 intervention to follow-up.

**327 The Attitudes Toward Seeking Professional Psychological Help Scale–Short Form
328 (ATSPPH-SF)**

329 A repeated measures ANOVA showed that overall ATSPPH-SF mean scores differed
330 significantly across the three phases $F(2, 12) = 14.66, p = .001, \eta_p^2 = .71$. Post hoc Bonferroni
331 correction highlighted a significant increase in scores from baseline to intervention ($p =$
332 $.017$), and baseline to follow-up ($p = .010$), but a decrease in scores from intervention to
333 follow-up.

334 Social Stigma for Receiving Psychological Help (SSRPH)

335 A repeated measures ANOVA showed that overall SSRPH mean scores differed significantly
336 across the three phases $F(2, 12) = 11.92, p = .001, \eta_p^2 = .67$. Post hoc Bonferroni correction
337 determined that mean scores decreased significantly from baseline to intervention ($p = .013$).
338 Mean scores also decreased from baseline to follow-up ($p = .069$), and intervention to follow-
339 up ($p = .599$), however, these results were not significant.

340 The Self-Stigma of Seeking Help (SSOSH)

341 A repeated measures ANOVA determined that overall SSOSH mean scores differed across
342 the three phases, as means scores decreased from baseline to intervention, and from baseline

343 to follow-up. Mean scores increased slightly from intervention to follow-up. However, these
 344 results were not significant $F(2, 12) = 3.66, p = .058, \eta_p^2 = .38$.

345 **Acceptability**

346 *Session Evaluation Questionnaires*

347 All session evaluation questionnaires were completed by the participants. Overall, the mean
 348 score for the level of intervention engagement in each session was rated 5, whilst the
 349 helpfulness and effectiveness of the intervention sessions were rated as 4.5.

Table 3

Mean Scores Across each Intervention Phase

	Baseline (<i>SD</i>)	Intervention (<i>SD</i>)	Follow-up (<i>SD</i>)
MHLS	127.90 (9.80)	140.00 (13.59)	137.71 (15.34)
ATSPPH-SF	15.14 (4.16)	20.00 (5.57) *	19.57 (5.41) *
SSRPH	11.93 (2.35)	9.86 (3.08) *	10.29 (3.54)
SSOSH	28.71 (6.85)	25.43 (4.83)	25.86 (4.45)

Note. * Reached significance from baseline ($p < .017$)

350

Discussion

351 This feasibility study evaluated the impact of an educational intervention on stigma
 352 toward mental health symptoms and disorders, MHL, and help-seeking intentions among
 353 semi-elite women rugby players. This brief, educational intervention was successful in
 354 enhancing the player's MHL and reducing stigmatising attitudes towards seeking professional
 355 psychological help. These findings are crucial as increasing MHL has been identified as a
 356 determinant of help-seeking, whilst mental health stigmatisation was noted as a barrier to
 357 help-seeking among women rugby players (Oftadeh-Moghadam et al., 2022). The results also

358 revealed that the intervention improved attitudes toward seeking and receiving professional
359 psychological help. This is notable as help-seeking intentions have been acknowledged as
360 one of the strongest predictors of help-seeking behaviour (Fishbein & Ajzen, 2010).
361 Improvements in participants' attitudes and intentions may have resulted from an increase in
362 their MHL (Taylor-Rodgers & Batterham, 2014). The results indicate that participants
363 perceived the intervention to be helpful and effective thereby justifying the need for a larger,
364 randomised controlled trial study to fully examine the intervention's effectiveness with a
365 broader sample size.

366 **MHL Interventions**

367 Research examining MHL interventions in athletic and sporting populations has found
368 increases in knowledge of mental health symptoms and disorders, as well as improvements in
369 attitudes and stigma towards those diagnosed with a mental disorder (Bapat et al., 2009; Kern
370 et al., 2017, Gulliver et al., 2012b). Our findings are consistent with Chow et al.'s (2020)
371 results who found that their four-week programme was successful in enhancing MHL,
372 attitudes toward seeking help, and intentions to seek counselling among student-athletes. The
373 findings are also similar to Gulliver et al.'s (2012b) findings with young elite athletes, where
374 a brief MHL and de-stigmatisation intervention improved mental health knowledge and
375 reduction in stigma towards mental health symptoms and disorders. Similarly, Liddle et al.'s
376 (2021) brief MHL programme (Help Out a Mate) with male adolescent football club players
377 showed improvements in MHL for depression and anxiety and intentions to provide help
378 along with sustained improvements in attitudes that promote help-seeking and reduce stigma.
379 They concluded that a brief intervention can be effective at improving MHL when delivered
380 within a sporting context. These components were also implemented within this study's
381 intervention and were also effective as participants scored each session highly on the
382 acceptability questionnaires (average score of 4.5 out of 5) on levels of engagement,

383 helpfulness and effectiveness. More recently, Vella et al.'s (2021) MHL and resilience
384 intervention in organised sports revealed significant benefits on depression literacy, anxiety
385 literacy, intentions to seek help from formal sources, confidence to seek mental health
386 information, resilience, and well-being among a sample of adolescent male sport participants.
387 Vella et al. (2021) highlighted the importance of centring such programs on equipping
388 participants with the skills to recognise the warning signs of mental health symptoms and
389 disorders.

390 **Mental Health Support and Help-Seeking**

391 Previous research has revealed that there is a lack of mental health support in the
392 women's game, as well as the scarcity of academic research examining women rugby
393 player's mental health in comparison to their male counterparts (Oftadeh-Moghadam et al.,
394 2022; Oftadeh-Moghadam & Gorczynski, 2022). Addressing these factors was critical in this
395 study as the intervention was designed and based on detailed knowledge of social issues
396 related to women rugby players and systemic challenges within the sport setting (Gorczynski
397 et al., 2021). Brijnath et al.'s (2016) meta-analysis revealed that MHL programs were most
398 successful when there were structured, tailored to specific populations (e.g., rugby players),
399 incorporated activities and experiential learning, and delivered evidence-based content. Our
400 intervention incorporated all the aforementioned aspects and it is likely that the combination
401 of the four empirically supported sessions impacted the overall results of the intervention.
402 Session one specifically targeted MHL and various components of MHL such as mental
403 health symptom recognition, information on seeking mental health information, professional
404 help resources and attitudes that promote recognition and appropriate help-seeking. The
405 subsequent sessions also included factors that likely contributed to MHL and mental health
406 stigmatisation. For example, experiencing empathy (via perspective taking) and then
407 expressing empathy exposed participants to particular information regarding professional

408 mental health support and targeted attitudes that promoted recognition and appropriate help-
409 seeking. Consequently, our findings suggest that brief, online interventions that are tailored,
410 interactive and educational can be beneficial in improving MHL and attitudes and intentions
411 toward seeking professional help. Moreover, our findings are in line with Kern et al.'s (2017)
412 Athletes Connected project which addressed knowledge and attitudes about mental health
413 among college student-athletes. Their findings indicated significant increases in knowledge
414 and positive attitudes toward mental health and help-seeking, with the results suggesting that
415 a brief in-person, educational intervention may be helpful in reducing stigma and promoting
416 help-seeking behaviours.

417 **Participant Engagement and Awareness**

418 Alongside these findings, there was also a notable shift in participants' confidence
419 regarding professional help-seeking, and their intentions to engage in help-seeking
420 behaviours. Throughout the course of the intervention, the participants became more aware of
421 professional psychological support (e.g., sport psychologist) that did not necessarily include
422 seeking guidance from a general practitioner (GP). Similar findings have been reported by
423 Bird et al.'s (2020) student-athletes, who noted that self-efficacy to seek treatment is an
424 important factor in engaging in help-seeking behaviours. There was also a shift in narrative
425 when participants discussed their intentions of help-seeking, where help-seeking was viewed
426 in a positive light. Throughout the course of the intervention, participants became more aware
427 of the causes of mental health symptoms and disorders, the stigma associated with help-
428 seeking and the importance of help-seeking, which in turn resulted in promoting positive
429 attitudes towards help-seeking behaviours. This shift mirrors Breslin et al.'s (2019) results
430 which demonstrated that knowledge and exposure to mental health symptoms and disorders,
431 their treatments and discussion of prevalence rates can contribute to the reduction of mental
432 health stigma in athletes. Based on the theory of reasoned action constructs (Ajzen &

433 Fishbein, 1977), future research should consider framing mental health using a positive
434 perspective, and recruit socially relatable role models to encourage and champion mental
435 health awareness messages (Breslin et al., 2019). These efforts may increase athlete
436 willingness to participate and engage with a mental health awareness programme, and
437 ultimately contribute to addressing common misconceptions and stereotypes about mental
438 health symptoms and disorders (Clement et al., 2015).

439 **Strengths and Limitations**

440 This is the first feasibility study that has evaluated an educational intervention on
441 stigma toward mental health symptoms and disorders, MHL, and help-seeking intentions
442 among semi-elite women rugby players. The online component of the programme increased
443 the potential of the intervention to reach women rugby players across the UK regardless of
444 their geographic location, due to being easily accessible. This is notable as a lack of easily
445 accessible mental health support was identified as a barrier to help-seeking among women
446 rugby players (Oftadeh-Moghadam et al., 2022). The online intervention also eliminated
447 travel expenses and was the most appropriate tool during and post the first wave of the
448 COVID-19 pandemic. A strength of this feasibility study was the recruitment of participants
449 from diverse ethnicities, mental health statuses, sexuality, age, generational diversity,
450 educational diversity as well as diversity in their rugby careers. The intervention
451 demonstrated a broad appeal across these demographics as well as intergenerationally as the
452 intervention was feasible and accessible to a very diverse audience. Additionally, given the
453 educational nature of this intervention, it was crucial that the language used to disseminate
454 the information was easy to digest and acceptable across a range of diverse educational
455 attainments. These are noteworthy points for future research to consider, given the
456 importance of diversity and inclusion in any intervention.

457 However, this study also had several limitations that must be noted. Firstly, this study
458 comprised a small sample of women rugby players, recruited via convenience sampling by
459 the primary researcher, which may not be representative of all UK women rugby players at
460 the semi-elite level. Future research should consider recruiting a larger, international sample
461 of women rugby players with separate studies examining interventions at different levels of
462 play (i.e., grassroots, semi-elite and elite). Particular consideration should be given to
463 recruiting from various demographics such as age, sex, gender, sexuality, class, race,
464 ethnicity, (dis)ability and geographic location to continue the theme of participant diversity.
465 Additionally, a longer follow-up period may help determine the effectiveness of the
466 intervention and detect behavioural patterns (e.g., an increase/decrease in stigmatising
467 attitudes) over a longer time scale. Secondly, access to the intervention was dependent on
468 electronic devices, which excluded participants who had limited or no such access to
469 electronic devices. With more funding, such interventions may be able to provide electronic
470 devices to the participants. Thirdly, participants' experiences with the intervention are based
471 on results from self-report measures. Future research should consider implementing
472 qualitative questions to evaluate how helpful and useful the participant found the
473 intervention, particularly in phases where a significant change did not occur. Fourthly, a
474 limitation of any educational focused intervention is the resource intensity. Such
475 interventions require lengthy hours of delivering content to a small cohort of participants and
476 require at least one person to deliver the content. However, an online, 'complete at your own
477 pace' learning platform would not require intensive delivery of content and would allow the
478 participant to complete the content in their own time. This is a noteworthy point for future
479 researchers who may be considering creating similar educational interventions. Future
480 research should also consider a comparison between a practitioner-led intervention versus a
481 self-guided intervention versus a combination of both approaches to explore which is more

482 effective and preferable. Finally, this feasibility study did not include a control group and did
483 not measure mechanisms of change (e.g., self-efficacy). A control group would have made
484 the results stronger as it would have helped determine which outcomes were due to the
485 intervention (as opposed to other variables). Future studies should consider utilising a
486 randomised controlled trial research design with a longer follow-up phase (e.g., 12 months)
487 and mechanisms of behaviour change need to be measured and evaluated accordingly.

488 **Practical Implications**

489 Practical implications from this study could be useful for rugby players, coaches and
490 professional governing bodies. This study suggests that practitioners delivering online
491 training using the present design, could enhance athletes' MHL and reduce stigmatising
492 attitudes towards seeking professional psychological help. The findings may encourage
493 women rugby players to challenge the lack of support systems available to them, as well as
494 demand for equal access to healthcare professionals as their male counterparts. From a
495 coach's perspective, the findings may help them create a dialogue with their rugby players
496 with the aim of confidently signposting them to mental health support systems. Professional
497 rugby governing bodies should utilise the findings to inform their strategic planning towards
498 mental health support provision within the women's game. Governing bodies should explore
499 the development of online synchronous and/or asynchronous training materials to improve
500 their athletes', coaches' and wider staffs' MHL. Additionally, they should pay specific
501 attention to recruiting mental health professionals as experts within their boards of
502 governance to provide tailored advice and support.

503 **Conclusion**

504 This feasibility study is the first of its kind to evaluate the impact of an online
505 educational intervention on stigma toward mental health symptoms and disorders, MHL, and

506 help-seeking intentions among semi-elite women rugby players. The findings indicate that
507 using a brief, internet-based, evidence driven educational intervention supplemented with
508 interactive activities and open discussions about mental health among women rugby players
509 can be effective in enhancing players' MHL and reducing stigmatising attitudes towards
510 seeking professional psychological help. Given the scarcity of MHL focused interventions in
511 women's sports, it's only logical and appropriate to start small and explore the fundamentals
512 and scalability of such interventions. Consequently, this feasibility study will support larger
513 scale experimental research that can provide generalisable results with a larger sample size.

514

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