

# The Design and Implementation of a Novel Mental Health Literacy Educational Intervention Program in Gaelic Footballers

Sinéad O’Keeffe, PhD, CAT\*†; Niamh Ní Chéilleachair, PhD†; Anna Donnla O’Hagan, PhD\*; Mark Campbell, PhD‡; Siobhán O’Connor, PhD, MSc, CAT\*

\*Centre for Injury Prevention and Performance, Athletic Therapy and Training, School of Health and Human Performance, Dublin City University, Ireland; †SHE Research Group, Department of Sport and Health Sciences, Technological University of the Shannon: Midlands-Midwest, Athlone, County Westmeath, Ireland; ‡Department of Physical Education and Sport Sciences, University of Limerick, Ireland

**Context:** Lack of education, stigma, and negative self-attitudes are key barriers to help-seeking in Gaelic footballers. With the prevalence of mental health issues in Gaelic footballers and the increased risk of experiencing mental health challenges after injury, mental health literacy (MHL) interventions are necessary.

**Objectives:** To design and implement a novel MHL educational intervention program in Gaelic footballers.

**Design:** Controlled laboratory study.

**Setting:** Online.

**Patients or Other Participants:** Elite and subelite Gaelic footballers divided into intervention ( $n = 70$ ; age =  $25.1 \pm 4.5$  years) and control ( $n = 75$ ; age =  $24.4 \pm 6.0$  years) groups. In the intervention group, 85 participants were recruited, but 15 dropped out after completing baseline measures.

**Interventions:** A novel educational intervention program, “GAA [Gaelic Athletic Association] and Mental Health—Injury and a Healthy Mind,” was designed to address the key components of MHL and was underpinned by the Theory of Planned Behavior and the Help-Seeking Model. The intervention was implemented online via a brief 25-minute presentation.

**Main Outcome Measures:** Measures of stigma, help-seeking attitudes, and MHL were completed by the intervention group at baseline, immediately after viewing the MHL program, and at 1 week and 1 month after the intervention. The control group completed the measures at similar time points.

**Results:** Stigma decreased, and attitudes toward help-seeking and MHL increased in the intervention group from baseline to after the intervention ( $P < .05$ ), with significant differences sustained at 1-week and 1-month follow-ups. Our results showed differences in stigma, attitudes, and MHL between groups across time points. Intervention participants provided positive feedback, and the program was appraised as informative.

**Conclusions:** Remote online delivery of a novel MHL educational program can effectively decrease mental health stigma, improve attitudes toward help-seeking, and increase the recognition and knowledge of mental health issues. Gaelic footballers with improved MHL may be better equipped to manage their mental health and cope with stressors, leading to improved mental health outcomes and overall mental well-being.

**Key Words:** well-being, psychology, mental health stigma, education, athletes, community sports

## Key Points

- A novel educational intervention program reduced stigma, improved attitudes toward help-seeking, and increased the recognition and knowledge of mental health issues.
- A sport-specific educational program that is brief, accessible, structured, and targeted was a viable and practical approach to enhance mental health literacy in Gaelic footballers.

Mental health literacy (MHL) refers to an individual’s knowledge and beliefs about mental health that aid in the recognition, management, or prevention of mental health conditions and is defined with 3 key principles: recognition, knowledge, and attitudes.<sup>1</sup> Mental health literacy focuses on knowledge about how to obtain and maintain good mental health, knowledge about mental disorders and their treatments, strategies aimed at decreasing stigma, and enhancement of help-seeking efficacy (ie, knowing when and where to seek help, what to expect when seeking help, and being

empowered to receive the best available help).<sup>2</sup> Therefore, MHL encompasses the ability to change attitudes, overcome stigma, and seek help.<sup>3</sup> Common mental disorders are prevalent among those who participate in Gaelic games, the most popular community sports in Ireland,<sup>4</sup> with 48% of elite players experiencing symptoms of anxiety or depression.<sup>5</sup> Gaelic games players also had a 3-fold increased risk of experiencing mental health issues after severe injury.<sup>5</sup> Mental health in Gaelic football players has garnered media attention in the past decade, with discussions

of players' experiences of mental health conditions.<sup>6-8</sup> Thus, MHL interventions specific to Gaelic footballers are essential and must be prioritized.

Education, the perception of others, and attitudes toward seeking help—all key factors related to MHL—can influence mental health help-seeking in Gaelic footballers.<sup>9</sup> This highlights the need for evidence-based educational interventions that improve awareness, reduce stigma, and facilitate and normalize help-seeking. Mental health literacy interventions implemented to date across a variety of sports have elicited changes in knowledge, attitudes, and stigma surrounding athlete mental health.<sup>10-12</sup> However, previous intervention studies have failed to address all domains of MHL<sup>2</sup> or account for cultural differences in sport that affect mental health<sup>13</sup> and have either demonstrated small effect sizes or were associated with a high or unclear risk of bias.<sup>11,12</sup> In addition, earlier investigators<sup>13</sup> assessed small sample sizes without control groups, used limited follow-up periods, or failed to administer valid or reliable psychometric measures. Currently, no Gaelic football-specific MHL programs are available for players to access.

The design and delivery of appropriate MHL interventions must take into account personal, environmental, and cultural variants that can influence mental health.<sup>3</sup> Mental health can be a sensitive topic; therefore, program design must involve medical professionals with a detailed knowledge of mental health issues<sup>3</sup> and ensure that those delivering the educational content have the necessary expertise and level of training.<sup>14</sup> Interventions must also be underpinned by an appropriate theoretical framework that considers the outcomes of the interventions.<sup>14</sup> Operational factors (eg, feasibility, length of time, service user experience, delivery method) should also be considered.<sup>14</sup> To date, interventions have used in-person group delivery<sup>10,11,15</sup> and online approaches.<sup>12</sup> The effectiveness and acceptability of mental health educational programs via remote delivery have been proven.<sup>16</sup> When assessing the effectiveness of MHL programs, the use of psychometrically validated, theory-informed, and context-appropriate measures that are clearly aligned with the intended outcomes of the program is essential and must be considered when designing a novel program.<sup>14</sup>

Equipping Gaelic footballers with the necessary skills and tools to proactively manage their mental health should they sustain an injury or be exposed to a mental health stressor can be of great benefit. The importance of early intervention and promotion of mental health as well as the prevention of poor mental health has been recognized,<sup>17</sup> and community sports, such as Gaelic football, can provide the avenue for delivering appropriate interventions.<sup>18</sup> Sport-specific MHL programs allow players to directly relate to the content, which may prove beneficial for increasing the visibility of mental health in the sport,<sup>19</sup> thereby supporting better help-seeking attitudes. Therefore, our study was aimed at designing and implementing a novel educational intervention program to increase MHL among Gaelic footballers. We hypothesized that participation in an MHL educational program would decrease mental health stigma, improve attitudes toward help-seeking, and improve recognition and knowledge of mental health issues in Gaelic footballers.

## METHODS

### Intervention Design

The design of the “GAA [Gaelic Athletic Association] Mental Health—Injury and a Healthy Mind” educational intervention program was informed by formative research that identified a lack of education, stigma, and negative self-attitudes as barriers to mental health help-seeking in Gaelic footballers.<sup>9</sup> An MHL program was deemed most appropriate to address these factors, and a matrix of objectives (see Supplemental Material A, available online at <http://dx.doi.org/10.4085/1062-6050-0463.22.S1>) was developed, with the program determinants informed by the definition<sup>1</sup> and components of MHL.<sup>2</sup> The intervention was underpinned by the Theory of Planned Behavior and the Help-Seeking Model. We agreed on the program content (see Supplemental Material B, available online at <http://dx.doi.org/10.4085/1062-6050-0463.22.S2>) after a comprehensive review of the literature and an examination of existing MHL educational programs and materials<sup>12,15</sup> by a multidisciplinary group of experts (a sport and exercise psychologist, athletic therapists, and a sport scientist). The content was designed to be delivered through a brief 25-minute online presentation, supplemented by a Mental Health Toolkit information pack available online.

### Pilot Study

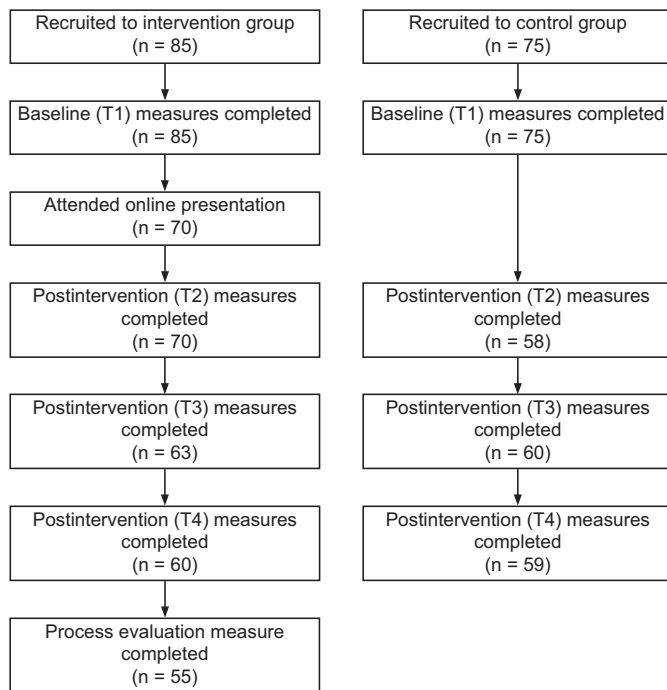
Program design and content clarity were piloted with a convenience sample of 13 athletes from a variety of sports (age  $24.6 \pm 3.5$  years old; men = 6; women = 7). Participants attended the presentation online via Zoom (version 5.0.1), received the Mental Health Toolkit by email, and completed a process evaluation measure after the presentation. The process evaluation measure, similar to that used by Liddle et al,<sup>15</sup> consisted of 9 rating statements using a 4-point Likert scale ranging from 1 (*not at all*) to 4 (*very*) and 5 open-ended questions that asked participants to provide feedback on the program. Our pilot study results showed that participants rated the MHL educational program positively, with an overall average score of  $3.5 \pm 0.4$ . Detailed results, feedback, and evidence of program changes are available in Supplemental Material C, available online at <http://dx.doi.org/10.4085/1062-6050-0463.22.S3>.

### Intervention Implementation

**Design.** A quasi-experimental design was used. We adopted a between-groups (intervention and control) and within-groups (time: baseline [T1] and immediately after [T2], 1 week after [T3], and 1 month after [T4]) intervention design.

**Participants.** Male and female Gaelic footballers ( $n = 160$ ) were recruited via social media to an intervention ( $n = 85$ ) or control group ( $n = 75$ ). Ethical approval was granted by the Institutional Research Ethics Committee (No. 20191104), and informed consent was obtained.

**Procedures.** The intervention group completed the baseline measures online using Google Forms. The 25-minute educational program was delivered in small groups (1 to 8 participants) via PowerPoint (Microsoft Corp) and Zoom at a time convenient to the participants. The presentation was



**Figure 1.** Flow of participants through study.

facilitated by a qualified and experienced sports psychologist with master’s and doctoral qualifications who was not involved in program development. The facilitator underwent training, which included a detailed presentation plan and script. After the presentation, participants were given an opportunity to ask questions. We also provided participants with a Mental Health Toolkit, outlining the program content, by email to refresh their knowledge when necessary.

Follow-up measures, which were emailed to participants, were completed by the intervention group immediately after the Zoom presentation and at 1 week and 1 month afterward. Reminders were not necessary for measures completed immediately after the intervention, but reminder emails were sent after 2 days to those who failed to complete follow-up measures at 1 week and 1 month, with responses accepted up to 3 days after reminders were issued. After all repeat measures were administered, intervention group participants completed a process evaluation measure to determine their feedback. The control group supplied measures at baseline, and, as they did not receive the intervention, a 1-week period was allowed before postintervention measures were obtained; these were repeated after 1 week and 1 month. A flow chart of participants at each time point is presented in Figure 1.

**Measures. Stigma Scale for Receiving Psychological Help.** The Stigma Scale for Receiving Psychological Help (SSRPH; Table 1) is a unidimensional measure used to assess perceived stigma toward seeking professional mental health treatment.<sup>20</sup> The scale demonstrated good content and construct validity<sup>20</sup> and also had good internal consistency in athletic populations.<sup>21,22</sup> Good internal consistency of the SSRPH was shown in the current sample at T1 ( $\alpha = .78$ ), T2 ( $\alpha = .93$ ), T3 ( $\alpha = .90$ ), and T4 ( $\alpha = .92$ ).

**Self-Stigma of Seeking Help Scale.** The Self-Stigma of Seeking Help Scale (SSOSH; Table 1) is used to measure

**Table 1. Measures and Scoring System**

Measure	No. of Items	Likert Rating System	Scoring	
			Total Score Range <sup>a</sup>	Score Interpretation
Stigma Scale for Receiving Psychological Help	5	4-point scale: 0 (strongly disagree) to 3 (strongly agree)	0–15	Higher scores = greater perceived stigma associated with receiving professional psychological treatment
Self-Stigma of Seeking Help Scale	10	5-point scale: 1 (strongly disagree) to 5 (strongly agree)	10–50 (items 2, 4, 5, 7, and 9 are reverse scored)	Higher scores = greater levels of self-stigma
Attitudes Toward Seeking Professional Psychological Help-Short Form	10	4-point scale: 0 (disagree) to 3 (agree)	0–30 (items 2, 4, and 8–10 are reverse scored)	Higher scores = more positive attitudes toward seeking professional psychological help
Mental Health Literacy Scale	35	Four varying scales are used: • 4-point scale: 1 (very unlikely) to 4 (very likely) • 4-point scale: 1 (very unhelpful) to 4 (very helpful) • 5-point scale: 1 (strongly disagree) to 5 (strongly agree) • 5-point scale: 1 (definitely unwilling) to 5 (definitely willing)	35–160 (items 10, 12, 15, and 20–28 are reverse scored)	Higher scores = greater mental health literacy
Brunel Mood Scale	24	5-point scale: 0 (not at all) to 4 (extremely)	0–16	Higher scores = greater mood disturbance and greater negative mood

<sup>a</sup> Total score is calculated by summing all item scores.

**Table 2. Participant Demographic Information**

Characteristic	Group		P Value
	Intervention (n = 70)	Control (n = 75)	
	No. (%)		
Sex			.85
Men	26 (37)	29 (39)	
Women	44 (63)	46 (61)	
Highest level of education completed to date			.47
Post-primary	19 (27)	30 (40)	
Bachelor's	34 (49)	27 (36)	
Master's	14 (20)	14 (19)	
Doctorate	1 (1)	1 (1)	
Other	2 (3)	3 (4)	
Current playing level			.21
Subelite	54 (77)	64 (85)	
Elite and subelite	16 (23)	11 (15)	
History of injury			.81
Minor	8 (11)	7 (9)	
Moderate	11 (16)	16 (21)	
Severe	47 (67)	49 (65)	
None	4 (6)	3 (4)	
	Mean $\pm$ SD, y		
Age	25.1 $\pm$ 4.5	24.4 $\pm$ 6.0	.44
Gaelic football experience	15.4 $\pm$ 5.0	15.9 $\pm$ 5.7	.55

negative self-perceptions for seeking psychological help.<sup>23</sup> It is a valid and reliable measure of self-stigma, with demonstrated test-retest reliability<sup>23</sup> and good internal consistency in athletes.<sup>21,22</sup> The SSOSH displayed good internal consistency in the current sample at T1 ( $\alpha = .85$ ), T2 ( $\alpha = .92$ ), T3 ( $\alpha = .91$ ), and T4 ( $\alpha = .93$ ).

**Attitudes Toward Seeking Professional Psychological Help-Short Form.** The Attitudes Toward Seeking Professional Psychological Help-Short Form (ATSPPH-SF; Table 1) is used to assess professional help-seeking attitudes<sup>24</sup> and demonstrated good internal consistency<sup>12,21</sup> and test-retest reliability<sup>12</sup> among athletes. Good internal consistency of the ATSPPH-SF was present in the current sample at T1 ( $\alpha = .78$ ), T2 ( $\alpha = .92$ ), T3 ( $\alpha = .91$ ), and T4 ( $\alpha = .92$ ).

**Mental Health Literacy Scale.** The Mental Health Literacy Scale (MHLS; Table 1) can be divided into 3 subscales measuring recognition (MHLS-R; 8 items), knowledge (MHLS-K; 11 items), and attitudes (MHLS-A; 16 items).<sup>25</sup> The MHLS can be used to examine all 3 major components of MHL with due regard to cultural context,<sup>3</sup> and good internal consistency and test-retest reliability have been shown.<sup>25</sup> The MHLS displayed good internal consistency in the current sample at T1 ( $\alpha = .91$ ), T2 ( $\alpha = .97$ ), T3 ( $\alpha = .96$ ), and T4 ( $\alpha = .96$ ).

**Brunel Mood Scale.** The Brunel Mood Scale (BRUMS; Table 1) assesses mood states and is composed of 6 subscales: tension, depression, anger, fatigue, confusion, and vigor.<sup>26</sup> Total mood disturbance is calculated by subtracting the positive vigor subscale from the sum of the 5 negative mood state subscales (tension, depression, anger, fatigue, and confusion) and adding a constant of 100 to eliminate negative values. Good internal consistency was evident for each subscale, and content and criterion validity were demonstrated in athletic populations.<sup>26</sup> In the current sample, the BRUMS

exhibited good internal consistency at T1 ( $\alpha = .89$ ), T2 ( $\alpha = .92$ ), T3 ( $\alpha = .92$ ), and T4 ( $\alpha = .89$ ).

## Statistical Analysis

Data were analyzed using SPSS (version 25; IBM Corp). A significance level of .05 was set for all statistical tests. Descriptive statistics were conducted to examine participant characteristics, and separate independent-samples *t* tests, Pearson  $\chi^2$  tests, or Fisher exact tests were calculated to examine differences between the intervention and control groups. Linear mixed modeling (LMM) was applied to evaluate differences between groups over time for each of the dependent variables (SSRPH, SSOSH, ATSPPH-SF, and MHLS score). The LMM was deemed appropriate as it accounts for missing data, unequal variances, and correlated data that are common with repeated measurements on individual participants.<sup>27</sup> We adopted the intention-to-treat principle, which allows for an unbiased estimate of treatment effect and minimizes type I error.<sup>28</sup> The LMM was conducted with group, time, and group-by-time interaction treated as fixed effects and participant as a random effect. The BRUMS total mood disturbance score was treated as a covariate in all models tested to control for mood. The participants in each group were assessed as a repeated effect using the unstructured covariance matrix. Bonferroni adjustments for multiple comparisons were applied to limit type I error. Effect sizes, determined using the Cohen *d*, were classified as *small* ( $d = 0.2$ ), *medium* ( $d = 0.5$ ), and *large* ( $d = 0.8$ ). Descriptive statistics were determined for the process evaluation responses, and open-ended responses were coded and summarized.

## RESULTS

Of the 85 participants recruited, 70 (age = 25.1  $\pm$  4.5 years) completed the intervention (Figure 1). No differences were noted in demographics or baseline measures between those who completed the intervention ( $n = 70$ ) and those who dropped out ( $n = 15$ ), and the latter were subsequently removed from the analyses. A total of 75 participants (24.4  $\pm$  6.0 years) were recruited to the control group. No differences between groups were present for sex, age, education level, current playing level, years playing Gaelic football, or injury history ( $P > .05$ ; Table 2). Average scores in outcome measures at baseline and after the intervention are shown in Table 3.

## Outcome Measures

**Stigma Scale for Receiving Psychological Help.** A significant group-by-time interaction for SSRPH scores was seen ( $F_{3,124.1} = 22.9$ ;  $P < .001$ ). In the intervention group, the SSRPH score decreased from T1 to T2 ( $P < .001$ ;  $d = 1.7$ ), T1 to T3 ( $P < .001$ ;  $d = 1.3$ ), and T1 to T4 ( $P < .001$ ;  $d = 1.5$ ). The scores were not different between T2, T3, and T4. No differences occurred in the control group between T1, T2, T3, and T4. Differences in SSRPH scores were evident between the intervention and control groups at T1 ( $P = .04$ ;  $d = 0.3$ ), T2 ( $P < .001$ ;  $d = 1.8$ ), T3 ( $P < .001$ ;  $d = 1.6$ ), and T4 ( $P < .001$ ;  $d = 1.5$ ; Figure 2A).

**Self-Stigma of Seeking Help Scale.** We observed a significant group-by-time interaction effect for the SSOSH score ( $F_{3,124.9} = 9.6$ ;  $P < .001$ ). In the intervention group, scores

**Table 3. Outcome Measures**

Outcome Measure	Group	Time <sup>a</sup> , Mean ± SD			
		T1	T2	T3	T4
Stigma Scale for Receiving Psychological Help	Intervention	6.2 ± 3.3	2.1 ± 1.7	2.7 ± 2.2	2.3 ± 2.0
	Control	7.4 ± 4.1	7.7 ± 4.6	7.7 ± 3.9	6.9 ± 4.3
Self-Stigma of Seeking Help Scale	Intervention	23.9 ± 5.5	19.6 ± 5.8	20.1 ± 5.7	19.9 ± 6.5
	Control	27.2 ± 7.3	29.3 ± 10.7	28.2 ± 9.2	27.5 ± 10.0
Attitudes Toward Seeking Professional Psychological Help-Short Form	Intervention	20.0 ± 4.6	23.8 ± 4.5	24.1 ± 4.7	23.6 ± 5.1
	Control	18.5 ± 5.7	16.0 ± 8.4	17.8 ± 7.4	17.8 ± 8.1
Mental Health Literacy Scale	Intervention	129.5 ± 10.9	142.0 ± 11.9	141.4 ± 12.8	142.3 ± 11.6
	Control	125.8 ± 17.8	116.1 ± 28.5	119.9 ± 22.3	119.6 ± 23.6
Recognition	Intervention	26.1 ± 2.4	28.8 ± 2.9	28.9 ± 3.1	28.8 ± 3.1
	Control	25.3 ± 3.4	24.4 ± 4.2	25.4 ± 3.8	25.7 ± 3.9
Knowledge	Intervention	36.4 ± 3.8	40.6 ± 3.7	40.5 ± 3.5	40.3 ± 3.2
	Control	35.1 ± 4.8	33.8 ± 6.5	34.7 ± 5.5	34.3 ± 5.2
Attitudes	Intervention	66.9 ± 8.8	72.7 ± 8.3	72.0 ± 9.1	73.2 ± 7.6
	Control	65.4 ± 12.0	57.9 ± 19.3	59.7 ± 15.2	59.7 ± 16.5

<sup>a</sup> T1, baseline; T2, immediately after the intervention; T3, 1 week after the intervention; T4, 1 month after the intervention.

decreased from T1 to T2 ( $P < .001$ ;  $d = 0.8$ ), T1 to T3 ( $P < .001$ ;  $d = 0.7$ ), and T1 to T4 ( $P < .001$ ;  $d = 0.7$ ). The scores were not different between T2, T3, and T4. No differences were found in the control group between T1, T2, T3, and T4. Differences were demonstrated in the SSOSH scores between the intervention and control groups at T1 ( $P = .002$ ;  $d = 0.5$ ), T2 ( $P < .001$ ;  $d = 1.2$ ), T3 ( $P < .001$ ;  $d = 1.1$ ), and T4 ( $P < .001$ ;  $d = 0.9$ ; Figure 2B).

**Attitudes Toward Seeking Professional Psychological Help-Short Form.** The ATSPPH-SF scores displayed a significant group-by-time interaction effect ( $F_{3,127.2} = 17.4$ ;  $P < .001$ ). In the intervention group, the ATSPPH-SF scores increased from T1 to T2 ( $P < .001$ ;  $d = 0.8$ ), T1 to T3 ( $P < .001$ ;  $d = 0.9$ ), and T1 to T4 ( $P < .001$ ;  $d = 0.7$ ). The scores were not different between T2, T3, and T4. For the control group, the ATSPPH-SF scores decreased from T1 to T2 ( $P = .004$ ;  $d = 0.3$ ) and increased between T2 and T3 ( $P = .05$ ;  $d = 0.2$ ). Differences were present in the ATSPPH-SF scores between groups at T2 ( $P < .001$ ;  $d = 1.2$ ), T3 ( $P < .001$ ;  $d = 1.0$ ), and T4 ( $P < .001$ ;  $d = 0.9$ ; Figure 3).

**Mental Health Literacy Scale.** We saw a significant group-by-time interaction effect for the MHLS scores ( $F_{3,118.4} = 38.8$ ;  $P < .001$ ). Similarly, significant group-by-time interaction effects were observed for the recognition ( $F_{3,125.9} = 14.3$ ;  $P < .001$ ), knowledge ( $F_{3,125.4} = 23.3$ ;  $P < .001$ ), and attitude ( $F_{3,118.5} = 29.2$ ;  $P < .001$ ) subscales.

In the intervention group, the MHLS scores increased from T1 to T2 ( $P < .001$ ;  $d = 1.1$ ), T1 to T3 ( $P < .001$ ;  $d = 1.0$ ), and T1 to T4 ( $P < .001$ ;  $d = 1.1$ ), but it was not different between T2, T3, and T4. In the control group, the MHLS scores decreased from T1 to T2 ( $P < .001$ ;  $d = 0.4$ ), T1 to T3 ( $P = .001$ ;  $d = 0.3$ ), and T1 to T4 ( $P < .001$ ;  $d = 0.3$ ). Differences were found in the MHLS scores between the intervention and control groups at T2 ( $P < .001$ ;  $d = 1.3$ ), T3 ( $P < .001$ ;  $d = 1.2$ ), and T4 ( $P < .001$ ;  $d = 1.3$ ; Figure 4A).

The MHLS recognition score in the intervention group increased from T1 to T2 ( $P < .001$ ;  $d = 1.0$ ), T1 to T3 ( $P < .001$ ;  $d = 1.0$ ), and T1 to T4 ( $P < .001$ ;  $d = 1.0$ ), but it was not different between T2, T3, and T4. In the control group, the recognition score increased from T2 to T3 ( $P = .007$ ;  $d = 0.3$ ) and T2 to T4 ( $P = .001$ ;  $d = 0.3$ ). Differences were demonstrated in the recognition

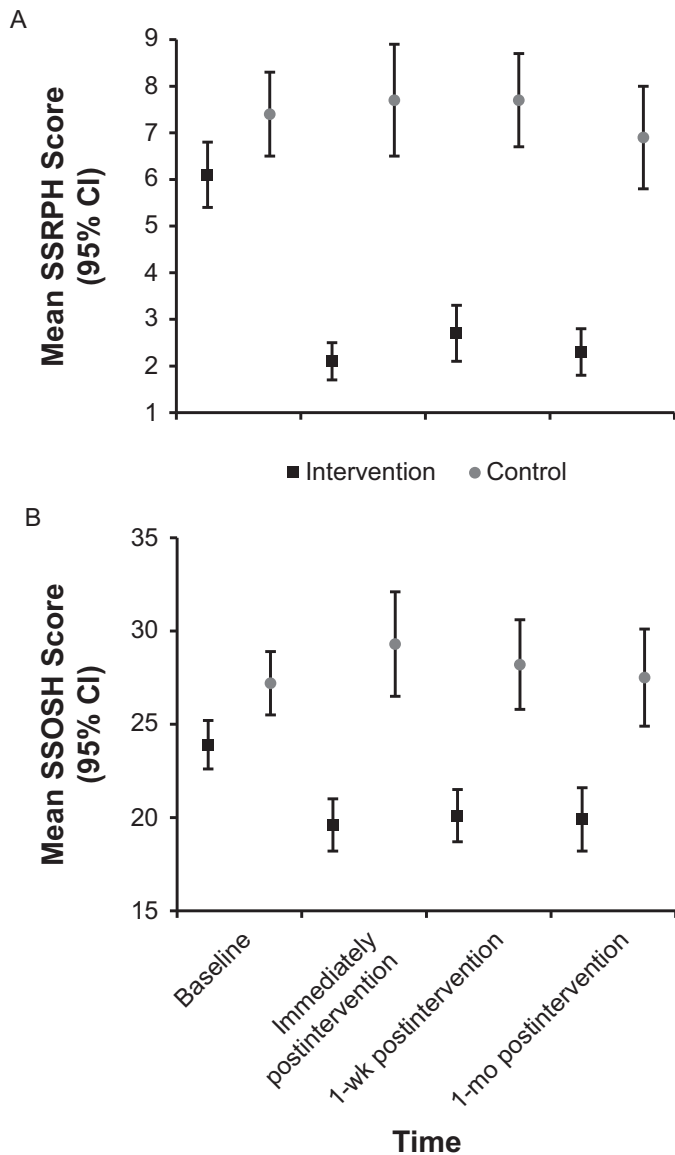
scores between the intervention and control groups at T2 ( $P < .001$ ;  $d = 1.2$ ), T3 ( $P < .001$ ;  $d = 1.0$ ), and T4 ( $P < .001$ ;  $d = 0.9$ ; Figure 4B).

The MHLS knowledge score in the intervention group increased from T1 to T2 ( $P < .001$ ;  $d = 1.1$ ), T1 to T3 ( $P < .001$ ;  $d = 1.1$ ), and T1 to T4 ( $P < .001$ ;  $d = 1.1$ ), but it was not different between T2, T3, and T4. No differences were shown in the control group between T1, T2, T3, and T4. Differences were evident in the knowledge scores between the intervention and control groups at T2 ( $P < .001$ ;  $d = 1.3$ ), T3 ( $P < .001$ ;  $d = 1.3$ ), and T4 ( $P < .001$ ;  $d = 1.4$ ; Figure 4C).

In the intervention group, the MHLS attitudes score increased from T1 to T2 ( $P < .001$ ;  $d = 0.7$ ), T1 to T3 ( $P < .001$ ;  $d = 0.6$ ), and T1 to T4 ( $P < .001$ ;  $d = 0.8$ ); however, it was not different between T2, T3, and T4. In the control group, the attitudes score decreased from T1 to T2 ( $P < .001$ ;  $d = 0.5$ ), T1 to T3 ( $P < .001$ ;  $d = 0.4$ ), and T1 to T4 ( $P < .001$ ;  $d = 0.4$ ). We found differences in the attitudes scores between the intervention and control groups at T2 ( $P < .001$ ;  $d = 1.1$ ), T3 ( $P < .001$ ;  $d = 1.0$ ), and T4 ( $P < .001$ ;  $d = 1.1$ ; Figure 4D).

### Participant Feedback

Participants rated the program positively, with an overall score of  $3.6 \pm 0.5$  (see Supplemental Material D, available online at <http://dx.doi.org/10.4085/1062-6050-0463.22.S4>). They liked that the program was informative, specific to Gaelic football, well communicated, relevant, interesting, clear, and concise; addressed mental health as an important topic; was available online; and provided additional online resources (see Supplemental Material D). Of the intervention group participants who offered feedback ( $n = 55$ ), the majority ( $n = 38$ , 69%) stated that there were no elements of the program that they disliked or would change, but some participants ( $n = 12$ , 22%) disliked the repetitiveness of the measures and would have liked more concise surveys. In addition, 4 participants (7%) reported that the MHL educational program was lacking detail and was too simple, only delivered on 1 occasion, supplied no new information, and required more in-depth psychology detail. A small number of participants

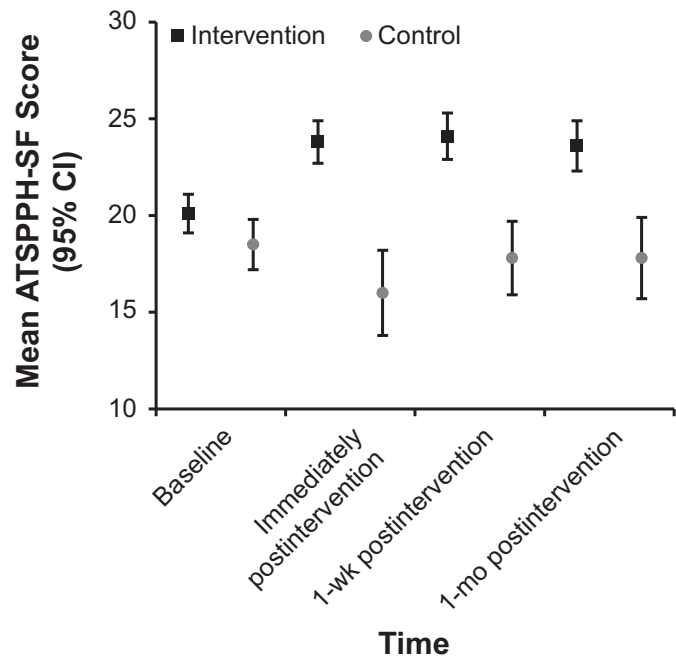


**Figure 2.** Stigma scores per group across the intervention period (mean, 95% CI). Abbreviation: SSRPH, Stigma Scale for Receiving Psychological Help; SSOSH, Self-Stigma of Seeking Help Scale.

acknowledged the need for greater interaction ( $n = 3$ , 5%), access to a recorded version of the presentation ( $n = 2$ , 4%), and more detailed information ( $n = 4$ , 7%). Participants indicated that the additional information pack received after the presentation was informative ( $n = 25$ , 45%), a useful reminder and reference tool ( $n = 17$ , 31%), and clear and concise ( $n = 3$ , 5%). Detailed results of the feedback received are available in Supplemental Material D.

## DISCUSSION

Our aims were to design a novel educational intervention program for improving MHL in Gaelic footballers and examine its effectiveness. As hypothesized, the “GAA Mental Health—Injury and a Healthy Mind” educational program was effective in decreasing mental health stigma, improving attitudes toward help-seeking, and increasing



**Figure 3.** Attitude scores per group across the intervention period (mean, 95% CI). Abbreviation: ATSPPH-SF, Attitudes Towards Seeking Professional Psychological Help-Short Form.

the recognition and knowledge of mental health conditions compared with a control group. The effect sizes were large and the changes were sustained at 1-week and 1-month follow-ups.

## Stigma

The MHL educational program decreased the stigma associated with seeking and receiving psychological help from baseline to after the intervention, improvements that were retained at follow-up. Previous researchers similarly identified that a brief internet-based mental health and destigmatizing intervention<sup>12</sup> and an educational mental health program<sup>10,11</sup> reduced stigma in elite and collegiate athletes, respectively. The reduction of stigma in Gaelic footballers was retained at the 1-month follow-up, which was not evident<sup>10</sup> or reported in earlier studies.<sup>11</sup>

We found differences in stigma at baseline between the intervention and control groups. With the quasi-experimental design, intervention group participants were recruited first, followed by control group participants. Despite no differences in participant characteristics at baseline, those who initially signed up may have been more willing to be involved possibly due to prior experience with mental health issues or exposure to those with mental health issues, which may explain the lower stigma scores in the intervention group. In addition, self-stigma in the intervention group at baseline (mean =  $23.9 \pm 5.5$ ) was lower than levels observed in collegiate athletes (mean =  $25.1\text{--}25.4$ ),<sup>10,22</sup> while the control group had a greater SSOSH score (mean =  $27.2 \pm 7.3$ ). Along with the possibly greater willingness of the intervention group to engage with mental health research, as outlined previously, this may be attributed to the additional pressures collegiate athletes face, such as pressure to maintain scholarships or achieve professional contracts,<sup>29</sup> resulting in greater help-seeking self-stigma than evident in amateur

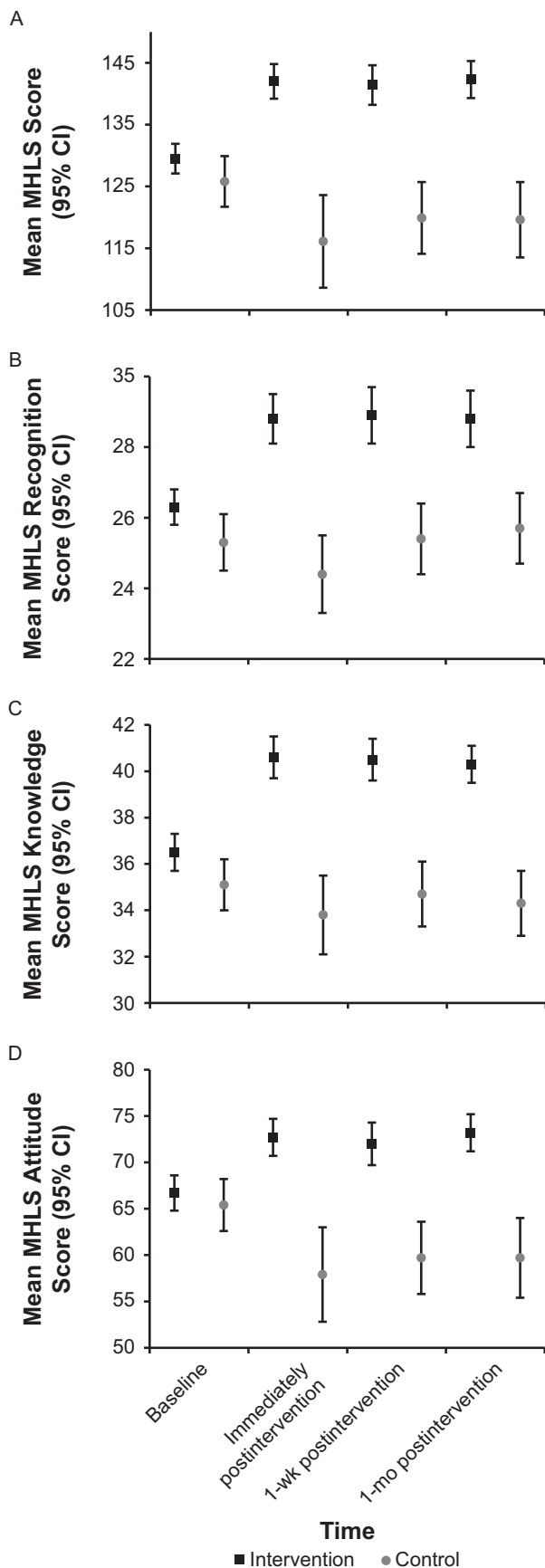


Figure 4. Mental health literacy scores per group across the intervention period (mean, 95% CI). Abbreviation: MHLs, Mental Health Literacy Scale.

Gaelic footballers. Self-stigma was also lower in Gaelic footballers at the 1-month follow-up (mean =  $19.9 \pm 6.5$ ) than observed at a similar follow-up in collegiate athletes who completed an MHL program (mean =  $23.1 \pm 5.6$ ).<sup>10</sup> Perceived stigma for receiving help at baseline (mean =  $6.2 \pm 3.3$ ) was in line with the level observed in collegiate athletes (mean = 6.1),<sup>22</sup> but the control group had higher SSRPH scores (mean =  $7.4 \pm 4.1$ ).

Athlete mental health is often framed using language consistent with mental illness,<sup>30</sup> so help-seeking stigma can be heightened in an athletic setting.<sup>31</sup> Athletes need to be comfortable in their environment, where they are free to ask for help without judgement or negative consequences and will receive the necessary assistance from expert mental health professionals.<sup>32</sup> Our findings provide evidence for the implementation of a brief MHL educational program in community sport to reduce the stigma associated with help-seeking. The current intervention presented here aimed to normalize mental health and help-seeking by debunking common myths and misconceptions about mental health conditions and offering the perspectives of elite players. The use of athlete role models to convey destigmatizing information and address stereotypes<sup>13</sup> can supply vicarious reinforcement to players<sup>33</sup> and proved to be effective in eliciting changes in stigma perceived by Gaelic footballers. By reducing stigma and creating a healthy mental health culture advocating for mental well-being and mental health help-seeking, Gaelic footballers may be better equipped to manage stressors.

### Attitudes

Attitudes toward help-seeking improved in the intervention group, with the differences sustained at 1 week and 1 month. Previous researchers<sup>10</sup> identified similar increases in help-seeking attitudes after a 4-week educational program in collegiate athletes (age =  $19.2 \pm 1.5$  years) from a variety of sports. Extensive MHL programs may not be necessary, as our brief educational intervention elicited comparable effects.

Baseline help-seeking attitudes were lower in both the intervention (mean =  $20.0 \pm 4.6$ ) and control (mean =  $18.5 \pm 5.7$ ) groups than preintervention attitude scores in collegiate athletes (mean =  $27.5 \pm 4.6$ ),<sup>10</sup> indicating that Gaelic footballers may have worse attitudes toward help-seeking. Irish elite athletes previously reported positive attitudes and a willingness to seek sport psychology consulting when dealing with injury and rehabilitation.<sup>34</sup> The conflicting findings suggest differences in attitudes between mental health help-seeking and sport psychology consulting for physical performance benefits, with a preference for seeking help in the latter situation.<sup>34</sup> Professional athletes may also have greater access to mental health professionals and, therefore, better attitudes toward help-seeking than Gaelic football players.

As with stigma, normalizing the conversation and increasing visibility can improve overall attitudes toward mental health issues.<sup>35</sup> Exposing Gaelic footballers to an MHL educational program may provide that visibility, and using specific examples of the mental health experiences of Gaelic footballers can help players relate to the content, supporting better help-seeking attitudes. Thus, a sport-specific educational intervention program may improve attitudes toward help-seeking and

is an essential step in preparing Gaelic footballers to effectively manage mental health conditions.

## Recognition and Knowledge

The educational intervention program improved the recognition and knowledge of mental health issues and help-seeking resources, with increases sustained at follow-up. Improved recognition or knowledge was similarly facilitated in collegiate<sup>10,11</sup> and youth athletes,<sup>15</sup> coaches,<sup>36</sup> elite sport staff,<sup>33</sup> parents of youth sports participants,<sup>37,38</sup> and sports club leaders.<sup>39,40</sup> Baseline MHL was greater in the intervention (mean = 129.5 ± 10.9) and control (mean = 125.8 ± 17.8) groups than in student-athletes (mean = 123.4 ± 11.1).<sup>10</sup> Mental health literacy decreased in the control group from baseline to immediately after the intervention and follow-up, whereas the scores on the attitudes subscale decreased across all time points. This suggests that MHL can fluctuate over time and may be affected by experiences of daily living. Better MHL reflects a greater intention to seek help<sup>41</sup>; combined with a lack of knowledge of mental disorders and their symptoms and poor awareness of help-seeking services previously acknowledged as key barriers to help-seeking among Gaelic footballers,<sup>9</sup> the findings indicate the importance of an MHL education program for players.

Improving MHL can not only benefit the development and use of knowledge to improve overall mental well-being but also change attitudes, help overcome stigma, and create opportunities to seek help.<sup>3</sup> In particular, those with greater mental health knowledge have more intentions to engage with those who have a mental health condition,<sup>42</sup> which may be due to less stigma and more positive attitudes toward mental health. Interventions can also support intervention participants in transferring newly acquired knowledge or helping behaviors with family, friends, and social networks.<sup>33</sup> Organized sport, particularly Gaelic football (the most popular participatory sport in Ireland),<sup>43</sup> is a promising avenue for mental health education and promotion, whereby teammates look out for and support one another on the field (a concept that can be extended off the field), to facilitate and support mental well-being among players.<sup>15</sup> Therefore, mental health and well-being MHL educational programs in community sports should be seen as an essential component of athlete care and well-being, and stakeholders must consider providing mental health programs for all players across the organizations.

## Strengths and Limitations

Participants positively rated the MHL educational program and acknowledged that it addressed mental health as an important topic needing more attention and discussion in Gaelic football environments. Gaelic football is a popular community sport in Ireland, and the current findings can be translated to similar sports environments internationally. In addition, problems identified with previous interventions<sup>2,13</sup> were addressed: the program was underpinned by an appropriate theoretical framework, addressed all domains of MHL, and used valid and reliable psychometric measures to assess changes in MHL, and we recruited a large sample size and control group.<sup>2,13</sup>

We adopted a quasi-experimental design, as a randomized controlled trial was not feasible, which may have resulted in unobserved and potentially confounding variables between

groups attributed to the lack of random assignment. However, this design is more robust than a single-group pre-post design and was deemed most appropriate. Participants' previous mental health experiences or education was not measured, and self-selection bias may have had an effect, with some players being potentially more willing to engage. Future researchers may minimize these factors by accounting for prior mental health education and using multiple recruitment strategies. Intentions to seek help were not measured, and follow-up was conducted over only a 4-week period, which did not allow us to examine the long-term implications and sustained benefits of the program. Future investigators should consider longer follow-up periods or use longitudinal studies to evaluate actual help-seeking behaviors after the intervention.

## CONCLUSIONS

The "GAA and Mental Health—Injury and a Healthy Mind" educational program, a brief, accessible, structured, and targeted program designed specifically for Gaelic games athletes, may be a practical and viable approach for eliciting effective changes in MHL. Our findings demonstrated that the program was beneficial in improving Gaelic footballers' recognition, knowledge, and attitudes and reducing help-seeking stigma, with large effect sizes evident. This pioneering and novel educational program sparks the conversation around mental health and paves the way for the support of mental health and well-being. The program also essentially showed utility in transferring to other community sports beyond Gaelic football, extending the benefits for improving MHL and help-seeking across Ireland and internationally, which is key to further normalizing the conversation around mental health in the community.

## ACKNOWLEDGMENTS

This research was funded by the Technological University of the Shannon: Midlands-Midwest Seed Funding.

## REFERENCES

1. Jorm AF, Korten AE, Rodgers B, et al. Belief systems of the general public concerning the appropriate treatments for mental disorders. *Soc Psychiatry Psychiatr Epidemiol*. 1997;32(8):468–473. doi:10.1007/BF00789141
2. Kutcher S, Bagnell A, Wei Y. Mental health literacy in secondary schools: a Canadian approach. *Child Adolesc Psychiatr Clin N Am*. 2015;24(2):233–244. doi:10.1016/j.chc.2014.11.007
3. Gorczynski P, Currie A, Gibson K, et al. Developing mental health literacy and cultural competence in elite sport. *J Appl Sport Psychol*. 2021;33(4):387–401. doi:10.1080/10413200.2020.1720045
4. Teneo sport and sponsorship index. Twitter. Accessed February 1, 2023. <https://twitter.com/teneoireland/status/1603125745257050115>
5. Gouttebauge V, Tol JL, Kerkhoffs GMMJ. Epidemiology of symptoms of common mental disorders among elite Gaelic athletes: a prospective cohort study. *Phys Sportsmed*. 2016;44(3):283–289. doi:10.1080/00913847.2016.1185385
6. Whooley D. "I'm still here": GAA stars breaking the taboo of mental illness. Independent.ie. Published May 2, 2014. Accessed February 1, 2023. <https://www.independent.ie/sport/gaelic-football/im-still-here-gaa-stars-breaking-the-taboo-of-mental-illness-30238070.html>
7. Ó Conchúir D. Wicklow's Alan Daly: "Suicide is a permanent fix to a temporary problem. What my girlfriend did was life-saving." Irish Examiner. Published November 19, 2020. Accessed February 1, 2023. <https://www.irishexaminer.com/sport/gaa/arid-40085285.html>



8. Moloney E. "There are people there to help." Family of Red Óg Murphy urge people in distress to reach out this Christmas. Independent.ie. Published December 18, 2022. Accessed February 1, 2023. <https://www.independent.ie/irish-news/there-are-people-there-to-help-family-of-red-og-murphy-urge-people-in-distress-to-reach-out-this-christmas-42227989.html>
9. O'Keeffe S, Ni Chéilleachair N, Campbell M, O'Connor S. Barriers and facilitators to mental health help-seeking in elite Gaelic footballers post-injury: a qualitative study. *Res Q Exerc Sport*. 2022; 93(3):488–503. doi:10.1080/02701367.2020.1865517
10. Chow G, Bird M, Gabana N, Cooper B, Swanbrow Becker M. A program to reduce stigma toward mental illness and promote mental health literacy and help-seeking in NCAA Division I student-athletes. *J Clin Sport Psychol*. 2020;15(3):185–205. doi:10.1123/jcsp.2019-0104
11. Breslin G, Haughey T, O'Brien W, Caulfield L, Robertson A, Lawlor M. Increasing athlete knowledge of mental health and intentions to seek help: The State of Mind Ireland (SOMI) Pilot Program. *J Clin Sport Psychol*. 2018;12(1):39–56. doi:10.1123/jcsp.2016-0039
12. Gulliver A, Griffiths KM, Christensen H, et al. Internet-based interventions to promote mental health help-seeking in elite athletes: an exploratory randomized controlled trial. *J Med Internet Res*. 2012;14(3):e69. doi:10.2196/jmir.1864
13. Breslin G, Shannon S, Haughey T, Donnelly P, Leavey G. A systematic review of interventions to increase awareness of mental health and well-being in athletes, coaches and officials. *Syst Rev*. 2017; 6(1):177. doi:10.1186/s13643-017-0568-6
14. Breslin G, Smith A, Donohue B, et al. International consensus statement on the psychosocial and policy-related approaches to mental health awareness programmes in sport. *BMJ Open Sport Exerc Med*. 2019;5(1):e000585. doi:10.1136/bmjsem-2019-000585
15. Liddle SK, Deane FP, Batterham M, Vella SA. A brief sports-based mental health literacy program for male adolescents: a cluster-randomized controlled trial. *J Appl Sport Psychol*. 2019;33(1):20–44. doi:10.1080/10413200.2019.1653404
16. Aller TB, Kelley HH, Fauth EB, Barrett TS. A non-randomized, quasi-experimental comparison of effects between an in-person and online delivery of a college mental health literacy curriculum. *Prev Sci*. 2022;23(7):1208–1215. doi:10.1007/s1121-022-01350-y
17. Reavley N, Jorm AF. Prevention and early intervention to improve mental health in higher education students: a review. *Early Interv Psychiatry*. 2010;4(2):132–142. doi:10.1111/j.1751-7893.2010.00167.x
18. Vella SA, Swann C, Batterham M, et al. Ahead of the game protocol: a multi-component, community sport-based program targeting prevention, promotion and early intervention for mental health among adolescent males. *BMC Public Health*. 2018;18(1):390. doi:10.1186/s12889-018-5319-7
19. Moesch K, Kentta G, Kleinert J, Quignon-Fleuret C, Cecil S, Bertollo M. FEPSAC position statement: mental health disorders in elite athletes and models of service provision. *Psychol Sport Exerc*. 2018; 38:61–71. doi:10.1016/j.psychsport.2018.05.013
20. Komiya N, Good GE, Sherrod NB. Emotional openness as a predictor of college students' attitudes toward seeking psychological help. *J Counsel Psychol*. 2000;47(1):138–143. doi:10.1037/0022-0167.47.1.138
21. Hilliard RC, Redmond LA, Watson JC II. The relationships among self-compassion, stigma, and attitudes toward counseling in student-athletes. *J Clin Sport Psychol*. 2019;13(3):374–389. doi:10.1123/jcsp.2018-0027
22. Wahto RS, Swift JK, Whipple JL. The role of stigma and referral source in predicting college student-athletes' attitudes toward psychological help-seeking. *J Clin Sport Psychol*. 2016;10(2):85–98. doi:10.1123/JCSP.2015-0025
23. Vogel DL, Wade NG, Haake S. Measuring the self-stigma associated with seeking psychological help. *J Counsel Psychol*. 2006;53(3):325–327. doi:10.1037/0022-0167.53.3.325
24. Fischer EH, Farina A. Attitudes toward seeking professional psychological help: a shortened form and considerations for research. *J Coll Stud Dev*. 1995;36(4):368–373.
25. O'Connor M, Casey L. The Mental Health Literacy Scale (MHLS): a new scale-based measure of mental health literacy. *Psychiatry Res*. 2015;229(1–2):511–516. doi:10.1016/j.psychres.2015.05.064
26. Terry PC, Lane AM, Lane HJ, Keohane L. Development and validation of a mood measure for adolescents. *J Sports Sci*. 1999;17(11):861–872. doi:10.1080/026404199365425
27. Black Becker C, McDaniel L, Bull S, Powell M, McIntyre K. Can we reduce eating disorder risk factors in female college athletes? A randomized exploratory investigation of two peer-led interventions. *Body Image*. 2012;9(1):31–42. doi:10.1016/j.bodyim.2011.09.005
28. Gupta SK. Intention-to-treat concept: a review. *Perspect Clin Res*. 2011;2(3):109–112. doi:10.4103/2229-3485.83221
29. Etzel EF. Understanding and promoting college student-athlete health: essential issues for student affairs professionals. *NASPA Journal*. 2006;43(3):518–546. doi:10.2202/1949-6605.1682
30. Hughes L, Leavey G. Setting the bar: athletes and vulnerability to mental illness. *Br J Psychiatry*. 2012;200(2):95–96. doi:10.1192/bjp.bp.111.095976
31. Leimer AD, Leon RA, Shelley K. Stigmas and stereotypes: counseling services for student-athletes. *J Stud Sports Athl Educ*. 2014;8(2):121–135. doi:10.1179/1935739714Z.00000000022
32. Bauman NJ. The stigma of mental health in athletes: are mental toughness and mental health seen as contradictory in elite sport? *Br J Sports Med*. 2016;50(3):135–136. doi:10.1136/bjsports-2015-095570
33. Sebbens J, Hassmén P, Crisp D, Wensley K. Mental Health in Sport (MHS): improving the early intervention knowledge and confidence of elite sport staff. *Front Psychol*. 2016;7:911. doi:10.3389/fpsyg.2016.00911
34. Woods D, Meade MM, Mahoney C, Breslin G. Elite athlete receptivity to sport psychology consulting in Ireland. *Ir J Psychol*. 2016;36(1–4):1–17. doi:10.1080/03033910.2016.1188136
35. Otterbein M, Miller Aron C, Gorczynski P. The role of coaches, institutions, and clinicians in addressing athlete mental health. *J Emerg Sport Stud*. 2021;6(2021):2–9.
36. Breslin G, Haughey TJ, Donnelly P, Kearney C, Prentice G. Promoting mental health awareness in sports clubs. *J Public Ment Health*. 2017;16(2):55–62. doi:10.1108/JPMH-08-2016-0040
37. Hurley D, Allen MS, Swann C, Vella SA. A matched control trial of a mental health literacy intervention for parents in community sports clubs. *Child Psychiatry Hum Dev*. 2020;52(1):141–153. doi:10.1007/s10578-020-00998-3
38. Hurley D, Allen MS, Swann C, Okely AD, Vella SA. The development, pilot, and process evaluation of a parent mental health literacy intervention through community sports clubs. *J Child Fam Stud*. 2018;27(2):2149–2160. doi:10.1007/s10826-018-1071-y
39. Pierce D, Liaw ST, Dobell J, Anderson R. Australian rural football club leaders as mental health advocates: an investigation of the impact of the Coach the Coach project. *Int J Ment Health Syst*. 2010;4:10. doi:10.1186/1752-4458-4-10
40. Bapat S, Jorm A, Lawrence K. Evaluation of a mental health literacy training program for junior sporting clubs. *Australas Psychiatry*. 2009;17(6):475–479. doi:10.1080/10398560902964586
41. Smith CL, Shochet IM. The impact of mental health literacy on help-seeking intentions: results of a pilot study with first year psychology students. *Int J Ment Health Promot*. 2011;13(2):14–20. doi:10.1080/14623730.2011.9715652
42. Breslin G, Shannon S, Ferguson K, Devlin S, Haughey T, Prentice G. Predicting athlete mental health stigma using the theory of reasoned action framework. *J Clin Sport Psychol*. 2019;13(1):103–115. doi:10.1123/jcsp.2017-0055
43. Reilly B, Akubat I, Lyons M, Collins DK. Match-play demands of elite youth Gaelic football using global positioning system tracking. *J Strength Cond Res*. 2015;29(4):989–996. doi:10.1519/JSC.0000000000000714

## SUPPLEMENTAL MATERIAL

**Supplemental Material A.** Matrix of objectives.

Found at DOI: <http://dx.doi.org/10.4085/1062-6050-0463.22.S1>

**Supplemental Material B.** Program content.

Found at DOI: <http://dx.doi.org/10.4085/1062-6050-0463.22.S2>

**Supplemental Material C.** Pilot study results and feedback.

Found at DOI: <http://dx.doi.org/10.4085/1062-6050-0463.22.S3>

**Supplemental Material D.** Participant feedback.

Found at DOI: <http://dx.doi.org/10.4085/1062-6050-0463.22.S4>

---

*Address correspondence to Sinéad O’Keeffe, PhD, CAT, Dublin City University, Glasnevin, Dublin 9, 0000 Ireland. Address email to [sinead.okeeffe@dcu.ie](mailto:sinead.okeeffe@dcu.ie).*