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The impact of abuse experiences and coping responses on distress and mental health outcomes in sports officials

Tom Lishman [a], Stephen Shannon [b], Orla McDevitt-Petrovic [a], Gavin Breslin [c] and Noel E. Brick [a]

aSchool of Psychology, Ulster University, Coleraine, Northern Ireland; bSport and Exercise Sciences Research Institute, Ulster University, Belfast, Northern Ireland; cSchool of Psychology, Queen's University, Belfast, Northern Ireland

ABSTRACT

Sports officials (e.g., referees) experience multiple role-related stressors, including episodes of verbal, physical, and social media abuse. However, the impact of strategies employed to cope with abuse experiences is unknown. The aims of this study were to: (i) explore the prevalence and frequency of abuse experiences over a single season, (ii) determine the impact of abuse and other stressors on sports officials' mental health, and (iii) understand the mental health impact of strategies utilised by sports officials to cope with abuse experiences. A total of 303 Gaelic games match officials completed an online survey measuring stressors (including abuse experiences), coping strategies, and mental health outcomes. Correlational and path analyses explored relationships between abuse experiences, coping strategies, distress, and subsequent mental health outcomes. In total, 88.11% of officials reported experiences of verbal abuse, 7.59% physical abuse, and 17.16% social media abuse during the previous season. Greater use of both avoidance-cognitive and approach-oriented coping was associated with higher distress and poorer mental health outcomes following verbal abuse. Moreso, greater use of avoidance-cognitive strategies to cope with verbal abuse from players predicted higher distress which, in turn, predicted higher anxiety, higher depression, and lower mental well-being. For social media abuse, self-blame, planning, and behavioural disengagement were associated with poorer mental health. The findings suggest that sports officials employ maladaptive coping for abuse experiences, negatively impacting on mental health outcomes. Developing alternative strategies, such as mastery-oriented coping, may help sports officials to deal with abuse experiences and better protect their mental health.

Research has highlighted many protective factors for both physical and mental health that sports participation provides, including higher sport confidence and greater social

support (Küttel & Larsen, 2020). Despite this, several studies have reported significant levels of mental ill-health amongst athletes with prevalence rates ranging between 3.7% and 36.5% for mild or more severe depression and between 6% and 14.6% for mild or more severe anxiety (Du Preez et al., 2017; Reardon et al., 2019). Risk factors for these mental health challenges include injury, deselection, and low-support environments, and exploration of these factors has led to significant improvements in mental health provision for athletes in recent times (Breslin & Leavey, 2024; Breslin et al., 2019; Küttel & Larsen, 2020).

In contrast to athlete populations, relatively little research has explored the mental health of sports officials (i.e., referees, umpires, judges). This is despite the essential role of sports match officials (MOs) who facilitate competition according to the laws of the sport (Hancock et al., 2021). Recent research has shed light on the epidemiology of mental health concerns within this population. Specifically, prevalence rates for mild or more depression range between 4.8% and 34.6%, and between 4.9% and 24% for mild or more severe anxiety, both equivalent to data reported for athlete populations (e.g., Brick et al., 2022; Lima et al., 2023). Understanding factors that contribute to poor mental health in sporting populations is crucial to inform tailored interventions (Breslin & Leavey, 2024; Oftadeh-Moghadam et al., 2023) and relevant stressors encountered by MOs include both performance-related (e.g., errors in decision-making, media scrutiny) and non-performance related (e.g., occupational demands, sexual objectification for female MOs) sources (Tingle et al., 2022). Yet, despite highlighting the existence of stressors within officiating, little research has explored the mental health impact of these stressors to date.

Abuse is regarded as the foremost stressor for MOs and is a primary contributor to MO attrition (Brick et al., 2022; Mojtahedi et al., 2022). MO abuse includes verbal abuse (e.g., swearing at an MO) and physical assault (e.g., pushing, punching). Existing literature reports a career-long prevalence of abuse experiences ranging from 51% to 94% for verbal abuse and 14% to 23% for physical abuse in Gaelic games and association football (e.g., Brick et al., 2022; Webb et al., 2020). Despite these findings, no studies to date have explored abuse prevalence over a single season. This omission is noteworthy given that previous research (e.g., Brick et al., 2022) has reported associations between historical abuse experiences (i.e., at any point in an MOs career) and current mental ill-health symptoms (i.e., experienced over the previous 2 weeks). Although highlighting these associations is important, reporting abuse experiences over the course of a single season could provide a more accurate determination of the impact of proximal abuse experiences on MO mental health and attrition outcomes. Equally, no studies to date have explored other sources of abuse, such as experiences of social media abuse. Social media abuse is defined as "direct or non-direct online communication that is stated in an aggressive, exploitative, manipulative, threatening, or lewd manner" (Kavanagh et al., 2020, p. 12). Highlighting the pervasiveness of social media abuse in sporting contexts, Vidgen et al. (2022) reported that 68% of English Premier League footballers received at least one abusive tweet during the first five months of the 2021–22 season. Revealing the insidious nature of this abuse, former rugby union referee, Wayne Barnes, recently reported on the distress caused by threats of violence directed towards him and his family, via social media, following the 2023 Rugby World Cup (BBC, 2023).

Despite such anecdotal insights, the prevalence and impact of social media abuse on MOs is unknown.

Given the range of unique stressors experienced by MOs, identifying appropriate coping is vital to support MOs and to minimise the impact of stressors on mental health and MO attrition (Gorczynski & Webb, 2022). Coping is defined as one's "constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p.141). Although many descriptions of coping exist, the most prominent within the sport psychology literature are *trait* and *process* perspectives (e.g., Nicholls & Polman, 2007). The trait perspective considers coping *styles* and suggests that an individual's coping style is a relatively stable approach whereby individuals bring a preferred set of coping *strategies* to handle a situation (e.g., Aldwin, 1994). In contrast, the process approach considers coping as an interaction between an individual and their external environment. From this transactional perspective, the coping process involves cognitive appraisals whereby individuals interpret and respond to external events which ultimately determines the impact of these events (e.g., distress; Lazarus, 1999; Lazarus & Folkman, 1984). Two appraisals are purported to occur. Initially, a primary appraisal is made to assess if a situational event may hinder goal attainment. Based on this primary appraisal, the individual evaluates whether the event is important and whether it endangers their well-being. As such, primary appraisals include appraisals of *harm/loss* that may have already taken place; *benefit* for potential future gain; *threat* concerning potential future risk; or *challenge* when an event is seen as surmountable (Lazarus, 1999). These primary appraisals are followed by a secondary appraisal whereby the individual evaluates which coping options are available to them (i.e., what they will do to cope), especially when the primary process results in a harm/loss or threat appraisal (Lazarus, 1999). Based on this process approach, the choice of coping strategies used are based on (a) the primary appraisal of an event and its impact (e.g., of potential threat), and (b) the individual's evaluation of the coping resources available to them. Ultimately, whether an individual successfully copes with an event, or not (e.g., experiences distress or lower wellbeing), depends on the choice of coping strategy used.

Coping strategies have been categorised in several different ways. Higher-order dimensions include problem – and emotion-focused coping (Lazarus & Folkman, 1984). Problem-focused strategies are intended to alter the stressful situation and, in a match officiating context, may include active strategies such as issuing a caution to deal with verbal abuse or dissent, for example. In contrast, emotion-focused strategies are intended to decrease the distress related to an event and may include seeking emotional support from others. Despite its simplicity, this categorisation of coping has often been criticised because of the difficulty to adequately categorise coping strategies as solely problem – or emotion-focused (e.g., Stanisławski, 2019). Consequently, alternative coping dimensions have also been proposed, including avoidance – and approach-oriented coping (e.g., Roth & Cohen, 1986). Avoidance coping includes both behavioural (e.g., physical distancing) and psychological (e.g., cognitive distancing) efforts to disengage from a stressful situation, whereas approach coping involves confronting the source of stress and deliberately attempting to reduce it, such as planning or taking direct action (e.g., Nicholls & Polman, 2007).

Specific to officiating, these dimensions of avoidance and approach coping have recently been used to categorise coping responses to abuse experiences amongst MOs (see Mojtahedi et al., 2022). As such, MOs have been reported to employ a combination of approach and avoidance coping strategies when attempting to manage interpersonal conflict. Approach-oriented coping includes explaining decisions, using humour to de-escalate confrontation, or issuing penalisation (e.g., cautions) toward players or coaches (e.g., Anshel et al., 2014; Devís-Devís et al., 2021; Radziszewski et al., 2024). Dependent on situational factors (e.g., players' emotional responses), MOs may employ one or more of these strategies to increase perceived control, to present as respectful and approachable, or to help them remain focused on the game (Mojtahedi et al., 2022). In contrast, for less controllable sources of abuse (e.g., from spectators), MOs may employ avoidance-oriented strategies, including ignoring the abuse or not taking the abuse personally (Mojtahedi et al., 2022). Both forms of coping can have mixed effects, with approach coping suggested to prevent abuse escalation (Webb, 2017) but also to increase the risk of threat or harm when an MOs actions are rejected by players (Cleland et al., 2015; Cunningham et al., 2018). Similarly, avoidance coping can help MOs to negate some of the adverse consequences associated with abuse (e.g., interpersonal conflict) but can also lead to a loss of control and subsequent abuse escalation (Cunningham et al., 2018; Hill et al., 2016). Despite these insights, there remains a lack of understanding on the impact of approach and avoidance coping amongst MOs and whether they protect MOs from the negative impact of abuse on distress and mental health outcomes (Brick et al., 2022).

Whereas these various conceptualisations of coping originated within the non-sporting literature, Nicholls et al. (2016) recently developed a sport-specific classification of coping, incorporating relevant, pre-existing conceptualisations, to explore relationships between coping strategies used and subsequent outcomes within sporting settings. Within Nicholls et al.'s (2016) classification, three categories of coping were developed: (1) *mastery coping* (i.e., attempts to control the situation and eliminate the stressor including task-oriented and problem-focused coping), (2) *internal regulation strategies* (i.e., attempts to regulate one's internal response to stress including emotion-focused coping and acceptance) and (3) *goal withdrawal* (i.e., when one no longer works towards achieving their goal, including disengagement-oriented coping and venting). Based on meta-analytic findings, Nicholls et al. (2016) suggested that the most adaptive coping strategies, positively associated with sporting performance, were mastery-oriented, whereas goal withdrawal strategies were negatively associated with performance. Mastery-oriented strategies were also associated with lower distress, whereas goal withdrawal was negatively associated with perceived coping effectiveness within competition. Finally, internal regulation strategies had a small but statistically significant negative association with performance.

Summarising the extant literature, some important knowledge gaps are evident. First, despite insights into the career-long prevalence of MO abuse and subsequent mental health impact, no research has explored the prevalence of verbal, physical, and social media abuse of MOs within a single season. Equally, no studies have explored the mental health impact of coping strategies employed by MOs to deal with abuse experiences. Accordingly, the aims of this study were to: (i) explore the prevalence and frequency of verbal, physical, and social media abuse amongst MOs within a single

season, (ii) determine the impact of abuse and other stressors on mental health outcomes, and (iii) understand the impact of strategies utilised by MOs to cope with abuse on distress and mental health outcomes.

Materials and methods

Recruitment and procedure

Ethical approval was granted by the research ethics committee at the first author's institution in November 2022. Survey responses were collected between 14th December 2022 and 9th February 2023. To purposively sample MOs, an anonymous online survey using Qualtrics software was emailed to all registered Gaelic Athletic Association (GAA) MOs (approximately 1500 individuals) via the National MOs Manager. After providing informed consent, participants answered questions on: (1) demographics including age, years of officiating experience, games officiated during the 2022 season, main sport officiated (e.g., Gaelic soccer, hurling), match official role (e.g., referee, umpire), and officiating level (e.g., national-level, club-level, adult or youth), (2) experiences of verbal, physical, and social media abuse during the season, (3) impact of abuse on distress and mental health, (4) other sources of stress, and (5) strategies used to cope with abuse experiences.

Participants

Based on Brick et al. (2022), who reported small-to-medium relationships between verbal abuse frequency and mental health outcomes, and medium-to-large relationships between distress resulting from abuse and mental health outcomes, we completed a two-tailed a priori power analysis for bivariate correlations, estimating a small-to-medium effect ($\rho = .20$), alpha = .05, and power = .80, to suggest a minimum sample size of 193 individuals. Following the removal of incomplete responses (see *Data analysis*), the final dataset consisted of 303 responses (see Table 1 for demographic characteristics).

Survey items

Experiences of abuse

Items on experiences of abuse, including definitions of verbal and physical abuse, were adapted from Brick et al. (2022). After providing demographic data, participants

Table 1. Demographic characteristics of participants ($n = 303$).

Variable	
Age (Years)	45.19 ± 12.28
Sex	$m = 301$ (99.34%); $f = 2$ (0.66%)
Experience (Years)	11.37 ± 9.67
Number of games officiated in 2022	51.34 ± 40.68
Main Sport	Gaelic football ($n = 267$; 88.12%); Hurling ($n = 153$; 50.50%); Ladies Gaelic football ($n = 98$; 32.34%); Camogie ($n = 69$; 22.77%); Handball ($n = 1$; 0.33%).
Primary Role	Referee ($n = 299$; 98.68%); Sideline official ($n = 3$; 0.99%); Umpire ($n = 1$; 0.33%).
Current Highest Level	Club-level adult ($n = 191$; 63.04%); Club-level underage ($n = 36$; 11.88%); National Support Panel ($n = 32$; 10.56%); National Panel ($n = 31$; 10.23%); Provisional Panel ($n = 13$; 4.29%).

responded to questions relating to experiences of verbal, physical, and social media abuse. For the novel item on social media abuse, we asked participants to consider whether they had received "abusive/threatening comments made on Facebook, Twitter, etc., either directly or indirectly". Participants answered whether they had experienced these forms of abuse (Yes = 1, No = 2), during/after how many games they received what they considered to be abuse, and who they experienced abuse from (i.e., players, coaches, spectators). Adapted from Boxall and Lawler (2021), participants were also asked to describe the severity of any physical abuse experienced based on the injury or harm that resulted (minor = 1, moderate = 2, serious = 3, severe = 4, critical = 5). An open-ended question also asked participants to describe the injury or harm that resulted from physical abuse, where relevant. Participants were asked if episodes of abuse made them question whether to continue officiating, with response options ranging from "Strongly Agree" = 1 to "Strongly Disagree" = 5, whether they were planning to leave their role in the next 12 months (Yes = 1, No = 2) and "if yes, why?".

Distress

The impact of abuse on distress was ascertained using the Distress Screener (Braam et al., 2009), a short, 3-item survey used for identification of distress. Participants were asked if, during the week after they experienced either verbal, physical, or social media abuse, they suffered from worry, listlessness, or felt tense. Responses ranged on a 3-point Likert scale from: "No" = 0 to "Regularly or more often" = 2. Possible scores ranged from 0 to 6. Cronbach's alpha (α = 0.740 for verbal abuse, α = 0.857 for physical abuse, and α = .829 for social media abuse) indicated acceptable reliability (verbal abuse) and good reliability (physical and social media abuse) for the Distress Screener in this study.

Mental ill-health

Depression was screened using the 8-item version of the Patient Health Questionnaire (PHQ-8; Kroenke et al., 2009), and anxiety was screened using the Generalised Anxiety Disorder 7-item scale (GAD-7; Spitzer et al., 2006). Example items from each scale included "little interest or pleasure in doing things" (PHQ-8) and "feeling nervous, anxious or on edge" (GAD-7). For both scales, participants responded with how often they had experienced these feelings during the previous two weeks on a 4-point Likert scale ranging "Not at all" = 0 to "Nearly every day" = 3. For the PHQ-8, possible scores ranged from 0–24 and thresholds for depression, based on Kroenke et al. (2009), were no symptoms (0–4), mild (5–9), moderate (10–14), moderately severe (15–19), and severe (20–24). Possible scores ranged from 0–21 for the GAD-7 and thresholds for anxiety (Spitzer et al., 2006) were minimal (0–4), mild (5–9), moderate (10–14), and severe (15–21). Cronbach's alpha indicated good reliability for the PHQ-8 (α = 0.869) and excellent reliability for the GAD-7 (α = 0.926) in the present study.

Based on Åkesdotter et al. (2020), participants were also asked if they had ever experienced psychological suffering (daily for at least 2 weeks) so severe that they had significant difficulties functioning as usual in everyday life and/or in sports (Yes = 1, No = 2, Prefer not to say = 3), whether they had received formal support from mental health services for a mental health issue (Yes = 1, No = 2, Prefer not to say = 3), whether they had received mental health awareness training through their sport (Yes = 1, No = 2), and whether they were interested to receive such training in the future (Yes = 1, No = 2).

Mental well-being

The Mental Health Continuum-Short Form (MHC-SF; Keyes et al., 2008) assessed mental well-being. The MHC-SF consisted of 14 items theorised to derive hedonic, social, and psychological well-being dimensions. Respondents rated the frequency of feelings (e.g., "happy") or experiences (e.g., "that you had warm and trusting relationships") in the past month on a 6-point Likert scale with scale responses ranging from "Never" = 0 to "Every day" = 5. Total scale scores range from 0–70 (hedonic well-being: 0–15; social well-being: 0–25; psychological well-being: 0–30) with higher scores indicating more positive mental well-being. Participants were classified "flourishing" for responses of "every day" or "almost every day" on 1 of the 3 hedonic well-being items and 6 of the 11 social and psychological well-being items in the past month. "Languishing" was classified with responses of "never" or "once or twice" on 1 of the 3 hedonic well-being items and 6 of the 11 social and psychological well-being items. Participants who were neither "languishing" nor "flourishing" were coded as "moderately mentally healthy."

Shannon et al. (2023) reported acceptable factor structure and nomological validity for the MHC-SF in athlete populations. Cronbach's alpha values (α = 0.937 for scale total; α = 0.864 for hedonic well-being; α = 0.858 for social well-being; α = .915 for psychological well-being) indicated good reliability (hedonic and social well-being) and excellent reliability (total score and psychological well-being) for the MHC-SF in this study.

Sources of stress

The Referees' Sources of Stress scale (RSS; Anshel et al., 2014) was adapted to determine the sources of GAA MO stress. The original RSS consisted of 14 items measuring stressors including "verbal abuse from players", and "I made a 'wrong' call". One item (sexual harassment) was removed from the present study, as the item was added by Anshel et al. (2014) to the Basketball Officials Sources of Stress Inventory (Kaissidis & Anshel, 1993) upon which the RSS was based. Consequently, participants in the present study responded to each of 13 items on a 5-point Likert scale ranging from "Not at all" = 0 to "Extremely" = 5 indicating how stressful they found each stressor over the past season. Cronbach's alpha (α = 0.820) indicated good reliability for the 13-item version of the RSS in the present study.

Verbal abuse coping

The Referees' Coping Styles scale (RCS; Anshel et al., 2014) was used to assess coping by MOs when they experienced verbal abuse from three groups: (i) coaches, (ii) players, and (iii) spectators. The RCS was considered appropriate as it is the only existing scale that specifically addresses coping responses to stressors experienced by MOs including verbal abuse from coaches, players, and spectators. The original RCS contained 13 items and, based on confirmatory factor analysis by Anshel et al. (2014), incorporated three coping styles: *approach-cognitive coping* (e.g., "I kept my concentration on the game and focused on the next task at hand"), *avoidance-cognitive coping* (e.g., "I felt the situation was unfair to me and developed negative feelings"), and *approach-behaviour coping* (e.g., "I gave a warning or technical foul"). Respondents were asked to indicate the extent to which they use coping strategies to deal with stressful events, ranging from "Never" = 1 to "Always" = 5. Despite achieving acceptable reliability for all three coping

sub-scales in the original study (approach-cognitive: α = .71; avoidance-cognitive: a = .76; approach-behaviour: a = .75; Anshel et al., 2014), Cronbach's alpha indicated unacceptable reliability for the approach-cognitive subscale when coping with abuse from coaches, players, and spectators in the present study (all a < .019). In addition, reliability ranged from poor (a = .335), to acceptable (a = .786) to good (a = .803) for avoidance-cognitive coping with abuse from coaches, players, and spectators, respectively. Finally, unacceptable reliability was noted for approach-behaviour coping with abuse from coaches (a = .416) and players (a = .465), but acceptable reliability for approach-behaviour coping with abuse from spectators (a = .796).

Given these reliability concerns, we performed an Exploratory Factor Analyses (EFA) using all 13 items from the original RCS for coping with verbal abuse from coaches, players, and spectators. Given space limitations, we include details of the EFA within the supplementary documentation (S1). Importantly, because of a lower sample size for experiences of abuse from coaches, EFA were only performed for coping with verbal abuse from players and spectators. Based on EFA, two coping factors emerged for verbal abuse experienced from players and spectators. Like the original scale, we labelled the first as *avoidance-cognitive coping* for both player and spectator data as similar items loaded onto this factor for both sets of data. The second factor was labelled as *approach-oriented coping* as this factor contained an amalgam of both approach-cognitive and approach-behaviour items from the original scale. Cronbach's alpha indicated acceptable (a = .786) and good (a = .801) reliability for avoidance-cognitive coping for players and spectators respectively, and questionable (a = .687) and good (a = .820) reliability for approach-oriented coping for player and spectator data, respectively.

Physical abuse coping

MOs were asked an open-ended question to recount coping strategies used to deal with physical abuse experiences. Responses were coded using content analysis independently by the first and last authors, allowing data to be analysed in terms of content-related categories (Krippendorff, 2018). Responses were analysed deductively using coping sub-scales from the Brief Cope (Carver, 1997) and any items where disagreements in coding were present were fully discussed to reach agreement on the coping strategy used. The frequency of occurrence of each coping strategy was also recorded.

Social media abuse coping

The Brief Cope (Carver, 1997) was used to report strategies used to cope with social medial abuse. The Brief Cope consists of 28 items grouped into 14 subscales: *acceptance; active coping; behavioural disengagement; denial; humour; planning; positive reframing; religion; self-blame; self-distraction; substance use; using emotional support; using informational support;* and *venting*. Example items included, "I've been learning to live with it" (acceptance), "I've been giving up trying to deal with it" (behavioural disengagement), "I've been thinking hard about what steps to take" (planning), and "I've been criticising myself" (self-blame). Respondents rated coping responses to social media abuse on a 4-point Likert scale ranging from "I haven't used this at all" = 1 to "I've been doing this a lot" = 4. Cronbach's alpha for all coping subscales indicated at least acceptable reliability in this study (all a > .720), except for acceptance (a = 0.626; questionable), behavioural

disengagement ($a = 0.533$; poor), denial ($a = 0.405$; unacceptable), and planning ($a = 0.395$; unacceptable).

Data analyses

Raw data from 407 respondents were exported into the Statistical Package for the Social Sciences (SPSS, Version 29; IBM Corp, NY). Data were screened, and all incomplete responses were deleted as it was assumed that these cases represented withdrawal from the study. There were no missing data in the remaining sample of 303 MOs, representing approximately 20.2% of registered GAA match officials. To determine relationships between variables, Pearson's correlation coefficients (or Spearman's rho equivalent where assumptions of normality were violated) were calculated and interpreted using Cohen's effect size conventions of small ($r = 0.1$), moderate ($r = 0.3$) and large ($r \geq 0.5$).

Following Brick et al. (2022) who reported that the effects of verbal abuse on mental health outcomes were partially mediated by distress, and based on transactional perspectives on stress and coping (Lazarus & Folkman, 1984), path analysis explored relationships between verbal abuse experiences, avoidance-cognitive and approach-oriented coping, distress, and mental ill-health and well-being (Total MHC-SF score) outcomes. In total, six separate models were estimated using MPlus (Version 8.6; Muthén & Muthén, 1998-2017), three for verbal abuse from players and three for verbal abuse from spectators. The models differed only in terms of how experiences of verbal abuse, coping, distress, and mental health outcomes were modelled. Building on Brick et al. (2022), our analysis sought to explore the effects of coping strategies on these relationships. Consequently, Model 1 (for both player and spectator verbal abuse data) posited that verbal abuse experience has a direct effect on distress and was the "Direct Effects Only" model. In this model, indirect paths between verbal abuse, coping (i.e., avoidance-cognitive, approach-oriented coping), and distress were fixed at zero. Model 2 proposed that there are no direct effects between verbal abuse experience and distress, rather that the associations are entirely mediated through coping strategies used. This was the "Indirect Effects Only" model, and the direct path between verbal abuse experience and distress was fixed at zero. Model 3 proposed that the effects may be both direct and indirect and was the "Direct and Indirect Effects Model". In this model, all paths were estimated. Each model is visually illustrated in Figure 1.

Before completing path analyses, data were screened for univariate and multivariate outliers, with univariate outliers changed to the next most extreme score (i.e., winsorising; Reifman & Keyton, 2010). Multivariate outliers were determined using Mahalanobis distance cut-off values and removed before estimating each model (Weston & Gore, 2006). Maximum likelihood estimation, bootstrapped to 1000 samples, was used to improve the accuracy of parameter estimates, fit indices, and to address non-normal data (Muthén & Muthén, 1998–2017; Shrout & Bolger, 2002). Bivariate correlations were screened to check for multicollinearity with values of $r \geq .850$ indicating multicollinearity (Kline, 2005). Goodness-of-fit indices recommended by Hu and Bentler (1999) assessed the adequacy of the models. The Chi-Square ($\chi 2$) test of overall model fit was assessed but was interpreted with caution based on limitations associated with non-normal data and larger samples (Tanaka, 1987). Both the Comparative Fit Index (CFI) and the
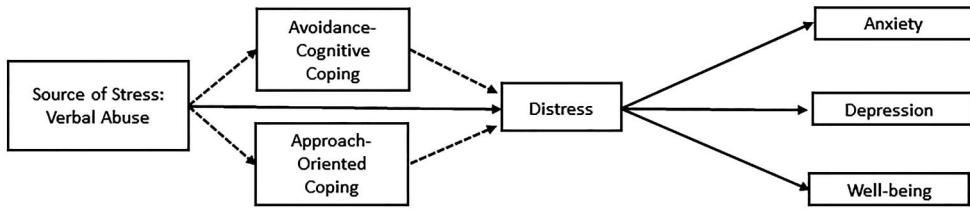
Model 1. Direct Effects Only model. *Note:* Dashed lines represent paths fixed at zero.
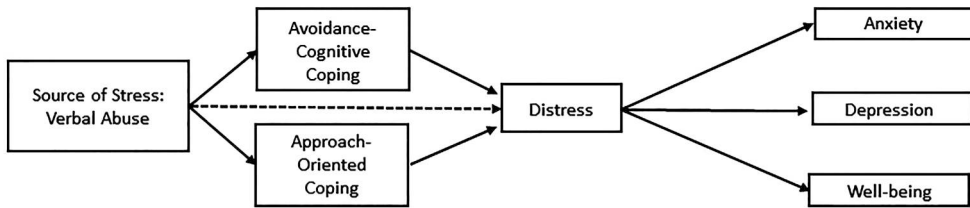
Model 2. Indirect Effects Only model. *Note:* Dashed line represent path fixed at zero.
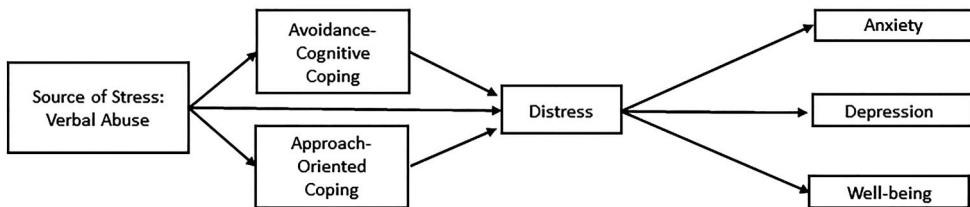
Model 3. Direct and Indirect Effects model. *Note:* All paths estimated.

Figure 1. Alternative models of verbal abuse as a source of stress, coping with verbal abuse, distress resulting from verbal abuse, and mental health outcomes.

Tucker-Lewis Index (TLI) were reported with values of > 0.90 deemed acceptable fit. We also interpreted the Root Mean Square Error of Approximation (RMSEA), with 90% confidence intervals (CI), with <0.08 considered fair model fit and the Standardized Root Mean Square Residual (SRMR) with values < 0.08 considered acceptable fit. To determine the explanatory power of the models, R^2 values are reported to indicate the proportion of variance explained in each of the dependent variables.

Results

Descriptive statistics

Of 303 MOs, 88.11% ($n = 267$) indicated that they had experienced verbal abuse during 2022. MOs experienced verbal abuse in 28.04% ($n = 14.40$) of games officiated during the season. Verbal abuse was experienced mainly from team management or coaches (reported by 89.85% of MOs), followed by spectators (77.07%), players (66.17%), club officials (30.83%) and support staff (21.80%). Physical abuse was experienced by 7.59% ($n = 23$) of MOs during the season and was experienced during 2.42% ($n = 1.24$) of

games. Severity responses indicated that 69.57% ($n = 16$) of cases were classed as "no injury or harm", 13.04% ($n = 3$) as "minor", 13.04% ($n = 3$) as "moderate" and 4.35% ($n = 1$) as "serious". Physical abuse was experienced mainly from players (reported by 61.90% of MOs), followed by spectators (38.10%), and team management or coaches (33.33%). Finally, social media abuse was experienced by 17.16% ($n = 52$) of MOs during the season and was experienced after 12.46% ($n = 6.40$) of games. Social media abuse was experienced mainly from spectators (69.23%), followed by unknown individuals (30.77%), team management or coaches (26.92%), players (21.25%), club officials (11.54%), and support staff (5.77%).

The highest rated perceived sources of stress (see Supplementary Table S1), in order, were "I made a wrong call", "verbal abuse from coaches", "threats of physical abuse from others", "verbal abuse from spectators", "I made a controversial call", and "verbal abuse from players". Most respondents felt that MO abuse had increased (51.82%) or stayed the same (33.00%) during the 2022 season compared with 2021. Most also strongly agreed (23.91%) or agreed (30.30%) that episodes of abuse made them question whether to continue officiating. Furthermore, 17.49% of MOs were thinking of leaving their role in officiating in the next 12 months. Of those considering quitting, the most common reasons included episodes of abuse (52.83%; $n = 28$), not enough support (52.83%; $n = 28$), time pressures (47.17%; $n = 25$), and not enjoying the role anymore (35.85%; $n = 19$). In terms of coping strategies used for verbal abuse experiences, approach-oriented coping for verbal abuse from players was sometimes used ($M = 2.99$), but rarely used to cope with verbal abuse from spectators ($M = 2.04$). Avoidance-cognitive coping was rarely-to-sometimes used to cope with verbal abuse from both players ($M = 2.31$) and spectators ($M = 2.46$). For physical abuse experiences, participants used a range of coping strategies (see Supplementary Table S2). Most frequently reported strategies were use of emotional support ($n = 5$; 20.83%), active coping ($n = 4$; 16.67%), and acceptance ($n = 4$; 16.67%). For social media abuse, the most frequently used coping strategies were, in order, acceptance, self-distraction, self-blame, humour, emotional support, and informational support (see Supplementary Table S5).

In terms of mental ill-health, 17.82% of MOs reported mild, 5.28% moderate, 0.99% moderately severe, and 0.66% severe depression. In addition, 16.50% of MOs reported symptoms of mild, 5.61% moderate, and 2.31% severe anxiety. Mental well-being data indicated that 69.6% of MOs ($n = 211$) were classified as flourishing, 27.7% ($n = 84$) as moderately healthy, and 2.8% ($n = 8$) as languishing. Finally, 10.56% of MOs reported experiencing psychological suffering so severe that they had difficulties functioning as usual and 14.19% ($n = 43$) had received formal support from mental health services for a mental health issue. Less than one-quarter (23.10%; $n = 70$) reported that they had received mental health awareness training through their sport, whereas 73.93% ($n = 224$) reported that they would be interested to receive mental health awareness training in the future.

Relationships between variables

Descriptive statistics and associations between variables are presented within Supplementary Tables S3–S5. Here, we will summarise selected relationships in line with the study aims. The Kolmogorov–Smirnov statistic indicated that all variables were

non-normal (all $p \leq .024$). Consequently, Spearman's rho coefficients are reported for all correlations.

Experiencing more frequent verbal abuse was associated with higher distress, $r_s = .176$, $p = .004$. In turn, higher distress resulting from verbal abuse was associated with higher anxiety, $r_s = .396$, $p < .001$, higher depression, $r_s = .412$, $p < .001$, lower hedonic, social, psychological, and total well-being (all $r_s \geq -.269$, all $p < .001$), and greater intentions to quit, $r_s = -.156$, $p = .011$. When coping with verbal abuse from players, greater use of avoidance-cognitive coping was associated with more frequent verbal abuse experiences, $r_s = .221$, $p = .003$, higher distress after verbal abuse, $r_s = .627$, $p < .001$, higher anxiety, $r_s = .276$, $p < .001$, higher depression, $r_s = .252$, $p < .001$, lower hedonic, social, psychological, and total well-being (all $r_s \geq -.221$, $p \leq .003$), and greater intentions to quit, $r_s = -.231$, $p = .002$. Greater use of approach-oriented coping was associated with higher distress, $r_s = .265$, $p < .001$, higher anxiety, $r_s = 195$, $p = .010$, and lower hedonic and social well-being (all $r_s \geq -.164$, all $p \leq .030$). For verbal abuse from spectators, greater use of avoidance-cognitive coping was associated with higher distress, $r_s = .602$, $p < .001$, higher anxiety, $r_s = .308$, $p < .001$, higher depression, $r_s = .284$, $p = < .001$, and lower mental, hedonic, social, and psychological well-being (all $r_s \geq -.163$, all $p = .020$). Greater use of approach-oriented coping was associated with higher distress, $r_s = .253$, $p < .001$, higher anxiety, $r_s = .178$, $p = .011$, higher depression, $r_s = .209$, $p = .003$, and lower social well-being, $r_s = -.214$, $p = .002$.

For physical abuse, older, $r_s = .497$, $p = .016$, and more experienced, $r_s = .428$, $p = .042$, MOs reported greater harm resulting from physical abuse. Experiencing physical abuse was also associated with fewer games officiated in during the season, $r_s = -.744$, $p < .001$.

In terms of sources of stress (RSS data), verbal abuse from coaches was associated with higher distress following verbal abuse, $r_s = .403$, $p < .001$, higher anxiety, $r_s = .188$, $p = .001$, higher depression, $r_s = .170$, $p = .003$, and lower hedonic well-being, $r_s = -.151$, $p = .009$. Verbal abuse from players was also associated with higher distress, $r_s = .361$, $p < .001$, higher anxiety, $r_s = .183$, $p = .001$, higher depression, $r_s = .231$, $p < .001$, and lower hedonic, psychological, and total wellbeing (all $r_s \geq -.148$, all $p \leq .010$). Verbal abuse from spectators was associated with higher distress, $r_s = .345$, $p < .001$, higher anxiety, $r_s = .195$, $p < .001$, higher depression, $r_s = .180$, $p = .002$, and lower hedonic, psychological, social, and total wellbeing (all $r_s \geq -.120$, all $p \leq .036$). Finally, experiencing threats of physical abuse was associated with higher distress following both verbal abuse, $r_s = .296$, $p < .001$, and physical abuse, $r_s = .482$, $p = .020$, and lower hedonic wellbeing, $r_s = -.118$ $p = .040$.

More frequent social media abuse was associated with and higher substance use, $r_s = .302$, $p = 030$. Coping with social media abuse via informational support, planning, emotional support, venting, self-blame, self-distraction, and behavioural disengagement (all $r_s \geq .285$, all $p \leq .041$) were all associated with higher distress. Increased coping via planning, acceptance, self-blame, substance use, and behavioural disengagement (all $r_{s-} \geq .278$, all $p \leq .046$) were all associated with higher anxiety. Self-blame, $r_s = .298$, $p = .032$, and behavioural disengagement, $r_s = .401$, $p = .003$, were also associated with higher depression. Greater planning, self-blame, and behavioural disengagement, (all $r_s \geq -.302$, all $p \leq .029$) were associated with lower total well-being, greater planning, self-blame, and behavioural disengagement (all $r_s \geq -.280$, all $p \leq .045$) were associated with lower hedonic well-being, and greater planning, acceptance, self-blame, and

behavioural disengagement (all $r_s \geq -.283$, all $p = .042$) were associated with lower social well-being. Finally, greater self-blame, $r_s = -.340$, $p = .014$, and behavioural disengagement, $r_s = -.300$, $p = .031$, were associated with lower psychological well-being. Higher distress after social media abuse was associated with higher anxiety, $r_s = .350$, $p = .011$, and higher depression, $r_s = .388$, $p = .004$.

Path analyses: coping with verbal abuse, distress, and mental health outcomes

The fit indices for the estimated models for both verbal abuse from players and verbal abuse from spectators are reported in Table 2. Exploration of correlation matrices indicated that multicollinearity was not a concern for any model estimated, with correlation coefficients between independent latent variables (all $r \leq .626$) below the threshold (Kline, 2005). Three multivariate outliers were identified in the data and were removed before analysis.

For verbal abuse from players, only model 2 (indirect effects only model) and model 3 (direct and indirect effects model) achieved an acceptable fit on all indices (see Table 2). Model 1 was the worst fitting model and was rejected as it failed to achieve an acceptable fit on any criterion. Within model 3, the direct effects path between verbal abuse experience and distress was not significant ($\beta = .121$ [95% Confidence Intervals: $-.011, .246$], $p = .056$), thus we also rejected model 3 because of this non-significant path. Within model 2, the indirect path between verbal abuse from players and avoidance-cognitive coping ($\beta = .491$ [.372, .579], $p < .001$) and between avoidance-cognitive coping and distress

Table 2. Fit indices the alternative models for coping with experiences of verbal abuse from players and spectators, distress, and mental health outcomes.

Item	Model 1 (Direct)	Model 2 (Indirect)	Model 3 (Direct & Indirect)
Verbal Abuse from Players			
χ^2	119.84	18.95	15.06
Df	14	11	10
P	<.001	.062	.130
CFI	.795	.985	.990
TLI	.692	.971	.979
RMSEA	.159	.049	.041
90% CI	.13 – .19	.00 – .09	.00 – .08
SRMR	.182	.063	.059
R^2 Distress	.137*	.384*	.386*
R^2 Anxiety	.194*	.190*	.191*
R^2 Depression	.193*	.191*	.190*
R^2 Well-being	.093*	.092*	.091*
Verbal Abuse from Spectators			
χ^2	184.75	52.50	50.81
Df	14	11	10
P	<.001	<.001	<.001
CFI	.700	.927	.928
TLI	.551	.861	.850
RMSEA	.202	.112	.117
90% CI	.18 – .23	.08 – .14	.09 – .15
SRMR	.199	.095	.094
R^2 Distress	.100*	.402*	.403*
R^2 Anxiety	.190*	.196*	.196*
R^2 Depression	.195*	.202*	.202*
R^2 Well-being	.096*	.100*	.100*

Note. Criteria for acceptable fit are $p > .05$ for χ^2, CFI and TLI > .90, RMSEA and SRMSR < .08. *Significant variance explained (all $p \leq .007$).

($\beta = .605$ [.504, .681], $p < .001$) significantly predicted distress, with verbal abuse from players leading to greater use of avoidance-cognitive coping which, in turn, was associated with higher distress. The use of approach-oriented coping was not significantly associated with verbal abuse from players ($\beta = .017$ [−.137, .171], $p = .831$) but was associated with higher distress ($\beta = .129$ [.005, .243], $p = .029$). In total, model 2 explained 38.4% of the variance in distress, 19.0% of the variance in anxiety, 19.1% of the variance in depression, and 9.2% of the variance in mental well-being. The model also showed significant effects of distress on higher anxiety ($\beta = .436$ [.312, .556], $p < .001$), higher depression ($\beta = .437$ [.338, .534], $p < .001$), and lower mental well-being ($\beta = −.303$ [−.399, − .185], $p < .001$). The standardised estimates for the indirect effects model (verbal abuse from players) are presented in Figure 2(a).

When coping with verbal abuse from spectators as a source of stress, neither model 1, 2, nor 3 achieved an acceptable fit on every index (Table 2). Model 1 was rejected as the worst fitting model, failing to achieve acceptable fit on all indices. As with verbal abuse from players, within model 3 the direct effects path between verbal abuse experience and distress was not significant ($\beta = .073$ [−.011, .246], $p = .225$) and we rejected model 3 because of this non-significant path. Within model 2, the indirect path between verbal abuse from spectators and avoidance-cognitive coping ($\beta = .453$ [.331, .549], $p < .001$) and between avoidance-cognitive coping and distress ($\beta = .639$ [.527, .711], $p < .001$) significantly predicted distress, with verbal abuse from spectators leading to greater use of avoidance-cognitive coping which, in turn, led to higher distress. Use of approach-oriented coping was associated with verbal abuse from spectators ($\beta = .284$ [.130, .422], $p < .001$) but not with distress ($\beta = −.103$ [−.224, .028], $p = .112$). In total, model 2 explained 40.2% of the variance in distress, 19.6% of the variance in anxiety, 20.2% of the variance in depression, and 10.0% of the variance in mental well-being. The model showed significant effects of distress on higher anxiety ($\beta = .442$ [.306, .570],
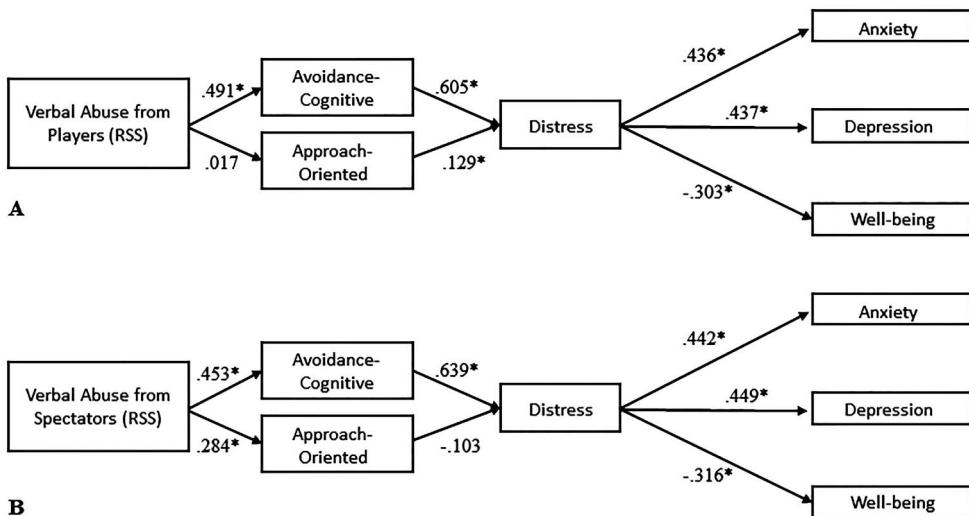
Figure 2. Standardised estimates from the indirect effects only models for coping with experiences of verbal abuse from players (A) and spectators (B). Significant path estimates ($p < .05$) are indicated with an *.

$p < .001$), higher depression ($\beta = .449$ [.344, .549], $p < .001$), and lower mental well-being ($\beta = -.316$ [-.414, $-$ .190], $p < .001$). The standardised estimates for the indirect effects model (verbal abuse from spectators) are presented in Figure 2(b).

Discussion

The aims of this study were to (i) explore the prevalence and frequency of verbal, physical, and social media abuse amongst MOs during a single season, (ii) determine the impact of abuse and other stressors on mental health outcomes, and (iii) understand the impact of strategies used by MOs to cope with abuse on distress and mental health outcomes. In total, 88.11% of Gaelic games MOs had experienced verbal abuse, 7.59% had experienced physical abuse, and 17.16% had experienced social media abuse in the previous (2022) season. Furthermore, those who experienced abuse reported verbal abuse during 28.04% of games, physical abuse during 2.42% of games, and social media abuse following 12.46% of games. Most respondents felt that MO abuse had increased during 2022 in comparison with the previous season and either agreed or strongly agreed that abuse episodes made them consider quitting. These findings provide a unique insight into the verbal, physical, and social media abuse experiences of MOs over the course of a single season and raise considerable concerns about the prevalence and frequency of abuse experiences amongst MOs.

In terms of mental health, the findings revealed a cumulative prevalence of 6.93% and 7.92% for moderate or more severe depression and anxiety respectively, findings equivalent to those previously reported amongst MOs in Gaelic games (Brick et al., 2022) and other sports including rugby union, field hockey, and association soccer (Carson et al., 2020; Lima et al., 2023). For mental well-being, 69.6% of MOs were classed as "flourishing", 27.7% as "moderately healthy" and 2.8% "languishing", figures comparable with those reported within Danish elite athletes by Kuettel et al. (2021), with 64% classed as "flourishing", 29% as "moderately healthy", and 7% as "languishing" in that study. These mental well-being findings are encouraging and suggest that officiating can provide positive mental health benefits for MOs. Specifically, officiating can offer a distraction from the stressors of everyday life (Tingle et al., 2022), be intrinsically rewarding (Hancock et al., 2021), and provide an avenue to increase social connectivity (Kellett & Shilbury, 2007).

Yet, despite these benefits, stressors associated with officiating can also impact negatively on MO mental health. More so, 14.19% of MOs in the present sample reported receiving formal support for a mental health concern in the past. In addition, the most stressful events reported by MOs in the present study were making incorrect or controversial decisions and experiencing verbal abuse – in order of both stress caused and frequency of experience – from coaches, spectators, and players. Within other sports, such as ice-hockey and soccer, making a conversational call and interpersonal confrontations also present as key stressors (Dorsch & Paskevich, 2007; Voight, 2009). In the present study, we explored how MOs cope with these experiences to further understand how role-related stressors, such as abuse, can impact on distress and subsequent mental health outcomes, and how coping can impact on this relationship. For verbal abuse, MOs reported approach-oriented (i.e., verbally responding to the situation) or avoidance-cognitive (i.e., ruminating about the situation) coping strategies. Approach-oriented strategies were sometimes used, on average, to cope with verbal abuse from players but rarely

used for spectator abuse, whereas avoidance-cognitive coping was rarely-to-sometimes used to cope with verbal abuse from both players and spectators. These strategies align with those reported in the officiating literature previously, with MOs reported to use either approach-oriented or avoidance-oriented coping to manage interpersonal conflict depending on the source and controllability of the abuse (Mojtahedi et al., 2022). Neither strategy appeared to be particularly effective longer-term, however, with both approach-oriented and avoidance-cognitive coping associated with higher distress and poorer mental health following verbal abuse experiences. More so, path analysis indicated that avoidance-cognitive coping in particular predicted higher distress and, in turn, higher anxiety, higher depression, and lower mental well-being. As such, based on a transactional perspective on stress and coping, whereby coping is viewed as an interactive process between an individual and their external environment (e.g., Lazarus, 1999; Lazarus & Folkman, 1984), this analysis suggests that the choice of coping strategies used by match officials in this context results in less successful coping that is ultimately experienced as higher distress and poorer mental health outcomes.

To further understand these findings, it is important to explore the content of both approach-oriented and avoidance-cognitive coping as measured within the present study. For approach-oriented coping, MOs reported arguing their point, verbally defending themselves, or confronting the source of stress (see Supplementary Document S1). While these approach-oriented strategies increased distress and led to poorer mental health outcomes, other approach-oriented strategies may be more helpful in this context. Using alternative communication strategies such as calmly explaining decisions to players, attuning to players emotional states, demonstrating respect, or using humour to diffuse a tense situation can help to maintain control, manage players' emotions, and prevent conflict escalation in different contexts (e.g., Cunningham et al., 2018). As such, it may be that greater use of other approach-oriented, mastery coping strategies such as these may better protect MOs from the deleterious effects of verbal abuse experiences on distress and mental health. No studies have specifically explored the impact of proactively developing these mastery-oriented strategies on either the performance or longer-term mental health of MOs, however.

Avoidance-cognitive coping was ubiquitously associated with higher distress and poorer mental health outcomes in the present study and, specifically, involved rumination and thoughts related to quitting following verbal abuse experiences (see Supplementary Document S1). Aligned with Nicholls et al.'s (2016) sport-specific categorisation of coping, these avoidance-oriented strategies are equivalent to disengagement-oriented, goal withdrawal coping. Goal withdrawal strategies are negatively associated with perceived coping effectiveness (Nicholls et al., 2016), and the current findings suggest that avoidance-cognitive coping is especially unhelpful to minimise distress and protect MO mental health following abuse experiences. Such findings further reinforce a need to develop more effective coping responses that help MOs to either (i) de-escalate conflict situations (e.g., training in mastery-oriented strategies) or, (ii) manage the distress and prevent the adverse mental health consequences associated with abuse experiences.

While most MOs reported no injury or harm from physical abuse experiences, a cumulative total of 30.43% reported minor or more severe harm/injury. To help cope with physical abuse, emotional or informational support (e.g., taking with family members or officiating colleagues/mentors), active coping (e.g., reporting the incident, applying

relevant penalties), and acceptance (e.g., "just get on with it") were most frequently reported. Whilst emotional – or informational-focused social support is useful to cope with stressors in sporting contexts (Reeves et al., 2011), the benefits of acceptance coping in the present context is questionable. Moreso, MOs report appraising abuse as "part of the role" and accepting these experiences contributes to the normalisation of abusive behaviours toward MOs (Kellett & Shilbury, 2007; Radziszewski et al., 2024). Although acceptance can minimise negative emotional consequences in the short-term, acceptance and normalisation can also lead to more frequent abuse experiences in the longer-term (Mojtahedi et al., 2022). Ultimately, while significant focus should be on the prevention of MO abuse (Dawson et al., 2022), these findings reinforce the need for sporting associations to prioritise coping resources for MOs, including a need to provide effective forms of social support (e.g., informational, emotional) to better protect MOs from the deleterious effects of abuse.

That 17.16% (almost 1 in 6) of MOs had experienced social media abuse, predominantly from spectators and unknown individuals, was a novel finding in this study. The most frequently used strategies to cope with social media abuse were acceptance, self-distraction, and self-blame. More frequent social media abuse was associated with greater substance use, and many other coping strategies were associated with poorer mental health outcomes. Specifically, venting and self-blame were associated with higher distress as were greater use of informational support and emotional support, planning (i.e., thinking about what to do), self-distraction, and behavioural disengagement. Self-blame, planning, acceptance, substance use, and behavioural disengagement were associated with higher anxiety, and self-blame and behavioural disengagement were associated with higher depression. Finally, in terms of well-being outcomes, self-blame, behavioural disengagement, planning, and acceptance were all associated with lower mental well-being. Although there were concerns regarding the reliability of some Brief COPE subscales (e.g., behavioural disengagement, planning) within this study, these findings further highlight MO training support needs and suggest that MOs may also utilise several maladaptive coping strategies, especially self-blame and, perhaps, planning and behavioural disengagement when attempting to cope with social media abuse. Evidence from other sporting populations indicates that proactive social media engagement can be more helpful and recommendations for MOs should include avoiding social media exposure and maintaining emotional and informational support from important others. Both emotional and informational support strategies were associated with higher distress in the present study, which could be interpretated as greater use of social support from others when distress resulting from social media abuse was experienced. In contrast, acceptance (e.g., learning to live with the notion that others may perpetrate abuse toward match officials on social media) was associated with lower social well-being, reinforcing the potential negative effects of this strategy if abuse experiences are normalised (e.g., Mojtahedi et al., 2022; Radziszewski et al., 2024). Alternative cognitive strategies, such as rationalising, for example, by reminding oneself that abuse is a systemic problem rather than a personal (e.g., self-blame) issue that should not be normalised (Jane, 2020; Tayech et al., 2020) may prove more helpful in this regard.

Collectively, our findings provide some important directions to support MOs in their role. Firstly, MOs report that coping – whether adaptive or maladaptive – is largely developed through personal experiences or advice from colleagues. Based on our findings, we

suggest that early MO training should incorporate education on the use of mastery-oriented coping strategies, including effective communication and conflict management skills development to help MOs proactively cope with the stressors experienced within their role and minimise subsequent distress (Cunningham et al., 2018; Nicholls et al., 2016; Radziszewski et al., 2024). Moreso, MOs should be educated on the negative consequences of goal withdrawal, and in particular avoidance-oriented coping. Instead, training on effective stress management techniques, including content on relaxation techniques (Poulus et al., 2023), understanding cognitive distortions (Curwen et al., 2018), recognising social support networks (Reeves et al., 2011), and mental health literacy (Mellick, 2020) may help MOs to better cope with the stressors experienced in their role (Rumbold et al., 2012). Worryingly, however, our findings highlight important gaps in MO support provided by sporting associations. Specifically, "not enough support" was cited as frequently as "episodes of abuse" as a reason for considering quitting by MOs in the present study. In addition, less than one-quarter of MOs had received mental health awareness training through their sport, whereas almost three-quarters reported that they would be interested to receive such training in the future. Perceptions of organisational support play a pivotal role to create a facilitative environment that helps individuals to thrive in their role and seek mental well-being support when needed (Fletcher & Sarkar, 2016; Mellick, 2020). As such, delivering suitable training programmes aligned with, and informed by, MO needs (e.g., via co-production methods; Smith et al., 2023) should be prioritised by sporting associations.

Despite these recommendations, some limitations are noted for this study. Although we provide novel insights into abuse prevalence over a single season, and subsequent coping, the cross-sectional design of our survey does not exclude the possibility of reverse causality. Consequently, a longitudinal design that incorporates measurements of abuse experiences and mental health and attrition outcomes at two different time points would strengthen any causal attributions made. Furthermore, although our findings suggest that MOs employ maladaptive strategies to cope with verbal, physical, and social media abuse, there were concerns regarding the reliability of the RCS and some subscales of the Brief Cope (specifically, behavioural disengagement, denial, and planning). Future development of a valid and reliable scale to measure sport-specific coping amongst MOs, perhaps aligned with Nicholls et al.'s (2016) classification, would provide a clearer insight into the effectiveness of various strategies used by MOs to cope with abuse experiences and other role-related stressors. Finally, only two female MOs participated in the present study. It should be noted that we recruited via the GAA's National MOs Manager (see *Recruitment and procedure*), and did not recruit via other, related associations (e.g., the Camogie Association, the Ladies Gaelic Football Association) which may have a higher female MO representation. Consequently, future research should prioritise female MOs, given the additional stressors (e.g., gendered abuse) experienced by this population (Tingle et al., 2022).

These limitations aside, the present study highlights the prevalence, frequency, and impact of verbal, physical, and social media abuse experiences amongst Gaelic games MOs over a single season. Our analyses suggest that MOs employ a range of maladaptive strategies to cope with abuse experiences and that some coping strategies can lead to increased distress and poorer mental health outcomes. These findings underlie the importance of supporting MOs with adequate training and development early in their career,

with a specific emphasis on effective coping strategies to deal with role-specific stressors, and training in effective stress management and mental health literacy to help MOs better maintain their mental health and well-being longer-term.

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Data availability statement

The data is available from the first author on request.

ORCID

Tom Lishman 🔟 http://orcid.org/0009-0008-4192-1523
Stephen Shannon 🔟 http://orcid.org/0000-0001-6720-8189
Orla McDevitt-Petrovic 🔟 http://orcid.org/0000-0002-2783-561X
Gavin Breslin 🔟 http://orcid.org/0000-0003-2481-0860
Noel E. Brick 🔟 http://orcid.org/0000-0002-3714-4660

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