

Protecting the welfare of individuals operating in organized sport

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Protecting the welfare of individuals operating in organized sport

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Editorial: Protecting the welfare of individuals operating in organized sport

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abuse, concussion management, duty of care, interpersonal violence, mental health, safeguarding, well-being, welfare

Editorial on the Research Topic

Protecting the welfare of individuals operating in organized sport

1 Introduction

The issue of physical and mental welfare in sport has gained increasing prominence in recent years, leading various personnel (e.g., the media, professional bodies and researchers) to consider aspects such as safeguarding, clean sport, overtraining, and the wider ethics surrounding the duty of care of those involved in this environment. Given the importance of these aspects, it is unsurprising that researchers as well as professional bodies and sports organizations have tasked themselves with protecting individuals in sport from the harmful effects of wrongdoing and factors which might create significant injury risk (e.g., concussion). As a result, numerous positive advances have been made to understand and improve the welfare and well-being of those in sport, as well as to raise awareness and education at the micro- (e.g., peer-to-peer), meso- (e.g., coach-athlete, coach-parent, parent-athlete), exo- (e.g., professional leagues, national governing bodies), and macro-system (e.g., media and societal views) levels. Despite such positive advances, they have not always been well communicated between system levels of sport or across international perspectives. Therefore, this special topic sought to address these concerns, utilizing various international perspectives to provide recommendations to protect individuals across the sporting systems.

2 Contents of the research topic

In this Frontiers research topic, it is pleasing to see a number of multinational collaborative studies, with our topic including research findings from Canada, the United States of America, and eight European countries. We believe this multinational

collaboration illustrates an international research commitment to better understanding and addressing safeguarding and welfare in organized sport. The authors who have contributed to this research topic have utilized a range of methods (e.g., mini reviews, quantitative, qualitative, and intervention methods) to expand our knowledge of how sporting personnel, organizations, and national governing bodies can protect the welfare of various individuals who are involved in organized sport. Below, we provide a research topic summary of author contributions based on three overarching themes: (1) Abuse, bullying, interpersonal violence and maltreatment studies; (2) Exploring mental health in elite athletes, and; (3) Parent and match official perspectives on concussion management.

2.1 Abuse, bullying, interpersonal violence, and maltreatment studies

2.1.1 Reviews

Gillard et al. (2024) conducted a mini review to synthesize knowledge regarding the roles, readiness to change and training needs of athlete health and performance team members to handle interpersonal violence in sport. From 43 articles that were reviewed, it was identified that very little research has directly assessed athlete health and performance team members' needs to facilitate safety and eradicate interpersonal violence in sport. The authors offer a series of expert recommendations to guide future research and practice.

2.1.2 Quantitative findings

Muhonen et al. (2024) surveyed Finish elite and leisure athletes to ascertain whether there is any correlation between emotional abuse, athletic identity, and disclosure of abusive behaviors. Results indicated that a salient athletic identity was related to a higher prevalence of emotional abuse, children were most susceptible to emotional abuse, and both salient athletic identity and emotional abuse negatively predicted athletes' disclosure of emotionally abusive coaching practices.

To develop a tool to measure coaches' beliefs regarding the effectiveness of interpersonal violence practices in sport, **Parent et al.** (2024) consulted with an expert panel of six researchers, and carried out item reduction to arrive at a 25-item PIEVS scale containing six dimensions. Following this, the authors conducted an initial validation of the PIEVS scale with 690 coaches to determine the 1-factor solution for both the 25-item, and a 9-item short form version of the scale. In addition, convergent and divergent validity was achieved by identifying significant relationships with disempowering and (inversely) empowering motivational climates.

Vveinhardt and Kaspare (2024) surveyed 371 Lithuanian Kyokushin karate athletes to measure bullying experiences and signs of stress, anxiety and depression. The findings indicated that 75.5% of Kyokushin karate athletes had experienced unethical behavior by their coaches or others at least once. In addition, signs of stress, anxiety and depression were found to be

correlated with damage in the areas of communication, social relations and physical health.

The work of **Willson et al.** (2024) examined the relationship between psychological abuse, athlete satisfaction, eating disorder and self-harm indicators in current and retired Canadian national team athletes using a maltreatment survey. The results indicated a negative correlation between psychological abuse and athlete satisfaction, and a positive correlation with eating disorders and self-harm indicators.

2.1.3 Qualitative findings

Adams et al. (2024) implemented interviews to explore how and why former intercollegiate athletes identified their head coach as emotionally abusive. The athletes' narratives suggested that a coach is labelled abusive if they diminished performance, neglected holistic development, were inconsistent, provided negative emotional responses, and dehumanized athletes.

Newman and Rumbold (2024) conducted interviews with safeguarding and welfare personnel in English professional and semi-professional football to explore their understanding of maltreatment. Findings indicated that wrongdoing in football contexts is nuanced in comparison to other sports, as certain forms of maltreatment are driven by the unique nature of football environments. This work provides a platform for practitioners and researchers to raise awareness of maltreatment in professional football whilst also challenging the prevailing workplace culture.

2.1.4 Intervention mapping

The work of **Adriaens et al.** (2024) implemented an intervention mapping approach as a guiding framework to systematically develop a bystander training program (i.e., Safe Sport Allies), to train youth sport participants and youth sport coaches to act as effective bystanders. The authors propose a variety of behavior change program principles to improve sport participants' bystander behaviors.

2.2 Exploring mental health in elite athletes

Work by **Küttel et al.** (2024) interviewed seven Danish international elite athletes to unveil perspectives on career and mental health development, whilst considering the dynamic interplay of personal and environmental factors. Findings highlighted the complex interplay of factors affecting mental health, and emphasize the need for creating supportive environments that help athletes manage the intense demands of elite sport.

To explore the media coverage relating to German elite athletes' mental illness, **Hapig et al.** (2024) conducted a systematic search and screening of eleven German newspapers and magazines. Through synthesizing more than a decade's worth of German print media, it was concluded that there is an enhanced awareness towards the topic of mental illness and those affected in recent years. This was evidenced by the increased integration

of responsible reporting elements, the inclusion of diversified perspectives, and the considerate selection of content.

2.3 Exploring parent and match official perspectives on concussion management

Hagopian et al. (2024) conducted two focus groups with 11 parents in Canada to gain their perspectives and experiences with Neuropsychological Baseline Testing (NBT) to better manage concussion injuries. Using inductive content analysis, some common themes included navigating uncertainty about the nature of concussion and its management process, and mixed NBT reviews regarding its usefulness in concussion management.

In the concluding article, Jorgensen et al. (2024) conducted semi-structured interviews to investigate match officials' perspectives and experiences regarding sport-related concussion management and the Blue Card protocol (i.e., the removal of athletes from play if they are suspected to have sustained a concussion) in community rugby in Canada. The authors highlighted that despite potential benefits to athlete welfare, the welfare of match officials is risked due to sporting cultures that tolerate abuse.

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Connections of bullying experienced by *Kyokushin karate* athletes with the psychological state: is “a Cure for Bullying” safe?

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Although some authors propose practicing martial arts as a prevention against bullying, little is known about bullying among karate athletes and the consequences of negative behaviour for athletes' psychological state. This study aims to explore the effect of bullying on the psychological state of *Kyokushin karate* athletes. A total of 371 athletes were surveyed to measure bullying experiences and signs of stress, anxiety, and depression. It was determined that 75.5% of *Kyokushin karate* athletes had experienced unethical behaviour by their coaches or other athletes towards them at least once, and the scores on the signs of stress, anxiety, and depression correlated with damage in the fields of communication, social relations, and physical health. The results of binary logistic regression have shown that the qualifications of karate athletes and their participation in competitions influence the risk of being bullied. Organisations in which *Kyokushin karate* athletes do sports should devote more attention to preventing bullying among karate athletes themselves, especially when preparing for competitions as bullying can harm communication, social relations, and physical health.

KEYWORDS

Kyokushin karate, bullying in sport, psychological state, qualification, martial arts, athletes, adults

Introduction

The sport of *karate* is a widely practised form of self-defence and is considered a discipline that facilitates physical and mental balance and improving health (Greco et al.) (1, 2). A study conducted by Oulanova (3) showed that martial arts could help people regulate their behaviour and improve their mental health by learning self-control and concentration. Therefore, it is believed that martial arts can also be an effective tool in the fight against bullying and its consequences for athletes' health Greco et al. 2019 (1, 2, 4, 5). Lafuente et al. (6) maintain that training in traditional martial arts can be an effective means to reduce aggression and anger.

However, the branches of combat sports differ in their level of aggressiveness. A study by Piepiora et al. (7) showed that the semi-contact (*Shotokan karate*) system distinguished itself by a significantly lower overall level of aggressiveness compared with other *Kumite* systems (when athletes performed offensive and defensive actions with their hands and feet). Meanwhile, according to the author, *Kyokushin karate* is characterised by a significantly higher overall level of aggressiveness in physical, verbal, and social aspects. Bullying is considered a form of aggressive behaviour (8), and in the sports environment, where competition and aggressive behaviour are considered a norm,

victimisation may be treated as a normal expression of aggression but not bullying (9, 10). For this reason, some acts of bullying may remain unrecognised. Furthermore, the motives behind the choice of karate are also important. It has been noticed that attending martial arts classes may be associated with a wish to defend oneself against bullying (11). However, a significant proportion of former victims of bullying later become persecutors themselves (12). In other words, karate may not be immune to bullying and may simply go unnoticed.

Other important aspects are related to the benefits of karate to the athlete well-being. Although Greco et al. (1, 2) linked the preventive effect of karate with self-regulation, fostered respect, and health promotion, the study conducted by Pinto-Escalona et al. (13) showed only a positive effect on health and academic achievement. Compared to the control group, engaging in karate had no significant impact on variables such as psychosocial difficulties, emotional symptoms, or prosocial behaviour. Therefore, the results are inconclusive. In another study that was based on a meta-analysis of 12 studies, Harwood et al. (14) noted that aggression (anger, violence) related to problem behaviour among young athletes practising different martial arts styles decreased, but the authors did not rule out the possibility that age could still be a potential moderator. Furthermore, the positive effect may also depend on the duration of training (14). Research in this area is still scarce and is often only indirectly related to bullying or conducted among school-age karate practitioners.

Thus, the prevalence of bullying among karate athletes of different age groups remains unknown. Hence, addressing the topic of karate as a bullying prevention mechanism leaves important unknowns related to the dynamics of bullying within the sport of karate itself. Therefore, this study aims to explore the effect of bullying on the psychological state of *Kyokushin karate* athletes.

This is an exploratory study. Specifically, it explores how actions harming interpersonal communication (15, 16), undermine social context within the athlete group and damage personal health, unfavorable impact psychologically, emotionally, socially (17) and performance areas are related to the scores of athlete stress (18, 19), anxiety (20, 21), and depression signs (22). Damage to communication (23) in this study includes hostile verbal communication by insulting, shouting, or limiting the target's opportunities for self-expression. Social undermining manifests itself by demonstrative actions that damage the athlete's reputation by spreading gossip, underestimating him or her as a person and as an athlete (15, 16). Damage to health and performance (16, 24) encompasses physical (25) and material damage (26), actions that disrupt the athlete's performance. It is also sought to find out the prevalence of these negative experiences and how likely athletes are to experience bullying, depending on their age Stirling et al. (27) and the nationality of the athlete (28), gender, sports qualification and duration of sporting activities, also preventive strategies (29). This study contributes to a small but growing body of literature aimed at understanding the manifestation of bullying among *Kyokushin karate* athletes in order to assist those who are responsible for a safe and healthy sporting environment.

Literature review

Bullying in sport

Bullying is defined as the repeated hostile behaviour of one or several individuals against another person with the intent to harm, both physically and emotionally, and includes any resulting damage (24). Bullying increases the level of stress (18, 19) and negatively affects athletes' involvement in sports and their well-being (30). In addition, being a victim of bullying is associated with a higher susceptibility to various diseases (18) and greater risk of depression (22).

Stirling et al. (27) note that bullying is experienced not only by young people who do sports but also by adults, as the phenomenon is based on power imbalance that is not related to the athlete's age. Areas of damage to athletes include damage to communication (negative verbal and non-verbal communication), social undermining (undermining the person's reputation), damage to health and performance (16).

The causes of bullying in sports are related to the characteristics of the sports environment and athletes' individual traits (19, 30, 31). Muhsen and Mohsin (32) link bullying to sports culture, where aggressive behaviour is often perceived as "natural", while this problem is not addressed at the levels of athletes, coaches and authorities. In addition to contextual environmental factors, the personality traits of bullies also play a role. The study by Sentse et al. (33) showed that bullying behaviour among school-age children was related not only to the desire to gain but also to maintain dominance and status in the group. Other studies highlighted aggressors' Machiavellianism (34) and oppression, anxiousness, and low self-esteem of the targets of bullying (35). However, there are no clear answers to what extent bullying causes depression or whether the depressive effect is a risk factor for subsequent bullying (36). In comparison, neuroticism in adult professional settings can predict both victimisation and the consequences of bullying (37).

Kyokushin karate

It is a fighting style developed by M. Oyama in Japan in the middle of the last century. "*Karate Kyokushin* is characterized by competition in the knockdown formula. The fight takes place in close contact and allows blows to be inflicted with full force. The fight takes place without any protection (except for the suspension and the protector; for women, the chest protector)" [(38) p. 36]. Athletes' qualification is evaluated according to the rank system from 10 (orange belt, the lowest) to 1 (brown belt with black stripe) Kyu and from 1 (black belt with one gold stripe) to 10 Dan (black belt with ten gold stripes, the highest). It differs from other martial arts by its peculiar philosophy. M. Oyama, the founder of the *Kyokushin karate* style, promoted his own *Kyokushin* philosophy or the ultimate truth, which he derived from various Far Eastern schools of thought and identified with the Warrior's Way (39). As stated by

Zabjek (40), it is believed that daily practice provides meaning to life, a sense of belonging, mental well-being, and spiritual support and, at the same time, also gives guidance on values, etiquette, and interpersonal relations. In this context, shared values enable developing trust-based interpersonal relationships that encourage seeking and accepting spiritual support (41, 42). In addition, close-contact fighting and difficult challenges are associated with real power, which in addition to the ability to defeat the opponent includes overcoming one's own weakness, pain, and fear (43).

Some differences are found when comparing different styles and individual qualities of *Kyokushin karate* athletes. Compared to kickboxing, no significant personality differences among *Kyokushin* athletes were observed: low neuroticism, high extraversion, conscientiousness, and moderate openness to experience were identified. Several studies have demonstrated that the level of qualification of athletes is related to a better psychological state. It has been found that the use of mindfulness practice and higher qualification in sport led to better psycho-emotional and achievement indicators (20). Another study found that masters of sports were characterised by a higher level of openness to experience than younger athletes, which is related to experience and the influence of pro-health values of karate (38). However, compared with aikido, the highest negative indicators of personality traits according to social norms (aggression-hostility) came from the *Kyokushin* group (44). Although genetic and social environmental factors may play a role, Litwiniuk et al. (44) state that the degree of physical contact in sports competitions is directly proportional to aggressiveness. Although aggressiveness in sport is important, and aggression does not necessarily turn into bullying, research shows that increased aggression is related to higher levels of bullying (9, 45).

Martial arts and bullying

Because karate emphasizes respect, self-regulation, and health promotion, Greco et al. (1, 2) state that this martial art increases resistance to bullying. The results of the study conducted by these authors showed that after a 12-week intervention in which pupils aged 14–16 years trained in Shotokan karate, indicators of general resilience and well-being were higher than in the control group. The aforementioned authors maintain that this can reduce the likelihood that young people will engage in aggressive behaviour or experience bullying. Increased resilience among school-age pupils, like self-efficacy, was also identified after martial arts-based psychosocial intervention, which included psychoeducation (on bullying, self-respect, courage, goal-setting, values, and other topics), physical exercises, breathing, meditation, and combinations of blocks and strikes (46). The latter study, unlike the study by Greco et al. (1, 2), analysed the themes of peer pressure and bullying.

However, there are studies showing that bullying also exists among martial arts practitioners. This is demonstrated in an ethnographic study conducted in the martial arts school in Dengfeng, China. Dong (47), the author of this year-long study,

observed that by practising martial arts, “the ‘bullies’ who were marginalised in academic schools” became leaders who used violence against the weaker. In addition, Orak et al. (48) in Turkey found that combat sports representatives had a strong inclination to direct their negative emotions towards those who were weaker, to demonstrate attitudes in order to justify their bullying behaviour, to indulge in bullying and establish superiority based on individual strength.

Material and methods

Instruments

The scales identifying bullying in sport (Damage to communication, Social undermining and Damage to health and performance) were developed based on previous research on workplace mobbing (15) and bullying in sport (16), summarising the negative behaviours described in those studies in the verbal, social, and physical domains (49). The items developed for the study to measure the signs of bullying in a sports context showed promising psychometric characteristics, and a validation article is forthcoming. Bullying experiences were measured using a 7-point scale: “Almost always (everyday)”, “Very often (every second/third day)”, “Quite often (once a week)”, “Not often (once in two weeks)”, “Very rarely (once in a month)”, “Almost never (once in 3–6 months)”, and “Never”. The participants were dichotomized between those who had answered “Almost never” to at least one item per dimension of bullying as having had an experience of bullying.

The Depression, Anxiety, and Stress Scale is a set of three self-report scales designed to measure the psychological states of depression, anxiety, and stress (50). Every scale consists of seven items. For example, items such as “I was unable to become enthusiastic about anything” (depression signs, further, DS, seven items), “I found it difficult to relax” (stress signs, further, SS, seven items), and “I was worried about situations in which I might panic and make a fool of myself” (anxiety signs, further, AS, seven items).

Questions measuring the characteristics of athletes [duration of participation in sports, athlete qualification (*Dan* and *Kyu*), membership in the national team, participation in competitions, meditation, training], and demographic characteristics (gender, age) were also integrated.

Questions measuring the characteristics of athletes [duration of participation in sports, athlete qualification (*Dan* and *Kyu*), membership in the national team, participation in competitions, meditation, training], and demographic characteristics (gender, age) were also integrated.

Participants and procedures

Any adult engaged in practicing *Kyokushin karate* in Lithuania was eligible to participate in the study. Athletes were contacted by email containing information about the study. The purpose,

guarantees of anonymity, confidentiality, the rights of the respondents were explained. This survey involved $N=371$ *Kyokushin* karate athletes, of whom 59.3% were male and 40.7% were female. The respondents' age fluctuated from the late twenties to mid-thirties ($M=27.75$ years, $SD=8.56$, Min.—18, Max.—56). Most participants had done *Kyokushin* karate for at least 11 years (53.6% of all participants), 14.8% had done the sport for up to 5 years, and 31.5% had done it for 6–10 years. The more experience in karate that the athletes had, the higher the belts they also have [$\chi^2(4)=240.9$, $p<0.001$]; 71.4% of *Kyokushin* karate athletes who have been engaged in this sport for at least 11 years have the 1st Dan or a higher belt.

The study was conducted using an electronic questionnaire, the link of which was sent to the athletes who gave their consent to take part in the study. The questionnaire was protected against re-completion, and incomplete questionnaires were not accepted.

While analyzing the collected data, percentages of experienced bullying among athletes were calculated, and differences between groups based on the duration of karate practice, possession of a karate belt, participation in competitions, gender, and other factors were examined using Chi-square (χ^2) tests. Additionally, correlations between bullying and indicators of stress, anxiety, and depression were computed. To determine the dependency of bullying on binary variables (experienced bullying or not), binary logistic regression was applied, considering variables such as age, gender, karate belt level, duration of sports practice, frequency of participation in competitions, and other relevant factors.

Results

It has been found that 42.6% of karate athletes were harmed through communication (not allowed to express an opinion—CO1, spoken to in a raised tone—CO2, insulted, called swear words—CO3, had no dialogue with the coach—CO4). There is no significant difference between those who have experienced bullying in communication and the duration of practising karate, so experiencing bullying does not depend on experience. Owning a karate belt, participating in competitions, belonging to the national team, and coaching children or adults (training in groups of children or adults) do not differ significantly between athletes who have experienced harm through communication and those who have not experienced bullying. A difference in the experience of harm through communication was identified based on gender $\chi^2=8.564$, $p=0.003$. The average age of athletes who experienced bullying (damage through communication) was 27.3 ± 8.2 years, and the oldest respondent who reported bullying in the field of communication was 53 years old (Table 1).

Scores of stress, anxiety, and depression signs weakly but correlated with damage experienced by respondents due to bullying in communication (stress $r=0.274$, anxiety $r=0.242$, depression signs $r=0.225$, $p<0.001$). Thus, as bullying in communication increases, so do the signs of stress, anxiety, and depression experienced by *Kyokushin* karate athletes.

A large minority (37.2%) of karate athletes stated that they had experienced bullying, harm to their social relations (avoided

contact—SU1, are viewed as an “empty place”—SU2, are mocked at, ridiculed—SU3, gossip was spread—SU4, decisions/proposals are publicly questioned—SU5, achievements in sports are undermined—SU6).

The duration of engaging in karate, possessing a karate belt, belonging to the national team, coaching others, gender, practising meditation, and feeling the benefits of karate do not have a significant difference in relation to experienced bullying when social relations are harmed. Bullying is equally characteristic regardless of the possessed karate belt or duration of engaging in sport. However, a significant very weak association/correlation was found between participation in competitions and bullying by applying isolation actions ($r=-0.105$, $p=0.042$); i.e., if the athlete does not participate in competitions, he or she is less likely to experience bullying when the attacks are performed through social relations (Table 2).

The average age of persons who experienced social isolation was 26.26 ± 7.73 SD years. The youngest person who experienced bullying through the acts of isolation was 18 years old and the oldest was 54 years old. Damage to social relations correlates with respondents' experienced signs of stress, anxiety, and depression (stress $r=0.177$, $p=0.001$, anxiety $r=0.160$, $p=0.001$, depression signs $r=0.155$, $p=0.003$).

Seventeen percent of karate athletes stated that they had experienced at least one type of harm to their health and performance (physical violence—HP1, assigned too easy tasks regardless of physical capabilities—HP2, financial penalty—HP3, material expenses—HP4).

The average age of athletes who stated that their health and results had been harmed was 27.23 ± 7.5 years. Bullying through being assigned tasks that are too easy differs depending on gender ($p=0.045$). When analysing factors according to damage to athletes' health and performance between different factors, no significant relationship was found in any of the subgroups. Thus, regardless of the duration of engaging in sport, possession of a karate belt, engaging in a meditation group, frequency of participation in competitions, and gender, bullying through harm to health and performance is experienced by athletes in a similar way (Table 3).

Bullying by harming health and performance correlates, although weakly, with experienced stress, anxiety, and depression (stress $r=0.241$, $p<0.001$, anxiety $r=0.238$, $p<0.001$, depression $r=0.225$, $p<0.001$). Scores indicating a poorer psychological state were higher among *Kyokushin* karate athletes who were negatively affected through health and achievements.

In addition, logistic regression (Table 4) was performed with respect to two groups (athletes who experienced bullying and athletes who did not experience bullying) and factors such as gender, age, participation in competitions, and possession of a karate belt. The results of the binary logistic regression show that the sensitivity of the model in predicting athletes who experienced bullying is 58 percent HL (the Hosmer and Lemeshow test) $\chi^2=3.108$, $df=8$, $p=0.927$, which shows that the model is an adequate fit. Pseudo-R-squared coefficient of determination (R^2) = 0.049.

TABLE 1 Harm via communication: distribution by subgroups of characteristics of athletes in sport and demographic characteristics.

Factors	Subgroups	Damage to communication				χ^2	p	r
		Inexperienced		Experienced				
		Cases	Percent	Cases	Percent			
Engaging in karate	Up to 5 years	31	14.6%	24	15.2%	0.037	0.982	−0.009
	6–10 years	67	31.5%	50	31.6%			
	11 years and more	115	54.0%	84	53.2%			
Karate belt	10-7 Kyu	19	8.9%	9	5.7%	2.281	0.320	−0.012
	6-1 Kyu	94	44.1%	80	50.6%			
	1 Dan and higher	100	46.9%	69	43.7%			
Participated in karate competitions	Yes	192	90.1%	148	93.7%	1.476	0.224	−0.063
	No	21	9.9%	10	6.3%			
Member of the national team	Yes	103	48.4%	77	48.7%	1.014	0.314	−0.052
	No	110	51.6%	81	51.3%			
Train children or adults	Yes	78	36.6%	66	41.8%	0.564	0.453	0.039
	No	135	63.4%	92	48.2%			
Gender	Male	140	63.6%	80	50.6%	8.564	0.003	0.152 $p = 0.003$
	Female	73	34.3%	78	49.4%			
Meditation effect	No	32	15.0%	26	16.5%	0.141	0.707	0.015
	Yes	181	85.0%	132	83.5%			
Frequency of participation in competitions	1–2 times	61	28.6%	43	27.7%	0.502	0.919	0.020
	3–4 times	63	29.6%	46	29.1%			
	5 times and more	39	18.3%	27	17.1%			
	Not participating	50	23.5%	42	26.6%			
Total		213	100%	158	100%			

Thus, the model shows that the qualification of the karate athlete is significant; i.e., possessing a karate belt is important for experiencing bullying. The odds ratio (OR) of 0.249 indicates that athletes who have a 6-1 Kyu karate belt have a lower chance of experiencing bullying than athletes who have a 10-7 Kyu belt. Since the regression

coefficient is negative ($b = -1.389$), there is a higher probability of experiencing bullying when the athlete has a higher qualification belt. In addition, athletes who take part in competitions 4–6 times a year have an almost two times higher chance of experiencing bullying (OR = 1.991) than those who compete only one to three

TABLE 2 Social undermining: distribution by subgroups of characteristics of athletes in sport and demographic characteristics.

Factors	Subgroups	Social undermining				χ^2	p	r
		Inexperienced		Experienced				
		Cases	Percent	Cases	Percent			
Engaging in karate	Up to 5 years	37	15.9%	18	13.0%	0.563	0.755	0.034
	6–10 years	73	31.3%	44	31.9%			
	11 years and more	123	52.8%	76	55.1%			
Karate belt	10–7 Kyu	22	9.4%	6	4.3%	3.66	0.161	0.077
	6–1 Kyu	110	47.2%	64	46.6%			
	1 Dan and higher	101	43.3%	68	49.3%			
Participated in karate competitions	Yes	209	89.7%	131	94.9%	3.093	0.079	−0.091
	No	24	10.3%	7	5.1%			
Member of the national team	Yes	113	48.5%	67	48.6%	0.00	0.92	−0.001
	No	120	51.5%	71	51.4%			
Train children or adults	Yes	82	35.2%	62	44.9%	3.458	0.063	−0.097
	No	151	64.8%	79	55.1%			
Gender	Male	141	60.5%	79	57.2%	0.384	0.536	0.032
	Female	92	39.5%	59	42.8%			
Meditation effect	No	36	15.5%	22	15.9%	0.016	0.900	0.007
	Yes	197	84.5%	116	84.1%			
Frequency of participation in competitions	1–2 times	61	26.2%	43	31.2%	5.516	0.013	−0.105 $p = 0.042$
	3–4 times	64	27.5%	45	32.6%			
	5 times and more	41	17.6%	25	18.1%			
	Not participating	67	28.8%	25	18.1%			
Total		233	100%	138	100%			

TABLE 3 Harm to health and performance: distribution by subgroups of characteristics of athletes in sport and demographic characteristics.

Factors	Subgroups	Damage to health and performance				χ^2	p	r
		Inexperienced		Experienced				
		Cases	Percent	Cases	Percent			
Engaging in karate	Up to 5 years	45	14.5%	10	15.9%	0.248	0.883	−0.024
	6–10 years	96	31.2%	21	33.3%			
	11 years and more	167	54.2%	32	50.8%			
Karate belt	10-7 Kyu	24	7.8%	4	6.3%	0.511	0.775	−0.016
	6-1 Kyu	142	46.1%	32	50.8%			
	1 Dan and higher	142	46.1%	27	42.9%			
Participated in karate competitions	Yes	282	91.6%	58	92.1%	0.017	0.895	−0.007
	No	26	8.4%	5	7.9%			
Member of the national team	Yes	152	49.4%	28	44.4%	0.193	0.461	−0.023
	No	156	50.6%	35	55.6%			
Train children or adults	Yes	118	38.3%	26	41.3%	0.271	0.602	0.027
	No	190	61.7%	37	58.7%			
Gender	Male	180	58.4%	40	63.5%	0.553	0.457	−0.039
	Female	128	41.6%	23	36.5%			
Meditation effect	No	48	15.6%	10	15.9%	0.003	0.954	0.003
	Yes	260	84.4%	53	84.1%			
Frequency of participation in competitions	1–2 times	85	27.5%	19	30.2%	0.174	0.982	−0.018
	3–4 times	91	29.5%	18	28.6%			
	5 times and more	55	17.9%	11	17.5%			
	Not participating	77	25.0%	15	23.8%			
Total		308	100%	63	100%			

TABLE 4 Logistic regression with respect to athletes who experienced bullying vs. athletes who did not experience bullying.

Subgroups	<i>B</i>	<i>SE</i>	<i>p</i>	<i>OR</i>	<i>PI 95% OR</i>
Engaging in karate sport					
Up to 5 years ^a			0.431		
6–10 years	0.485	0.449	0.280	1.625	0.674–3.919
11 years and more	0.284	0.274	0.300	1.329	0.776–2.275
Karate belt					
10–7 Kyu ^a			0.045		
6–1 Kyu	−1.389	0.595	<0.020	0.249	0.078–0.801
1 Dan and higher	−0.039	0.274	0.886	0.961	0.0562–1.645
Frequency of participation in competitions per year					
Do not participate ^a			0.212		
1–3 times	0.315	0.377	0.404	1.371	0.654–2.872
4–6 times	0.689	0.334	0.039	1.991	1.034–3.835
6 or more times	0.390	0.321	0.225	1.476	0.787–2.769
Gender	0.214	0.224	0.907	1.238	0.964–1.025
Age	−0.006	0.016	0.159	0.994	0.964–1.025

^aDummy variable.

times a year. Age and gender criteria do not have a significant influence on the possibility of experiencing bullying.

Discussion

While research on the manifestation of bullying in the *Kyokushin karate* sport is lacking, this study expands knowledge in this area. According to Xu and Zhang (4), training in martial arts can reduce bullying behaviour by improving the

practitioner’s self-control and self-esteem, reducing hostility, and enhancing interpersonal communication abilities. However, the results of this study show that engaging in karate does not protect against bullying from other martial arts practitioners.

Three-quarters of *Kyokushin* karate athletes (75.5%) experienced at least one of the three forms of bullying, the most common being verbal bullying (42.6%). This shows that karate practitioners face a high risk of being bullied. There is a particularly high risk of experiencing verbal attacks, compared to damage in social, health and performance areas. This does not reduce the dangerousness of bullying, but may indicate certain specificity of attacks. Since we could not find similar studies in *Kyokushin* karate, the results can be compared with other studies only with caution. For example, although Kostorz and Sas-Nowosielski (51) did not study bullying, they found significantly higher physical aggression scores (hostility scores were similar) among martial arts athletes, compared to verbal aggression. Similarly, the research results of Boostani et al. (52) show that in controlling Karate (limited contact) and kickboxing (contactable) physical aggression was higher than verbal aggression. Meanwhile, hostility scores of both of them were lower than verbal and physical aggression scores. However, the authors of the above-mentioned study pointed out that behaviour in sport followed societal culture and moral norms; therefore, in the case of our study both the high indicator of bullying and the verbal bullying form that has distinguished itself may also be related to certain cultural trends. Of course, this is only an assumption that should be tested in a separate study.

The duration of practising martial arts and higher qualifications are associated with better skills and greater self-

control, self-esteem, and social skills (20, 38). As discussed earlier, this should provide protection against bullying. This study also found that there were no significant differences between criteria such as possessing a belt, participating competitions, belonging to the national team, and coaching children or adults. In other words, there are no indications that there are groups with more power, such as “veterans” or “stars.” Based on Mishna et al. (53), in traditional bullying, unlike in cases of hazing, power relations are not predetermined, and the perpetrator’s goal is to eliminate the victim. However, unlike in the studies by Mishna et al. (53) and Knack et al. (54), bullying was not associated with lower achievement. Novice athletes (with 10-7 Kyu belts) had a slightly lower chance of being bullied than athletes with 6-1 Kyu belts. Meanwhile, no significant differences in bullying experiences among holders of 1 Dan belt and above were observed at all.

Kyokushin karate athletes who competed more often had a greater chance of being bullied. This supports the theoretical insights in which competition is related to bullying (55, 56). Contests are associated with increased stress and strong competing. Competitive attitudes are considered one of the factors of bullying (30), and in sports where aggression is more socially acceptable, bullying behaviour may become more common (30). Notably, this study showed that athletes participating in competitions felt more socially excluded and isolated. Despite the very weak correlation between participation in competitions and social isolation, it suggests that, under conditions of increased competition, interpersonal relationships may deteriorate. This is a preliminary hypothesis that remains to be tested. Thus, it cannot be ruled out that the desire to win and lead contributed to the fact that athletes participating in competitions experienced incidents related to bullying more often.

The results of this study do not allow unambiguous confirmation of the theoretical assumptions that link martial arts to reduced bullying. Persons experiencing bullying often choose martial arts to find a way to defend themselves, reduce their anxiety, and increase their self-confidence (57). However, the results of this study demonstrate that bullying is a phenomenon that harms *Kyokushin* karate athletes. Poorer psychological state of athletes (scores of signs of stress, anxiety, and depression) was weakly correlated with damage experienced through communication and social relations in health and athletic performance. We could not find similar studies with which we could compare the statistical results, but the results of the qualitative study conducted by Dong (47) show that experienced psychological and physical violence reinforced feelings of loneliness and exclusion. Although the latter study was conducted among children, it shows, like our study, that the positive effects of karate in reducing bullying should not be overestimated, at least as far as *Kyokushin* karate is concerned.

Conclusions

Most research to date has looked at how martial arts can contribute to tackling bullying in school-age children. The results of this study expand the age limits to include adults and fill a gap in

research on bullying among *Kyokushin* karate athletes, providing new knowledge about the prevalence, forms, and effects of bullying on the emotional state. In addition, in regard to the preventive effect of martial arts on bullying and improving the emotional state, more attention must be paid to the preventing bullying between the karate athletes themselves. Because victims of bullying associate martial arts with the opportunity to defend themselves and improve their psychological state, there is a risk of entering the unsafe environment where bullying takes place. Therefore, to strengthen the preventive effect of martial arts and better protect victims, it is recommended to evaluate the experiences of persons practising martial arts not only before starting training but also during classes. In particular, *Kyokushin* coaches should pay attention to the interpersonal relations of karate athletes when preparing for competitions, which can increase the harm caused by bullying in communication, social relations, and physical health.

Limitations of the study

This study has several limitations, which are related to the exploratory nature of the research and also highlights a few additional topics for future research. One of the limitations of this study is the small sample size and unequal respondent groups (e.g., with regard to age, duration of doing sports), which may affect the results. No quantitative studies on bullying among *Kyokushin* athletes could be found, which limited the possibility of comparing the results obtained in this study. It has not been investigated which of the persons experiencing bullying were victims before they started training; therefore, a longitudinal study is needed. Moreover, more studies such as this should be conducted, especially in culturally similar countries. This is also important because the philosophy of martial arts in Europe does not have such a religious and cultural rationale as in the countries where these sports originated.

It cannot be ruled out that cultural context could have influenced the results of this study. This study demonstrated that *Kyokushin* karate athletes encountered a high risk of bullying, especially verbal. The existence of such risk can be explained by harmful value attitudes (47, 58). Analysing how pupils reconstruct the hierarchy of masculinity in Shaolin martial arts schools, Dong (47) noted that demonstrating violence and cultivating toughness, pupils used martial masculinity models to fit in with their peers and reproduce the masculine ethos of martial arts schools. Of course, there are cultural differences between countries, but values and patterns of behaviour that are considered acceptable can be those circumstances that put karate practitioners at high risk of bullying. In any case, future examination of the relation between the values of *Kyokushin* karate athletes and violence would be useful for a better understanding of the causes of bullying in this sports branch. It would therefore make sense to apply a qualitative research design in other studies. Such a study would help answer questions such as those related to value approaches nurtured by respondents and their coaches and the ethical treatment of actions that can be classified as bullying.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by the Ethics Committee of the Lithuanian Sports University, protocol No. SMTEK-26. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

JV: Conceptualization, Formal Analysis, Funding acquisition, Methodology, Project administration, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. MK: Data curation, Investigation, Resources, Software, Writing – original draft.

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Development and initial validation of the perceived instrumental effects of violence in sport scale

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Introduction: A growing body of research is looking into risk factors for interpersonal violence (IV) in sport. This research suggests the existence of several important risk factors, especially organizational and social factors. One of these factors is the beliefs regarding instrumental effects of violence. Coaches may want to drive performance, deter failure, test resilience and commitment, develop toughness, assure interpersonal control, and promote internal competition. In sum, available evidence suggests the risk of IV increases when coaches believe in the effectiveness of strategies involving IV to enhance athlete performance or perceive external approval for these practices.

Methods: The studies presented in this article seeks to develop and validate the Perceived Instrumental Effects of Violence in Sport (PIEVS) Scale in order to measure those beliefs in coaches. In study 1, item generation, expert consultation, cognitive interviews, pilot test and item reduction phases led to 25 items for the PIEVS around six dimensions. In study 2, exploratory factor analysis (EFA) was conducted with 690 coaches in order to determine the PIEVS factorial structure and the convergent and divergent validity of the scale was tested (long and short form).

Results: Our results suggested a one-factor solution for the PIEVS (25 items). This one-factor model provided an excellent fit to the data and a very good internal consistency. The PIEVS and empowering motivational climate were negatively correlated, which supported divergent validity as expected. The PIEVS was positively correlated with the disempowering motivational climate and with sport ethic norms, which supported convergent validity as expected.

Discussion: These findings provide preliminary evidence for the appropriateness of the PIEVS Scale to measure perceived instrumental effects of violence in coaches.

KEYWORDS

validation, violence, sport, beliefs, maltreatment, scale

Introduction

In the context of sport, recent prevalence studies clearly show that interpersonal violence (IV) is a problem, varying between 44% and 86% [e.g., (1–4)]. IV involves the intentional use of physical force or power against other persons by an individual or small group of individuals (5). While IV in this context can be perpetrated by people known (e.g., peer athletes, coaches, parents, entourage members) and unknown to the athletes (e.g., spectators), special attention to IV by authority figures in sport is warranted, especially because of their position of power and trust relative to athletes. Previous studies on interpersonal violence (IV) toward athletes participating in organized sport clearly show high prevalence estimates for all forms of IV from authority figures in sport (1–4, 6–8).

Although IV by authority figures in sport can manifest itself through acts also observed outside of sport (e.g., sexual abuse, physical abuse), some manifestations are specific to the context of organized sport. For instance, there are instrumental forms of IV used by coaches, where actions are taken (e.g., forcing an athlete to use performance-enhancing drugs) or neglected (e.g., denying access to appropriate medical care in the event of an injury) to enhance sport performance or ensure discipline (9, 10). Such manifestations have been referred to as instrumental violence (10), which “consist of both psychological and physical behaviors displayed by a coach that seem to be performance-related” (p. 401). Even though these types of behaviors can be perceived as useful or necessary in sport, they are potentially harmful (11, 12) and negatively related to athletes’ motivation (13) and thus problematic.

In a systematic literature review, Roberts et al. (14) identified four important social factors associated to IV in sport: conformity to dominant values, organizational tolerance, organizational stressors, and perceived instrumental effects of violence. This last factor refers to the belief that violence “is functional for motivating athletes and making them perform better” (p. 11) and is composed of eight dimensions. Six dimensions are related to goals intended by authority figures when they use violence, intentionally or not (see Table 1). Coaches may want to drive performance, deter failure, test resilience and commitment, develop toughness, assure interpersonal control, and promote internal competition. The other two dimensions are related to actions of athletes that may want to promote team cohesion by using hazing (abusive team initiation) and impair competitor performance to enhance their chances of winning.

While the terminology of instrumental violence is relatively new, examples of its use within sport is widespread in the literature. For example, Willson and Kerr (12) studied the concept of body shaming as a form of abuse toward athletes. Their results show that athletes experienced negative verbal comments about their bodies, body monitoring (i.e., regular weigh-ins and constant observations), forced restriction of food and water, public criticism of their bodies, and punishment when body-related standards were not met. In 2014, Pinheiro and colleagues documented underlying reasons for the use of abuse

toward young gymnasts. They discovered that some coaches verbally abuse athletes to control their weight, force them to train despite injury and pain, and even resort to the use of corporal punishment of athletes when athletes are not successful in exercises or routines. Another manifestation of instrumental violence is the use of exercise as a form of punishment. Kerr et al. (15) showed in their study that coaches think that this strategy will be beneficial for a multitude of reasons, namely learning, deterrence, motivation, team cohesion, increasing conformity within the team, and increasing well-being, mental toughness, and resilience of athletes. These behaviors from coaches are often rooted in their own athlete experience (16). Developing and strengthening mental toughness, as mentioned earlier, is often a justification for the use of emotional abuse. In their study, Owusu-Sekyere and Gervis (17) have documented many examples of methods described by coaches for developing this “quality” in athletes, namely exposure to emotionally and physically challenging situations such as bullying, belittling, humiliating, shouting, ignoring/isolating, and intimidating. As a last example, McDonald & Kawai (18) reported that punitive techniques such as slapping, punching, hitting with equipment, beating with sticks, or running without water or breaks are used in the context of Japanese sport and serve as strategies to correct errors and improve technique. Globally, those examples of IV could be considered as instrumental violence because of the performance-related goals they seem to serve.

Interestingly, many authors reported a deep-rooted normalization of these behaviors in coaches, as well as in athletes and parents (15, 17–20). Such behaviors are not only normalized, but also sometimes even glorified, and considered as necessary for performance outcomes or to prevent unwanted behaviors from athletes (12, 18, 19). It is also very important to note that abusive behaviors are often perceived as having a positive impact on performance in conditions where athletes are already excelling. Coaches (but also athletes and other sport actors) might interpret this relation as causal; abusive behaviors seem to lead to good performance, which in turn justifies the use of these behaviors (21). Stirling and Kerr (11) explained that the positive or negative perception of abuse seems to be based on the athletes’ results: if they perform, such behaviors are seen as acceptable, beneficial, or desired; if athletes underperform, less so. Performance can be used to justify, legitimize, or compensate for emotional abuse.

The normalization of IV behaviors by coaches occurs in an interpersonal and social context specific to sport. Some aspects of this context could influence a coach’s beliefs on the instrumental effects of IV toward athlete. Indeed, social and relational factors such as the sport ethic norms (22, 23) and the coach-created motivational climate (24) have been associated with IV in sport. In some qualitative studies, authors also pointed out that IV used by coaches could be influenced by sport ethic norms (18, 20, 25). Coakley & Donnelly (26) defined the sport ethic as “a set of norms accepted as the dominant criteria for defining what it means, in their social worlds, to be defined and accepted as an athlete in power and performance sports” (p. 155). In terms of coach-created motivational climate, Ohlert and colleagues (24)

TABLE 1 Definitions of the perceived Instrumental effects of violence dimensions.

Dimension	Definition
Drive performance	Motivates athletes, increasing their efforts and thus improving their performance.
Deter failure	Creates a fear of failure that reduces poor performance.
Test resilience and commitment	Promotes adaptability and tests athletes' dedication.
Develop toughness	Increases psychological and physical endurance.
Interpersonal control	Reinforces discipline and promotes respect through fear.
Promote internal competition	Increases competition between athletes on the same team or club.

Adapted from Roberts et al. (14).

demonstrated that a disempowering climate could constitute a risk factor for IV and, conversely, an empowering climate could serve as a protective factor. Coaches who create an empowering climate focus on the autonomy and social support of the athlete while coaches who create a disempowering climate focus on controlling behaviors (24). Aspects of control are also present in IV behaviors, which are all related to coaches' goal of achieving optimal performance.

In sum, available evidence suggests that the risk of IV increases when coaches believe in the effectiveness of strategies involving IV to enhance athlete performance or perceive external approval for these practices (27, 28). Taking this into account, we assume that beliefs and attitudes could be associated with actual IV behaviors toward athletes, yet were unable to find any study that clearly showed this association. As stated by Roberts et al. (14), there are very rich descriptions of these practices in qualitative research. However, "longitudinal, quantitative research needs to be conducted to cross-validate the current findings" (p. 17). For that purpose, a tool that measures perceived instrumental effects of violence in sport is needed. The present study seeks to develop and validate a measurement instrument that assesses coach beliefs regarding the instrumental effects of violence.

Material and methods

The *Perceived Instrumental Effects of Violence in Sport* (PIEVS) Scale was developed to measure coaches' beliefs concerning the instrumental effects of various IV behaviors. The development and initial validation of the PIEVS occurred in two complementary studies following DeVellis (29) guidelines for scale development. Ethical approval from the principal investigator's university was obtained for each study presented below (blinded for review).

Study 1: Scale development

Item generation

An initial pool of items was developed based on a recent systematic literature review which included the concept of perceived instrumental effects of IV, defined by Roberts et al. (14) as the belief that violence "is functional for motivating

athletes and making them perform better" (p. 11). Based on the work of Roberts et al. (14), we generated items based on the six dimensions presented earlier in the introduction, namely *drive performance*, *deter failure*, *test resilience and commitment*, *develop toughness*, *assure interpersonal control* and *promote internal competition*. Roberts et al.'s definitions for each of the six dimensions are presented in Table 1. Following an iterative process, the items were developed from these definitions by two research assistants and the principal investigator. This led to an initial pool of 87 items, in French, that were divided among the dimensions (goals). In terms of response format, a five-point Likert scale was designed, ranging from: (1) Strongly disagree, (2) Disagree, (3) Neither agree nor disagree, (4) Agree, to (5) Strongly agree.

Item justification

Expert panel

The initial pool of 87 items was revised by a panel of six researchers with various expertise relevant to the study (e.g., coach development and maltreatment inside and outside of sport), to improve construct validity (29, 30). Three of the experts were part of the research team [initials blinded for review] and three others were independent from the study. They had between 5 and 23 years of experience as professors with complementary proficiency related to beliefs about the instrumental effects of IV in sport and psychometric questionnaire development. Each expert was asked to assess the items regarding three distinct criteria on a scale of 1–4 and had the opportunity to provide comments. They scored relevance, meaning to what degree the items referred to the concept of belief in instrumental effects of IV, for which a definition was provided. They also scored clarity, meaning the degree to which the item is easy to understand, and the vocabulary is adapted to the coaches who will answer the scale. Finally, they rated conciseness, meaning to what degree the item is of optimal length or could be shortened. Based on their input, 22 items deemed less relevant or redundant were removed. For example "Insulting or humiliating an athlete is a good test of their level of devotion to their coach" was considered confusing because of the use of the word test. One expert also questioned if the devotion was toward the coach or toward the sport. Another 21 items were modified due to grammatical or comprehension issues. For most, experts suggested reformulations to be more concise or add precision. Finally, two items were added to include specific aspects that were not covered. A total of 65 items remained across six dimensions in the PIEVS.

Cognitive interviews

Cognitive interviews were then conducted to assess the scale response process (30–32). The goal was to assess the validity of each item, based on the participants' cognitive processes when reading the item, understanding the item, evaluating their answer, and formulating the answer (31, 32). The interviews were conducted with five purposively sampled coaches who read the items aloud and shared their reflections with a research assistant. The coaches' answers were then analyzed using an item-based analysis inspired by Peterson et al. (33). Two research assistants

and the principal investigator discussed adjustments to be made to increase item’s clarity. A total of 12 items were modified for clarity and three were removed, resulting in 62 remaining items. For example, one item concerning yelling as acceptable to motivate athletes and participants wondered if yelling encouragements would be included. To add precision, the item was changed to “yelling or swearing” to indicate the negative undertone.

Pilot test

A pilot of the 62-item PIEVS was then conducted to further identify the most relevant items as well as to evaluate the completion time. The goal was to reach a more concise version and to identify potential issues before the validation study. We purposively sampled 29 participants from four university sport programs and one community sport organization. This choice was made to preserve the larger coach sample for the final validation study. Indeed, the PIEVS was included in a larger questionnaire to test the completion time for an upcoming study of which the validation was one of the objectives. Informed consent was obtained for each participant. The questionnaire was administered online, using Qualtrics software. Most participants were male ($n = 19$) and aged between 26 and 35 years old ($n = 13$). They were active in 11 different sports, the most frequent being badminton ($n = 7$), soccer ($n = 7$), and gymnastics ($n = 5$). The majority coached either at a provincial ($n = 12$) or local/regional ($n = 11$) level. Descriptive statistics were performed for each item.

Final item reduction

Given the low number of participants for the pilot, we were unable to proceed to preliminary psychometric testing of the items (e.g., inter-item and item-total correlations). Choices were therefore made based on the whole process, going back to the literature used to develop the initial pool of items, the experts’ and participants from the cognitive interviews comments as well as the descriptive analysis of the pilot. The principal investigator gathered the results from the previous steps to make the final choice of items for the PIEVS. Given the length of the scale and the long completion time during the pilot test, 37 items were removed based on relevance or redundancy. As a result of the development study, the PIEVS consisted of 25 items across six dimensions.

Study 2: Initial scale validation

An exploratory factor analysis (EFA) was conducted to determine the PIEVS factorial structure and test Roberts et al. (14) theoretical categorization for the six dimensions retained for the scale. We also evaluated the scale’s convergent and divergent validity. Based on the literature described in the introduction, we hypothesized that the beliefs in instrumental effects of violence (measured by the PIEVS) would be positively correlated with adherence to the sport ethics norm and the propensity to use a disempowering climate. On the opposite, we hypothesized that the PIEVS would be negatively correlated

with the propensity to use an empowering climate. Finally, we developed and validated a short-form of the PIEVS, based on the original version of 25 items.

Procedures and participants

A convenience sample of adult coaches involved in organized sport at the time of the study was recruited. Participants were recruited on a voluntary basis through different strategies, such as emails sent through sport federations and associations as well as targeted ads on social media. The inclusion criteria was to be 18 years old or more and to coach in organized sport at the time of the survey. Coaches from all sports and from all sport levels were invited to participate in the study. Interested participants accessed an anonymous survey through a hyperlink hosted by a secure, online survey software, Qualtrics. Following this step, they electronically agreed to participate via the completion of a consent form before starting the questionnaire. Because IV is a sensitive topic, a list of resources was included in the consent form. Our sample was composed of 690 participants (see Table 2 for sociodemographic characteristics).

TABLE 2 Participants’ sociodemographic characteristics (N = 690).

Age ($n = 682$)	
18–25	101 (14.8%)
26–35	114 (16.7%)
36–45	225 (33.0%)
46–55	171 (25.1%)
56–65	54 (7.9%)
65 and older	17 (2.5%)
Ethnic or cultural group ($n = 682$)	
Canadian or Quebecer	610 (89.4%)
American	20 (2.9%)
First Nations, Inuit, Métis, Aboriginal	12 (1.8%)
Latin American (Central and South America)	9 (1.3%)
African American (Caribbean and West Indies)	5 (0.7%)
Sub-Saharan African (Gabon, Senegal, etc.)	3 (0.4%)
North African (Maghreb)/Middle East	3 (0.4%)
Asian (China, Japan, Laos, Philippines, India, etc.)	2 (0.3%)
Western European (France, Spain, etc.)	1 (0.1%)
Eastern European (Hungary, Romania, etc.)	17 (2.5%)
More than one	610 (89.4%)
Sex at birth ($n = 682$)	
Male	455 (66.7%)
Female	227 (32.9%)
Gender identity ($n = 689$)	
Man/Male	453 (65.7%)
Woman/Female	231 (33.5%)
Indigenous or other cultural gender identity (e.g., two-spirit)	3 (0.4%)
Non-binary, gender fluid or something else (e.g., genderqueer)	2 (0.3%)
Type of sport coached ($n = 659$)	
Individual	456 (69.2%)
Team	197 (29.9%)
Both	6 (0.9%)
Coaching experience in years ($n = 677$)	
	$M = 12.1$, $SD = 10.4$
Level of competition ($n = 688$)	
Local or regional	284 (41.3%)
Provincial	226 (32.8%)
National	118 (17.2%)
International	60 (8.7%)

Measures

Sociodemographics

Participants provided information regarding the nature of the sport in which they were coaching (team, individual, or both), the level of competition (local/regional, provincial, national, or international), and the years of experience they had in coaching. General sociodemographic characteristics (age, sex, cultural identity, and gender) were also collected.

Beliefs regarding instrumental effects of violence

The initial version (25 items) of the Perceived Instrumental Effects of Violence Scale (PIEVS) that we developed in Study 1 was used.

Sport ethic norms

To assess convergent validity, we used the Conformity to Sport Ethic Scale [CSES, (34)]. This validated tool measures the participant's degree of adherence to sport ethic norms. The CSES is composed of the "striving for distinction", the "self-sacrifice", and the "refusing to accept limits" subscales. For this study, the scale was adapted to fit for coaches. It showed good internal consistency, with Cronbach's coefficient of 0.831.

Motivational climate

To assess convergent and divergent validity, we used two subscales of the coach-created Empowering and Disempowering Motivational Climate Questionnaire [EDMCQ-C, (35)], namely Empowering (divergent validity) and Disempowering subscales (convergent validity). This scale measures the motivational climate created by coaches with empowering climates focused on task-involving and autonomy-supportive strategies and disempowering climates focused on ego-involving and controlling strategies (35). In this sample, the Empowering subscale showed good reliability ($\alpha = 0.830$), and the Disempowering had acceptable reliability ($\alpha = 0.749$).

Data analysis

An EFA was performed using Mplus version 8.0 (36) to identify the scale's latent dimensions with the objective of obtaining the most parsimonious and conceptually sound factor structure. We used the following criteria to evaluate the best model: items loading above 0.4 and limited cross-loading on more than one factor (37, 38). The overall model fit was evaluated with a combination of fit indices: the chi-square, the *Root Mean Square Error of Approximation* (RMSEA ≤ 0.05), the *Standardized Root Mean Square Residual* (SRMR ≤ 0.05), the *Tucker Lewis Index* (TLI ≥ 0.95), the *Comparative Fit Index* (CFI ≥ 0.95), and the ratio of chi-square to degrees of freedom ($\chi^2/\text{df} \leq 3$) as fit indices to identify the best solution (30, 39). After determining the best factorial solution, descriptive and correlational analyses were computed with the Statistical Package for the Social Sciences (SPSS 24.0) with a significance level of $p < .05$. The scale's internal consistency was measured with Cronbach alpha (40) and McDonald's omega (41, 42) coefficients. As recommended, we aimed for a score of 0.7 aimed for both coefficients to show adequate reliability (43). For divergent and convergent validity, we measured the correlations between the PIEVS and the three conceptually related scales

presented earlier in our measure section, namely the CSES (34), and the EDMCQ-C (35).

In a second step, we developed a short form of the PIEVS to increase its usability in future studies. We conducted an EFA with the 9 items that had obtained the highest factor loadings in the previous stage of analyses. The model fit was evaluated with the same combination of indices, and we measured reliability. We also documented divergent and convergent validity with the previously described scales.

Results

Factorial structure

We used the Weighted Least Squares Mean and Variance-adjusted (WLSMV) estimator as we dealt with ordered categorical indicators. We compared factorial structures ranging for 1- to 6-factor solutions. The 1-factor solution (11.174), 2-factor solution (1.406), 3-factor solution (1.043), and 4-factor solution (1.028) had Eigenvalues over 1, which is the threshold recommended for continuing the exploration. The screeplot indicated that a 1- or 2- factor solution could be appropriate. Overall, the 1-factor solution appeared highly superior to the others. We continued exploring the 1- to 4-factor solution and saw that they all presented good to excellent fit. The 2- to 4-factor solutions had a few issues of low factor loadings and cross-loadings. We then considered the nature of each factor by evaluating the items that loaded on each to see which solution would be more coherent with the theory on instrumental effects of violence. None of the solutions included factors that corresponded to the six theoretical dimensions identified in Roberts and colleagues' (2020) systematic review. At the end of this process, we decided that the one-factor solution was the most appropriate when considering both psychometric and theoretical relevance. This one-factor model provided an excellent fit to the data, $\chi^2(275) = 594.38$, $p < .001$; RMSEA = .041, 90% CI [.037 to .046]; SRMR = 0.056; CFI = 0.965; TLI = 0.962; $\chi^2/\text{df} = 2.161$. Standardized factor loadings of the items are presented in Table 3.

Reliability

The internal consistency of the PIEVS was very good with a Cronbach alpha of 0.891 and a McDonald omega of 0.949. Based on those results and the fact that EFA allow to keep the 25 original items, it was decided to also look for the validation of a short version of the PIEVS (see below—section on short form).

Convergent and divergent validity

As expected, the PIEVS and the Empowering subscale were negatively correlated ($-.29$, $p < .001$), which supported divergent validity. The PIEVS was positively correlated with the Disempowering subscale ($.558$, $p < .001$) and with the CSES ($.653$, $p < .001$), which supported convergent validity. The convergent correlations were strong but not near perfect, which was consistent with similar yet distinct concepts being measured.

Short-Form

We performed the second EFA also using the WLSMV. We compared factorial structures ranging for 1- to 4-factor solutions given the results from the first EFA. When looking at the

TABLE 3 Factor loadings for the PIEVS.

Item number	Summary of content ^a	Factor loading
1	Yelling or swearing for motivation	.727
2	Ignoring for motivation	.688
3	Asking to reduce social network for performance	.537
4	Mentioning being ashamed for motivation	.769
5	Giving extra workouts after poor performance	.693
6	Being angry after poor performance	.738
7	Shaking or pushing after poor performance	.597
8	Punishing team for one person's mistake	.617
9	Benching after poor performance	.611
10	Accepting yelling as commitment	.697
11	Giving harder training for less committed	.741
12	Ignoring the less committed	.640
13	Bullying as preparation for competition	.736
14	Considering athletes weak or lazy for failure in hard training	.730
15	Imposing pain to increase endurance	.569
16	Restricting food or water to increase endurance	.614
17	Creating sense of fear to obtain obedience	.714
18	Imposing punishments for disrespect	.503
19	Imposing punishments for missed practice	.650
20	Threatening to stop working with an athlete for discipline	.574
21	Removing athletes for weight reasons	.632
22	Maintaining distrust among athletes to promote competition	.770
23	Giving preferential treatment to motivate others	.626
24	Creating conflict among athletes to motivate	.735
25	Openly comparing athletes' bodies to promote competition	.432

^aThis Table presents a summary of each item's content. For the full items, please contact the lead researcher.

Eigenvalues, we saw that only the 1-factor solution (5.340), was over 1, which is the threshold recommended for continuing the exploration. The screeplot clearly indicated that a 1-factor solution was the most appropriate. This one-factor model provided an excellent fit to the data, $\chi^2(27) = 66.946$, $p < .001$; RMSEA = .046, 90% CI [.032–.060]; SRMR = 0.041; CFI = 0.986;

TABLE 4 Factor loadings for the PIEVS short-form.

Item number	Summary of content ^a	Factor loading
1	Yelling or swearing for motivation	.761
4	Mentioning being ashamed for motivation	.779
6	Being angry after poor performance	.729
11	Giving harder training for less committed	.713
13	Bullying in training to prepare for competition	.766
14	Considering athletes weak or lazy for failure in hard training	.674
17	Creating sense of fear to obtain obedience	.709
22	Maintaining distrust among athletes to promote competition	.782
24	Creating conflict among athletes to motivate	.769

^aThis Table presents a summary of each item's content. For the full items, please contact the lead researcher.

TLI = 0.982; $\chi^2/df = 2.479$. Standardized factor loadings of the items are presented in Table 4. The internal consistency of the PIEVS short form was very good with a Cronbach alpha of 0.82 and a McDonald omega of 0.917. Concerning convergent and divergent validity, the PIEMS short form and the Empowering subscale were negatively correlated (-0.27 , $p < .01$), which supported divergent validity. The PIEVS short form was positively correlated with the Disempowering subscale (0.476, $p < .01$) and with the CSES (0.556, $p < .01$), which supported convergent validity.

Discussion

The present study aimed to develop and validate a scale that assesses sport coaches' beliefs regarding instrumental effects of violence, namely the *Perceived Instrumental Effects of Violence Scale* (PIEVS). To our knowledge, the PIEVS is the first measurement tool for this concept. Based on the two studies reported in this paper, we obtained a one-factor, 25-item scale with a very good internal consistency and an excellent fit to the data. We also obtained a 1-factor, 9-item short scale with satisfying psychometric characteristics. These one-factor models differ from the theoretical 6-factor model based on the proposed dimensions from Roberts et al. (14) that we chose to test (drive performance, deter failure, test resilience, and commitment, develop toughness, assure interpersonal control, and promote internal competition). This could be explained by the fact that these dimensions are all related to the same global goal: to assure compliance of athletes with the demands, expectations, and goals of experts in positions of authority. As stated by Roberts et al. (14), “abuse is construed as an effective and acceptable way to discipline value-inconsistent behaviour” (p. 23). This means that the sport culture is dictating a set of values (“dominant values”—as described by Roberts and her colleagues) that coaches, among others, endorse. These dominant values (high-performance values, traditional masculine values, and expertise values) could explain the perceived need to ensure that athletes' behaviors fit this normative framework. It also logically explains that we found convergent validity with the *Conformity to the Sport Ethic Scale* (34). Indeed, a previous study showed an association between CSES scores and coaches' IV behaviors, as reported by athletes (23). We could then hypothesize that perceived instrumental effects of violence could be a mediating variable between dominant values in sport and IV from coaches. This hypothesis remains to be tested.

Coaches' beliefs about the perceived instrumental effects of violence could also be related to the motivational climate they strive to implement among their teams. An empowering climate combines task-involving, autonomy-supportive, and socially-supportive strategies (35). Meanwhile, a disempowering climate focuses on ego-involving and controlling strategies (35). As described previously, the PIEVS' factorial structure suggests that the underlying “goal” of violence is to help coaches guide

athletes toward value-consistent behaviors. It is therefore not surprising that we found convergent validity with the Disempowering subscale and divergent validity with the Empowering subscale of the *Motivational Climate Questionnaire* (35). As stated in the introduction, Ohlert and colleagues (24) have recently observed that a disempowering climate constituted a risk factor for IV. On the contrary, an empowering climate could serve as a protective factor. More research is needed to increase our understanding of the relation between these factors and ultimately develop more efficient prevention strategies. As such, the PIEVS could be used in future studies to evaluate if programs promoting the use of empowering motivational climates also influence the coaches' beliefs concerning the perceived instrumental effects of violence.

The development and validation of the PIEVS open many avenues for future research to refine our understanding of the various factors that can explain IV in sport. Indeed, the tool could be used to test associations between beliefs regarding instrumental effects of violence and actual coach IV behaviors (observed or self-reported). We could then pursue further and document if coaches' beliefs about the instrumental effects of violence are related to the dominant values identified in sport by Roberts et al. (14). This could lead to testing our hypothesis on the possible mediation role of such beliefs between dominant values and IV in sport. If the results of these studies support the relationship between beliefs regarding instrumental effects of violence and actual IV behaviors, the PIEVS could then be used to evaluate changes in attitudes and beliefs of coaches in the context of an intervention aimed at changing behaviors regarding IV in sport.

Although our study focused on coaches, given their central role, it is essential to underline that they are only one part of the sport ecosystem. As reported in previous studies, athletes, parents, and administrators are all concerned by the dominant values related to IV in sport [(14, 23), p. 16]. This means that other actors in sport could also endorse the perceived instrumental effects of violence. In turn, the situation creates a reinforcing loop that contributes to coaches maintaining those attitudes, beliefs, and behaviors. Adaptations of the PIEVS to these actors could be interesting and will need to be tested for validity.

Limitations

While we believe that the PIEVS represents a promising measurement tool to further improve both research and intervention regarding IV in sport, limitations should be noted. The tool was developed to measure coach beliefs only, and does not allow for the measurement of other sport actors' beliefs. This research was conducted with a convenience sample of coaches from Québec, Canada. The PIEVS should be tested in other samples in other cultures and regions to confirm the obtained factorial structure. To do so, some cultural adaptations and translations will be needed.

There could be differences in beliefs concerning perceived instrumental effects of violence based on gender, sports, years of experience, coach education levels, competition levels, and cultures. Future research with the PIEVS should document such differences and use the findings to refine the scale if appropriate.

Conclusion

In conclusion, the process of developing the PIEVS led us to reflect on the explanation of coaches' IV behaviors. As explained previously, more sport-specific tools to measure diverse potential contributing factors, such as sport-specific social norms and other organizational factors are needed. The PIEVS could serve as a tool to measure progress, but it is not the only measurement tool that we need to fully understand the whole picture and explain more fully why coaches use IV toward athletes in their practice. As long as we do not have a clear model to explain coaches' IV behaviors, it will be difficult to fully understand how to prevent this phenomenon in sport. The PIEVS is one step toward this end.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Laval University Human Research Ethics Committee (approval #2021-458). The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

SP: Conceptualization, Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. SR: Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Project administration, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. AG: Data curation, Investigation, Software, Writing – review & editing. AB-G: Conceptualization, Methodology, Writing – review & editing. M-HG: Conceptualization, Methodology, Writing – review & editing. ES-P: Formal Analysis, Investigation, Writing – review & editing. TV: Conceptualization, Methodology, Writing – review & editing. AW: Conceptualization, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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The role, readiness to change and training needs of the Athlete Health and Performance team members to safeguard athletes from interpersonal violence in sport: a mini review

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Safeguarding athletes from interpersonal violence (IV) in sport is an important topic of concern. Athlete Health and Performance (AHP) team members working with athletes have a professional, ethical, and moral duty to protect the health of athletes, prevent IV, and intervene when it occurs. However, little is known on their respective roles regarding IV in sport and their needs to fulfill their responsibility of safeguarding athletes. The aim of this review is to synthesize knowledge about the roles, readiness to change and training needs of AHP team members to navigate IV in sport. A total of 43 articles are included in the review. Results show that all AHP team members have a role to play in safeguarding athletes and should therefore be trained in the area of IV in sport. Overall, very little research has directly assessed AHP team members' needs to positively foster safety and eliminate IV in sport. There are common training needs for all types of AHP team members such as the ability to recognize signs and symptoms of IV in sport. However, there are also specific needs based on the role of the AHP team members such as ways of facilitating behavioural change for sport managers. Findings from this review are mostly experts' recommendations and should therefore be interpreted as such. The results of the review can guide the development of future research and recommendations.

KEYWORDS

Athlete Health and Performance team members, interpersonal violence, sport, safe sport, safeguarding, duty of care, training

1 Introduction

Recently, safeguarding all athletes from interpersonal violence (IV) in sport has become an important topic of concern (1, 2). IV in sport implies acts of psychological, physical, and sexual violence as well as neglect that occur between individuals within the sport community (3–5). Every individual, no matter their role in sport, can witness or commit IV toward athletes such as coaches and Athlete Health and Performance (AHP) team members (1, 6–8). Even though AHP team members can perpetrate IV themselves (9, 10), authors have recently suggested that AHP team members play an important role in the prevention and intervention regarding IV in sport (11–13). Indeed, while AHP team members do not necessarily have a neutral position toward athletes, they typically have less control and authority over athletes than coaches (14–16). Their role is often related to taking care of the health and wellbeing of athletes and depending on their expertise, they may have professional and ethical responsibilities to protect athletes based on their regulatory body or college's policies and code of ethics. However, little is known on their respective roles and needs to fulfill their responsibility to safeguard athletes from IV in sport. The aim of this review is to synthesize knowledge about the roles, readiness to change and training needs of AHP team members to navigate IV in sport. AHP team members are classified in four types: (1) medical and paramedical staff, (2) sport managers, (3) mental performance (MP) and mental health (MH) practitioners and (4) strength and conditioning coaches and other training support staff.

2 Materials and method

Eligible articles were searched on EBSCO (SPORTDiscus), ProQuest, PsycINFO and PubMed databases in May 2023 using keywords specific to the research question (see Table 1). Articles that were (a) peer reviewed (2), published from January 2010 to May 2023 and (c) written in French or English were included in the review. A total of 2,355 articles were identified through the bibliographic search. Duplicates ($N=148$) were removed, and 1,891 articles were judged irrelevant through screening title and abstract. After full text review of the remaining articles, 30 articles were included in the review. Other relevant sources ($N=13$) known by the research team were considered important to the study aim and were also included in the review, for a total of 43 sources¹.

3 Results and discussion

3.1 General findings

The need to train all AHP team members to safeguard athletes from IV in sport is raised by several authors (12, 17–21). Indeed,

safeguarding athletes is perceived as a shared responsibility between all AHP team members (16, 21–25). Thus, preventing IV in sport depends on the commitment and collaboration of the collective AHP team members (12, 24). Each AHP team member must understand their roles, responsibilities, and obligations in this regard (23, 26). Consideration must also be given to their respective perspectives and needs in advancing safe sport (27). Evidence-based training for all AHP team members would allow a shared understanding of safe sport and coordinated actions (23). In this regard, some authors suggested topics that should be universally addressed in training regarding IV in sport (see Table 2). The next sections will detail the specific training needs for each type of AHP team members.

3.2 Medical and paramedical staff

Medical and paramedical staff includes actors responsible of athletes' health such as sport doctors and physiotherapists, to give a few examples. Seven articles addressed the role of medical and paramedical staff in safeguarding athletes from IV in sport, but none have directly assessed their needs to fulfill this role.

3.2.1 Role

Medical and paramedical staff play an important role in athlete safeguarding, notably because of their professional duty of care to protect the physical and mental well-being of their patients, the development of confidential trusting therapeutic relationship with athletes and their frequent contact with them (33–35). Thus, involving medical and paramedical staff in athlete safeguarding would increase surveillance of the sporting environment (28). Based on their professional competencies, medical and paramedical staff also have the role to raise awareness and educate the sport community on the health impact of IV in sport (35). They should be leaders in the implementation of change through their role as health advocates for the development of safeguarding initiatives in sport organizations (35). Medical and paramedical staff should also support research in the field of safe sport in their sport organizations (35). Moreover, the therapeutic relationship they have with athletes gives them a privileged place to support athlete experiencing IV in their recovery (34). No article addressed the readiness to change of medical and paramedical staff.

3.2.2 Training needs

The training needs of medical and paramedical staff regarding IV in sport fall into three main categories: (a) general knowledge about IV in sport, (b) prevention, and (c) intervention. Regarding general knowledge, medical and paramedical staff should be able to recognize IV in sport (12, 22), notably the general and sport-specific clinical presentation (signs and symptoms) of IV in sport (12, 18, 21, 24, 33–35). Medical and paramedical staff should also be able to recognize sport-related risk factors of IV in sport (21, 33) and the signs of an abusive or at-risk relationship (e.g., signs of grooming) (33).

¹The included articles are marked by an asterisk (*) in the reference list.

TABLE 1 Keywords for bibliographic search.

Concepts (AND)	Sport	Athlete	Maltreatment	Stakeholders	Training
Keywords (OR)	Sport*	Athlet* Player*	Maltreat* Violen* Abus* Harass* Negl* Harm* Aggression Hazing Assault Victim* Bullying Prejudice	"Sport doctor" "Sport physicians" Physiotherapist* "physical therapist" Manager* "sport psychologist" "mental performance consultant" "physical trainers" "massage therapist" Nutritionist* Stakeholder* decision-maker" administrat*	Prevention Training Safeguard* Polic* Rules* Guideline* Education Program Intervention Protect Promotion awareness

*(asterisk) is the truncation symbol used in the bibliographic search.

TABLE 2 Topics that should be universally addressed in training regarding IV in sport.

Topics
Definitions and prevalence of the different types of IV in sport (28, 29)
Signs and symptoms of IV in sport (30–32)
Risk factors and consequences of IV in sport (29, 33)
Perpetrators of IV in sport (29)
Challenges related to disclosure (29)
Appropriate response to a disclosure (31)
Reporting procedures and laws (29, 31)
Limits of interpersonal relationships between AHP team members and athletes (29, 31)
The modus operandi of the perpetrators of IV in sport (17)
Issues of diversity, equity and inclusion (30)

Concerning prevention, medical and paramedical staff need the knowledge and abilities to prevent IV in sport (21, 24). They should also know how to screen for IV in sport by creating a climate of open and reassuring communication that encourages disclosure (22) and by developing screening tools specific to IV in sport (24). Given that medical staff have been involved as perpetrators in cases if IV in sport, it is also essential to educate them on existing safeguarding policies and best practices when performing their professional duties with athletes (e.g., requiring the presence of a chaperone during intimate clinical examinations with a minor athlete) to prevent IV in their interactions with athletes (30).

In terms of intervention, medical and paramedical staff should be trained to respond appropriately to an athlete's disclosure of IV in sport (12, 18, 21, 24, 30, 33, 35). They should also know what to do in case of a suspected or known case of violence toward an athlete (18, 21). Indeed, medical and paramedical staff need to know how to report allegations of IV in sport, the appropriate authorities to whom to report, and be aware of their reporting obligations and legal confidentiality issues (12, 24, 34, 35). It is also important to train them with the best practices for supporting, caring for and treating athletes affected by IV in sport (24, 33–35). Medical and paramedical staff must therefore develop clinical competencies in trauma-informed practice to prevent re-

traumatization in their interventions with athletes who experience IV in sport (34, 35).

3.3 Sport managers

Sport managers are people in charge of organizational aspects of sport, for example administrators working for national organizations, university athletic program directors, and regional sport club managers. Among all types of AHP team members, sport managers², are the ones who received the most attention in the literature regarding athlete safeguarding. A total of 21 articles addressed this group, four of which directly assessed sport managers' role in the prevention of IV in sport.

3.3.1 Role

Results suggest that sport managers play a key role in promoting safe sport. Sport managers appear to have the primary responsibility for safeguarding athletes (36). Their organizational leadership is recognized as an essential element having the greatest impact on safe cultures and environments within sport (19, 37–39). Several authors also suggest that sport managers have a role in promoting and providing accessible evidence-based education programs on IV in sport to individuals involved in sport (e.g., AHP team members, coaches, athletes) (17, 18, 27, 29, 31, 40).

3.3.2 Readiness to change

Organizational tolerance regarding IV in sport and conformity to traditional values in sport (e.g., masculinity, sport ethic, expertise) create conducive environments for all forms of IV in sport (15). For example, norms of masculinity and heteronormativity are associated with IV in sport and

²Articles addressing the role of sport organizations regarding IV in sport are included in the sport managers category since sport organizations are led by sport managers.

non-reporting of IV (14, 37, 41). According to high performance athletes, sport managers must prioritize athletes' holistic development and a safeguarding culture over performance (20). Such approach would place athletes' wellbeing first rather than short-term outcomes such as medals. This safeguarding culture must be an integral part of the organization's and not perceived as an add-on element imposed by external actors (e.g., funding instances) (19, 38). To remain relevant and effective, a safeguarding system must be continually reviewed and adapted, meaning that sport managers must commit to its sustainability (38). Managers should be ready to invest the necessary resources (e.g., material, financial, human) for the implementation and maintenance of a safeguarding system (38). Organizational change, commitment and distancing from traditional values are therefore necessary to promote safe sport (15).

3.3.3 Training needs

When directly questioned about their training needs, sport managers stated that education is a key element to creating a safe sport environment (42). However, they think that training should go beyond awareness raising and explicitly address ways of facilitating behavioural change (42). Participants suggested various topics they would like addressed in training initiatives, such as policies, prevention, power dynamics, and reporting (how and when to report) (42). Sport managers also need to be better equipped to recognize signs and symptoms of IV in sport (32). Although training is perceived as one of the most important elements for the prevention of IV in sport, it is also one of the greatest challenges in terms of organizational capacity (43, 44). In addition, sport managers recommended having an independent body to monitor, investigate and manage complaints. While this may reflect their lack of resources and ability to address IV in sport by themselves (42), it also acknowledges the need for third-party independent entities to manage IV in sport.

The literature review points out on some actions that sport managers should take to foster safe sport, from which we can identify indirect training needs. First, it seems of prime importance that sport managers implement clear policies and codes of conduct (13, 22, 27, 28, 40). Codes of conduct should clearly define the limits of interpersonal relationships between all actors in sport, expected behaviours, and good practices, as well as unsafe practices and unacceptable behaviours (15, 18, 31, 33, 42, 45). Thus, sport managers should receive training on these subjects (e.g., concrete manifestations of IV in sport) to be able to develop clear and effective policies and codes of conduct. Moreover, policies and codes of conduct should target risk and protective factors of IV in sport related to both victimization and perpetration (13, 31), meaning that sport managers should also be able to identify these factors through training. It is important to mention that to be effective, policies and codes of conduct must be accompanied by enforcement strategies, such as clear disciplinary measures (42). Indeed, policies and codes of conduct are not sufficient themselves; it is also necessary to clearly define and enforced sanctions for each breach of ethics (15, 18, 22, 27, 36).

Second, sport managers should implement reporting mechanisms regarding IV in sport (15, 27, 29, 36, 46). Indeed, it is important that all sport actors know why, when, how and where to signal known or suspected cases of IV in sport (39, 42). Sport organizations must clearly establish procedures for reporting, managing allegations and responding appropriately to a report of IV (13, 18, 28, 30). Moreover, in order for a reporting mechanism to be effective, sport managers should be aware of the barriers to disclosure and take action to reduce them (34, 39).

Third, sport managers should offer support and appropriate resources to complainants and witnesses of IV in sport (13, 18, 22, 39). To ensure appropriate support, sport managers must recognize that each experience of IV in sport is unique and that complainants' needs will vary from one person to another. They should also work in collaboration with athletes experiencing IV in sport (34). Indeed, survivors of IV in sport are experts by experience and should therefore be involved in the development of safeguarding initiatives (34). However, to safely support and collaborate with survivors of IV in sport, it is essential that all those who interact with survivors are trained in trauma-informed approaches (e.g., understand stages of recovery, avoid stigmatizing language and re-traumatization, recognize signs of mental health challenges) (34).

Additionally, results of this literature review suggest that sport managers should understand the realities and needs of the different groups of athletes. Preventive measures to safeguard athletes are not "one-size-fits-all" and must take into consideration diversity and intersectionality (20, 26, 47). For instance, equity and inclusion should be part of safeguarding strategies (13, 20, 47). Importantly, Canadian high performance athletes belonging to an equity-deserving group consider that current safe sport measures are not appropriate for all athletes (47). They consider that the measures benefit normative athletes, as they were created for them, without taking into account the specific needs of various athlete groups (47). In this regard, athletes suggest training AHP team members to understand the needs and realities of different equity-deserving groups in sport (47).

3.4 Mental performance and mental health practitioners

MP and MH practitioners are professionals working with athletes to support their mental health, well-being, and performance. This group includes, for example, certified mental performance consultants, clinical psychologists and social workers. A total of seven articles addressed the role of MP and MH counsellors regarding IV in sport. Only two studies directly addressed this group's perceived needs in this area.

3.4.1 Role

Several authors emphasized that MP and MH practitioners are in an unique position to safeguard athletes from IV in sport (11, 48, 49). Indeed, by the nature of their job, their knowledge of ethical practice as well as the neutral, confidential and

trustworthy relationships they develop with athletes, they are well placed to recognize and intervene in cases of IV in sport (11, 16, 50, 51). Athletes are also more likely to disclose (directly or indirectly) their experience of IV in sport to practitioners they trust (11, 51). These practitioners, and especially mental performance consultants, often directly work with athletes on the sporting field, which gives them a privileged position to detect IV (11). They also have the professional expertise to implement prevention strategies (e.g., consult with coaches to help them shift controlling behaviours to autonomy-supportive ones) and minimize the impact of IV on athletes (e.g., train mental skills to cope with stress) (50). Moreover, because these practitioners are members of professional orders or associations, they have a duty of care to protect the physical and mental health of athletes (11, 16).

3.4.2 Readiness to change

MP and MH practitioners in sport might be socialized in a performance-oriented culture which may lead them to not recognize or to accept certain abusive practices (e.g., constant yelling) (11). They may be former athletes themselves who have normalized certain practices because of a win-at-all-cost mentality, or they may be influenced by the very nature of their job to maximize sport performance (e.g., they may emphasize stress management, resilience, and mental toughness despite the toxicity of an environment) (11). It is therefore important that these practitioners remain aware of their own beliefs and biases, and engage in ongoing reflective practice to ensure their interventions promote and protect athletes' welfare above and beyond performance (11, 48, 52). While this has been raised specifically for MP and MH practitioners in the reviewed articles, we acknowledge that it can also apply for all types of AHP team members (i.e., medical and paramedical staff, sport managers, as well as physical trainers and other training support staff).

3.4.3 Training needs

The studies that directly assessed MP and MH practitioners' knowledge regarding athlete safeguarding shows that these individuals are direct or indirect bystanders of IV in sport (51, 52). As a result, these practitioners wish to have better knowledge regarding safe sport, notably protection policies, regulations, or laws for minors or children (51). They expressed a need for more clarity regarding definitions of IV in sport and specific examples (51, 52). Results also show that practitioners want to be better equipped to recognize signs and symptoms of IV in sport and to identify appropriate intervention strategies (51, 52). Participants suggested that additional training in this area be integrated in academic programs and accreditation processes (51).

The need to include safe sport training in MP and MH practitioners' education programs has also been highlighted by several authors (11, 14, 53). They suggested that practitioners should be able to recognize general and sport-specific signs and symptoms of IV in sport (11, 16, 50). They must also recognize risk factors and high risk situations of IV in sport (11), and be equipped to implement prevention strategies (11, 16, 48) by understanding the root causes of IV in sport (11). Finally, MP

and MH practitioners must know how to intervene in cases of IV in sport (11), while respecting existing laws and regulations. To ensure safe and effective interventions, they must also be trained in trauma-informed practices (16).

3.5 Physical trainers and other training support staff

Within the literature review, no articles addressing the role of strength and conditioning coaches and other training support staff regarding IV in sport were identified. This is surprising considering that over 10 years ago, Stirling and Kerr (51) highlighted the relevance of assessing the exposure and knowledge of IV in sport of various AHP team members, including strength and conditioning coaches and nutritionists. For instance, nutritionists could play an important role in detecting IV in sport since experiences of IV in sport have been correlated with disordered eating and eating disorders (54, 55). Body shaming has also been identified as a form of IV in sport and is used by some coaches for instrumental purposes to pressure athletes to reach the ideal weight for their sport (56, 57). As a result, nutritionists working with athletes exhibiting disordered eating should be equipped to recognize the signs of IV in sport, the mechanisms for reporting suspected or known cases of IV in sport, and to respond appropriately to an athlete's disclosure.

4 Conclusion

In conclusion, the necessity to provide evidence-based training to all AHP team members on the topic of IV in sport is widely supported by the scientific literature. However, to date, very little research has directly addressed the specific needs of each group of AHP team members in relation to IV in sport. As a result, the findings of this literature review are mostly experts' recommendations and may not necessarily reflect the real needs of AHP team members. Moreover, none of the articles reviewed gave specific insight on AHP team members' needs and expectations regarding the structure (e.g., duration, format, and frequency) of training on the area of IV in sport. More studies are required to document the specific needs of each type of AHP team members. This would allow the development of targeted training programs that respond to both general and unique or local needs. The results of the review can guide the development of future research and recommendations. Finally, recognizing AHP team members' role in the prevention of IV in sport, one should not assume that they can't participate to IV in sport or be the perpetrators of such harms themselves. Indeed, we acknowledge that AHP team members are part of a wider sport system often embedded in a win-at-all-cost mentality that normalize IV in sport and in which there are inherent power relations between actors (11, 39, 42). This wider system can therefore have an impact on their propension and abilities to prevent and respond to IV in sport. Training AHP team members regarding IV in sport is therefore proposed as a way of

promoting safe sport but will not be sufficient in itself. Prevention and intervention strategies should be implemented in all levels of the sport socioecological model to establish an overall safeguarding culture (13, 58).

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AG: Data curation, Formal Analysis, Investigation, Methodology, Writing – original draft. MM: Conceptualization, Writing – review & editing. TV: Conceptualization, Writing – review & editing. SR: Conceptualization, Writing – review & editing. VB: Conceptualization, Writing – review & editing. ND-B: Conceptualization, Writing – review & editing. SP: Conceptualization, Funding acquisition, Project administration, Supervision, Writing – review & editing.

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Navigating uncertainty: exploring parents' knowledge of concussion management and neuropsychological baseline testing

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Introduction: Parents play an important role in preventing and managing sport-related concussions among youth sport participants. Research indicates that parents understand the severity and consequences associated with the injury but gaps exist in their knowledge of its management. Neuropsychological baseline testing (NBT) is a modality that has gained interest in youth sport to purportedly better manage concussion injuries. Little is known about parents' perspectives on the use of NBT in the management process.

Methods: The present qualitative study used Protection Motivation Theory as a guiding framework and employed focus groups ($N = 2$) with parents ($N = 11$) to gain insight into parents' perceptions and experiences with concussion management, specifically focusing on NBT.

Results: Inductive Content Analysis developed a core theme of navigating uncertainty. Participants expressed uncertainty about the nature of concussion and its management process, where concussion was not always easy to identify, youth were not always reliable reporters, and there was no prescribed or proscribed path for recovery. Personal experience and concussion management policy provided participants with a degree of certainty in managing concussions. Participants gave NBT mixed reviews in potentially promoting greater certainty but also held reservations about its usefulness in concussion management.

Discussion: We discuss findings relative to existing knowledge and theory in youth sport concussion and identify implications for practice.

KEYWORDS

concussion, parents, risk, management, uncertainty, neuropsychological baseline testing

1 Introduction

Sport-related concussion (SRC) is a complex injury (1), prevalent among youth and adolescent athletes. These injuries draw substantial attention due to potential long-term consequences (2, 3). SRC injury is defined as "a traumatic brain injury caused by a direct blow to the head, neck or body resulting in an impulsive force being transmitted to the brain that occurs in sports and exercise-related activities" (4, 5). The injury is experienced as a range of cognitive, emotional, and somatic symptoms, which typically resolve within 7–10 days. However, a commonly cited estimate from older literature (i.e., pre 2005) is that 10% of athletes in youth and adolescent populations that experience SRC will have an extended recovery period (1). Some recent research has

shown that 31% of children and adolescents with acute head injuries continue to experience symptoms such as difficulty concentrating and headache beyond one month, affecting daily functioning and quality of life (6). These differences may be due to improvements in diagnostic systems, such as that developed by Zemek et al. (6). Symptoms present in response to neurometabolic rather than structural disturbances (7–9), making concussion difficult to identify, diagnose, and manage (1, 10, 11).

In Canada in 2017–2018, in excess of 100 SRCs occurred per 100,000 population in the 12–19-year-old age category (12). High-profile cases, like Rowan Stringer's catastrophic and lethal concussion injury (13, 14), have prompted legislative actions, such as Rowan's Law [mandating removal-from-play and return-to-play (RTP) processes for SRC in organized sports; (15, 16)], policy developments, like the Blue Card in rugby [a removal from play and RTP process following SRC in rugby; (17, 18)], and rule changes to enhance SRC risk reduction and injury management (19).

Neuropsychological baseline testing (NBT) is a widely promoted tool in concussion management, used in elite and youth sports, in US high school systems (20), and sport associations in Ontario, Canada. Although not mandatory, NBT provides a pre-season cognitive baseline for athletes, aiding in post-concussion management (4, 5, 21). This individualized cognitive profile allows clinicians to assess post-injury cognitive impairment, informing a tailored management plan. This can ensure that athletes recover before re-engaging in sports activities, reducing the likelihood of severe consequences such as second-impact syndrome (SIS) (22, 23). While NBT is theorized to enhance return-to-play decisions and mitigate second-impact syndrome risks, it is emphasized that it should complement, not replace, clinical findings in concussion assessment (4, 5). Although marketed as concussion management support, NBT is not endorsed for use (4, 5) and has limitations that warrant critique. In youth athletes, NBT may be of limited value owing to neurocognitive development and poor discriminative ability beyond the initial (i.e., post-24-h) period following a concussion (4, 5). Moreover, NBT demonstrates low test re-test reliability (24–27); this is particularly problematic in youth sports where cognitive development is dynamic (4, 5). Natural variability in cognitive abilities due to personal and contextual factors (e.g., academic stress) and purposefully underperforming (i.e., “sandbagging”) on baseline testing also compromises the validity of baseline testing (28–30). Overemphasis on baseline testing may overshadow other critical aspects of concussion management, such as graded RTP and learning and psychological readiness to return-to-sport.

Parents play a crucial role in managing youth SRCs, serving as advocates for their child's well-being and key decision-makers in the recovery process. Parents assume a *Case Manager* role by ensuring that their child adheres to recovery guidelines—taking sufficient time to recover before resuming sporting and academic activities (31). As case managers, parents must liaise with other sport participants on behalf of their child (i.e., parents, coaches, school officials) to ensure that precautions and accommodations supporting recovery are followed, to monitor their child's health

status, and to make decisions based on their recovery progress. In this respect, the parent-coach-athlete triad [sporting triad, (32)] may have particular importance in concussion management in that each actor relies on the other for information on safe RTP.

In the event of SRC parents need to have access to knowledge of SRC signs and symptoms and the potential consequences of untreated injuries and be instructed to identify and implement effective management strategies to make recovery decisions that align with current guidelines. Research has shown that parents understand the severity of concussion but lack knowledge surrounding its identification and management (33–37). A lack of parental knowledge of concussion management strategies can lead to uncertainty in decision-making and potential problems for their child's health and well-being (e.g., delayed medical attention, adopting dated or ineffective strategies, rushing return-to-competition). This can increase the risk of further injury and the athlete's exposure to cumulative brain trauma [e.g., SIS; (14)] and long-term consequences [e.g., Chronic Traumatic Encephalopathy, CTE; (38)]. These potential risks, consequences, and implications for youth safety and well-being related to a general lack of parental awareness on SRC injuries highlight a need to examine parents' responses to youth concussions.

Parents, driven to minimize risks and support their child in sports, might be misled by technologies like NBT into a false sense of security. This may lead to deferred medical attention, assuming the technology suffices for professional medical advice or can somehow speed recovery. Allied health professionals marketing such tools appeal to parents' imperative to mitigate risks, creating uncertainty for those who opt out. In navigating this complexity, parents may unknowingly rely on unproven methods, potentially compromising their child's recovery. Understanding parental perspectives on such technology is crucial in mitigating these risks. We are unaware of research examining parent perceptions of NBT.

Protection Motivation Theory [PMT; (39)] provides a potential framework for understanding parents' ability and motivation to respond to youth SRCs and engage with technologies such as NBT. In PMT, fear of health threats motivates behavioral responses through threat and coping appraisals (39). Threat appraisal considers vulnerability (i.e., perceived likelihood of a health risk) and severity (i.e., belief in the harm of short and long-term consequences, e.g., pain, impairment of learning) to enhance protection motivation. For concussions, this relates to parents' beliefs about the likelihood and severity of their child experiencing a concussion. Also considered in threat appraisal are reinforcers that reduce the sense of threat, prompting maladaptive responses such as denial or minimization (e.g., belief that playing through injury builds character).

Coping appraisal involves self-efficacy (belief ability to enact protective behaviors) and response efficacy (belief in the effectiveness of the measure). Self-efficacy is influenced by experience, encouragement, and affective states (40). Parents' ability to identify symptoms and negotiate restricted play is relevant here. Response efficacy is influenced by experience, modeling, and education, such as concussion awareness programs. Response costs (weighing the costs of protective

behaviors) are also considered. For athletes, removal from play is a direct cost. The money, time, and effort to administer concussion management are examples of response costs, as might be removing a child from play.

PMT is a useful framework to examine parents' responses to youth SRCs. PMT has been used in primary, secondary, and tertiary prevention to predict engagement in health prevention (41) and cancer screening behaviours (42), as well as rehabilitation and treatment participation (43, 44), and parents protecting their child's health (39). While not encompassing all potential influences, PMT provides a core of motivational and behavioural factors that might influence protective response, regardless of whether a child has experienced a concussion or not.

In sum, while parents possess sound knowledge of concussion injury, their understanding of concussion management is less certain, and limited research has focused on their experiences in this regard. This gap is particularly crucial given the rise of new technologies like NBT, positioned as solutions to the complexities of concussion management. Given the contested nature of NBT, careful consideration is needed regarding its inclusion (if at all), especially considering the influence of commercial marketing on parents who have a heavy emotional investment in their child's sport participation but may not have the expertise to evaluate such technologies (45). Our qualitative exploration aimed to shed light on parents' experiences, including their knowledge and beliefs about, but also their uncertainties and worries with concussion management, with specific reference to NBT, using PMT as a guiding framework. Our findings might help to underscore the uncertainty parents face, especially when navigating technologies like NBT, offering insights for future research and implications for concussion management.

2 Methods

2.1 Research design

A qualitative design was chosen due to the exploratory nature of this study and to present a rich and contextualized understanding of parents' experiences, beliefs, and feelings toward concussion management and their perceptions of NBT. Quantitative research may help identify parents' gaps in knowledge but offers little insight as to why these gaps exist or how they affect parents' experiences and decision-making processes concerning SRC management—elements that can be richly explored through qualitative methods. Ethics approval for the study was received from Trent University's Research Ethics Board in June 2020 (protocol #26630).

2.2 Theoretical orientation

Critical realism was used as the metatheoretical framework to identify generative mechanisms affecting human experience and action (46, 47). Critical realism recognizes internal experiences

(i.e., thoughts, feelings) and social structures as influences while at the same time recognizing that those participating in the experience (including the researcher) play a role in constructing meaning and experience. This study examined parent beliefs, attitudes, and other features (e.g., legislation) as potential generative mechanisms for parents' concussion management behaviours. Critical realism does not deny the constructed nature of experience, but rather asserts that there is an underlying reality that we can only understand imperfectly. Critical realism also recognizes the importance of extending understanding into practical action, but emphasizes that effective action is best achieved by understanding the mechanisms of effect of a phenomenon. PMT (39) provided a sensitizing methodological framework to guide data gathering owing to its behavioural focus on risk management and development based on appeals to fear.

2.3 Context

The study was conducted in Ontario, Canada. Ontario enacted Rowan's Law in 2016, which formalized the obligations of sport communities to prevent, monitor, and manage concussions properly (15) as well as educate members of the community. Briefly, the legislation mandates that sport organizations educate community members about SRC and its management, monitor concussion incidents, and ensure that RTP and learning guidelines are followed in community sport and school settings.

Ontario has a publicly funded healthcare system where injured athletes can access emergent and primary care medical diagnostic and treatment services. At the same time, networks of private (i.e., for-profit) healthcare providers have grown up around concussion treatment. These networks market baseline assessment technology to clinics to allow the clinics to adopt the technology in providing their own concussion services to sport organizations. Ontario provides an ideal context to study parents, sport concussion management, and NBT, as sport and health care communities are taking active steps to improve concussion management, parents are highly involved in their child's sport(s), and NBT is widely distributed across the province.

2.4 Sampling and recruitment

Purposive sampling was used to recruit participants through advertisements posted on social media websites (e.g., Facebook and Instagram) and email communication with administrators of local sporting organizations (e.g., minor hockey and rugby). To ensure the relevance of concussion injury in soliciting parent experience, recruitment efforts targeted parents with children involved with contact and collision sports. Parents were excluded from the study if they did not have a child registered in contact or collision sport. Participants received a twenty-dollar electronic gift card for their involvement in the study funded through the fourth author's personal research funds.

2.5 Data gathering

Focus groups (conducted in December 2020) were chosen to facilitate dynamic discussions, allowing participants to compare their experiences (48, 49). Prior to commencement, participants submitted consent and demographics via the Qualtrics online survey platform. Participants were assigned to two groups based on online polling for availability. Groups were held remotely over Zoom, enabling participation during COVID 19 pandemic and providing a degree of anonymity and potential for greater openness about personal matters on the part of participants (50). Groups were recorded for transcription and analysis. The first author moderated the groups, the fourth author took notes and researchers debriefed after each session. The first group ran for 100 min, the second for 108 min.

The guide (Supplementary Material 1) used to facilitate focus groups was shaped by the constructs of PMT (51). To gain a sense of personal orientation, participants were asked what interested them in participating in the focus group before shifting to the first topic of questioning, which was their current beliefs surrounding concussion injury. Within this section, questions looked to examine parents' beliefs about SRC and the sources of those beliefs (e.g., what past education have you received regarding SRC?), their perceptions on the severity of the injury (e.g., in your mind, what are the consequences of SRC?), and what measures they viewed as an effective means of reducing the chances of SRC in children (response efficacy; e.g., rule changes, equipment).

The inquiry then transitioned to participants' experiences with the SRC management process. This phase sought insights into the actions participants took to aid recovery and their confidence (self-efficacy) in managing their child's SRC. Inquiries extended to interactions with medical professionals and recommendations for parents undergoing the recovery process for the first time. Further questions explored participants' experiences and opinions on NBT, probing its potential applications in SRC management.

As not all parents may have had exposure to baseline testing, brief media-based summaries of NBT were provided prior to the focus groups to orient the parents to NBT (Supplementary Material 2). Three media summaries were provided—one emphasizing the potential benefits of NBT, one its shortcomings, and one neutral focusing on the technical aspects of NBT. Media summaries were researched and derived from sports media and vetted by two independent researchers (one neuropsychologist and one philosopher) to verify the technical accuracy and orientation of the argumentation of the media summary.

2.6 Data analysis

Video recordings were transcribed verbatim by the first author and reviewed for accuracy by the fourth author. No transcription software was used. Inductive Content Analysis aligning with Hsieh and Shannon's (52) guidelines for conventional content

analysis was employed for data analysis. Inductive Content Analysis was chosen for its suitability in exploring social phenomena with limited existing theory and prioritizing participant voice and lived experience over existing theory. Given the scarce knowledge about parents' perceptions toward NBT, Inductive Content Analysis was deemed appropriate. While PMT guided initial focus group questions, the analysis aimed to capture constructs beyond the theory, rather than seeking its validation as an explanatory framework for parents' management of SRC. PMT was used as a lens to discuss inductively developed themes.

Data analysis began with multiple transcript readings by the first author for data immersion. Initial impressions and comments were recorded, and key thoughts were highlighted through code labels (52). Themes were derived from multiple codes, and after developing themes and sub-themes for each focus group, comparisons identified similarities and differences across transcripts. The fourth author reviewed and discussed the evolving codes and themes with the first author, leading to the final construction of a common theme ("navigating uncertainty"). This theme encompassed sub-themes related to participants' experiences with concussion management and NBT. Examples were used from the text to contextualize and support the identified themes.

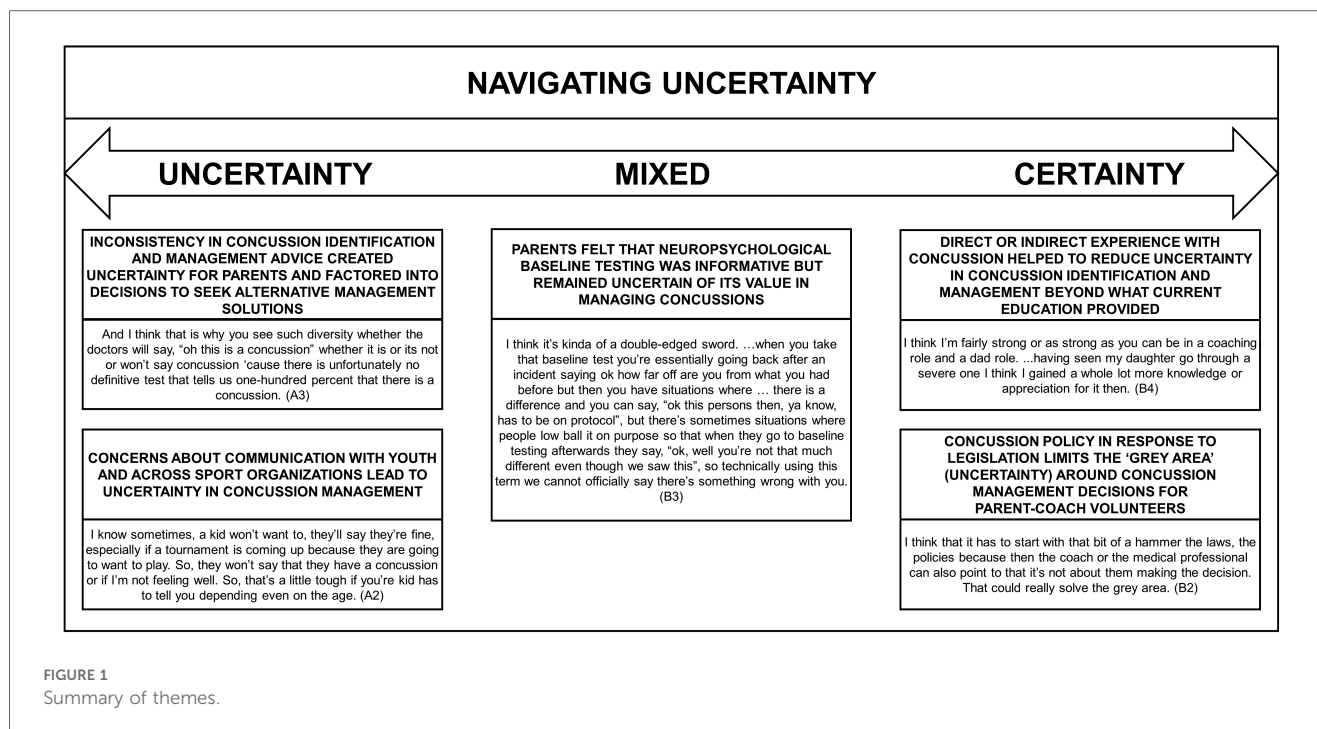
Our potential bias as sport participants in interpreting the data is acknowledged. To enhance rigor, independent researchers assessed the focus group guide for relevance and neutrality (e.g., ensuring questions would not lead participants to desired responding). The fourth author verified transcript accuracy (53). Multiple readings ensured analytical depth, and rich participant descriptions supported themes in the data. Throughout, we reflected on preconceptions to mitigate potential biases. The first and fourth authors actively contributed to theme development, fostering reflexivity (54), while the second and third authors critically reviewed themes to prompt further reflexive analysis (e.g., encouraging consideration of alternative interpretations).

3 Results and discussion

The results and discussion will first present the participant characteristics to help contextualize their accounts. We will then relate and discuss the themes in relation to extant literature and theory.

3.1 Participants

Table 1 provides a descriptive summary of the participants. As per the inclusion criteria, all parents had children involved in some form of collision or contact sport. The sample ($N = 11$) was gender balanced with a wide age range (23–61 years). Five participants were involved in coaching youth sport. Children were enrolled in a range of sports (i.e., hockey, rugby, football) from recreational to national level competition. Experience with concussion and NBT varied in the sample. Six parents had children who had



out on sport and the development opportunities afforded by their involvement in contact and collision sport.

Examining navigating uncertainty as a core theme within parents' decision-making through a PMT lens, threat appraisal reflected a balance between risk and reward. The threat component of concussion was present in acknowledging the potential severity of concussion injury; however, parents were willing to risk exposure to sport situations that may leave their child vulnerable to concussion owing to the benefits of participation. Parents identify significant cognitive (e.g., need to maintain grades to participate) and social (e.g., social cohesion and responsibility) benefits from participation in high-risk sport (55). This points to a more nuanced view of injury threat as it applies to sporting contexts. With PMT's prioritization of health outcomes, one might construe parent's willingness to allow their child's exposure as "maladaptive" in denying their vulnerability. However, it is clear that participants weighed the risks and benefits and were attempting to mitigate and consider SRC risks when allowing their child to participate in sport. In contrast to these considerations made by participants, another work indicated some parents believe there is too much attention placed on concussion injury (56), which reflects a minimization of SRC severity.

3.2.2 Inconsistency in concussion identification and management advice creates uncertainty for parents and factors into decisions to seek alternative management solutions

Participants entering the concussion management process were required to have their child medically assessed. They expected this

assessment would lead to a definitive medical diagnosis to provide direction on next steps in management.

"...so what's the truth here like how do we decide what is a concussion if the medical field, like, I'm not a doctor, I can't diagnose my child and I'm totally relying on the medical field to tell me if my kid has a concussion." (A2)

This expectation was not always realized. Participants perceived inconsistency and ambiguity in concussion identification, mainly during interactions with emergency room physicians. Also contrary to what might be expected, these differences in experiences were present within the same hospital emergency department. For A3, they had experienced no diagnosis and received minimal supportive materials for both her child's and husband's concussion, while A2 had a doctor who provided them with the diagnosis and supportive information (e.g., brochure) they needed to aid in their management process.

"So, the fact that A2's daughter was asked to come back to the doctor after three days, I mean that was great. We didn't unfortunately have that guidance. I again think it's that lack of consistency, right. Ya know, some doctors are really focused and wanting to get, ya know, whether it's a definitive diagnosis or give them the information they need to get better whereas others are kinda like 'well it might be, so just so you can see what happens', kind of thing." (A3)

"Ya I found they were really great and very caring, but I also find that not everybody is delivering the same message to everybody who comes through the door, so that's a little

confusing. If you go to a different physician or different emergency room or clinic, you might get a different message.” (A2)

The lack of diagnosis has been previously reported by Boutis et al. (57) who found that emergency room doctors were diagnosing concussion in children less often relative to the Zurich International Consensus Guidelines (58) suggesting a more hesitant diagnostic stance. Of the 495 cases that they examined, only 200 were diagnosed as concussion by the emergency room doctors while 443 of the cases were judged to meet the criteria for the Zurich guidelines. Diagnosing a SRC is not an easy process considering there is no definitive test and symptoms could take days to develop (11, 59). This leaves emergency room doctors to rely on signs and symptoms that they see during an initial assessment alongside information from the athlete and their parents, which may not, at that moment, lead to a diagnosis of an SRC.

Knowing the difficulties associated with diagnosing a concussion, it is important to understand sport participant expectations in an urgent care consultation for a suspected SRC. Zamarripa et al. (11), surveyed parents’ expectations and beliefs surrounding concussion diagnosis in an emergency room setting, concluding that parents were expecting more than what the emergency room doctors could provide. Parents expected comprehensive and definitive care, including imaging, a definitive diagnosis, a timeline for return-to-activity, and a signed RTP form (11). In practice, emergency room doctors review the patient’s SRC history and previous conditions (e.g., learning disorders, migraines, mood disorders), rule out any severe injuries that may need imaging (e.g., cervical spine injury), and potentially administer an age-appropriate symptom inventory [e.g., Sport Concussion Assessment Tool—5th Edition, SCAT5; (60)]. While participants might perceive the absence of a concussion diagnosis as a shortcoming on the part of healthcare providers, it is imperative to acknowledge the inherent limitations of the initial assessment, particularly given the constrained timeframe and the necessity for symptoms to manifest.

For the participants who did not receive a definitive diagnosis, they were left without an understanding of what exactly their child had experienced. This uncertainty created a sense of doubt for how they were going to approach their child’s injury.

“I think when my son had his first concussion, it was a bit of a learning curve of ‘does he have it, does he not have it?’ and not fully understanding...I think going through it the first time it was kind of easing in [to managing the concussion].” (B5)

Perceiving a lack of clear direction and in the absence of experience, participants managed concussion according to what they felt would benefit their child’s recovery, mainly relying on their child to express their symptoms to understand how they were feeling and supervising and limiting their child(ren)’s daily activities accordingly.

“Lots of sleep, trying to minimize media, which in this day and time is really challenging because, I mean, even school, like they’re using smart boards and they’re using digital everything. We let him lead the way in terms of, we wanted him awake during the day just a little bit, we [just tried to help him move a little bit] say lets go for a walk or something and we just listened to his cues, if his head [was starting to hurt] he would go back to bed.” (A3)

The uncertainty in management led three of the participants to access auxiliary health care, including unresearched therapies or trainings, influenced by existing relationships they had with healthcare providers (vs. evidence-supported interventions recommended by a healthcare provider). Two of these participants felt their child benefitted from the added care, although the methods (i.e., craniosacral therapy, virtual focus training) they pursued were exploratory and not evidence-based.

“We have a friend who’s a neuroscientist who works at the university and he was conducting studies with people who have suffered concussions, so we were able to get my kid into that trial which was great. But he did a lot of work with focusing training and it’s almost like a video game, ya know, and that really helped him recover quite quickly.” (B2)

A3 described taking her son to a colleague who did craniosacral therapy, which seemed to help resolve his residual symptoms. Whatever the efficacy of the interventions, for parents these alternative methods seemed to be attempts to exert some form of control over a management process they did not fully understand.

Thus, parents were more confident in their immediate actions (e.g., reducing screen time), but less certain when it came to managing prolonged symptoms. Perceptions of diagnostic ambiguity coupled with unrealistic expectations of a clear pathway from identification through management undermined participants’ efficacy in managing SRC.

From a theoretical standpoint, this sub-theme reflects how the difficulty in pinpointing the nature of threat can create confusion in response. While PMT does not address this aspect of threat, the Common-Sense Model of Illness Representations (61) elaborates how different dimensions of injury or illness representations might affect one’s coping response. In this framework, having clarity in the identity (i.e., associated signs and symptoms) is important to one’s response. Where the symptom picture is ambiguous and individuals are uncertain about personal control a problem-focused coping response is less likely (62).

Where uncertainty did play a role was in the response efficacy of longer-term management strategies. Lacking guidance, some participants turned towards unproven and experimental interventions to support management and were willing to consider NBT as it was a “better than nothing” approach. Through a PMT lens, this response is motivated more by the benefit of its anxiety reducing effect than on any beliefs held about the response efficacy of the modalities in question. Anxiety reduction can be looked at as a response benefit, while

maintaining anxiety in the absence of action can be looked at as a (non)response cost.

While this might seem innocuous, as there is likely no harm in exposure to modalities such as craniosacral therapy, (a) it directs resources, energy, and attention away from potentially beneficial management methods like progressive aerobic exercise, and (b) it serves mainly as a form of emotional coping rather than addressing the actual danger posed. As SRC most commonly resolves over time, the coincidental resolution of symptoms with the application of such techniques may lead to the anecdotal belief that the intervention was effective when research does not currently support such an approach.

3.2.3 Concerns about communication with youth and across sport organizations leads to uncertainty in concussion management

Participants relied on communicating with the athlete alongside other actors (e.g., teammates, coaches, administrators) within the sporting community to manage a suspected concussion. The need to trust a young athlete about their condition worried parents because of the internal and external factors they believed could influence their child into hiding or inaccurately reporting their symptoms—concerns aligned with extant research in youth athletics (63, 64).

Parents acknowledged their child as a committed sport participant and knew that they would not like to miss games or practices. This can make it difficult when trying to identify or manage a concussion. A2, for example, expressed concerns about their child not disclosing a concussion to not miss out on play.

“And I know sometimes, a kid won’t want to, they’ll say they’re fine especially if a tournament is coming up because they are going to want to play, so they won’t say that they have a concussion or if I’m not feeling well. So, that’s a little tough if your kid has to tell you, depending even on the age. So, that’s, we found a bit tricky, like our daughter would go full-tilt all the time and I’m not sure that some kids wanna miss.” (A2)

Echoing prior research, young athletes fear repercussions, including potential playtime loss, if honest about their symptoms (29, 65). To avoid perceived punishment, athletes may withhold information, indicating a possible overconformity to the Sport Ethic (66). The Sport Ethic encompasses normative beliefs like making sacrifices, accepting risks, and playing through pain. Overconformity manifests as athletes uncritically embracing and committing to these norms, potentially leading to deviant behavior, such as withholding health information (64).

Alternatively, young athletes could also be limited in providing information because of difficulties identifying and communicating what they have experienced as a potential SRC (67). A3 reported that when her child experienced a concussion, they did not have the ability to properly express their symptoms.

“Kids don’t always have the right words either, right? They don’t have those like necessary skills, sometimes giving them like I gave him wording like ‘there’s pressure in your head, is

there something sitting on your head, do you have a headache or do your eyes hurt?’ Like I gave him those things to kinda go through just again cause I know a lot of the weird symptoms that can happen with concussion.” (A3)

Unlike other sport-related injuries, SRC has a range of complex signs and symptoms that can occur hours up to days following the initial incident. The delayed onset and other known explanations (e.g., dehydration) could lead to athletes questioning if what they experienced was a SRC and if it was serious enough to report (63). Past research on collegiate athletes in the U.S. performed by Kaut et al. (65) found that nearly 32% of their sample reported experiencing a blow to the head that led to subsequent symptoms of SRC but continued to play due to the inability to self-identify their symptoms as a concussion. Similar findings were documented by Cusimano et al. (63) who interviewed 31 minor hockey athletes and found that underreporting of SRC was partially caused by the inability to recognize their own symptoms. There may also be denial on the part of the concussed athlete, believing what they want to be true (i.e., they don’t have a concussion) to avoid the negative consequences of sitting out. In sum, parents were uncertain that their child could or would provide reliable information to enable them to properly manage a concussion injury.

Developmental dynamics are also a potential consideration for parent-child interactions. Research suggests parental monitoring can protect at-risk youth from peer pressure to engage in health risk behaviors (69). However, as children mature into adolescence, they may become more recalcitrant in discussing personal issues with parents (70). This was a concern for parents in another study (71) and is consistent with developmental literature on parent-child dynamics (72, 73).

Social influences may also play a role in concussion reporting. A4 experienced this firsthand with peers from her son’s hockey team pressuring an injured player to try and play during an important game, also revealing the important role of parents in managing injury.

“...some kids might not be truthful leading up to a tournament or something where they really want to play a certain game and I have experienced that firsthand with one of our teams. We had a peewee team who their key player was injured, and the entire team wanted that player to be there, but that player very obviously was injured, and it was the parents who actually stepped in and was like, ‘nope you can’t play’, and it was a very important game for that team.” (A4)

External pressure is a common feature of competitive sport caused by a sporting culture that reacts negatively to injury disclosure (63). Kroshus et al. (74) reported on a survey of 328 U.S. collegiate athletes, 26.5% of whom experienced pressures to remain in play from teammates, coaches, and parents. Frey (75) and Nixon (76) identified that the motivation for athletes to play through injuries is a socially learned behaviour. They suggest it is reinforced by the accolades of “playing through pain” and avoiding social disapproval (“come on, suck it up!”), and it is taught at a relatively

young age (77). As a hinderance on the effectiveness of sport legislation such as Rowan's Law, the negative culture surrounding symptom reporting continues to be a cause for concern (78).

The lack of information exchange between sporting bodies was another source of uncertainty for parent-coach participants. As is evident in this sample, children play multiple sports, at varying levels and formats of competition. Parent-coach participants were concerned that they may be playing athletes who did not disclose concussions they experienced while participating in other sports competitions or trials (e.g., summer league tournaments) and therefore not have their injury managed adequately.

"Like if I coach a kid in a spring team but he's from another town and he suffers a head injury I can send him home or off the ice all I want, but when he goes back to his regular team, there's no one there that might know that this has happened and hopefully his parents, ya know, are looking out for his best interest, but unfortunately, that's not the reality in every case." (B7)

B5 shared a direct experience of this where a parent did not feel the need to report an injury (a broken arm in this case), which led to an injured athlete continuing to play and risking more severe injury. B5 stated, "we were told nothing about it... it's a tough situation for various sports coaching when you're not informed by the parents." Parent-coach participants were worried of potentially playing an injured athlete because of a lack of knowledge surrounding the health status of the athlete in question.

Youth sport's main social system, the sporting triad (coach, parent, and athlete), operates with each member responsible for their role to ensure success (32, 79). Disruptions within these triads can detrimentally affect the youth athlete's experience. One participant encountered such disruption when a parent failed to disclose their child's injury from another sport, leading to the athlete playing despite the injury's severity, turning a minor issue into a significant one. Withholding information may reflect the adoption of a professional model for their child, potentially becoming overly emotionally invested in their child's sport (80). Excess emotional involvement can skew their perspective on balancing health and performance in the developing youth athlete, leading to risky behaviors like withholding information from the coach. Such actions can contribute to a normative culture within the team that undermines injury reporting (80, 81). Previous research supports these assertions as parental pressure to achieve (82) and excessive identification with sport (83) influence parental response to concussion communication.

3.2.4 Direct or indirect experience with concussion helps to reduce uncertainty in concussion identification and management beyond what current education provides

Participants reported either directly managing or vicariously witnessing the management of a SRC as a valuable learning experience that they could not gain through education alone. Their experiences provided them with an insight into the complexities associated with the injury and its management process.

"The personal experience is really valuable as well, ya know, even if someone hasn't experienced it 'cause we can all attest to the fact that the proximity that you have to this kind of experience the better understanding and appreciation you have for the severity of it [concussion]." (B2)

These complexities were described by the participants as factors that would not be well understood by those without experience managing the injury. The participants noted that the "invisible" nature of concussion would make it difficult for those without experience (direct or indirect) to understand and appreciate the severity of the injury as experienced by their child.

"I think the problem with concussions is that unlike a broken arm, there's no label that there's something wrong and people don't and parent's and fellow athletes don't necessarily appreciate all of those symptoms that have been talked about so far." (B4)

By extension, the ability for concussion injuries to cause irregularities in an athlete's mood, behaviour, and psychological well-being needed to be experienced by being around the individual during the management process. Participants reported changes within members of their own social circle that affected their family life, profession, and schooling.

"Well the social emotional part of a concussion that people that haven't been around concussions really don't know that it's just not physical, it's just not the fact that you have blurred vision or difficulty seeing with light and have headaches and all the rest, it's the social emotional bit. Like, I had a friend that their son had a bad concussion and he literally became a different boy for six months. He became very moody." (B1)

The grounded understanding gained from experiential learning extended participants' understanding beyond that provided by public health education by expanding the parent's view on the scope of the injury's effects and reducing the novelty of management. The value of experiential knowledge contrasts with the general passive educational strategy from healthcare providers, such as pamphlets detailing concussion signs and symptoms. A systematic review by Curran et al. (84) revealed that most information provided to parents in pediatric emergency care used passive dissemination strategies. Rice and Curtis (36) underscored the limitations of passive education, noting that parents exposed to such programs struggled more with identifying mood and sleep symptoms compared to cognitive and physical symptoms.

Participants also indicated that current education efforts in the sporting community lacked specificity and organization. Their first criticism was that information was directed mainly to coaches and trainers instead of the parenting community—parents were not being provided with the educative support they needed even though they were the ones that had to manage their child's concussion.

“I think awareness overall is the big thing that needs to come out more for most parents. I know there’s been a lot of awareness, like lots of literature towards coaches and coaching staffs and trainers, but the general population of parents haven’t been shown as much of this information and I think getting it out there and the awareness to the parents, so they can realize what concussions really are.” (B5)

Supporting this claim, a systematic review of concussion education programs found none tailored for parents of youth athletes (34, 35). Despite parents’ pivotal role in managing SRC, resources primarily emphasized identification and awareness over management (34–36). In jurisdictions mandating concussion education, research showed that only 16% of parents received education from coaches, with the majority (58%) merely signing an information form. Similarly, in Ontario, 42% of schools provided concussion education to parents, while 52% had parents sign a participation form including concussion information (85). However, the education was generally passive and there is no indication of parents’ engagement with the provided information.

Their second criticism was with the organization and consistency of information that is already accessible for parents. They did not feel confident in choosing or following any specific option of care due to the lack of centralization and consistency surrounding opinions on concussion and methods used to manage it.

“I wish there was just a one stop shop for ‘this works’ and ‘this is what we should be looking for’, but because like anything you just punch it into the internet and, you know, it’s find the information that you’re actually looking for, and I guess what I’m trying to say is I just wish it was more cut and dry. There was more, ‘hey let’s go to concussion.com, let’s go to concussion recovery.com’, whatever it is, instead of just Joe’s concussion recovery... there’s just so many people that have an opinion or information or have done research and sometimes it varies from person to person.” (B7)

The value of experience described by the participants demonstrates how experience increases self-efficacy for concussion management. PMT identifies self-efficacy as a key motivational element and mastery experience as the most effective way to build self-efficacy and reduce uncertainty (40). Theories of experiential learning (86) elaborate how experience contributes to self-efficacy development, where learners benefit from: (1) firsthand, concrete experience with the symptoms and management challenges, with (2) reflective observation over time to deepen understanding that (3) enables abstraction of conceptualization to synthesize a multifaceted view of the nature of recovery (e.g., personality and mood changes) and (4) allows for experimentation with supportive actions (86).

The information provided by public health initiatives is essential to sensitize parents to concussion threat and to provide information about the basic tenets of concussion management (e.g., acute rest) and how to access further support as needed. It may not be beneficial or practical, however, to provide parents with the depth of insight required for longer-term management,

such as would be gained by direct experience. In this case connecting parents to the experiences of peers who have already been down the path, through question-and-answer forums or social media may help parents to tap into knowledge that is tailored to their child’s specific needs.

The concussion prevention and management landscape is constantly evolving. There remains debate around the reasonableness of the demands placed on parents in terms of knowledge and skills for concussion management (87). A Delphi panel of health care experts indicated that one-third of parent behaviours that were deemed important, were not viewed as realistic. Further to this, the expert panel identified only 7 of 24 necessary knowledge domains for executing these behaviours to have adequate scientific consensus. If experts are uncertain about the scientific foundations for concussion management, how can we expect parents to make decisions in an environment where there is significant grey area? Despite the central role of parents in concussion identification and management, it seems that parents are in a peripheral position when it comes to concussion education and the logistics of meaningfully educating parents remains a challenge (85).

3.2.5 Removing the “grey area”: concussion policy limits the uncertainty around concussion management decisions for parent-coaches

Parent-coach participants viewed developments in sport-specific policies (e.g., Hockey Canada’s concussion policy) in response to legislation requirements (e.g., Rowan’s Law) as a benefit because they reduced uncertainty within the concussion management process. Protocols reduced what these five participants deemed to be the “grey area”. These policies allowed for parental decisions to be supported by a formal guide to help identify potential concussion events, guide concussed athletes through the RTP process, manage their interactions with parents, and raise SRC awareness.

“Like Rowan’s Law and a little bit of awareness in the community and in the sports community has made my life as a coach way easier. Soon as it’s, ok there was clear contact to the head, one or more symptoms, you’re done for the day... talk with the parents afterwards, here’s the form, they need to see a doctor, it’s out of my hands, we’re all just trying to keep your kid safe. I think it’s like the grey areas have been removed, which, I mean, as long as we all sort of live to the letter of Rowan’s Law, a lot of the grey areas have been removed. So, I feel actually a lot more comfortable now than I did five, six years ago. Again, I coach football, rugby, and hockey and there, people do get bumps and bruises and knocks in the head and it’s a reality.” (B1)

Athlete removal policies and RTP guidelines simplified the decision-making process for coaches by providing a standard, evidence-based framework for how to support athletes during their recovery. Concussion policies reduced pressure on parent-coaches by providing mandatory processes, minimizing reliance on individual judgment when questioned about athlete removal

decisions by parents. “The coach or the medical professional can also point to that it’s not about them making the decision.” (B2). Concussion policy gave the parent-coaches a sense of security knowing that parents and athletes had to abide by the policy to RTP.

“My wife actually coaches as well and last year she had a player that was, their trainer thought had a concussion. They had to go to the doctor, get the note signed, the doctor said that they had a concussion and then before they actually got the letter re-evaluated for the doctor to sign off, the parent was trying to force the coach to make the player play and my wife was like, ‘No. She, that player cannot play until you get the doctor’s note signed’, and I think that’s a good step.” (B5)

The pressures coaches experience from parents to return their child early may stem from a lack of knowledge of the mandatory RTP protocols on the part of parents or, more concerning, knowingly trying to return an athlete to play before they are cleared. Hecimovich et al. (88) found that, of the 1,441 parents sampled, a high percentage (95%) understood that athletes should be removed from play following a suspected concussion; however, less than half of those parents (41%) endorsed a gradual RTP guideline for recently concussed athletes who are symptom free.

Although not expressed in this sample, parental pressures encouraging their child to play through injury could be viewed as an attempt to circumvent concussion protocols, which these parents may believe undermine parental autonomy over their child’s care (82). Consequently, this may position parents in opposition to the coach and the removal decision. Research describes how parents act on their negative perceptions of coaches through contrarian action [e.g., resisting a coach’s decision, questioning the actions of the coach; (89)]. Black et al. (33) reported that of the 786 youth hockey parents sampled, 15%–20% reported that they did not consult a physician for assessment or clearance to RTP following concussion and 19% stated they would not actively seek care from a physician for concussion management guidance. Whether through ignorance or contrarian and competitive attitudes, policy helped support removal and RTP decision-making on the part of parent-coaches. Alternatively, this issue may not simply represent contrarian behaviour on the part of parents. Limited access to primary care in certain jurisdictions (e.g., Ontario, Canada) makes the requirement of a doctor’s note an important systematic barrier that limits the equitable application of such policies (78).

While not an element in PMT, policy also has a norming property that can change the standard operating procedures within a community. From a theoretical perspective, policy can help to reduce the distortions that might occur in motivation towards proper concussion management by decreasing the intrinsic and extrinsic reinforcers/aversives that encourage maladaptive behaviour. The fact that a policy exists to remove and rest means that teammate and coach encouragement to play on or the child’s fear of missing out is less likely to be acted on to subvert the RTP process. Policy also promotes response

efficacy by pointing those involved towards efficacious action (e.g., graduated RTP protocols with monitoring) and away from responses that are ineffective. Clear guidelines and standards establish expectations within a community that those involved may be reluctant to disregard for fear of sanction or social disapproval. Eventually, these standards can become internalized as responsible and ethical behaviours on the part of sport community actors.

3.2.6 Parents feel that neuropsychological baseline testing is informative but remain uncertain of its utility in managing concussions

NBT use generated conflicting opinions among participants when discussing its value within the management process. Some parents questioned the utility of test results, while others felt that its inclusion could provide clarity (certainty) for the management process. The need for certainty was connected to the belief, for some, that using NBT would be better than doing nothing at all.

“I think any extra tool that we can use at this point to try and diagnose a concussion is very helpful because like it’s an invisible injury for the most part and I think that’s the biggest troubling thing for most parents and the athletes themselves is any information is good information.” (B5)

NBT was seen as a tool to make concussion more “visible” and bring some objectivity to its identification. In the absence of a definitive diagnostic tool and despite issues of reliability, it was also thought that NBT serves to reduce troubling uncertainty.

Three positions were introduced by participants to justify decisions to use NBT. The first position was the decision to engage with measures they were not confident about but were willing to include if there was a chance of the test possibly helping.

“I could see people doing it because, ya know, why not? Is it helpful? Maybe, maybe not, but if it was included in as a team thing and the coach and trainer said, or the league said this is what we’re doing this year, then I think people would be on board with it because, ya know, it’s not a big deal, it’s not a cost, not a hassle and maybe it will be helpful, but we don’t know, right?” (A1)

This position was advanced by parents whose upside belief of NBT was limited, but saw little downside, irrespective of evidence for use.

The second position was the ability for NBT to generate tangible evidence for SRC. This related to the visual results the test provides to parents and administrators to reflect on during the identification and management process. Although research has shown the results of NBT’s lack reliability and should not be used in a standalone fashion in a clinical decision for RTP (4, 5), its ability to provide tangible results was enough for three participants to feel comfortable including it in the management process.

“I think in theory it’s a great idea that we have something measurable and tangible because concussions are so fuzzy for us, to have something measurable to say your score was ‘X’ beforehand and it’s now x minus 10, you’re not up to where you were cognitively beforehand. So, I think that to make an effort to have something measurable is beneficial.” (B1)

Thirdly, participants noted that, while providing speculative objectivity to the SRC management process, NBT could function as an educative tool for the sporting community.

“But I think it’s important to have that information, the concrete information embedded somewhere, but it also highlights, it gets people talking, right? It also calls on people to take responsibility and be involved and understand what, ya know, it’s like in coaching where we’re expecting our coaches to have a criminal record check and they have to go through some sort of process, right, to be tracked, to be part of the community. ... Like it functions as an education, it functions as an awareness.” (B2)

In this sense, NBT requires behavioural engagement by the parent, coach, and young athlete (84, 90) providing another element of exposure to SRC education which the participants felt parents, coaches, and athletes could benefit from. It is also a means to promote parent-child communication about concussion, something that has been recommended in previous studies (82). NBT may also provide opportunities to engage actively and collaboratively with a concussion-focused modality, vs. passive engagement through single administration methods (e.g., brochures). Thus, justification for NBT depended on how the participants viewed the function of the test itself (i.e., diagnostic vs. educative).

On the other hand, participants had significant reservations about the inclusion of NBT in the concussion management process. Consistent with concerns raised in research on NBT (4, 5), they understood that accurately recording and comparing their child’s scores months apart would not be an effective way for identifying or managing a SRC. Having the existing gap in testing during the developmental years of a child’s life would make the pre-season assessment void if the injury were to occur months later. They would then be left to deal with a SRC and no test to help with the management process.

“even if you have a baseline and I get that the idea is that if a kid has a concussion they’re checking them to see if they’re back at that baseline, like I said, kids change. So, say they had their baseline done and the concussion happens even eight months later, the baseline could have changed in between that time and they don’t know.” (A1)

Participants struggled to justify incorporating NBT into their sport organizations, especially when they already had comprehensive RTP protocols in place. Additionally, the added expense and time commitment of NBT seemed unattractive,

considering its perceived redundancy alongside existing, mandatory youth sport RTP policies.

“So, why not just treat the concussion and make sure it’s gone and make sure they’re better before letting them go back and making sure that they’re passing all their new whatever milestones or getting better? They would have to do that regardless of if they had a baseline. So, it’s kind of like, what’s the point other than sounds like it’s a chiropractor money grab.” (A1)

The lack of preventive benefits from NBT further fueled doubts: “it’s not going to prevent anything [concussion]” (A1). Instead, participants favored a more direct approach, targeting treatment for the injury according to established guidelines, deeming it a more effective management method than investing in a costly auxiliary test.

Consistent with concerns raised in the literature (28–30), participants were also concerned with the ability for young athletes to purposefully score lower on a NBT to try and RTP faster. B3 expressed these concerns with NBT as a strategy because of the way young athletes could game the system knowing that the baseline scores they provide would make it easier for them to pass the test if they were to suffer a SRC.

“But there’s sometimes situations where people low ball it on purpose so that when they go to baseline testing afterwards, they say, ok, well you’re not that much different even though we saw this. So, technically using this term we cannot officially say there’s something wrong with you.” (B3)

B4 supported B3’s claims discussing how the assessment may become vulnerable to sandbagging (i.e., purposefully underperforming on the test) when providing the young athletes with information on how the test is supposed to fit into the SRC management process. They believed that once the athletes are provided with the information on how the process around the assessment is supposed to work, athletes would purposefully use that knowledge to underperform their test to guarantee a result that would allow them to RTP.

“They sandbag it. ‘Cause when you educate them, which you need to educate them, they figure out, well, I need to do poorly on this test to guarantee that myself I can get back to competition if I do get a concussion.” (B4)

The idea of young athletes purposefully scoring lower was not a matter of if but rather when they would try to cheat the test. B4 felt that athletes within his own sporting program would try to score lower based on his ongoing interactions with them in a sporting context “Well I know some speed skaters that would put a fix in on the test”. B2 supported B4’s claim from experiences that she had witnessing young athletes complete NBT, “I’ve seen kids game it for sure”. Participants, including those who did not hold coaching roles, knew that some youth athletes would alter their scores to RTP faster. The chance that a player may be able to

circumvent the assessment added further doubt and uncertainties for the inclusion of NBT in their league's current RTP protocols. Knowing that they already had a structure in place that required time away from play and a final sign off by a physician made them question the purpose of including an assessment that would not benefit the management process. Sandbagging is not a speculative concern. In a retrospective study among a sample of 6,346 high school athletes, Tsushima et al. (91) classified 47% as having sandbagged performance with underperformance affecting pre-post comparisons among concussed athletes in the sample.

Looked at from the perspective of response efficacy, it was encouraging that, when presented with information on NBT and arguments for and against its use, participants adopted a more critical view of its inclusion in concussion management, also acknowledging the value of current return-to-play procedures. This more rational perspective aligns with current recommendations about the inclusion of NBT in the management process in that it should only be used in conjunction with proper medical assessment and RTP procedures. Apart from the limitations of NBT in research findings, requiring its use can create equity and access issues in sport to families and communities who may not have the resources to afford baseline and follow-up testing (92, 93). For parents who are able and opt to make the financial investment and utilize NBT, their child may feel greater parental pressure as a result, which can impact their enjoyment and commitment to their sport (94).

4 Strengths and limitations

While our sample was small and non-representative (of both all sporting parents and parent-coaches), the information gained was complex and insightful. The focus group format and duration supported rich discussion and sharing of experiences among parents, emblematic of the peer-oriented and experiential approach we propose in the following section as a potential education intervention. Qualitative responses captured a range of experiences that have been shown in the literature including around diagnosis by a medical professional (11, 55) athlete underreporting and hiding symptoms (63, 64) and concussion management experience and education, or lack thereof (33, 36, 84). Our findings provide novel insight into parents' decisions on, and navigation of, the concussion rehabilitation process with their child(ren). These findings decentre the focus from parent knowledge towards the cognitive/affective experience of parents managing SRC without full information and in a complex environment where actors hold potentially competing priorities and views. Additionally, our study sets the stage for future research to examine specific areas highlighted by our themes (e.g., communication networks and flow of information within and across sport organizations and the impact of sport policy and experience on parents' care decisions for their child athletes).

We studied parents in Ontario, Canada, a province with concussion management legislation and policies within the

administration of sport to guide actors involved in concussion management. While these findings may not transfer entirely to jurisdictions without such structures, parents' uncertainties of managing the concussion process will likely have resonance in other contexts. Future research could look to expand participant recruitment across Canada and other sporting contexts. We were also aware of the limitations of NBT as a tool for identifying SRC when initiating the research. We acknowledge the potential for researcher bias; however, we attempted to manage our pre-existing beliefs through a reflexive and systematic approach. We also assert that a critical approach to research inherently carries values towards empowering participants toward positive change in the field of study.

5 Conclusion and implications

Our study of parents' experiences, beliefs, and attitudes towards concussion management and NBT provided insights into influences that moved parents towards greater (personal experience, policy) and lesser (diagnostic ambiguity, communication) certainty around concussion management. Views on NBT were mixed in recognizing potential value on the basis of a "better than nothing" or potential educative tool, while at the same time recognizing the limitations of the technology; an encouraging finding considering the commercial interests at play and the potential equity and access issues. Experience with concussion management and concussion-specific policy helped ease feelings of uncertainty among study participants, however, communication breakdowns remained a primary concern of parents resulting in greater uncertainty.

Our findings highlight the need for greater attention to be paid to the specific role and concerns of parents in the concussion management process. Extending from Kroshus and coworkers' (87) study of experts, understanding parent perspectives on what should be reasonably expected in terms of knowledge and skills would be of value in supporting programming for parents. Considering the uncertainty related to parent-child communication, developing a better understanding of the dynamics of parent-child interactions when it comes to communication and integrating a developmental perspective would be of value in guiding parent response. Extending our findings related to parent-coach and parent-physician interactions, understanding the dynamics surrounding injury management within the sporting triad and extending this to urgent and primary care providers as well as other sport participants in concussion management roles [e.g., match officials; (18)], would be valuable in supporting the organization of management and education efforts. Furthermore, parents' experiences can inform future concussion policy and education developments, highlighting the gap in understanding regarding the use of technologies such as NBT and concussion management pathways, leading parents to seek out unproven methods, potentially compromising their child's recovery and welfare.

Theory use has become more prominent in research on parents' response to concussion. We used PMT to support our methods and

interpret our findings. Study participants' responses highlight elements of PMT in identifying components of threat (i.e., perceived severity), but also potential modifiers (i.e., achievement-orientated motivation) to threat as well as the role of self-efficacy for identification and management. Response efficacy is reflected in the uncertainty around the use of technology such as NBT. We also found that PMT, as a health cognitions framework, is perhaps more limited as a lens to examine influences such as the role of uncertainty in emotional coping, interpersonal dynamics (e.g., the sporting triad), and larger contextual influences on parent behaviour such as information exchange within sport systems. It may be relevant and interesting to examine parent response through theories that more explicitly capture experiential avoidance, relationship dynamics, and systems influences. Theory informed research should also explore the experiences of key actors in concussion management throughout the entire process, not just the identification and acute management phase. At this point, it may be helpful to "take stock" and review the state of the art of theory use to see where gaps exist to inform future research and intervention development.

This work may also integrate into the larger literature on parent uncertainty with diagnosis, recovery trajectories, prognosis, care environments, and decision making in childhood illness (95) in revealing shared and distinctive concerns with concussion and other childhood illnesses and injuries. Like other research on child illness and injury, uncertainty is a major feature of parents managing SRCs. The antecedents of uncertainty for parents include the inherent limitations in medical diagnostic capacities that they are not made aware of. Communication patterns with children and within the sporting triad and sport systems also undermine parent confidence. Personal experience with concussion and concussion policy help to reduce uncertainty. Consequent to uncertainty, we identify that parents may fall back on management methods that do not have research support and are "better than nothing". Interventions directed towards parents may benefit from providing opportunities for parents who are managing their child's concussion to connect with experienced peers (e.g., social media contact), given the value attributed to personal and vicarious experiences in managing concussion. Based on this and previous research [cf., (36); and also see (34, 35)], expectations for urgent care assessment and evidence for alternative forms of management and treatment should be made clear to parents in concussion education materials and in consultation with health care providers. Specific to NBT, our findings suggest health care professionals involved in providing NBT should also make clear the potential shortcomings of its inclusion in management as parents are in a vulnerable position where their decisions are driven by understandable worry and concern for their child. Given the demands of parenting, it is unreasonable to expect parents to have expertise in assessing the value of these alternatives.

Finally, our findings and that of other research (87) suggest the need to more centrally involve parents in consultations and research around concussion management, and particularly interventions directed towards their involvement. Parents occupy perhaps the central role in youth sport concussion management.

Therefore, their voice is essential in advancing concussion prevention and management efforts.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Trent University Ethics Review Committee (Protocol #26630). The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

MH: Conceptualization, Formal Analysis, Investigation, Project administration, Writing – original draft, Writing – review & editing. MJ: Writing – original draft, Writing – review & editing. HL: Supervision, Writing – original draft, Writing – review & editing. FO: Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Project administration, Resources, Software, Supervision, Writing – original draft, Writing – review & editing.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fspor.2024.1360329/full#supplementary-material>

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Towards an understanding of maltreatment in football

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Introduction: This study explored the understanding of maltreatment from the perspective of various personnel working in roles related to safeguarding and welfare in English professional and semi-professional football.

Method: Through a social constructivist position, the present study was able to explore multiple understandings and perceptions of maltreatment in football. Individual semi-structured interviews (MDuration = 68.00 minutes, SD = 9.05 minutes) were conducted with 19 participants working across league structures ranging from the English Premier League (EPL) to the English Northern Premier League Division One, as well as individuals working with some of the principal organizations in English professional football.

Results: Through reflexive thematic analysis, three general dimensions were highlighted: "current understanding of maltreatment in football," "constituents of maltreatment," and "signs and symptoms of maltreatment." Findings from those working in a safeguarding capacity mirror the research literature around understanding the components of maltreatment but also demonstrate how wrongdoing is nuanced by the football context, in that certain forms of maltreatment are driven by the unique nature of this environment.

Discussion: From an applied perspective, the findings also outline how to distinguish both the more overt and covert signs and symptoms of maltreatment, whilst also highlighting the impact of maltreatment on individuals' mental health and their sense of self. Overall, the findings provide a platform for practitioners and researchers to consider in the design of safeguarding and welfare provision by highlighting the need to raise knowledge and awareness of maltreatment whilst intervening to challenge the prevailing workplace culture within professional football.

KEYWORDS

safeguarding, abuse, power, mental health, disengagement, harm

1 Introduction

In 2023, Hartill et al. highlighted the scale of the issue of interpersonal violence in sport through surveying 10,302 respondents aged 18–30 who had participated in organized sport prior to age 18. Specifically, 65% of those respondents reported experiencing some form of psychological violence in sport (1). Although professional football in the UK lacks similar data, the sport has been engulfed in similar reports of maltreatment, abuse, and bullying impacting players, coaches, and referees (2–5). This is especially concerning considering findings which suggest that maltreatment in the form of bullying leads to dropout from sport, as well as emotional harm and burnout in adult football participants (6–8). Despite significant attempts to understand maltreatment in contexts such as football, the plethora of terms (e.g., abuse, bullying, violence, and exploitation) and the interchangeable nature of their use has led to inconsistency in understanding, replicability, and transferability of research in this area over time (9, 10). Therefore, it remains of great importance to explore views of

maltreatment in specific sport contexts, such as football given this environment has been noted for the justification of abusive and intimidatory actions (11) which drive and legitimize these forms of wrongdoing. Moreover, at present, safeguarding policies related to maltreatment are lacking in professional football and instead, only limited information is available that addresses certain aspects of this behavior such as online abuse (12). The result of this is that individuals' understanding, and experiences of maltreatment may vary even if they are working in a safeguarding capacity, which may impact the way wrongdoing is addressed. Thus, exploring the perspective of multiple individuals working in this capacity is critical.

1.1 Defining maltreatment

Various authors have considered the overarching term of maltreatment to encapsulate the numerous forms of harm which may occur in sport (10, 13, 14). Specifically, these authors operationalize maltreatment as:

all forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power (15).

Notably, though, these definitions emphasize maltreatment with children rather than adults, highlighting a potential lack of understanding specific to the adult population. Nonetheless, this research does provide important information about how maltreatment can be understood in terms of "acts of omission (e.g., harmful inaction), commission (e.g., harmful action), and exploitation (e.g., deceptive, cynical and harmful use of one person for another's benefit)" (10). Moreover, this work highlights how maltreatment includes various forms of interpersonal violence and harm which can be seen as direct (e.g., from one individual to another), indirect (e.g., administered through others), intentional (e.g., with malicious intent) or unintentional (e.g., without malicious intent) (16, 17). As a result, maltreatment is made up of harm in the form of different types of abuse (physical, sexual, neglect, and emotional/psychological), as well as discrimination, institutional, and virtual maltreatment (17).

The findings presented thus far, align with the established conceptual framework for understanding maltreatment in sport (18). This model proposes maltreatment as an umbrella term that can be broadly categorized into relational forms (split into the four categories of physical abuse, sexual abuse, emotional abuse, and neglect) and non-relational forms (split into six categories of harassment, bullying, corruption/exploitation, sexual exploitation/prostitution, institutional maltreatment, child labor and abuse/assault occurring within a non-critical relationship with the individual). Stirling (18) suggested that relational maltreatment occurs in the context of a critical relationship in which one member (e.g., a coach) has significant influence over

another (e.g., a player). Examples of other relationships in which these occur include parents and other athletes who may be in a mentoring role (e.g., team captains in football). By contrast, non-relational maltreatment occurs when an individual does not have direct influence over another (e.g., peer-to-peer bullying). Other relationships where these forms of maltreatment may occur include with an official, sport administrator or the sport organization. These forms of maltreatment may also be reinforced through external outlets such as the media (19).

To date, Stirling's (18) model remains the predominant conceptual framework of maltreatment in sport, although it is acknowledged that contemporary research has highlighted a plethora of other forms of harm which may be categorized as maltreatment (20, 21). This can involve direct physical harm such as punching, beating, and kicking, as well as indirect forms such as holding a position for longer than necessary. Equally psychological harm can be experienced in the form of belittling, denigrating, scapegoating, threatening, scaring, discriminating, and body shaming. Given the inconsistency in the terminology used to define harm and the variability in the sample examined in terms of the level of sport and age of participants (21), it is potentially unsurprising that findings have been mixed in terms of the reporting of maltreatment. As an example, research with adult professional footballers on their understanding of bullying demonstrates this (8). Players in this study reported that bullying occurs both within critical and non-critical relationships in contrast to Stirling's (18) frameworks of maltreatment. Part of this issue may be explained by the complexity of understanding maltreatment (22). This is further complicated by what has been described as the "grey area" of relationships, such as between a coach and athlete (14). "Grey area" behaviors may be deemed as either acceptable or unacceptable, depending on the circumstances, the intent and frequency of the potential maltreatment (14). The result of this are issues with the reporting of maltreatment which might be reflective of the degree to which key personnel (e.g., football players, coaches, sport scientists and welfare officers) are educated (or not) about this behavior (22). These findings are compounded by recent research which highlighted the volatile culture around reporting wrongdoing in professional football, that leaves players in fear of speaking out (23).

1.2 The sport/football culture

Alongside the challenges of understanding maltreatment, it is also important to consider whether the prevailing culture of sport and football is an issue. Inherently, individuals may be bound to what Hughes and Coakley (24) describe as the "sport ethic", that prioritizes performance over wellbeing. This exacerbates the potential for maltreatment as beliefs that performance is a result of mental toughness, resilience and perseverance (25) become problematic. These beliefs coupled with a culture of winning at all costs, normalizing harm, a lack of equity, diversity, and inclusion, a culture of fear and silence, and a lack of trust in organizations to handle cases of harm (21)

can further increase the potential for maltreatment. Furthermore, the centrality of the coach in determining a sport organization's culture (particularly if they are seen as successful) may also present difficulty (25), especially as these individuals can normalize emotionally abusive practices (26). Coaches' negative approaches can be ingrained, stemming from their careers as athletes and/or the experiences of other coaches, which, when coupled with situational factors such as job insecurity (27), can provide an additional context in which maltreatment can grow (28). The result can be a grey area within coaches' relationships with athletes, where the latter individuals often navigate maltreatment situations by accepting them through normalization (14). Unfortunately, other researchers have also shown that these practices of maltreatment extend beyond coaches to other members of an athlete's entourage, such as parents, partners, and general team managers (20, 28).

In football particularly, the abusive and intimidatory practices of coaches and managers (29) are potentially legitimized to an even greater extent with adult participants, threatening the safeguarding of this population in this context. Within the professional football environment, violent and abusive language, scornful humor and personal castigation are commonplace (30), reinforcing a "hidden curriculum" around the need to accept severe banter (31). Individuals are expected to give and receive insults to the point where others fail to cope and ultimately "snap" (30), despite more recent research revealing that this verbal abuse is seen as bullying (8). In common with research focusing on emotional abuse in sport (26), players were of the view that coaches may not be aware that abuse or bullying is taking place (8). Findings of this nature are indicative of the potential issues of a lack of understanding and awareness of maltreatment from key personnel (e.g., coaches) in sports such as professional football. Thus, in recent times there has been some gradual movement towards exploring the perspective of personnel with an interest in advancing safe sport (32–34). While this movement has made encouraging advances in understanding the perspective of those in leadership and administrative roles in elite sport, as well as other key personnel such as sport psychology consultants, these studies have not directly explored the perspectives of those directly tasked with safeguarding and welfare (e.g., such as heads of safeguarding/welfare). Engaging such personnel in football is critical, as at present, policy frameworks regarding the safeguarding and prevention of maltreatment are limited to focusing on children and vulnerable adults and often do not explicitly cover maltreatment itself (35, 36).

1.3 The present study

Through specifically focusing on staff in football with a responsibility for safeguarding and welfare, the present study answered calls for research to incorporate interviews with policymakers and others involved in the policy-making process (37). Moreover, the study took a unique approach to understanding maltreatment, by exploring football personnel's (e.g., chief executive officers, player care leads, safeguarding leads,

and education/welfare leads) perceptions of this concept concerning non-vulnerable adults rather than children or vulnerable adults. Specifically, the central research question guiding this qualitative inquiry was what are football personnel's (e.g., chief executive officers, player care leads, safeguarding leads, and education/welfare leads) understanding of maltreatment? Drawing on a co-design approach which drew on the participants' experiences and knowledge, the present study enabled key personnel in football to co-design the findings in partnership with the researchers (38), to improve the understanding of maltreatment in football.

2 Materials and methods

2.1 Research paradigm

Given this study involved exploring football personnel's perspectives on maltreatment and safeguarding, a social constructivist position was adopted. The use of a constructivist lens was ideal in focusing on the multiple understandings and perceptions (39) of football's various personnel. Grounded in a relativist ontological viewpoint, the study was guided by the view that there is no singular truth and instead, multiple realities exist as meaning, interpretations, and experiences in relation to maltreatment in football differ between participants (40). For example, through adopting this lens, the present study was mindful that views on maltreatment in football may be shaped by the context of the club the participant was working at and the participant's previous experiences of working football, as well as other occupations. In terms of an epistemological stance, the constructivist approach regards the researchers and participants as being active in the co-construction of knowledge as part of its subjectivist/transactional view (40). Moreover, this research approach has been applied within studies of safe sport, as part of a co-dependent process between researchers and participants (32). This was seen as well-matched to this study's approach of developing findings between the participants and researchers through co-design. Therefore, to maintain consistency with other co-design approaches the present study drew on the experiences and perspectives of the participants through interviews (38). Key points concerning maltreatment were identified by the football personnel and were prioritized by the researchers in the development of the findings, in combination with evidence from the literature in this area (38).

2.2 Participants

Semi-structured interviews were conducted with 19 participants ($M_{Age} = 44.21$, $SD = 10.03$, range = 28–70 years). This approach offers the benefit of structuring questions based on previous research on maltreatment [e.g. (34)], whilst offering flexibility to the participants to guide the interview around areas of interest and importance concerning this concept. The sample size was determined following recommendations for qualitative

research, whereby sufficient participants were recruited to tell a rich, complex, and multifaceted exploration of maltreatment (41). The participants were recruited from clubs ranging from the English Premier League (EPL) to the English Northern Premier League Division One, as well as the principal organizations in English professional football (further details on the recruitment process are provided in 3.3 Procedure). At the time of interviewing, the participants held a range of appointments in football including Chief Executive Officer, Vice Chairman, General Counsel, Club Development Officer, Head of Safeguarding, Designated Safeguarding Officer, Safeguarding Case Officer, Academy Safeguarding Manager, Head of Education and Welfare, Player Care and Welfare Officer, Head of Education and Player Care and Coach. By focusing on members of staff who are specifically responsible for safeguarding and welfare, the study extended beyond the perspectives of administrators [e.g. (32),] in order to understand maltreatment further within the context of elite sport. To this end, by drawing on the perspectives of safeguarding and welfare personnel in football, combined with the extant research evidence it was hoped that a more detailed conceptualization of maltreatment could be provided (33).

2.3 Procedure

Following ethical approval by the University Research Ethics Committee [ER41451626], the participants were initially contacted via a combination of emails and LinkedIn messages. Initially, this process involved convenience sampling focusing on participants who were known/accessible to the researchers and who met the criteria to participate in the study (32). To be eligible participants had to be non-vulnerable adults, working for a professional/semi-professional football club in either a designated safeguarding role or a position in which safeguarding was one of their key responsibilities. As the study progressed a mixture of purposeful and snowball sampling was used to identify participants who were consistent with the trajectory of the study (32). Once the potential participants had indicated a willingness to take part, they were provided with an information sheet which provided additional details regarding the study as well as a consent form which was signed before the interview commenced. Furthermore, as the participants held positions of responsibility they were reassured that confidentiality would protect them from being perceived negatively and would also safeguard them from jeopardizing their position within their organization (32). To assist in this process the participants' names and their respective organizations were replaced by pseudonyms.

Once full consent had been provided semi-structured interviews were conducted by the first author with each participant to explore their understanding of maltreatment. Interviews lasted between 54 and 83 min ($MDuration = 68.00$, $SD = 9.05$). The interviews began with rapport-building questions, such as "How are you?" and "Can you describe a typical day or week in football?" Then the interviews progressed towards questions around maltreatment "Could you tell me in your own words what maltreatment means in football?" and "What sort of

effects would maltreatment in football have?" This semi-structured interview guide was developed from the existing literature on maltreatment in sport (34, 42). It should be acknowledged that due to the socially constructivist position adopted, the interview guide was based on a mixture of pre-determined questions and those which were adjusted to the individual and their football context (39). Specifically, this guide was amended where required to address areas of interest raised by the participants (39), and space was allowed to take into account unanticipated directions to the questions and answers (33). Finally, the interviews were conducted via Microsoft Teams. All the interviews were audio recorded and then transcribed verbatim using a combination of Microsoft Teams' transcription software and manual transcription, before being analyzed. All data for the present study was managed in line with United Kingdom General Data Protection Regulation (GDPR) 2018.

2.4 Data analysis

Data were analyzed for themes in participants' accounts using reflexive thematic analysis [RTA (43);]. RTA is described as a unique approach to thematic analysis in that it acknowledges and values the researcher's role in knowledge production whilst offering the theoretical flexibility to fit this study's social constructivist stance (43). Given RTA's potential to conceptualize patterns of shared meaning around a central organizing concept (44), it was seen as ideal for developing an understanding of maltreatment in professional football. The analysis did not progress in a linear fashion, and instead involved a recursive journey back and forth between stages (45, 46).

The thematic analysis steps employed in the present study revolved around those set out by Braun and Clarke (47). Firstly, after the transcriptions were complete, the lead author familiarized themselves with the data by reading and re-reading it. Secondly, the authors went through a process of systematically analyzing and interpreting meaningful segments of text to understand views of maltreatment, adding labels to generate initial codes (46). Once these codes were developed, they were reviewed, combined, and interpreted in terms of shared meanings to form themes (46). A process of thematic mapping was employed at this point (45) to make sense of and connect patterns of shared meaning, review themes, define and name themes and produce the report. For example, themes were generated around the different types of abuse which make up the constituents of maltreatment. Once this process was complete across the themes the second author challenged and suggested alternative perspectives on the themes through the process of being a "critical friend" (48). Drawing on "critical friends" was important in the present study as it is a hallmark of rigor in qualitative research where a relativist rather than criteriologist position is adopted (49), therefore researchers do not necessarily need to agree in their views of certain themes (48). The themes were then further analyzed, defined and, written up (46).

It should be noted that due to the inductive approach taken, themes were generated in the participants' rather than the

researchers’ language. Therefore, given the investigators’ experience in publishing scientific research in areas relating to maltreatment, care was taken to ensure that data was not forced into preconceived categories (50). Once this process was complete the themes were then reviewed via deductive reasoning (51). This aided with the categorization of findings into higher-order themes and general dimensions based on research literature and theory (51).

2.5 Research quality

For this project, a relativist position was adopted to ensure sound qualitative practice and to maintain data trustworthiness (23, 48). As a marker of quality, the underlying philosophical assumptions were set out for the study as a means of illustrating how theoretical assumptions influenced the study design, analysis, and the authors’ relationship with the participants (52, 53). Moreover, a reflexive approach was taken (8), whereby both authors identified their positions as researchers who have published research in areas associated with maltreatment (e.g., bullying) in professional football. The first author also has experience of working as a psychology practitioner in professional football. Finally, both authors identified their positions as fans of professional football. As such both researchers carefully monitored their presuppositions regarding the football context (8).

Further consideration from qualitative research in sport (48) was made to develop rigor within the present study. Firstly, credibility was ensured within the data by providing rich and detailed descriptions from the participants. Secondly, ethical considerations were met by providing a “sensitivity to the context” (54) in terms of protecting the anonymity and confidentiality of the participants due to the nature of the content discussed and the potential vulnerability of their roles, given the potential organizational issues in sport more broadly. Finally, the study also aimed to provide naturalistic generalizability (55), such that it resonated with the reader’s personal engagement or vicarious experiences of maltreatment in professional football.

3 Results and discussion

Analyses of the participants’ data revealed three general dimensions. These dimensions *the current understanding of maltreatment in football, the constituents of maltreatment, and the signs and symptoms of maltreatment* presented some similarities with existing conceptual models of maltreatment in sport [e.g. (18).], whilst extending understanding of this concept within the professional football context specifically.

3.1 The current understanding of maltreatment in football

Across their accounts, the participants evidenced how maltreatment is understood in professional football (see Table 1).

TABLE 1 The current understanding of maltreatment in football.

Example raw data code		Lower-order theme		General dimension
The importance of winning	→	Producing players and succeeding	}	Understanding
Part of society/life	→	Transcending football		
Unintentional behavior	→	Lack of knowledge and awareness		
Misguided perceptions	→	Football cultures affecting understanding		
A fear of speaking out	→	Power dynamics at the heart of maltreatment		

This was underpinned by the higher-order themes of producing players and succeeding, transcending football, lack of knowledge and awareness, football cultures affecting understanding, and the power dynamics at the heart of maltreatment.

3.1.1 Producing players and succeeding

For some participants, maltreatment was described as a necessary means to an end that was driven by the wider context of the club and systemic culture of professional football:

It sustains business models, it achieves funding. So you’re a Cat (egory) One Academy and you’re receiving £2 million a year because you’re hitting standards and producing players again. The whole concept of football is (...) to win (...) and to win, it could mean win at all costs, and the win supersedes [everything] (...) If you’re a coach (...) your job isn’t just to look after that player, it is to is to score more goals than the other team. You know and (...) it can be that really that simple. (Giles).

Giles highlighted how the pressures both systemically in terms of receiving funding, and the importance of winning, drive a feeling in individuals that maltreatment may be necessary to hit these standards. This drive disregards players’ welfare at both a systemic and more localized club level, where norms and values around a “will to win” (11) supersede safeguarding concerns. Furthermore, at the relational level, Giles described, how “discipline and nurture can be competing needs” for coaches, which results in the needs of an individual being “overridden over and again.” The result is a “trickle-down” effect of maltreatment where coaches culturally reproduce and accept acts of wrongdoing that they experienced in professional football as part of football’s hidden curriculum (31).

The sense that maltreatment is “necessary” spread into views of how players are treated when they were not seen to make the grade for a particular club. Cheryl illustrated this, “there’s a situation I’d say around releasing people. And I suppose they [coaches] have to some extent be OK with it, because they have to do it and it’s a really difficult thing to do.” Interestingly, although Cheryl appeared on one level to highlight the problematic nature of this perception in professional football by placing the spotlight on this “rationalization,” she also started to show how this view interacted with her own psyche by rationalizing that some

individuals “have to” behave in this way. Again, the need to succeed appeared to move beyond the need to protect individuals.

3.1.2 Transcending football

Although the general tendency was for the participants to situate their understanding of maltreatment within the football context, others highlighted how this concept transcends football. Indeed, for Michael, maltreatment functions at a broader systemic level,

I don't think it's necessarily just in football though. I think it could be any industry that you're in (...) It got a lot worse for me when I was in my previous role as safeguarding, designated safeguarding lead at a primary school. And having to go to mapping meetings.

Michael's view demonstrated broader concerns about maltreatment at a societal level which feeds into football, reflecting findings in other industries (e.g., education) where there is a tendency to focus on academic achievement rather than how an individual is functioning in the school environment (56). Thus parallels can be drawn between the performance-oriented nature of professional football (57) and school achievement where maltreatment often breeds from these pressures, and safeguarding concerns arise. As such, the findings add important information about the potential risks of achievement-based cultures in football and society.

In furthering their account, Michael discussed how maltreatment is also a product of normal human functioning, though he did suggest that individuals can make attempts to address this behavior “I know this is about football, but I don't think necessarily just football that this relates to. I think we're all sort of, we're all humans.” Other participants described a different view of how maltreatment transcends football to the extent that it might not be seen as applicable in this context. When asked to conceptualize maltreatment in football, Anna said,

Maltreatment is not a word I use. I'm gonna be honest, I don't use it. Maltreatment to me implies a (...) and so, gosh, I would hope in football that that's not, that's not the case. I'd hope in any kind of organization.

In this case, there was almost a sense of disbelief that maltreatment might exist in football. The pause in Anna's quote around the implication of maltreatment alluded to a sense of the severity of this concept yet was also revealing a (dis)belief that this could occur in football. As such this revealed the gravity of this term but potentially also a sense that professional football as a culture would be shocked if it occurred in this context.

3.1.3 Lack of knowledge and awareness

A striking finding from across the participants revolved around the lack of knowledge and awareness of maltreatment. For Kyle, this lack of awareness is fueled by naïve beliefs of individuals, leading to maltreatment,

I do also think that you can make honest mistakes and we're all educated differently, we're all brought up differently and what you're taught is appropriate language (...) we had to get a player to take a Tweet down a couple of weeks ago because he'd waded in with his opinion on the abortion decisions about the Supreme Court in the US. And his beliefs weren't in keeping with those of the majority of XXX supporters. And I just felt that as somebody representing the football club, it wasn't really appropriate for him to share his political opinion on something that could be deemed so offensive to a lot of people. So I'm sure he wouldn't have said his opinion was banter, but his opinion is different to everybody else's because of his own faith, his own culture, his own education. But that's not to say that it's OK to share it.

This reveals the challenges faced around developing an understanding of maltreatment in professional football. On the individual level, Kyle outlined how the person concerned made an honest error that was not in keeping with the club's standards. Yet within professional football, this can be challenging, due to the multi-cultural nature of this environment, which may shape a vast array of views around the appropriateness of behavior.

The potential lack of education around maltreatment does not occur due to the country of origin alone, however, as Robert stated,

I'm not sure that there are that many individuals, certainly on the coaching, backroom side, that would have that much experience or knowledge of maltreatment. I suppose if it was something obvious like bruising, particularly to the face or something, which probably wouldn't have been caused in football itself, that might set alarm bells ringing. But I'm not sure football practitioners are that adept at dealing with the more emotional sides of maltreatment.

Quotes such as this exposed a critical gap in knowledge around maltreatment and safeguarding in football, with the findings reaffirming that coaches appear to lack sufficient skills and knowledge to understand this concept (58) and provide a duty of care to their athletes. Though it should be noted, as Kyle outlined previously, that the participants also supported the findings that this lack of awareness and knowledge spreads beyond coaches to other individuals such as players, who may be the instigators of abuse (59).

One explanation for a lack of awareness about wrongdoing in football may be explained by beliefs that maltreatment is only understood in terms of the significant cases of sexual abuse (57). While not directly corroborating this view, Gemma did highlight the problem of when more “accidental” forms of maltreatment may be occurring,

A lot of these complaints and things are unintentional and it is just a learning need. Or somebody's held a view or a way of working for a very long time, because, like I was talking about earlier where people have been in the system or their role for quite a long time.

It appears that the grey area of behaviors (14) may be shifted, such that more serious forms of abuse are either missed or not processed in football, due to both systemic issues around acceptance, as well as an individual's position in their role. Therefore, the results reinforce the need for intervention programs to educate those across the sport, particularly for the forms of maltreatment which may subtly cross the line between appropriate and inappropriate behavior (49, 60).

3.1.4 Football cultures affecting understanding

For many participants the primary way they understood maltreatment was as a cultural issue in football. Simon's account was particularly reflective of this,

Once you go into the first team it's just a murky world and it's so dependent on the individuals that are in charge [leadership roles] at that time. This [interview room] door is not quite closed, so that's something to explore in itself. My level of comfort about talking with an open door, well everybody calls the manager gaffer, what century are we in here? There are ways to address people and ways to certainly not address people, an expectation about who you ring and what time you ring and how you interact with other people, and these are just implicit, you know, it's just stuff that's in the air and people just know. And if you fall foul of that, flipping heck, it's a tough school.

This account demonstrated the complex nature of the football context, where interactions with certain individuals are dangerous, and the assumed nature of what can be said and how individuals must behave comes with potential ramifications for those who transgress. Indeed, the concern expressed by this participant at the time of their interview, that their views may be overheard, spoke of a systemic level of fear. Such fear was indicative of a sense that concerns held by players that they will jeopardize their careers through reporting maltreatment (57), extends to other personnel within clubs. Thus, wrongdoing is sustained.

The systemic cultural issues around maltreatment extend beyond the playing staff to include those tasked with the responsibility of addressing inappropriate behavior. As Sarah described,

So prior to that I'd worked in ... the public sector so there is lots of structure that is put in and you have an understanding of what's expected of you. But I think it's a very different culture within football and I think people have historically held a lot of power and I think the difficulty is, who provides the checks and balances? I think it's certainly better than it was, but it is not where it needs to be, and I think there is potential for if somebody is on a [executive] board or if somebody is a manager or is first team coaching staff. There are certain positions within the club that have the potential to not have those checks and balances applied appropriately because people are fearful. If you're me, if you're [job role excluded for anonymity] and the problem is the director, how do you go about that?

Several points were made here about the deeply ingrained nature of potential maltreatment. Any understanding that is present is controlled by certain individuals and a culture of fear persists both within the game more widely, as well as at the club level for individuals who need to challenge inappropriate behavior. Although some positive steps were highlighted, the necessary agency for individuals to check and challenge still does not appear to be available and welfare staff are left marginalized (57).

Furthermore, the cultural issue around maltreatment in football is problematic to the extent that cases of inappropriate behavior can become severely compromised,

I do think culturally where there's an allegation against somebody, everyone, what I've seen sometimes and particularly in the elite environment is staff around them will start taking a view. It's a bit like, "he would never do that", "this is ridiculous", which is quite dangerous, and it does isolate [people]. It makes the safeguarding team's job really difficult, particularly managing relationships after an allegation. (Robert).

These were quite concerning allegations about how individuals exercise their role as a bystander by offering personal opinions which may mean that inappropriate behavior is not addressed. As such it reveals the persistence of a culture of organizational bystanding in football (23, 61) where concerns around behavior are suppressed or never reported. Moreover, it suggests that the first instinct may be for individuals to inappropriately protect each other, due to the "intense loyalty" demanded by their clubs (23), rather than to work with other parts of their club/organization to handle cases professionally.

In a similar vein, the participants discussed how the understanding of maltreatment in football is currently shaped at the individual level. For example, this behavior is influenced by misguided perceptions, fueled by a lack of awareness around what maltreatment is:

You know somebody might even jokingly say to me "oh shut up baldy, fatty" or something like that. I'd shrug it off because I'm bald and I'm fat (...) but the point is that I can shrug it off and I'm not really bothered about it. But there are some people that might not be able to do that so what's maltreatment to one [person] is totally different to another. (Myles)

This quote demonstrated the dangers in perceptions around maltreatment in football, in that terms which may be upsetting or abusive to some individuals are used in the belief that they are ok. It also implies that the understanding of this concept is driven by the individual perpetrator's perspective and that victims must "shrug off" these forms of abuse.

3.1.5 Power dynamics at the heart of maltreatment

For some participants, one of the main ways to understand maltreatment in football was through the power dynamics which

sit at its core. These were seen as particularly central in illuminating this concept,

There's a lot of power in football and that creates silence. And one of the biggest things you see in football from a tiny age all the way up is that nobody wants to do anything to jeopardize their on-field time. So they will experience behaviors or situations that they should never put up with, they should never tolerate, they should always speak out about, but that fear that it's going to impact their football is more powerful than whatever they're on the receiving end of. (Claire).

This portrayed a worrying account of what individuals are on the “receiving end” of in terms of their interactions, as well as broader concerns about the dangers of speaking out. It also illustrated a vulnerability players experience around their playing time, where a code of silence is maintained in football (62) which keeps maltreatment suppressed. Seemingly there is an unquestioning acceptance of subordination on behalf of the players to their managers and coaches (31).

This issue was compounded for Lucy who described footballers as “not employees in the same way I’m an employee.” For this participant, there was something around the affluence achieved by certain individuals which can breed potential maltreatment,

There is something around the power imbalances that exist that can sometimes cause the gaps for those behaviors that would fall under maltreatment to exist. So, there is something around that. There is something around salary and there's something around how we work.

Although this is not the only way in which a power imbalance can be achieved it was potentially illustrative of the power afforded to or gained by certain individuals, and the potential for this to drive maltreatment. Thus Lucy’s point reaffirmed previous findings in relation to bullying [e.g. (8),] where financial status can be one of the hallmarks of the power which drives wrongdoing.

3.2 Constituents of maltreatment

The themes outlined by the participants in relation to their understanding of football provided the backdrop for identifying a range of factors which made up the constituents of maltreatment (see Table 2). This included commonly reported elements such as abuse, bullying, individual and institutional neglect, and discrimination, as well as components which are more nuanced to the professional football environment such as creating unpleasant environments, control and power over others, and commodification.

3.2.1 The common components of maltreatment

Several of the participants viewed maltreatment as an umbrella term which covered various forms of abuse. Layla demonstrated this,

TABLE 2 Constituents of maltreatment.

Example raw data code		Lower-order theme		General dimension
Bullying	→	The common components of maltreatment		Constituents
Thwarting autonomy	→	Creating unpleasant environments		
Exploitation	→	Control and power over others		
The loans system	→	Commodification		

So, if you're looking at it from the outside in, and you're looking for signs of maltreatment you're going to be looking for a form of abuse. So, whether that's emotional, mental, bullying, coercive control, it brings us back to the money, you know.

Interestingly, Layla’s account not only identified a range of commonly identified constituents in relation to maltreatment but also echoed the points made around how maltreatment is understood in football in terms of how money underpins power differentials. This reinforced a contextualized view of maltreatment in professional football which mirrored findings in relation to bullying (8). Furthermore, in listing bullying as a form of abuse Layla showed the potentially interchangeable use of these terms in contexts such as professional football. This finding was reflective of the participants often drawing on many of the constituents of maltreatment proposed by Stirling’s (18) conceptual framework, yet it highlighted that the terms were used more interchangeably than in this model.

Although there was a tendency for several participants to collapse bullying into a discussion of abusive behaviors which underpin maltreatment, there were other occurrences where this concept was discussed for its standalone contribution as a form of maltreatment. Anna’s account was indicative of this,

I guess for me, maltreatment would be kind of bullying (...) whether that's players, (...) on play[ers] it's like amongst players. Whether that's staff to players, you know coaches have all different coaching styles and you know I have no doubt that there are occasions where some overstep the mark, or it can seem quite targeted, or you know it's inevitable.

Within this extract, there were several notable points. Firstly, bullying is a strong component of maltreatment. Secondly, it is important to highlight that Anna viewed bullying as occurring across multiple relationships within football’s hierarchy. This finding is noteworthy as it contrasts the conceptual model of maltreatment (18) where bullying is viewed as occurring within “non-critical” peer-to-peer relationships. Here Anna described a more fluid view of bullying which can occur across different levels of power relations. Finally, Anna’s quote also highlighted the targeted nature of bullying.

Other participants though, highlighted the grey area nature of bullying in the form of banter and how this may manifest itself,

I think banter is an acceptable word to describe behavior that isn't acceptable on the whole. I think anything, if people are oversensitive or if people are offended by something the natural response is oh it's just banter, it's just a joke, you're too sensitive, you're too this and you're too that. So it creates this safety net for those people who are intent on causing maltreatment and to kind of hide behind as well. (Claire).

Even though research demonstrates the potential for bullying through one-off acts (8, 63), these accounts were particularly illustrative of how behavior masquerades as “banter” and may hide bullying and wider maltreatment in football. Although these participants suggested that the use of banter at the individual level of relationships warrants consideration, there appear to be wider concerns about the social acceptability of this term and by proxy maltreatment within the football context. Thus, banter also needs considering as a form of bullying to expand upon conceptual models of maltreatment (18).

Common with the view of banter overlapping into bullying, some participants discussed how discriminatory language can also be excused through this term, when ultimately discrimination is a further indicator of maltreatment,

I think language is quite a tricky one because there are a lot of different people from different backgrounds, different faiths, different cultures and what that person from that background finds acceptable will be different to what you or I might find acceptable. And if I think that joking about a particular topic is my way of dealing with it, it may not be another person's. So I think that it is something where people can be cruel and then hide behind the term of banter. (Kyle)

This was a further representation of the potential systemic issue of the use of the term banter to mask the discrimination which forms maltreatment. These results can be understood from the historically masculine contexts of professional football where behaviors which are deemed to “cross the line” of acceptability in other sports such as cricket (64) are still accepted. Specifically, banter provides a legitimization to be “cruel” as Kyle described. It should be noted though that Kyle also drew reference to individual interpretations of appropriateness, which provided an important reminder that football's personnel have some responsibility over their behavior in this regard.

Aligned with the common identification of abuse, bullying, and discrimination as constituents of maltreatment, the participants highlighted neglect as another component of this concept. Alice outlined how this neglect functions on both a psychological and physical level, resulting in harm in both cases.

[Maltreatment is] not caring or respecting the athlete along with the person, I think, and so anything that that causes, (...) that person any (...) maltreatment will probably be significant things like neglecting their needs. Or you know, not giving them the best chance of fulfilling their job role and what they need to be doing etcetera. So yeah, probably

say, you know, anything that causes them any sort of, (...) physical or psychological harm.

This account was indicative of occurrences where individuals are maltreated within the football context, whereby both their physical and psychological needs go unmet. Although this pointed to maltreatment occurring at the individual level, other accounts showed that these forms of neglect may be more driven at a wider club or systemic level, suggesting that the interaction of these factors leads to needs not being met. Unfortunately, this may reflect a failure such that safeguarding programs directed at the systemic level do not necessarily change individual behavior (14). As Anna described,

We're coming to the end of the season now. We're managing a lot of [player] release decisions. So like player welfare beyond when they're [contracted] with us and how we manage that as an organization and how we (...) support them to process that kind of thing. It's about the responsibility (...) that we have towards (...) our players that have been with us since 8–9 years old and then hit kind of 23 (...) and they're released (...) and I think if we're not doing that properly and we're not providing that support then for me that would come under maltreatment as well.

Context-specific challenges for football clubs were evidenced here around unfortunate decisions which need to be made with releasing players. Despite recommendations around proactive approaches to try to manage player welfare and transitions out of football (58, 65), the participants still highlighted the potential for maltreatment when players are released. Therefore, as Anna stressed, ownership needs to be taken by both clubs and the individuals within them to safeguard against maltreatment.

3.2.2 Creating unpleasant environments

Considering the participants' identified forms of institutional neglect, it is potentially unsurprising that the football environment is one which at times is characterized by unpleasantness in terms of promoting false views around resilience and thwarting autonomy. Lucy captured this,

It's something around the systems and the processes and how they're set up so that we don't always give adults or adults at risk much autonomy in their decision-making. And that can lead to situations or circumstances where they feel disempowered. And for me that would probably come under a very large umbrella of maltreatment (...) I think that's an interesting way to think about maltreatment because you're talking about young people who could be earning thousands of pounds a week, but I think they are vulnerable, and I think they can be vulnerable in all sorts of different ways.

Lucy revealed an interesting dichotomy which connected to the previous theme around neglect. Although wealth gave players power, she described how money can leave footballers in a potentially precarious position which might make them

susceptible to maltreatment (66). Moreover, despite this wealth individuals can be maltreated by their clubs through their autonomy being thwarted and their sense of self becoming devalued. This finding extends the parent-child literature which has found low autonomy support is a strong predictor of individual maltreatment (67). Within an adult group specifically, they revealed a contextualized view of maltreatment that is shaped by the football context.

Thwarting autonomy (68) was not the only factor that can occur at a club/systemic level which might lead to maltreatment. Several participants characterized a false view around resilience which creates unpleasant environments:

A lot of maltreatment will be treating younger people and young adults differently through trying to make them resilient to the rigors of professional football. And frequently I have heard this young man needs to toughen up. He could find himself in front of thousands of supporters baying for his blood, so therefore we wish to condition him almost. (Giles)

These is a notable finding both in extending the conceptualization of maltreatment in sporting contexts, as well as illustrating some of the common myths around resilience purveying the professional football context (69). As Dave summarized, this comes with a risk “they think they are developing resilience or pushing people, but it can, you know. I believe (...) it comes, there’s a close line.”

3.2.3 Control and power over others

As several participants noted across the general dimension of the constituents of maltreatment the professional football context is one in which vulnerability can be facilitated in various ways. One avenue for this is through the exploitation of individuals, as Sarah outlined,

Our players move up and down the country, there’s not to say that anybody couldn’t put any pressure on them to be moving substances around shall we say and being subject to those kind of pressures. Also in terms of modern slavery, when we talk about football and it’s kind of been addressed on a few levels, but that’s not to say that it still wouldn’t happen. Obviously, we get approaches from people all around the world and approaches from agents all around the world and we’re acutely aware that both young people and adults can be trafficked in a football context.

Sarah demonstrated that broader-level societal concerns such as modern slavery can infiltrate the professional football context through a football career being mis-sold as a viable strategy to lift individuals and their families out of poverty (70). The potential consequence is forms of maltreatment that may not be obvious to those outside of the sport. Therefore, professional football needs to be vigilant to these risks.

Maltreatment in the form of exploitation can spread beyond those working for a football club to the wider system of the sport, as Kyle experienced,

There are people out there that are motivated financially to do things that will hurt our players. We had a recent one where somebody was tweeting allegations against one of our players and you have to take them seriously, you have to contact the right bodies and you have to speak to the player as well and do your own internal investigations. But just one or two Tweets can really, particularly in professional football, can be really damaging and that individual is a young man and we’ve got to check on him as well.

This was particularly revealing of the challenges facing both football clubs and players in relation to maltreatment. In the first instance, this can leave individuals vulnerable to allegations that they have perpetrated maltreatment, yet they may be the ones who are victims. Significant challenges are posed here for both the individuals, the club, and football at large.

Nonetheless, there are elements where control and power are exercised by both clubs and individuals within them. Alfie discussed this, “You get that favoritism side of things and again I think a lot of it is false promises and letting people down, I class that as that’s maltreatment.” Favoritism was a specific reflection of where the football environment actively maltreats individuals, echoing a feeling that players have to follow the coach’s wishes due to fears around career progression (11). Furthermore, a reflection of how individual relationships in football can lead to maltreatment was offered by Simon,

A boy last year who’s still with us, ... he made the grave mistake of ringing the manager the night before a game to ask if he was in the squad, he’s a first-year professional and he has to ask the manager if he’s in the squad, he’s not even been told. And ever since then the manager has just completely blanked him, wants nothing to do with him, you know, won’t include him in training sessions, won’t even look him in the eye, wants absolutely nothing to do with him, all because of a phone call at night. And this is an 18-year-old boy who is just desperately trying to make his way in the game.

This quote revealed a different side to how control and power are demonstrated by coaches and managers. Rather than more overt forms of bullying and abuse, ostracism can be used as an active, indirect strategy for maltreating individuals.

3.2.4 Commodification

At the broader contextual level, the participants highlighted a systemic institutional view of maltreatment, specifically in relation to the commodification of players:

So we look at kind of the loans element, the way we’re loaning young people out. You look at their relationships with their families, their relationships with their agents in particular [this] is really interesting, their peer group, the fact their friends can change overnight, constantly being I suppose judged on performance, you know, must be incredibly draining. We do a lot of work around mental health and

resilience and wellbeing, and that is very much embedded in XXX, and it's embedded across all the clubs, but fundamentally we're here to make money. (Lucy)

This quote was illustrative of a less obvious view of maltreatment in which players are treated as tradeable commodities who may become isolated from their families and peer groups quickly whilst being constantly subject to evaluative pressure. The quote also highlighted the perils of the loan system where treating individuals as financial assets can be extremely damaging to them. It would appear that gaps in the football system around preparing individuals for loans and not treating them individually (71) leaves their wellbeing uncared for and creates the conditions for maltreatment.

Anna elaborated on how the potential pressures of the football industry provide a breeding ground for maltreatment,

That in and of itself is awful ... That's an awful concept, isn't it? This person could potentially earn us lots of money, ... the thing is, again, ... that's not a criticism of the of the organization. That's the reality of football. That's the reality of elite football is that they need to make money off their players to be able to be successful within the football industry.

Here the tensions of the football industry were exposed such that even an individual who is in a role to safeguard players presented the argument for how clubs rationalize the treatment of players. It also showed the contextual backdrop for how maltreatment may be produced.

Although many highlighted the importance of considering the commodification aspect in relation to players it is important to close this theme with a focus on all individuals within football. As Laurence cautioned,

So for example in our industry, the media side of the game. The number of media students that are leaving that will do anything to work in football is significant. Therefore, we pay relatively low wages, if people relocate they can often live in relatively poor living conditions and accommodation (...) when you talk about safeguarding or when you talk about there are things that you may not naturally associate but that's a great example of our industry of maltreatment.

This was a significant reminder that maltreatment can be experienced across the football system, in places and with people who might not be expected to receive this behavior. The fragile working conditions of professional football (66) leave staff at the risk of also being maltreated, due to a surplus of other individuals who are willing to take their place. In this case, close attention is needed to monitor the potential for maltreatment to occur across the football system and for all individuals working within this environment to be mindful of the risks to them.

3.3 The signs and symptoms of maltreatment

Thus far, the participants discussed the result of the constituent behaviors of maltreatment coupled with the understanding of this concept in football. Aligned with this the participants also identified a range of signs and symptoms of maltreatment (see Table 3). The higher-order themes covered a range of psychological and physical signs and symptoms emotional effects, a damaged sense of self, impacted mental health, burnout, and disengagement.

3.3.1 Emotional effects

One of the most common references made by the participants about the signs and symptoms of maltreatment was linked to emotional effects. On the more overt end of this continuum, Dave described a fear state experienced within the football context which mirrors other sports (72),

I've heard where adult players in high performance (...) they've come to a match and they're looking for the coach's car hoping that that particular coach isn't there that day. Then (...) they're pleased when the particular coach is not there because they're not gonna be shouting at them and, you know, getting on the backside. They're relieved (...) and then they go and play better.


This extract was indicative of both the maltreatment experienced in terms of shouting and criticism, as well as demonstrating how players can move from a position of preoccupation to relief. Within football beliefs persist that abuse, intimidation, and violence enforce authority and maximize the potential for winning (29, 72). Yet, Dave's account highlighted that the "win at all costs" view in football is flawed as players' performances improve once a perpetrator of maltreatment's presence is removed.

While the experiences shared by Dave highlighted an overt form of emotional effects, others pointed towards something more nuanced and subtle to observe, where the effects only appear later,

[The coach thinks] the players will listen to me now and will respect me if I scream and shout and throw a boot across the changing room. Well, we know they don't. We know that young people will completely block their ears off. Some will listen tentatively and be scared out of their wits and others will just switch off. So actually, it's not an effective use of communication at all. (Layla).

Here this participant demonstrated the layered nature of maltreatment as well as misguided beliefs in football around how respect is gained. In the moment, though some will display the emotional effects of fear, others more subtly suppress their emotions under the apparent guise of disengagement which may be theorized as a form of expressive suppression (73, 74) where individuals use active approaches to disengage from maltreatment.

TABLE 3 Signs and symptoms of maltreatment.

Example raw data code		Lower-order theme		General dimension
Suppressing emotions	→	Emotional effects		Signs and symptoms
Isolation and exclusion	→	A damaged sense of self		
Substance abuse and addiction	→	Impacted mental health		
Depersonalization	→	Burnout		
Lack of attendance	→	Disengagement		

At a broader cultural level, Layla’s account reflected something more concerning though in terms of the gradual process by which players become desensitized but then the resultant stress of this experience is exposed later in unmanaged emotions. This is problematic for the long-term mental health of these individuals (74). As Layla described, emotions may only be expressed in a dysregulated or angry fashion as the participants have not been allowed to express them productively (75).

3.3.2 A damaged sense of self

Related to some of the emotional effects experienced resulting from maltreatment, the participants also alluded to the outcome of a damaged sense of self. Simon outlined the far-reaching impact of how maltreatment can impact on individuals in football,

I think it can be a horrendous knock to their confidence, your self-esteem, your identity, you’ve gone from being an established first-team squad member to now you’re out in the cold, but you’ve still got to turn up and see these people every day. You’ve still got to interact, and you’ve still got to work with them. And then how does that affect your pecking order with your mates? You’ve gone from being the top player in your age group to, this guy’s with the first team all day every day, now he’s back with us. For somebody at such a vulnerable age that veneer of self-confidence is, it cracks like ice.

At the individual level, this account depicted a huge impact on the sense of self for those on the receiving end of maltreatment, with in this case, players’ status being impacted such that they may become isolated, and possibly even embarrassed. This though, is coupled with potential feelings of humiliation where the nature of the club environment means that individuals must keep attending despite not playing and their relationships can become seriously affected.

Notably, reference was made by both the previous participant and others to an individual’s self-esteem, given the global nature of this concept. Extending on research surrounding the legacies of abuse in sport (76, 77) Myles captured how the effects of maltreatment transcend the football environment,

Then it’s going to have an effect on their self-esteem and then passes on to the rest of the life to the family and you know into the job at work that kind of thing, so I think it’s something that you can’t underestimate that side of it.

The pertinence that Myles gave to the point that maltreatment can impact others beyond the football environment was important to highlight. Grounded within findings with elite gymnasts (72), there is concern that players in particular, may need long-term psychological therapy as a result of maltreatment and may be at risk of clinical issues such as posttraumatic stress. Myles demonstrated that maltreatment can be particularly far-reaching and impactful, with the signs and symptoms of this behavior ricocheting into other contexts. Consequently, detecting maltreatment might not be directly observable in the football environment.

3.3.3 Impacted mental health

Given the associated emotional effects of maltreatment and the resultant damage to an individual’s sense of self, it is unsurprising that the participants discussed the mental health impact of this behavior. Nonetheless, the gravity of the impact of this behavior was particularly concerning with a range of externalizing symptoms presented including substance abuse, other forms of addiction, and most disturbingly of all, fatality.

There’s that danger of escalating behavior. But if you are achieving your aims through those methods of maltreatment. You may think that’s an effective way to undertake your business, but unfortunately, there could be a casualty to that. Either there or sometime in the future. I’ve probably been to 10 to 15 young people who have hung themselves on the back of the bedroom door... being there with a child’s dead body, so it becomes very real to me of the potential consequences. Whereas if you’re a football coach, you wouldn’t have dreamt of being in that scenario, but maltreatment could lead to that. (Giles)

The experience of Giles is important to draw on here as they mirrored findings which suggest that various forms of maltreatment result in greater suicide attempts (78) and highlighted how fatality could occur with adults in professional football. These findings offer the potential to extend previous research (79) by shedding some light on why male adults may show signs of “male depression” and suicidal behaviors when they do not have a historical record of child abuse and neglect. Instead, it may be that they are maltreated within a particular context such as professional football, where these behaviors are not recorded. That then leads to these mental health outcomes. Moreover, Giles’ account demonstrates that coaches may lack the necessary understanding or responsibility for their actions in

relation to maltreatment and carry on with this behavior regardless, due to false beliefs about what constitutes success.

Though less severe in outcome, the participants also alluded to a range of other externalizing symptoms which were more common with the extant literature on maltreatment in sport (76, 77) such as various forms of addiction as well as internalizing symptoms such as disordered eating (72). Keeley, demonstrated this view whilst also highlighting a raft of addictions which might occur due to maltreatment,

You know, there will be the drink, the drugs, the gambling, the sex addiction, all that type of stuff. That's how it can impact but also massively on you know that mental health side of things.

It is also important to note that this participant couched these points within describing individuals' "behavior away from the club," reinforcing that effects of maltreatment may be experienced in isolation and may be subtle to detect. Furthermore in highlighting externalizing behaviors Keeley may have provided a more specific reflection of the football culture where actions such as sexual addictions may be celebrated as part of an individual's masculine identity (30). Consistent with this Keeley also discussed the possibility for eating disorders. "Eating disorders is another one actually. We see that, we do see eating disorders. And not necessarily related to players who've had weight issues either." Keeley's reference to those not having weight issues reinforced a sense that maltreatment can happen unexpectedly and the impact of it on mental health may not always be obvious to see. This was a point Robert reinforced, through discussing how maltreatment "might manifest itself in other ways, lack of sleep or irritability or feeling sick or anxious or missing training or whatever the case may be." Some of the subtleties are worthwhile to stress as it may mean that these behaviors get lost, and maltreatment is in operation without being identified.

3.3.4 Burnout

Although the participants often discussed the signs and symptoms of maltreatment at an individual level, the systemic risks because of this behavior were also evident in some accounts. This was most clearly expressed by Anna,

The [football] environment doesn't allow for that type of reflection because it is constant like there is, there is no let off whatsoever (...) Some of these guys work far too many hours, (...) they're accessible to parents 24 h a day. Often you know, there's no cut-off, there's very little boundaries. You know, that's a massive concern for me in terms of staff wellbeing.

This extract provided an important reminder about the breadth of maltreatment in that the participant discussed the effects on wellbeing across the staff group. It also re-emphasized that maltreatment is not a phenomenon experienced by coaches and players alone. Instead, this happens across football clubs and is governed by the expectations of the football environment more

broadly. Thus, from a theoretical perspective, the encompassing tendencies of the total institution of professional football (80) create a relentless work culture within which wellbeing is deprioritized. The outcome of this 24/7 culture is that individuals can leave football very early in their careers,

In support of Anna, the damaging cultural expectations of the football environment and key individuals within it were outlined by Cheryl,

I think there's a lot of burnout, there's a lot of when people are burned out and they're off on stress. Because I sit in the HR office, and I can hear the managers coming in and complaining about people that are off. I had one manager saying I don't believe her that's she on stress, I think she's just skiving, let's get rid of her (...).

Cheryl revealed a wider concern about the link between maltreatment and burnout in that individuals' feelings are not respected, and instead, they are accused of being off work for illegitimate reasons. Within this "captive world" (80, p. 15) all of football's individuals have to display the ideal identity to survive in this culture (11). This compounds the maltreatment of these individuals as they may then feel forced to return to work when they are not ready.

Considering the above this form of maltreatment it is not surprising that one of the common experiences of burnout, depersonalization, is evident,

And then the really extreme cases (...) this is a similar experience to my own, not from a playing capacity, but you start questioning who you are, because your identity is so wrapped up in what you do (...) What's the point in being here? (Simon).

Multiple layers were revealed here in terms of identifying maltreatment in football contexts. Simon illustrated how from a systemic perspective maltreatment can be experienced by various staff members, as well as players, whilst also demonstrating at the individual level how individuals lose their sense of worth and identity. This lost sense of identity appears to be symptomatic of the core elements of burnout syndrome such as emotional exhaustion and a feeling of depersonalization (81).

3.3.5 Disengagement

Given the conceptualization of burnout raised by both the participants, as well as within research, proposes a reduced sense of accomplishment (81) it was unsurprising that the final sign and symptom of maltreatment in football was linked to disengagement. The findings gave the sense that the potential devaluation individuals experience from burnout resulting from maltreatment can lead to disengagement from their work in football. Worryingly the views expressed by the participants in this study align with findings from high-risk adolescent youths (82), whereby maltreatment leads to a form of disengagement coping. For some, such as Claire, disengagement was a clear marker of maltreatment,

I guess from a staffing point of view (...) if you start seeing somebody disengaging in work, in the club, if they're not coming in, if they're frequently unwell, if there's tension, I think you can always tell if there's an atmosphere or awkwardness, then I think those things would indicate that something was going on. But I don't know that people outside of the safeguarding, player-carey-type of remit would necessarily pick up on it as much. I think we're a little bit more tuned to think what else is going on, rather than they're just being moody or they're being difficult or they're being lazy or whatever else somebody else might say.

Several layers were revealed here at both an individual, club and systemic level in relation to the signs and symptoms of maltreatment. On the individual level, a range of behavioral signs were identified which would first demarcate disengagement stemming from maltreatment. Though these signs would only be observable to key individuals within the organization such as safeguarding and player care staff. Claire's quote also revealed dangerous misconceptions about how disengagement might be perceived by others within the club. Thus, at this level, it suggests that potential maltreatment may be exacerbated, rather than addressed. If is the case this is a particular cause concern in relation to future aggressive acts which might follow, particularly as disengagement coping increases as a function of age (82). Despite the potential issues with disengagement coping, there appears to be a lack of understanding of the impact of maltreatment across the football system. Instead worrying views are digested by those who experience maltreatment, as Simon described,

This one player, in particular, the one with the phone call incident. He said he was actually, on reflection, further down the line, it helped toughen him up a bit, give him a thicker skin. He's had a real dip on confidence, but it feels like he's coming back and he's even more determined, more motivated. But for other people, you might have just continued on that downward trajectory and that can be quite a scary place I think.

Worryingly for the player concerned, it appears that maltreatment led them to initially disengage but then they perceived that this behavior may be to their benefit. This type of findings is representative of the worrying conflation of maltreatment with terms such as mental toughness and resilience in sport (25). As such, it pointed to the clear need to focus on this misunderstanding, as well as the other signs and symptoms of maltreatment and find effective means to address this behavior.

4 General discussion

The present study took a unique co-designed approach to understanding maltreatment in professional football through combining the expertise of those with experience of safeguarding in this context with an evidence-based approach to the findings. The results propose important considerations for how

maltreatment is conceptualized in the football context and beyond. From a conceptual perspective, the present study provides an important extension to Stirling's (18) model of maltreatment in sport by highlighting the importance of adding banter to frameworks which broadly encapsulate wrongdoing. In partnership with those working within safeguarding roles in professional football, the findings also reaffirm a sense that bullying occurs within critical as well as non-critical relationships in football (8), which acts as a further extension of Stirling's (18) model. Furthermore, the present study demonstrates notable considerations for those working in football and other financially lucrative high-performing contexts about the potential for maltreatment to result from the commodification of individuals in a way which might not be seen in other sports. Specifically, professional football's reliance on the loan system to develop and trade players as well as its fragile working conditions may mean that individuals' welfare and wellbeing are jeopardized (66, 71).

Further to establishing important information about the constituents of maltreatment, the present study outlined important guidelines for spotting maltreatment, as well as its effects in terms of individuals' mental health and sense of self. While some emotional effects are noticeable and disengagement can be used as a form of coping, football's safeguarding personnel outlined a worrying trend towards the emotional impact of maltreatment being expressively suppressed (74), leading to a combustible reaction (75). The result is a potentially disastrous set of mental health outcomes ranging from suicide at the most extreme to a range of highly negative internalizing and externalizing symptoms (76, 77).

Last, the present study provided an important cultural overview of how the professional football environment may create ideal conditions for maltreatment to take place. In particular, the participants highlighted an environment where abuse and intimidatory acts are commonplace, leading to subordination on behalf of the recipients of these forms of maltreatment (11, 29, 31). The participants described how these overt forms of behavior, when coupled with a lack of knowledge and awareness of football's personnel, can lead to a grey area in relationships where maltreatment can thrive (14). This raised significant concerns around the duty of care being provided in this sport.

4.1 Applied implications, limitations and future directions

From a practical perspective, the present study highlighted some key implications. The participants alluded to greater efforts needing to be made to raise the level of education and awareness of maltreatment in professional football, as well as the need to develop programs which tackle the problematic culture of this sport. Specifically, football personnel need to be made aware of problematic behaviors which operate within potential grey areas of acceptability and be ready to challenge potential wrongdoing which may be experienced through actions such as banter. Additionally, football personnel need to be mindful that the signs and symptoms of maltreatment may not be obvious and may

instead represent themselves in behavior such as disengagement which acts as a screen for potential mental health outcomes. More widely, football's governing bodies need to consider the working practices of this sport and how individuals' welfare can be better safeguarded through systems such as player loans.

Despite this study aided the understanding of maltreatment in professional football, it is important to acknowledge its limitations. The present study also did not provide further demographic information on the personnel involved in this research which may have limited the contextualization of the findings. Unfortunately, this was not possible as it may have jeopardized the anonymity of individuals who were part of the study. Similarly, although several different personnel in football were involved in the present study, it did not capture the views of football players and coaches. This is important to highlight in light of a range of recent research which has sought to empower the voices of athletes in relation to their maltreatment experiences (72) and players' experiences of whistleblowing (23). Additionally, this may be seen as a limitation in light of research which has sought to empower end users' views of adult safeguarding (83). However, research has noted that football players (for example) may be apprehensive about sharing their views about forms of maltreatment and including a broader range of personnel may be beneficial in developing a stronger organizational focus in the broad area of safeguarding (23). Consistent with this point, although the present study provided important findings in relation to a critical element of safeguarding (e.g., understanding maltreatment) it does not discuss how a future safeguarding program may be operationalized in terms of its delivery. Therefore, future research may wish to explore recommendations for the design of safeguarding programs, with those staff invested in this area in both professional football and sport more widely.

Data availability statement

The datasets presented in this article are not readily available because The participants did not give their consent for the data to be shared publicly. Requests to access the datasets should be directed to j.newman@shu.ac.uk.

Ethics statement

The studies involving humans were approved by University Research Ethics Committee, Sheffield Hallam University. The

studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

JN: Conceptualization, Data curation, Formal Analysis, Funding acquisition, Methodology, Project administration, Resources, Writing – original draft, Writing – review & editing. JR: Data curation, Formal Analysis, Funding acquisition, Methodology, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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An examination of social relations and concussion management via the blue card

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Introduction: Initially developed by New Zealand Rugby in 2014, the Blue Card initiative in rugby enables match officials to remove athletes from play if they are suspected to have sustained a concussion. Considerable attention has been paid by sport and health advocates to the possibilities and limitations of this initiative in safeguarding athlete health. However, little if any attention has been paid to the well-being of those responsible for administering the Blue Card (i.e., match officials). The aim of this paper was to examine match officials' experiences with and perspectives on implementing the Blue Card initiative in Ontario, Canada, with focused attention on the tensions around their ability to manage games and participants (e.g., athletes, coaches) while attempting to safeguard athlete well-being.

Methods: Using Relational Coordination Theory (RCT) as a guiding framework and qualitative research method, we highlight the rich accounts of 19 match officials' perspectives and experiences regarding sport-related concussion (SRC) management and the Blue Card protocol.

Results: Four themes were derived from the data, reflecting latent assumptions embedded within the concussion management process, which include: *assumptions of trust, respect, and cooperation; assumptions of shared responsibility; assumptions of shared understanding; and assumptions of harassment-free sport.*

Discussion: Our findings emphasize the need to attend to social relations in concussion management and provide insight into match officials' fraught experiences on the frontlines of concussion management. We identify factors affecting match official well-being and provide considerations for concussion management initiatives designed to improve athlete safety, such as the Blue Card.

KEYWORDS

sport-related concussion, participant welfare, match officials, culture of risk, rugby, sport policy, blue card, concussion recognition

1 Introduction

The issue of concussions in rugby has, in recent months, come back to the forefront of public attention as media headlines track the evolving class action lawsuit against World Rugby, the international governing body for the sport of rugby union, filed by former players in the UK. Over 250 athletes suffering from neurological damage are involved in the litigation against World Rugby, as well as several national rugby bodies in the UK, seeking damages for what they argue is negligence due to a failure to protect (1). Though their specific symptoms and diagnoses vary, these athletes are united in their belief that their conditions are tied to head injuries sustained from their participation in

rugby. Unlike similar litigation in the US against the National Football League (NFL), where plaintiffs argued the NFL intentionally misled the players on the dangers associated with football participation (2), this current case against World Rugby hinges on the argument that those in positions of authority did not do enough to mitigate these dangers in rugby (3). The lawsuit highlights the complex issue of duty of care in rugby and, at its core, a misalignment (real or perceived) of expectations of and responsibilities for protecting players' health and well-being.

Much can be unpacked about this specific lawsuit; however, we feel it is critical to highlight that this high-profile legal case magnifies the importance of understanding concussion management as a site of complex social relations and power dynamics (4) and not just as a medical issue in need of more clinical guidelines (5). Numerous scholars studying sport's "culture of risk" note that the social relations and interactions that form and are formed by sport shape the very attitudes, perceptions, and actions of the community as it relates to pain/injury tolerance [see (6, 7)]. For example, with regards to sports medicine clinicians, Malcolm [(8), p. 206] suggests that: "...not only clinicians' behavior, but also their *understanding* of medical conditions, is shaped by the interdependent relationships in which they are enmeshed. Clinicians...come to internalize a definition of concussion that is similar to the way players and coaches understand the condition" (emphasis in original). Other scholars also point to the ways in which interdependent social relations between participants (e.g., athletes, coaches, clinicians, and referees) within sport communities facilitate or impede the management of sport-related concussions (SRC) (9–12). And yet, it is still very commonplace to see the issue of SRC narrowly framed as a medicalized and individualized health problem [(13); see also (14)], and concussion management fixated on prescribing and proscribing specific athlete behaviours to reduce risk (15).

We do not dispute the significance of concussions within rugby given the inherent nature of the high-impact contact and collision sport (16). The concussion rate among both male and female high school rugby players is high and often the result of tackle events during competition (17–21). At the community level, research found that 37.2% of a sample of Canadian senior rugby players reported experiencing concussion symptoms over the past season, 87% of which were formally diagnosed with a concussion (22). Additionally, rugby players are believed to be at an increased risk for neurodegenerative diseases relative to the general population [(23); see also (24)]. Rather, we aim to draw attention to the limitations of concussion management initiatives that do not adequately take the social relations and power dynamics between sport participants into account. We particularly highlight the lack of attention paid to the experiences and perspectives of match officials given how, in some jurisdictions, they are increasingly being called upon to take on prominent concussion management roles through initiatives like the Blue Card, while simultaneously playing an intermediary role in the very social context that makes such management difficult, or dangerous.

The Blue Card initiative in rugby enables match officials to remove players from play if they are suspected to have sustained

a concussion. In Canada, the Blue Card initiative was introduced in 2019 by Rugby Canada amidst mounting public concern following the death of Rowan Stringer. Rowan was a Canadian high school rugby player who acquired multiple concussions in the same week without informing her parents or coaches and passed because of Second Impact Syndrome (25). In efforts to protect the welfare of community rugby athletes, Rugby Canada introduced the Blue Card process to all levels of amateur rugby competition in Ontario in the 2022 club season (26). A match official issues a Blue Card to an athlete when they suspect that athlete may have sustained a concussion, thereby removing them from play and initiating a return-to-play process preventing the athlete from returning to competition without medical clearance.

On one hand, introducing this process to facilitate the removal of an athlete from competition due to a suspected concussion is an important step towards safeguarding athlete health and well-being. On the other hand, the Blue Card initiative presumes a high degree of cooperation among key actors (players, coaches, and match officials) during games and a shared understanding that the safeguarding of athletes' health is *always* the common goal among *all key actors at all times* (27). Such a presumption is troubling when we recognize that the expanded responsibilities for safeguarding athletes' health in the Blue Card initiative are focused on just one group of actors involved in managing concussions (i.e., match officials). Research on the implementation of the Blue Card in other rugby nations (i.e., New Zealand) found that referees felt prepared to take on the added responsibility of the Blue Card and that it would not influence their enjoyment in their role (28). However, there remains a pressing need to better understand the relational dynamics involved in concussion management from the perspective of those responsible for its administration (i.e., match officials) and within the Canadian sport context. Any mechanism that relies on the decision of a single actor elevates the individuals in that role while neglecting both the social relations and power dynamics that underpin SRC and the implications of such an initiative on the health and well-being of the match officials themselves.

Considerable attention has been paid by sport and health advocates to the possibilities and limitations of the Blue Card initiative in safeguarding athlete health (28, 29). However, a paucity of attention has been paid to the well-being of those responsible for administering the Blue Card (i.e., match officials) amid a competitive sport context and culture that is replete with antagonism towards—if not outright hostility and harassment/abuse of—referees. This paper highlights findings from a study examining the relational dynamics within concussion management in Canadian community rugby through the experiences and perspectives of match officials, an underrepresented group in the sport research literature (30). In doing so, our work addresses a need for research evaluating concussion policy implementation (31) and match official well-being (32). Using Relational Coordination Theory (RCT) (33) as a guiding framework and semi-structured interviews, we examined the rich accounts of 19 match officials' perspectives and experiences regarding SRC management and the Blue Card protocol in community rugby.

2 Method

2.1 Theoretical approach

This study was conducted as a component of a larger, ongoing project exploring the implementation of the Blue Card protocol in Canadian community (amateur) rugby. Situated within a constructivist paradigm, this specific study focused on match officials' experiences with and perspectives on implementing the Blue Card process. A constructivist paradigm assumes ontological relativism, recognizing the presence of multiple realities and claims to truth, each constructed within the individual's mind through subjective interpretations of personal experiences (34). Transactional and subjective epistemological assumptions emphasize the social construction of knowledge throughout the research process (35). The researchers and participants engage in the research and co-create knowledge and meaning through double hermeneutical practices (36).

Authors MJ and PS have backgrounds within the Canadian rugby community (e.g., athlete, coach, match official). Author LM is a clinical psychologist with extensive experience working with athletes, specifically in the context of SRC. All authors have a background in research in health and sport injury. In adopting a constructivist paradigm, we acknowledge how our own beliefs and assumptions as researchers can influence the research process from the initial conceptualization of the study to the interpretation and subsequent presentation of participant experiences.

With foundations in social psychology, RCT is well-aligned with the paradigmatic and methodological approaches adopted in this study and offers a framework for understanding the relational dynamics involved in the concussion management process. The theory has been applied across various contexts, including sports, public health, and education (37). Gittell (38) defines "relational coordination" as "a mutually reinforcing process of interaction between communication and relationships carried out for task integration" (p. 301). Put differently, a social and relational process that informs and is informed by those involved—a reciprocal influence akin to the shared construction of knowledge through experience and social discourse advanced by a constructivist approach. According to RCT, the quality of relationships between participants, their respective roles in the process, and quality of communications influences their ability to coordinate action effectively (33, 39).

2.2 Recruitment

Following approval from the University of Toronto Health Sciences Research Ethics Board (protocol #39402) in September 2020, purposive sampling was used to select and recruit participants. Nineteen participants were recruited through the personal network of the first author and with the support of Rugby Ontario and Rugby Canada. Rugby Ontario facilitated recruitment by emailing all 42 match officials on their 2020 mailing list in September and all 223 match officials on their

2021 mailing list in March, April, and May. Inclusion criteria included registration as a match official in 2019, being 18 years of age or older, and having direct experience with, or knowledge of, the Blue Card during the 2019 season (the 2020 season was canceled due to the COVID-19 pandemic). Participants who met the inclusion criteria expressed interest by emailing author MJ. Upon obtaining consent, the researcher presented a brief demographic survey to the participant for completion and scheduled the online interview. The demographic survey included nine questions regarding the participants' age, gender, years of experience as a match official, current level of certification, most recent recertification year, level of rugby most qualified to officiate, years involved in rugby, personal concussion history, and other roles within the rugby community (e.g., parent, athlete, club official, etc.).

2.3 Data collection

Semi-structured interviews facilitated in-depth personal accounts of match officials' experiences with and perspectives on the Blue Card initiative. Interviews, lasting between approximately 50–80 min, were conducted virtually on the Microsoft Teams video communication platform, and recorded using an external Sony ICD-UX570 digital voice recorder. Interviews were conducted by author MJ, who adopted the role of a "passionate participant" in the research process in line with our constructivist approach (36). The interview questions were piloted in a mock interview with an independent researcher to verify the accuracy, relevance, and orientation of the interview guide to our research aims. The independent researcher was a behavioural psychologist and registered rugby match official. After completing an initial round of interviews ($n = 6$), we refined the guide to account for topics that arose organically during the interviews but were previously unaccounted for in our questions. We then conducted member reflections via follow-up interviews with most ($n = 5$) of the participants initially interviewed, allowing them the opportunity to clarify and expand on the topics discussed in the initial interviews.

The final interview guide (Supplementary Material S1) included rapport-building questions as well as orienting questions designed to ensure that those who hold or have held multiple roles within rugby were reflecting chiefly on their experiences as a match official when responding to interview questions (e.g., "Could you share an experience in that role as a match official that stands out to you?"). Four key areas were probed regarding participants' experiences and perspectives concerning SRC management and the Blue Card: (1) participants' understanding of their role in the SRC management (e.g., "What expectations are placed on match officials regarding concussion management?"); (2) participants' experiences and perspectives regarding the actions of rugby community members and their influence on the SRC management process (e.g., "How have athletes and other sport community members reacted when an athlete is removed from play due to a suspected concussion?"); (3) participants' beliefs about the responsibility for player safety among members of the rugby community (e.g.,

“Who do you think is most responsible for ensuring the safety of the athletes?”); and (4) participants’ SRC knowledge (e.g., “Please describe your understanding of sport-related concussion injuries”). Follow-up questions and prompts were used to encourage the participants to expand on their anecdotes and accounts.

2.4 Data analysis

Following verbatim transcription, the data were analyzed according to the guidelines for reflexive thematic analysis as outlined by Braun and Clarke (40). Reflexive thematic analysis embraces the role of the researcher within the analytical process, recognizes researcher subjectivity as an analytic resource, and is well aligned with a constructivist approach (41). The researchers used the RCT as a sensitizing framework following the initial coding phase. Doing so provided an opportunity to capture details about the participants’ accounts that the theory may not adequately capture. We did not seek to validate the features of RCT.

Following the guidelines proposed by Braun and Clarke (40), the authors MJ and PS familiarized themselves with the data through ongoing critical engagement. Author MJ began this process during the transcription phase. Transcripts were shared with author PS and both authors engaged in independent, organic data readings. Discussions between authors MJ and PS began when each researcher felt sufficiently familiar with the data.

The analysis then shifted to the initial coding of the data, which resulted in specific codes such as *trust*, *role*, *intervention*, *pressure*, *knowledge*, and *respect*. These codes were developed through ongoing discussions between authors MJ and PS. RCT was used by the researchers as a sensitizing framework for examining the social and relational qualities of task coordination. Specifically, initial inductive codes were then compared to theoretical concepts described by RCT (e.g., shared goals, shared knowledge, and mutual respect). The researchers did not attempt to match the codes to the RCT concepts deductively, but used the overlap as evidence that they were giving sufficient consideration to the social and relational qualities involved in the coordination of a task. Throughout this process, author LM served as a critical third-party to challenge and suggest alternative interpretations of the data. In the next phases, codes were organized into themes which were then reviewed, refined, defined, and labelled. Finally, the authors organized and expanded the analytical commentary alongside select quotes to produce the final written work.

In efforts to ensure rigor, we adopted a relativist approach which suggests that researchers should critically curate the most relevant criteria to their study (42, 43). Braun et al. (41) provide a list of criteria to judge the quality of their specific approach to (reflexive) thematic analysis. We have adopted the list proposed by Braun et al. (41) to ensure coherence between the method and criteria for qualitative rigor. For example, we ensured that each data item received equal attention, that the themes were not developed from a few instances but were comprehensive and inclusive, and that we identified all possible extracts for our themes. Braun et al. (41) suggest that the data must be

interpreted rather than paraphrased. Our interpretations led us to explore the underlying assumptions implicated in the Blue Card and concussion management more broadly, which were brought together alongside illustrative extracts in the following section to present a convincing story about the data and topic.

3 Results and discussion

The nineteen participants represent approximately ten percent of all match officials contracted by Rugby Ontario in a given season. Twenty-four interviews were conducted; five participants completed initial and follow-up interviews. The majority of participants identified as male ($n = 14$). Two participants identified as female, and one identified as non-binary. Two participants did not provide demographic information. Participants’ ages ranged from 20 to 57 years ($M = 39$) and most ($n = 15$) reported having personal experience with a concussion injury. Participants’ experience as a match official ranged from two to 23 years. The level of competition participants felt confident officiating ranged from junior to international, and the level of certification ranged from 1 (beginner) to 3 (experienced). Participants also reported having additional rugby roles (e.g., athletes, parents, coaches, administrators, and volunteers). Participants were required to complete SRC training through online modules provided by World Rugby as part of the match official certification process. Pseudonyms are employed in this paper to maintain confidentiality.

Our analysis highlighted not only the need to pay better attention to the social relations of concussion management, but to the negative consequences borne by match officials tasked with administering a concussion management program that is loaded with assumptions about risk tolerance and responsibility. Our findings suggest that, despite good programmatic intentions, concussion management efforts that do not attend to social relations and power dynamics in sport are bound to be insufficient so long as concussion is viewed as a solely clinical issue and so long as responsibility for concussion management is downloaded to but one group of actors. Specifically, the Blue Card downloads responsibility for concussion identification onto match officials; the administration of a Blue Card to remove an athlete with a suspected concussion sets into motion the subsequent concussion management pieces (e.g., medical clearance) within the initiative. Furthermore, as our participants shared, when considered alongside sport’s culture of risk and pre-existing issues of harassment or abuse of match officials, the concussion management initiative’s insensitivity to social relations in sport has troubling implications for the welfare of match officials themselves.

Our analysis developed four themes reflecting latent assumptions embedded within the concussion management process in community rugby from the perspective of match officials. The four themes include: *assumptions of trust, respect, and cooperation*; *assumptions of shared responsibility*; *assumptions of shared understanding*; and *assumptions of harassment-free sport*. Each theme was framed around participant accounts of relational disruptions within concussion management that challenge and, in some cases, contradict the logic of these

assumptions. Select quotes from participant accounts were chosen to illustrate and substantiate the four themes; quotes have been mildly edited to assist with ease of reading.

3.1 Assumptions of trust, respect, and cooperation

Concussion management initiatives like the Blue Card presume those involved will work together for the benefit of the athlete (44). Study participants indicated that concussion management initiatives like the Blue Card assume, and in fact demand, a high degree of trust, respect, and cooperation among those responsible for implementation. However, participants' accounts suggested varying degrees of skepticism and suspicion around other actors' (e.g., coaches, athletes, medical or paramedical clinicians) intentions and actions during matches. In fact, our study participants' experiences suggest trust, respect, and cooperation are the exception rather than the norm or are extremely dependent on pre-existing relations and rapport with athletes and coaches:

Oftentimes, it's dependent upon your rapport with the players. So, in a lot of cases, in situations where I've shown up and people don't know who I am or know what my refereeing style is, like, "Who the hell is this person? Why does she think she can referee this game?" And then oftentimes when you return and they have trust in you and you've built that trust they're like, "Okay, she knows what she's talking about," and then oftentimes you get the desired response without even having to say it. (Phoebe)

Match officials indicated a sense of hesitancy to fully rely on and trust others whose cooperation in the Blue Card process was integral. Dallas expressed concern regarding the assumptions of trust and cooperation inherent in the return-to-play stage of the Blue Card process:

Whoever is doing the testing is evaluating that player and then deciding whether they can move on to the next stage in the rehabilitation process, which seems to be really safe. But you're still relying on somebody to do that. So, you're placing your trust in someone having that players' welfare in mind, rather than getting them back to the pitch too soon.

Participants recognized the value of positive, trusting, and cooperative relationships with others (e.g., coaches) to support concussion management. However, when reflecting on their on-the-field experiences in administering the Blue Card protocol, study participants spoke to ways in which trust gets eroded in concussion management because of their constant need to question other peoples' intent. Terry offered: "If you see someone stumbling around and clearly not all there, it becomes a responsibility to take action, even if the coach doesn't want to take that player off the field because they're the star player." Blake described how he has felt the need to question the

accuracy of communication from others, which can have implications for trustworthiness (33):

You're always going to get people, coaches, assistant coaches, and players, they can say, "Hey man, that's not true. This didn't happen. I [saw] this happen. It didn't happen like that." Yeah, at the end of the day what's in your head, what you sell, whether it's wrong or whether it's right, you have to own it. The safety of the player will always steer you in the right direction at the end of the day. (Blake)

In addition to the need to constantly question players and coaches during matches and the impact of that on their sense of trust and cooperation, participants also often spoke to their need to protect themselves from criticism and to defend their decisions in the context of removing an athlete from play due to a suspected concussion; this also counters, if not erodes, assumptions of trust, respect, and cooperation underpinning the Blue Card initiative. When discussing the process of administering a Blue Card, Casey explained how match officials often need to "reduce the amount of potential backlash from the clubs that comes at a critical moment." Yasmin echoed this sentiment:

There's worry because there's a lot more backlash. This is taking a player out for a prolonged period of time and that increases risk of emotion coming out and players and coaches and it definitely causes stress. I don't know if other people feel that way but I definitely do. It definitely scares me to have to use my cards. I just don't want to deal with the anger from the players or whatever may come of it.

Study participants routinely commented on how match officials can be at odds with coaches and athletes when deciding to remove a player with a suspected head injury making plain that, while trust, respect, and cooperation between players, coaches and match officials are critical to the success of concussion management initiatives, these are not always present. Our findings underscore the relational nature of trust (45) and its dependence on relationships between individuals within systems for the purpose of task coordination. Our study participants themselves noted the importance of relationships in concussion management, "I think it would be more to do with developing that relationship to have [a discussion regarding the removal of an athlete from play due to a suspected concussion], you know, if and when that needs to happen" (Riley).

Gittell (33) argues that relational coordination can yield the most significant returns in contexts where conditions of reciprocal interdependence and uncertainty are present and when there is a premium placed on the responsiveness of a process (i.e., urgency). Participant accounts suggest that uncertainty and urgency exist within the concussion identification process due to the internalized injury experience, potential lack of physical signs, and the athletes' desire to play through injury or prematurely return to competition.

However, our participants' accounts highlighted the very ways in which the game-time dynamics and context worked against the building of positives relations. For example, we cannot disregard that the Blue Card expands the tools possessed by match officials—it affords them more power and capacity to intervene in the game. It is not unreasonable to appreciate that other sport participants may become hostile to the expansion and use of these tools, viewing them as a “punishment” (Louis) and an even greater imbalance of power. Study participants noted that this (mis)perception impacts their interactions with athletes; as Lukas explains:

It's not a Red Card. You aren't getting sent off because it was a dirty or illegal play. You're getting sent off because you took a big hit. These guys are fuckin' builders and plumbers. These guys are hard, big men; they get aggressive, “What? There's nothing wrong with me!” I can see it not going well.

Furthermore, community rugby match officials are often the sole referees on the field. Multiple demands fed into study participants' feelings of urgency and uncertainty when managing concussions and the game more broadly. For example, Jordan noted the challenge of balancing one's attention to a potential injured athlete and ensuring the safety of those who continue to compete, “It's very difficult to assess signs and symptoms when the ball has already moved 25 meters away. You're looking at that contest on the ruck for potential foul play.” When an athlete is injured in rugby, match officials often allow play to continue until a natural stoppage occurs, if there is no further risk to the injured athlete. We speculate that these power imbalances and logistical demands hinder the development of trusting, respectful, and cooperative relationships.

3.2 Assumptions of shared responsibility

Our analysis of study participants' accounts highlighted tensions around the notion of shared responsibility. On one hand, participants were cognizant of their responsibility as match officials to ensure the safety of athletes during competition; Dallas noted: “You're meant to be the person in charge. If you don't feel comfortable with it, don't be an official, but that's your job to make sure that the players are safe.” On the other hand, participants indicated that responsibility for concussion management must be shared: “[Concussion management] can't just be placed on the referee, it's the community itself that needs to be responsible for it” (Eddie). However, participants were frustrated with other key sport actors for failing to accept or act on their responsibility for concussion management decisions in their respective roles (e.g., coach, therapist, captain, athlete). As Blair shared:

I think the referee on the day is the person who makes the final decision. So, they have to be the most responsible. Inevitably, if that person, the coach, or the player, or the captain, or the

[trainer], doesn't want to make the decision, then it's up to the referee.

The participants described amplified demands on match officials when they were obligated to act as *last-in-line* decision-makers when those in adjacent roles (e.g., coaches, medical staff) did not.

Participants viewed the formalization of the match official's role in concussion management (e.g., the implementation of the Blue Card) as a direct result of others' inaction; this finding itself closely related to faulty assumptions around trust, respect, and cooperation noted above. Although Eddie was willing to take on this extra burden, he was quick to lay blame at other actors' feet: “What we're managing here is unfair practices by team management, right? Really, that's what we're doing and I'm actually okay with that.” Other study participants, however, were far more worried about the potential consequences of growing demands (e.g., blame, liability, recruitment, and retention):

I gotta make the decision at the end of every day. If a kid comes back and then it's like something drastically happened, who are they gonna blame? The referee. “Why would the referee not stop the game? Why did the referee not send them out?” They won't look at it and go, “Well, there was an athletic therapist there.” No, they'll be like, “What was the referee doing? That's his job.” (Jackie).

For some participants, the tensions around assumptions of shared responsibility arose out of concerns regarding their perceived lack of qualifications to identify suspected concussions as compared to other actors (i.e., medical/paramedical clinicians); more than half of participants noted that they were “not doctors” at some point in their interviews. This contrasts Sullivan et al. (28), who reported that most of the match officials in their sample felt prepared to take on the additional responsibility of the Blue Card. While Rugby Canada did provide some training and education on the Blue Card, these were often presented solely as online information sessions or modules. Several participants noted that on-field development sessions for match officials rarely included the opportunity to go through the process of issuing a Blue Card and what this might look like when other participant groups are involved (e.g., coaches).

While several participants reasoned that those with greater medical knowledge should be more prominent in concussion management decisions, others continued to express skepticism or suspicion: some teams have “a really good [therapist] that does their due diligence or there's gaps, right? So, I've seen both to be perfectly honest.” (Jordan). Nevertheless, when others fail to act, the *burden of responsibility* ultimately falls on match officials regardless of their confidence in their expertise:

You have to take note of all this information. So, there's just so much going on in your head and, generally speaking, at the lower levels it's newer referees. So, these people are already overwhelmed and you're just adding another thing to their role. Now tell us when these people are injured, like when

they have a brain injury. But we're not going to tell you how, we're not going to prepare you for that, but like, "Here you go, take this Blue Card and go do your job." (Phoebe)

Participants routinely felt that they were left alone to act in situations where they did not hold the necessary or expert knowledge; and yet, were expected to hold ultimate responsibility for safeguarding athletes' health. Shared knowledge also facilitates relational coordination (33). Exclusive knowledge was perceived to exist between roles whereby experts in one functional area may develop exclusive knowledge through differences in training and socialization (e.g., concussion knowledge among medical support staff). Exclusive knowledge can cause division among those who hold distinct roles, further exacerbated by a culture of disrespect [e.g., match official abuse (46, 47)].

Identifying signs and symptoms of concussion can be challenging for those involved, and the uncertainty (or "grey area") in this process was a steady source of stress for match officials. Objective signs (e.g., loss of consciousness) are not always present when a SRC has occurred, and symptom onset is typically delayed (48, 49). Furthermore, reliance on athlete self-reporting is problematic, as research suggests some athletes hold negative attitudes toward self-reporting concussion injuries (10, 50–54). These inherent challenges also informed participants' attitudes toward other actors:

It's tough because the match official is responsible for so much, but I know so many players try to hide things just to continue playing that it makes it difficult to put as much of that pressure on when they're actively working against us in that sense, you know? Concussions are also not black and white, it's a pretty big grey area. You're always going to be put in a bit of an awkward situation where you know that you're not the right person to be making this decision, but ultimately you are the person who has to make the decision. At the end of the day, I know that I'm not a doctor, but I also know that I don't want to take the risk on somebody's health too. I don't want to blow it. (Louis)

Louis questioned whether the decision to act should have fallen to match officials in the first place. While participants expressed concern for concussion identification responsibilities in the management process being downloaded onto match officials, responses such as Louis' suggest match officials also attempt to shift responsibility onto others. Athletes were viewed as failing to accept responsibility for their well-being [cf., (9)], while other actors were viewed as being the "right" people to make concussion management decisions but who often failed to do so. Related research by Zanin et al. (12) identified specific strategies (*Agentic Denial*) used by those involved in concussion management to obscure one's agency in concussion events—diminishing the responsibility and culpability of the actor. These concerns highlighted by our participants and other research (12) emphasized the social and relational consequences of downloading responsibility in concussion management onto others. As Cameron stated:

I felt like at that point, that player was at risk for injury, 'cause I felt that she at least had a mild concussion or at least enough to warrant being sent off the pitch. And the last thing you want, 'cause this is after Rowan's Law, you know, which was huge with all the different [professional development] on it, I think there are still some people that weren't quite on board with it all, or at least the severity of it. And the last thing you want, like I was feeling responsible for the fact that athlete was still on the pitch, even though I had no control over whether she got the follow up or what. There's too many things out of my control, but I still felt responsible that she was on field and I didn't feel it was the right decision.

In sum, match officials believed that a shared sense of responsibility was not fostered among participant groups—contradicting embedded assumptions and disrupting the relationships of those involved in the concussion management process (e.g., removing an athlete with a suspected concussion). Rather, downloading the final decision to the match official has provided the opportunity for others (e.g., athletes and coaches) to avoid responsibility. Salmon et al. (55) have similarly identified responsibility concerns in coordinating concussion management. Match officials accepted their role in ensuring the safety of participants, aligning with Clacy et al. (56). However, they felt the *burden of responsibility* through others' inaction (i.e., letting the match official make the final decision) or active resistance (i.e., hiding concussion symptoms). In conjunction with these attitudes was the concern that match officials would be the ones to endure the consequences should something catastrophic occur (e.g., the Rowan Stringer incident), as illustrated by Cameron.

3.3 Assumptions of shared understanding

In sharing their experience with implementing the Blue Card protocol in games, match officials' accounts pointed to an inherent assumption underpinning concussion management—that athlete welfare is prioritized above *any other* objectives or goals, such as winning, by *all* key actors at *all* times. However, participants routinely shared concerns regarding others' negative perspectives of match officials. Specifically, match officials believed coaches and athletes viewed them as antagonistic to their personal or team goals (e.g., being able to compete, winning the competition). The oppositional framing of participant groups implies relational disruption among key decision-makers where "the only one that's ever happy if it happens [i.e., a match official removes an athlete due to a suspected concussion] is the opposing captain, right?" (Riley). Louis shared:

[Coaches are] kind of thinking, "Well, I don't want to send that guy off, he's really good. I don't want to lose the game." Because ultimately, their ultimate goal in the course of the game is to win. So, you have that issue where [coaches are] not going to take [concussion management] as seriously or they may not make the right decision for the individual

because they want to make the right decision for the game. (Louis)

Regan's suspicions of athletes' motivations to resist match officials' efforts to safeguard their brain health are foregrounded when they note: "[Athletes] just want to go back in the game and just keep playing and ignore the head injury, right? You could ask them, but they're not very reliable. They're not very trustworthy because they just want to play the game." Louis' and Regan's perspectives challenged the assumption of shared understanding among coaches and players whereby they did not believe that others would deprioritize performance-related goals in the event of a suspected concussion. Experiences of hostility from others, including the fear of backlash noted earlier, seemed to entrench these beliefs and disrupt concussion management efforts.

Our findings aligned with extant research [e.g., (10, 57)] describing a functional understanding of SRC among amateur and sub-elite rugby players who downplayed injury severity and focused on returning to competition in the short-term rather than recovery or long-term health. Given the ways in which health is equated to performance, whereby health becomes reduced to the ability to perform excellently [cf., (14)], participants' accounts suggested that athlete welfare was viewed as emotional welfare, connected to the desire to remain in competition, rather than brain welfare. Riley suggested that the issue of athletes prioritizing performance goals is embedded within the broader culture of sport:

Like at the end of the day, [in] the perfect world, the players are pulling themselves off and saying, "My head hit this tackler's knee and it hurts. I'm not dizzy or anything like that right now, but I don't want to risk it." The culture doesn't allow, allow is a strong word, encourage, the culture doesn't encourage it. This isn't a rugby comment, this is hockey, this is football, it doesn't encourage that, right?

Athletes' drive to play through injury is not unique to SRC or rugby. However, the normalization of pain and acceptance of playing injured is part of broader socio-behavioural norms inherent in sport whereby competitors are encouraged to push boundaries in the pursuit of performance (58–60) and, by extension, view those who enforce the rules that interfere with their tolerance of the culture of risk as antagonistic to their performance goals (61, 62).

Participants believed that athletes would view intervention via the Blue Card as a threat to their ability to compete and as an inadvertent benefit to the opposing team. Where they could, the participants reaffirmed their neutrality: "The match official doesn't care win, lose, or draw what the end result is" (Louis). However, even at the highest level of competition, rugby match officials have been found to display implicit bias in their decision-making (63). Terry argued that this could impact the process of onboarding athletes to new concussion management practices like the Blue Card:

I think it's a little harder to sell the players because the Blue Card is giving the referee a tool to send them off without complaint. In theory, we can do that right now, but it's a more formalized process that can keep them out several games, whether or not they recognize that it's their welfare that we're worried about. I think players are a little more concerned about how it's gonna influence their ability to play matches.

Participant accounts indicated tensions between athletes' personal autonomy (i.e., respect for the athlete as a decision-maker) and match officials' professional autonomy (i.e., respect for the match official as a decision-maker). Participants emphasized that they were "out here for the welfare of [athletes]" (Sonny). However, they also expressed concern that athletes may view match official intervention through the administration of a Blue Card as a form of paternalistic intervention—a threat to their agency. Cameron insisted that he will "use [the Blue Card] appropriately. I'm not gonna abuse use it." Nonetheless, uncertainty is inherent to concussion management and is experienced by athletes (64) and all those who make decisions on their behalf (8, 65, 66).

Participants anticipated additional resistance in situations where their decision to remove an athlete due to a suspected concussion was not agreed upon by medical staff, further challenging assumptions of shared understanding. For example, Lukas explained: "If the [therapist] says, 'No, this athlete is fine,' but you feel this player does not look good, there's going to be conflict." Situations with conflicting opinions between match officials and medical staff may reaffirm athletes' perspectives of match officials as antagonistic to their goals. In contrast, bringing others into the decision-making process may help reposition concussion management efforts as collaborative rather than authoritative and ease hostility toward match officials:

...now players are thinking of you less as being hostile to their goals. I guess, like, okay, "That was a decision that was made by the captain. Well, that clearly means that it was the right call." As opposed to, "Ah yeah, the ref just blew that call, and you threw out our best player." You're not the antagonist in that situation. Everybody collectively made that decision. Then you don't have that hostility flowing for the rest of the game. (Louis)

According to the RCT, shared goals contributes to the quality of the relationships among those involved in task coordination (33). When the goals of participants are congruent with one another, a bond is formed that enables them to more efficiently adjust to new information. However, goal discrepancy can exist between roles. In our sample, the functional (i.e., performance) goals of coaches conflicted with the process (i.e., professional) goals of the match official in events where an athlete was removed due to a suspected concussion (e.g., via the Blue Card process).

Match officials challenged the assumption of a shared understanding that every member of the rugby community

always prioritizes safeguarding athletes' health. Key actors, such as captains, coaches, and teammates, have unique epistemic insight into an athlete's values, motivations, and goals. These social agents play a central role in athletes' negotiations of risk in sport, including their cooperation or resistance to the protective goals of the concussion managers. Without proper consideration of the social relational issues in concussion management, we contend that initiatives like the Blue Card will, at best, fail to safeguard athletes and, worse, inadvertently risk the welfare of others.

3.4 Assumptions of harassment-free sport

Participants expressed concern regarding acts of abuse endured by match officials by other actors (e.g., coaches, athletes), challenging the assumption that match officials can implement concussion management without harassment or worse. Although there is ample evidence in the media and extant scholarship documenting the ubiquity and pervasiveness of abuse directed toward rugby match officials across all levels of rugby (and other sport) competition (67–71), initiatives like the Blue Card pay no heed to this issue as a critically important consideration in concussion management. Rather, harassment and abuse are viewed and treated as separate issues from concussion management. The assumption that match officials can implement the Blue Card in harassment-free sport underscores the lack of attention to the social relations of concussion management and to the risks to match officials' own health and welfare.

Despite some participants being committed to the belief that rugby promotes respect towards match officials—"One of the nice things why I like rugby is the respect for the referee or at least respect for their decisions" (Blair)—others shared examples of having been personally subjected to abusive acts in their role as match officials, which were broadly described as salient and negative emotional experiences. Others expressed concern about the potential for increased abusive behaviour following the implementation of the Blue Card: "...you know what happens. Your team loses, 'It was the Blue Card, [it was the] referee!'" Verbal abuse, ya know? So, it can be tough" (Lukas). What was noteworthy for us was the degree to which study participants reframed experiences of abuse as things that needed to be tolerated and how they downplayed the severity of these events by describing them as a *normal* feature of their role and work [cf., (72)]. Our participants' accounts reflected this normalization of abuse toward match officials: "I found that as soon as you blow the last whistle, the coaches do relax a little bit more and the players too. They'll be angry at you, but then that's life of a referee, right?" (Lukas).

Though abuse can come from a variety of actors (e.g., parents and spectators), participants identified coaches as common perpetrators of match official harassment and abuse [cf., (70)]. As Riley shared:

The coaches have huge role, right? There's the good ones and the not-so-good ones, and the personality of the coach can very easily be taken on by the team. In the examples where the not-

good-ones are standing on the sideline, and when I say "not-good-ones", they may be good coaches, Xs and Os, motivating, those type of things, but they are not good for the game, right? They are not good for delivering teams that play with respect, and they're not good at respecting themselves or showing respect themselves, and they're the ones who are yelling and screaming on the sidelines on every 50–50 call, and they are screaming the loudest when their own team makes a big hit.

Several participants reflected on how coaches serve as models of acceptable behaviour for athletes, and that the actions of coaches can perpetuate an environment where match official abuse is viewed as acceptable. Yasmin expanded on this, particularly in connection to her experience as a female match official:

Coaches should also be trying to display a positive relationship with referees because that also determines how players are going to treat referees in future or in that game specifically. It is really daunting for a lot of women to look at a situation and recognize that they may have to tell a big 50-year-old man that their star player can't continue playing. And that's a fear that I have every time I ref a match. It's just like, "What if this coach just loses it on me?" And every time I'm leaving, I'm like, "I want to get out of here."

Yasmin, one of two female match officials in our sample, was the youngest match official interviewed. Her experience directly aligned with other research on match official abuse documenting increased rates of harassment and abuse directed toward younger (73), less experienced (74), and female officials (75, 76), suggesting their experiences of abuse can differ in both type (e.g., gendered abuse) and frequency from their older, more experienced, and male peers, subsequently impacting their mental health and retention in sport.

The stress-inducing nature of administering the Blue Card, even just the thought of potentially having to administer it, was prevalent among participants given an expectation that their efforts and decisions would be met with hostility. What stood out to us was the ways in which a few participants attempted to manage the real or anticipated tensions, and cope with the stress that was induced, by adopting a more threatening posture with coaches and athletes. For example, Sonny, a male match official who was among the oldest and most experienced in our sample, shared what he communicates to coaches and athletes to make it clear that they must work with him in managing suspected concussion events and the game more broadly:

If we can't work together then it may not be a good day for you. It may not be a good day for your team if you choose not to help diffuse the situation. If you choose not to be active in making this game move in a certain way, then it could be harsher on your team, right? It could be more difficult on your team if I've got to do it myself, right?

Logan shared a similar positionality when he stated: “Coaches think they are big and sometimes you gotta kind of bring them a notch down.” In these excerpts, we see participants attempting to exert their role-given authority but doing so in, frankly, aggressive, *quid pro quo*-type language. We do not disregard how these verbal tactics are maladaptive, but recognize the impetus for this approach—the lack of attention in the concussion management process to the fraught power dynamics between sport actors and to existing incidence of harm of match officials, and the faulty assumption embedded into the Blue Card that match officials’ attempts to safeguard athletes’ welfare will be accepted by others without any objection, harassment, or abuse.

When the quality of relationships (via qualities such as mutual respect) and communication among participants is high, relational coordination occurs (33). However, abuse of match officials reflects a lack of mutual respect between participants and is a common phenomenon in the context of amateur rugby (69, 70). Concussion management assumes harassment-free sport; participant responses challenged the soundness of this assumption. Research exploring coaches’ perspectives on match official abuse described the humanizing effect that strong relationships between coaches and match officials had in deterring abusive behaviours (47). However, current concussion management initiatives presume such a relationship in their absence of attention to the social relations of SRC. When concussion management initiatives like the Blue Card fail to adequately consider the complex social relations and power dynamics inherent in the process, match officials are prompted to try whatever they can to navigate the process. This includes using strategies in their toolkit that can be maladaptive, leading to further erosion of social relations and impacting the well-being of those involved.

3.5 Pulling the threads together

As highlighted above, inattention to the social relations and power dynamics that weave in and throughout competitive sport render concussion management initiatives as potentially dangerous for sport participants like match officials. Our study participants’ accounts in implementing the Blue Card initiative shed light on the need to interrogate both intended and unintended consequences of concussion management programs, and the constant need to think expansively with regards to protecting the health and welfare of *all* individuals operating within organized sport. Despite the potential benefits to athlete welfare, the welfare of those responsible for administering such things as Blue Cards *in situ* is risked as their decisions and actions are embedded within a sport culture that far too readily tolerates risk, pain, injury, and the harassment (and, at times, abuse) of match officials (46).

In highlighting latent assumptions of trust, respect, and cooperation, of shared responsibility, of shared understanding, and of harassment-free sport, our findings underscore how current approaches to concussion management do not adequately account for the relationships among those involved. In the Blue Card initiative, a great deal of responsibility is downloaded onto

match officials and these actors are required to serve as the gatekeepers of the process. Yet, concussion management demands common understandings of concussions, shared commitment to health always, and cooperation among all sport actors (e.g., athletes, coaches, and medical/paramedical clinicians). The existing Blue Card initiative assumes these features are in place, but our study participants’ experiences and perspectives challenged such assumptions. Our findings also contrast those of Sullivan et al. (28), who found that most of the match officials sampled felt prepared to take on the role of on-field concussion gatekeeper and did not think that this would affect their satisfaction with refereeing.

Examining our participants’ experiences through the lens of RCT afforded us opportunity to appreciate the importance of high-quality communication and relationships among individuals as developed through shared goals, shared knowledge, and mutual respect (39). According to the RCT, task coordination is highest when participants’ goals are congruent with one another such that a bond is formed that enables them to adjust to new information more efficiently (33). The successful implementation of the Blue Card initiative depends on reciprocal interdependence and multiple participants coordinating tasks across various stages of concussion management (i.e., identification, removal, recovery, return). When goal discrepancy exists between individuals, such as when the performance imperative of coaches and athletes conflicts with the concussion management responsibilities tasked to the match official because of the Blue Card protocol, task coordination falls apart. In addition, when there is a lack of mutual respect, for example, when in those instances of harassment or abuse directed towards match officials for simply doing their work, we see further deterioration of task coordination as well as an exacerbation of division and harm among sport participants. For example, our study participants candidly shared moments where they preemptively steered themselves for the blame that they anticipated would be directed toward them by others. They shared reciprocation of blame by suggesting that others were at fault for the challenges they experienced regarding concussion management and, in some cases, adopted their own maladaptive coping strategies by being threatening.

When the relationships between key actors are nurtured, there is a humanizing effect on the perspectives of others (47). Fostering positive relations between participant groups may lower the risk of match official abuse (47) and support concussion management efforts (i.e., the Blue Card). Hancock et al. (77) challenges the assumption that officials inherently operate as a group due to the transient nature of group membership from game to game, and notes that familiarity heightens trust. In the context of the Blue Card, the match official depends on other participant groups to successfully facilitate the process. Therefore, we recommend integrated training and education involving multiple participant groups (e.g., match officials, coaches, athletes) should be developed to help facilitate relational coordination. Current approaches to training and education for the Blue Card and concussion management are primarily static and siloed.

Organizations have a duty of care to provide support through the adoption and active communication of a zero-tolerance policy (74, 78) alongside processes for reporting instances of match official abuse and follow-up support (46) to promote the retention of match officials in rugby. We recommend that sport organizations explicitly connect concerns for match official abuse to concussion management efforts. For example, concussion training and education initiatives should integrate discussions regarding match official abuse and outline the abuse reporting process alongside how to access the supports available for match officials (e.g., opportunities to shadow games and review film for instances of abuse). Future research could evaluate the effectiveness of such developments on outcomes such as the satisfaction and preparedness of match officials as examined by Sullivan et al. (28).

3.6 Strengths and limitations

It is important to note that, as data collection occurred during the COVID-19 pandemic, the number of match officials who registered during this time was substantially reduced (registration is typically greater than 400). Even though women account for approximately 18% of match officials registered with Rugby Ontario, our sample was not completely gender-representative of the broader match official population. Furthermore, the majority (84.2%) of our sample did not have experience administering or supporting a Blue Card administration. However, our sample may have accounted for all seven administrations of the Blue Card during the 2019 season. One participant personally issued four Blue Cards (57%) in our sample. While two other participants supported the administration of Blue Cards (three administrations and one administration, respectively) as assistant referees.

Though participants spoke briefly on the return-to-play aspect of the Blue Card and the concussion management process more broadly, their responses tended to focus on the coordination of the removal process as has been highlighted in this paper. This is not surprising as match officials are not involved in the return-to-play aspect of the concussion management pathway. However, it remains a noteworthy missing piece in the Blue Card concussion management pathway. The fact that match officials are not involved in the return-to-play stage of the Blue Card process but felt the need to share their lack of trust in others to manage these areas is an important finding.

It is essential that we acknowledge the potential for our insider experiences as members of the rugby community to shape our perspectives on this research topic and approaches to this study, specifically. For example, our insider experiences enabled us to better understand the specific language chosen by our participants to describe their experiences, including sport specific terms (e.g., scrum). To account for any potential limitations of our insider experiences (e.g., that we would not be sensitive to perspectives that differed from our own), author LM acted as a

critical friend to challenge the interpretations of the data and encourage alternative viewpoints.

4 Conclusion

Our participants shared the ways in which they attempted to individually navigate a concussion management initiative that requires a much more collective and nuanced response. Part of this requires much greater critical attention to the implications of the still pervasive tolerance of a “culture of risk” alongside the continued dominance of the performance imperative in competitive sport, even at the community/amateur level. Part of this also requires careful examination of what we expect to have happen when such an initiative is siloed from other health and welfare issues, including match official harassment and abuse. Experiences of abuse impact the welfare and retention of match officials in sports (78, 79), as well as their ability to manage the match and ensure the safety of athletes (73, 80). Yes, we recognize that rugby governing bodies have responded to referee harassment and abuse by implementing strategies to safeguard match officials from the amateur level (81) up to international competitions (82). However, to date, the approach to concussion management as operationalized through the Blue Card initiative has occurred in a siloed manner disconnected from the attention being paid to match official harassment; we maintain that concussion management initiatives across all sporting contexts, not just rugby, must be critically evaluated in lock-step with other welfare programs to ensure that efforts to safeguard one group’s welfare does not come at the expense of others’ health and well-being.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by University of Toronto Health Sciences Research Ethics Board. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

MJ: Conceptualization, Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. PS: Data curation, Formal Analysis, Methodology, Writing – original draft, Writing – review & editing. LM:

Conceptualization, Data curation, Formal Analysis, Funding acquisition, Methodology, Resources, Writing – original draft, Writing – review & editing.

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Supplementary material

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Athletic identity affects prevalence and disclosure of emotional abuse in Finnish athletes

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The present study offers novel insight into the topic of experienced and observed emotional abuse by researching factors that affect athletes' responses to emotional abuse by coaches. The research aimed to explore three main questions: (1) whether athletic identity was associated with the prevalence of emotionally abusive coaching practices, and (2) disclosure of emotional abuse, and (3) whether demographic variations existed in the frequency of emotional abuse, athletic identity, and disclosure of the abuse. Study participants who filled in an anonymous digital survey consisted of athletes from elite to leisure levels living in Finland ($N = 3687$, aged 12–80, gender 61% female, 37.7% male, 0.8% other genders). The research findings highlighted three key insights. Firstly, Pearson correlations revealed that a salient athletic identity was related to a higher prevalence of emotional abuse. Secondly, ANOVA/Kruskal-Wallis tests between-groups indicated that particularly children were susceptible to the abuse. Thirdly, a mediation analysis showed that self-identity (aspect of athletic identity) influenced the relationship between experienced emotional abuse and disclosure, by reducing disclosure. As a result, holistic identity development is recommended for athletes and particularly children in sports.

KEYWORDS

emotional abuse, psychological abuse, interpersonal violence, athletic identity, disclosure

1 Introduction

Over the past few years, several high-profile cases of emotional abuse have emerged in sports environments worldwide. One of these is that of a Finnish synchronized skating coach who, according to reports, repeatedly and intentionally emotionally abused their athletes for several years by, for instance, telling their athletes, including children, to kill themselves (1). The case was considered a landmark case by many industry professionals. It highlighted that the issue of violence by coaches, and that of emotional abuse is very much present in Finnish sports (1). Similar cases can be observed in sports environments worldwide. For instance, in the UK, Olympians Becky and Ellie Downie revealed in 2020 experiencing years of emotional abuse in British Gymnastics (2). In Canada, stories continuously emerge about abuse in ice hockey (3). Thus, demonstrating that abuse in sports is not constrained to any one culture or region; it is a global concern that requires immediate attention (4).

Emotional abuse is a form of violence described as “a pattern of deliberate non-contact behaviors by a person within a critical relationship role that has the potential to be harmful” by Stirling and Kerr (5; p. 178). It is a form of relational violence characterized by an abuse of power within a critical relationship (6). Violence, used

here interchangeably with abuse, stands for various activities that may be harmful to athletes, including maltreatment, neglect and exploitation (7). Emotional abuse can manifest itself through verbal behaviors (e.g., shouting, humiliating and threatening), denial of attention and support (e.g., exclusion from training or lack of feedback) and physical (non-contact) behaviors (e.g., throwing of objects or punching a wall). According to various prevalence studies, emotional abuse (or psychological abuse) is the most common form of violence in sports (4, 8) with its prevalence being around 38%–75% in various disciplines [e.g., (9, 10)]. For instance, in a study on vulnerable group of Finnish gender and sexual minority sport participants, 27%–35% reported sexual or gender-based verbal or non-verbal harassment by a coach (11), and 33%–50% sexual or gender-based harassment and 4%–19% physical abuse by fellow sport participants in teams or groups (12).

1.1 Coach as the perpetrator

While the perpetrator of emotional abuse can be an athlete, coach, mentor, director of a sport club or parent (13, 14), in the present article we focus on the coach as the perpetrator and the athlete as the survivor of the abuse. The distinction was made because coaches alongside peers are the most common perpetrators of emotional abuse, and due to the unique position coaches hold in relation to athletes (15). Emotional abuse in the athlete-coach relationship is categorized as relational abuse, as it exists within a significant relationship that is characterized by the unequal status of coach and athlete (5). Coaches have considerable influence over athletes due to their age, knowledge, and control over the athlete's career progression (16, 17). Athletes, especially children, rely on their coaches for guidance and expertise which are vital for their development and success (17, 18). This dependence can lead young athletes to view their coaches as infallible authorities, leaving them susceptible to emotional abuse (19). In line, emotional abuse by coaches is documented to have severe consequences on athletes' wellbeing (20, 21). These encompass a broad range of emotional, social, physical, and cognitive effects (15, 22).

1.2 Influence of athletic identity

As illustrated above, the majority of past studies on emotional abuse have focused on prevalence, perpetration and experiences as well as the effects of emotional abuse by coaches [e.g., (5, 10, 20)]. Recently, a growing body of research has begun to emerge on factors contributing to athletes' experiences of abuse, which may subject them to additional risks of abuse [e.g., (4, 23)]. One such factor could be athletes' athletic identity. Stirling and Kerr (24) suggested that athletic identity might affect athletes' ability to recognize and react to emotional abuse. Athletic identity is defined as the degree to which an individual identifies themselves within the athlete role and looks to others for acknowledgement of that role (25, 26). Athletes develop their athletic identities

through learning the psychological and situational factors such as norms and values of a sport (26). Most athletes tend to identify themselves through the lens of their engagement in sports only and develop salient athletic identities (27). According to Stirling and Kerr (24), athletes with a salient athletic identity could have a harder time recognizing and reacting to emotionally abusive coaching practices compared to other athletes due to a process of normalization. Abusive behaviors such as shouting are generally normalized in sports to a degree, where these behaviors are perceived as acceptable (19). Athletes normalize abusive behaviors for various reasons, including success, denial, fear of consequences, and the norms and culture of a sport (28, 29). The more salient an athlete's athletic identity becomes, the more likely they are to normalize and adhere to the norms of sport (30).

1.3 Norms of sports

The norms of sports, often referred to as sport ethical norms, constitute the criteria set by the sports industry to outline the characteristics of a "true athlete" (31). According to these athletes are expected to push through pain, reject limitations, embrace risks, pursue excellence, and make sacrifices. Interestingly, the norms of sport form aspects of athletes' athletic identity (25, 26). Athletes get socialized into and learn the sport norms quickly upon entering the sport context for instance through personal and behavioral observation of more seasoned athletes and especially authority figures (32–34). When more experienced athletes exhibit behaviors that endorse specific norms and practices—such as emotionally abusive coaching behaviors—younger athletes who observe this behavior learn to perceive these norms as commonplace within the environment, regardless of their potential harmfulness (34, 35). In other words, the coaches' behavior becomes normalized, and the younger athletes internalize and conform to the norms (36). This is something coaches too endorse, by rewarding adherence to the norms and punishing nonconformity (23). To athletes challenging any harmful norms within sports may, to some extent, be perceived as a threat to their career, performance and athletic identity (27, 30). Furthermore, the sport ethic norms are glorified by media, sports club officials, and fans, pushing athletes to align with these norms (23, 35). The potential danger with this process is that athletes might internalize, normalize and inadvertently accept harmful sport norms such as emotional abuse by coaches (36). It is also plausible athletes become unable to recognize abusive behaviors, exposing athletes to further abuse (32). Consequently, conformity to aspects of sport ethic norms have been shown to increase the prevalence of abuse in sports (23). The norms could also discourage athletes from disclosing instances of abuse (37).

1.4 Disclosure of emotional abuse

According to research, athletes generally do not tend to disclose their experiences of abuse [e.g., (9, 38)]. For instance, Kerr and colleagues (39) found that of athletes who responded to their

survey, only 16% had reported their harmful experiences in sports. While the term disclosure has traditionally lacked clarity in sport psychology research, here disclosure (sometimes referred to as self-disclosure) refers to an athlete telling another person about abusive experiences in sports (40, 41). Disclosure of harm is argued to be a complex process, with numerous potential barriers (42). Despite limited research on the barriers, insights can be drawn from social psychology. Minto et al. (43) suggested that individuals with a strong group identity tend to avoid reporting abuse. When individuals view their group as positive and ethical, they are less likely to report abusive behaviors because of their strong sense of belonging and a desire not to deviate from group norms (44). Athletes, who often have a deep sense of identity tied to their teams, may be hesitant to disclose emotional abuse due to this strong association with their sports group (31). Thus, we propose that such athletic identity may act as a barrier preventing athletes from recognizing and disclosing emotionally abusive behavior by coaches (24). It is of paramount importance that athletes can disclose emotionally abusive coaching practices, as it is the primary method for detecting abusive behaviors in sports (37).

1.5 Research questions

Although we have outlined the various potential pathways through which athletic identity could influence the prevalence, and disclosure of emotional abuse by coaches, it is imperative to acknowledge the absence of empirical data substantiating the connection between the variables. Hence, the main aim of the present study is to ascertain the presence of any correlation between emotional abuse, athletic identity, and disclosure of abusive behaviors. To further address the limitations of past research, and to research the arguments made by Stirling and Kerr (24), our research questions were threefold: (1) is there an association between athletic identity and the prevalence of emotional abuse by coaches? (2) is there a relationship between athletic identity and disclosure of emotional abuse by coaches? and (3) are there demographic differences in the prevalence of emotional abuse, athletic identity and disclosure of the abuse? The term athletic identity here refers to the terminology by Brewer and colleagues (25), and emotional abuse to the definition of Stirling and Kerr (5). Based on past research we expected a salient athletic identity to be a factor exposing athletes to emotionally abusive coaching practices by preventing athletes from disclosing emotional abuse by coaches. It is important to acknowledge that previous relevant research has predominantly employed qualitative methodologies and concentrated on adult athletes (33). The advantage of quantitative research would be the arguably greater generalizability, reliability of research results and large range of potential analyses (Figgou & Pavlopoulos, 2015). To overcome past research limitations, our study adopted a quantitative approach and aimed to expand the participant group to include children (under the age of 18). Furthermore, previous research on emotional abuse has almost solely focused on athletes' personal experiences of emotional abuse. However, in

several cases, emotionally abusive behaviors are witnessed by more than one person. Athletes' observations of emotional abuse should also be researched, first, as bystander action increases the likelihood of investigation and sanctions for a perpetrator of abuse (45). Secondly, also observed abuse appears to have detrimental ramifications and failure to take action may extend the suffering of the witnesses (16, 46). Therefore, the present study focused both on experienced and observed emotional abuse.

2 Materials and methods

2.1 Participants and their recruitment

The sample consisted of 3,687 participants living in Finland. Majority of the participants were women, secondly men and third of other genders (Table 1). The minimum participation age was 12 years old, and no maximum participation age existed ($M = 27.91$, $SD = 1.18$, range = 12–80). The age range was justified because children from 12 years onwards can be expected from their cognitive skills to be able to answer the research survey (47). We collaborated with a children's rights associate professor to ensure our survey was suitable for children, and we

TABLE 1 Demographics of the participants.

Category	Subcategory	n/%
Genders	Female	2,004/54.4%
	Male	1,510/41%
	Other	23/0.6%
	Did not wish to disclose	38/1%
Age	12–17	1,029/27.9%
	18–30	1,177/31.9%
	31–40	564/15.3%
	41–60	845/21.8%
	61–80	42/1.1%
Level of proficiency	International/professional athlete	378/10.3%
	National level athlete	1,016/31.2%
	Regional level athlete	885/27.6%
	Active exerciser	448/12.2%
	Regular exerciser	570/15.5%
	Occasional exerciser	225/3.8%
	Did not wish to disclose	90/6.1%
Equity deserving groups	Deaf/deaf athlete	8/0.3%
	Para-athlete	13/0.8%
	Swedish speaking minority	103/4.5%
	Sexual minority	148/10.1%
	Gender minority	19/11.3%
	Ethnic minority	25/12.3%
	Something else	60/14.7%
	No minority	2,837/98.7%
	Did not wish to disclose	39/1.3%
Sport type	Individual	1,689/44.9%
	Team or pair	1,990/55.1%
Most represented disciplines	Finnish baseball	424/11.8%
	Floorball	281/7.6%
	Figure skating disciplines	219/6.4%
	Ice-hockey	187/5.4%
	Equestrian sports	158/4.6%

distributed the same questionnaire to both adults and children. Additionally, given the substantial variability in peak and upper age limits across various sport disciplines, this age range was deemed appropriate.

The majority of the study's participants were athletes competing at a regional or national level. Collectively, they represented a wide spectrum of athletic disciplines, encompassing 80 different sports. Overall participation from different disciplines spread relatively evenly across different sports. Popular sports in Finland such as Finnish baseball, floor ball, figure skating disciplines (especially synchronized skating) and ice hockey were the most represented. However, it is important to note that the representation within the sample was not fully diverse. Individuals from equity-deserving groups were less represented.

We used a self-selection sampling method to target athletes and leisure exercisers for our study, allowing participants to volunteer willingly. Potential participants were approached through the Finnish Olympic and Paralympic Committees, 45 Finnish sports associations and all Finnish sports academies and training centers. National organizations were contacted via email, with follow-up discussions as needed. While no organization declined to participate, 10 did not respond to inquiries. Organizations selected their own survey distribution method (i.e., newsletter, social media, email and website) and received two reminders for timely dissemination. Using REDCap, a digital, anonymous survey was sent to athletes living in Finland, across all levels in November 2021 with a 1-month response window. Prior to data collection, the research design was reviewed and approved by the University of Helsinki's ethical review board in the humanities and social and behavioral sciences. A data protection impact assessment was conducted and approved by the board. Participants gave their informed consent voluntarily before gaining access to the survey by ticking a box at the end of a participant information sheet, which included full disclosure and information on study purpose. For underaged participants, their guardian was asked to read the participant information sheet and explain any concepts that their child might not understand (as instructed by the of Finnish National Board on Research Integrity).

The survey consisted of eight demographic questions (e.g., gender, sport discipline, level of proficiency) and scales detailed below. No reward was offered upon completion of the survey. The survey took approximately 15–30 min to complete.

2.2 Measures and variables

2.2.1 Emotional abuse

A scale measuring athletes' experiences and observations of emotional abuse by coaches was created for this study. A new scale of 17 items was created as the existing surveys of emotional abuse were deemed insufficient for this study. The new emotional abuse by coaches' survey (EACS) was formed from items of three existing measures of emotional abuse; the Coach-Athlete Relationship Emotional Maltreatment Scale [CAREMS (48), for the prior usage among athletes in the USA, see (49)], the Sport Emotional Response Questionnaire [SER-Q (50), for

the prior usage among elite athletes see (51)], and the Controlling Coach Behaviors Scale [CCBS (52), for the prior usage among Icelandic athletes of various disciplines see (53)]. Three items were acquired from each of these surveys. Four items were formed by combining items from both CAREMS and SER-Q. Additionally, three items were added by the authors: "My coach hits or throws things in front of me (e.g., hits the wall) when angry, My coach leaves me intentionally outside the team or group (e.g., makes me train on my own) and My coach criticizes me (i.e., my appearance, speech or personality)." The same items were used for both experienced and observed emotional abuse, however for the latter purpose the items were modified to an observer perspective. For instance, "Your coach leaves another athlete intentionally outside the team or group." Participants were asked to rate their experiences and observations of each item on a 5-point Likert scale from 1 (*Never experienced/observed this*) to 5 (*Always experienced/observed this*).

An exploratory factor analysis was used to test the factor structure of the EACS. The analysis provided a three-factor structure, based on which the following three sum scores were calculated: (1) Verbal abuse (9 items, e.g., "My coach shouts at me in front of others", the Cronbach's $\alpha = .088$), (2) Denial of attention (5 items, e.g., "My coach ignores me if I am ill or injured", the Cronbach's $\alpha = .078$) and (3) Physical abuse [3 items, e.g., "My coach hits or throws things in front of me (e.g., hits the wall) when angry" the Cronbach's $\alpha = .074$]. The Kaiser-Meyer-Olkin measure was .95 and Bartlett's test of sphericity was statistically significant. Thus, new factors (from sum scores) were created based on the factor analysis. In addition, a total EACS sum score of 17 items was calculated (Cronbach's $\alpha = .092$).

As for the observed emotional abuse (OEACS), an exploratory factor analysis provided a two-factor structure with the Kaiser-Meyer-Olkin measure of .95 and a statistically significant Bartlett's test of sphericity. Based on the factor structure, two sum scores were calculated: (1) Observed denial of attention (6 items, e.g., "Your coach ignores another" athlete if they are ill or injured, the Cronbach's $\alpha = .071$) and (2) Observed verbal abuse (11 items, e.g., "Your coach shouts at another athlete in front of you", the Cronbach's $\alpha = .085$). In addition, a total OEACS sum score of 17 items was calculated (the Cronbach's $\alpha = .093$).

2.2.2 Athletic identity

The 10-item Athletic Identity Measurement Scale [AIMS (25); for prior usage among international athletes of multiple sports (54)] scale was used as an athletes' athletic identity measure. Participants gave their responses on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A confirmatory factor was used to test the four-factor structure suggested by past research [e.g., (55)], and the following sum scores were calculated: (1) Social identity (2 items, e.g., "Most of my friends are athletes", the Cronbach's $\alpha = .067$), (2) Self-identity (2 items, e.g., "I consider myself an athlete", the Cronbach's $\alpha = .081$), (3) Negative affectivity (2 items, e.g., "I feel bad about myself when I do poorly in sport", the Cronbach's $\alpha = .060$), and (4) Exclusivity (3 items, e.g., "Sport is the only important thing in my life", the Cronbach's $\alpha = .080$).

TABLE 2 Means (M) and standard deviation (SD) of emotional abuse, athletic identity and disclosure.

Variables	No groups	Gender (M) (SD)	Age (M) (SD)	Level of sport (M) (SD)
Experienced emotional abuse	M = 1.36, SD = 0.56	Female: 1.37 0.52 Male: 1.29 0.46 Other: 1.80 1.04	12–17: 1.45 0.55 18–30: 1.39 0.53 31–40: 1.25 0.43 41–60: 1.22 0.42 61–80: 1.19 0.35	International: 1.48 0.63 National: 1.41 0.52 Regional: 1.35 0.52 Active: 1.27 0.50 Regular: 1.20 0.39
Observed emotional abuse	M = 1.37, SD = 0.56	Female: 1.40 0.57 Male: 1.31 0.52 Other: 1.86 0.80	12–17: 1.43 0.56 18–29: 1.42 0.58 30–39: 1.35 0.63 40–59: 1.25 0.46 60–80: 1.17 0.34	International: 1.57 0.72 National: 1.41 0.54 Regional: 1.38 0.56 Active: 1.30 0.54 Regular: 1.21 0.42
Athletic identity	M = 3.26, SD = 0.78	Female: 3.36 0.79 Male: 3.07 0.73 Other: 3.14 0.81	12–17: 3.69 0.65 18–29: 3.38 0.71 30–39: 2.91 0.72 40–59: 2.76 0.66 60–80: 1.17 0.34	International: 3.70 0.64 National: 3.65 0.62 Regional: 3.29 0.68 Active: 3.02 0.69 Regular: 2.57 0.62
Disclosure	M = 4.09, SD = 1.83	Female: 3.88 1.72 Male: 3.07 0.73 Other: 3.63 0.77	12–17: 3.20 1.79 18–29: 3.54 2.13 30–39: 4.29 2.17 40–59: 4.01 1.35 60–80: 3.67 2.18	International: 4.25 1.76 National: 4.04 1.66 Regional: 4.10 1.85 Active: 3.69 2.11 Regular: 3.47 1.94

Additionally, a total 10-item athletic identity sum score was calculated (the Cronbach's $\alpha = 0.86$).

2.2.3 Disclosure of emotional abuse

Athletes' disclosure of subjectively experienced or observed emotional abuse was measured by one question: "Did you tell someone about the behavior you experienced or observed?" Participants were able to choose from the following responses: "A coach, Teammate or training partner, Another friend, My parent/parents, Another adult, Someone else, I did not tell anyone." The item was deemed as the lowest threshold of disclosure of emotionally abusive coaching practices by the study researchers.

2.2.4 Data analysis

Quantitative data analysis was conducted using SPSS version 27. Pearson's correlation analyses were run between the study variables to understand their associations. To compare results between demographic groups One-Way ANOVAs were conducted and where parametric assumptions could not be met, Kruskal-Wallis test was applied. To determine effect sizes, linear regression analyses were carried out between the variables. Assumptions for linear regression were met prior analysis (i.e., normal data distribution, mean distribution error is 0 and error variance is constant). Lastly, a mediation analysis was completed based on the results of the initial correlation and regression analyses.

3 Results

3.1 Descriptive results

The participants' average rate of experienced emotional abuse was $M = 1.36$ ($SD = 0.56$), and for observed emotional abuse it was $M = 1.37$ ($SD = 0.53$; Table 2). The participants' average score for athletic identity was $M = 3.26$ ($SD = .56$). Regarding disclosure of emotional abuse by coaches, 28.8% of the participants had

told a parent/guardian. 18.9% told a teammate, 17.3% told a friend, 9% disclosed to another adult and 6.9% had told a coach about the abuse. 19.1% of the participants had not told anyone about the experienced emotional abuse.

It appeared that the participants observed slightly more emotional abuse, than what they indicated experiencing $\chi^2(3) = 485.45$, $p < .001$. Both female participants and those identifying as other genders reported more instances of experienced $\chi^2(3) = 23.58$, $p < .001$ and observed emotional abuse $\chi^2(3) = 23.33$, $p < .001$, than male participants. However, the other genders had a low representation in the sample, and the result for this group was not significant. The results also revealed that athletes competing at national and international levels reported highest rates of experienced $\chi^2(6) = 109.82$, $p < .001$, and observed emotional abuse $\chi^2(6) = 118.39$, $p < .001$ in comparison to other levels of sports. Additionally, participants within the peak age range for top-level athletes displayed high instances of experienced emotional abuse. Children (aged 12–17) were the group most subjected to witnessing $F(4, 1,994) = 8.91$, $p < .001$, and experiencing emotional abuse $F(4, 1,943) = 1.86$, $p < .001$, in comparison to other age groups.

The findings revealed that the participants, overall, exhibited salient levels of athletic identity, with children $F(6, 705) = 49.15$, $p < .001$, women $F(3, 2,505) = 29.05$, $p < .001$ and athletes at the international level showing the most salient athletic identities $F(6, 2,515) = 181.06$, $p < .001$. In terms of disclosure of emotional abuse, athletes generally were willing to report such incidents. International-level athletes, in particular, had the highest disclosure rates ($F(6, 1,099) = 2.92$, $p < .001$). Children disclosed emotional abuse the least $F(6, 1,097) = 4.72$, $p < .001$. On the other hand, athletes in the 30–39 age bracket were the most disclosing group. Women disclosed the abuse the most in comparison to men and other genders $F(3, 1,101) = 19.54$, $p < .001$. We did not report the data for equity-deserving groups, as the participation from these communities was low and did not reach statistical significance.

3.2 Relationship between athletic identity and emotional abuse

There was a small but significant positive correlation between experienced emotional abuse and athletic identity ($r=.18, p<.001$), as well as between observed emotional abuse and athletic identity ($r=.13, p<.001$). As shown in Table 3, all dimensions of athletic identity were statistically significantly correlated with all aspects of both experienced and observed emotional abuse.

The results of the linear regression analysis further indicated that that athletic identity was a significant predictor of experienced emotional abuse [$F(1, 2,011)=66.34, p<.001, B=0.18, p<.001$]; the model explained 3.1% of the variance of the experienced emotional abuse. Athletic identity was also a significant predictor of the observed emotional abuse [$F(1, 1,960)=34.49, p<.001, B=0.13, p<.001$]; the model explained 1.7% of the variance. In other words, athletic identity influenced experienced and observed emotional abuse, by increasing the prevalence of the abuse.

3.3 Relationship between athletic identity, emotional abuse and disclosure

A low but significant negative correlation was found between experienced emotional abuse and disclosure (of emotional abuse by coaches) ($r=-.10, p<.001$), and between observed emotional abuse by coaches and disclosure ($r=-.08, p<.002$). As shown in Table 3, the sub-dimensions of both experienced and observed emotional abuse were positively related to the sub-dimensions of athletic identity, but negatively to disclosure.

The results of a linear regression analysis, summarized in Figure 1, indicated that experienced emotional abuse explained 10% of the variance and that it was a significant predictor of disclosure $F(1, 1,959)=11.18, p<.001, B=-.07, p<.001$. A linear regression between observed emotional abuse and disclosure indicated that the abuse explained 0.9% of the variance and that the model was a significant predictor of disclosure $F(1, 1,042)=15.74, B=-.07, p<.002$. Experienced and observed emotional abuse significantly influenced disclosure, the more emotional abuse athletes experienced and observed, the less likely they were to disclose it.

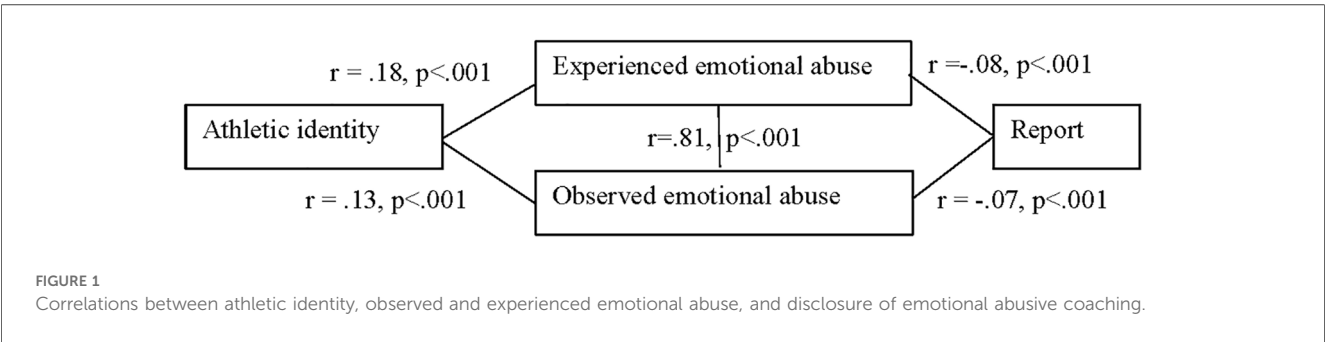
No significant correlations or regressions were found between athletic identity and disclosure. As seen in Figure 1 athletic identity still had an indirect effect on disclosure through emotional abuse. However, analysis of the sub-dimensions of athletic identity revealed a significant negative correlation between self-identity and disclosure $r=-0.30, p<.02$. Self-identity predicted disclosure by reducing the likelihood of disclosure rates.

A mediation analysis was conducted to explore whether the sub-dimension athletic identity, self-identity, had an influence on the relationship between experienced emotional abuse and athletic identity. In other words, we wanted to explore the mediation effect of self-identity on the discussed relationship. The results in Figure 2 showed that a significant total effect existed between experienced emotional abuse, and disclosure. Direct effects between variables were significant. A Sobel test was conducted to measure the indirect effect $z=-3.63, SE=0.03, p=.001$. The indirect point effect was 0.12. It was concluded that a partial mediation occurred between experienced emotional abuse and disclosure via self-identity. Mediation analysis was not conducted between self-identity, observed emotional abuse and disclosure because the total effect was non-significant.

TABLE 3 Associations of emotional abuse with athletic identity.

Emotional abuse variables	Types of emotional abuse	Social identity	Self-identity	Negative effect	Exclusivity	Disclosure
Experienced emotional abuse	Denial of attention	.15*	.09*	.16*	.14*	-.12*
	Verbal abuse	.17*	.07*	.12*	.25*	-.09*
	Physical abuse	.18*	.08*	.10*	.13*	-.06*
Observed emotional abuse	Denial of attention	.16*	.07*	.12*	.12*	-.12*
	Verbal abuse	.13*	.04*	.10*	.08*	-.11*

*Correlation is significant at the level of $p<.001$.



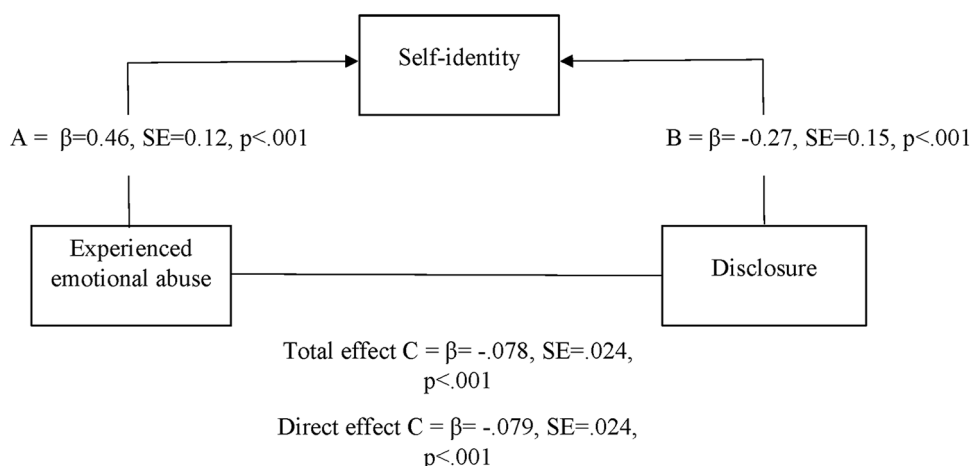


FIGURE 2
Mediation analysis of self-identity, experienced emotional abuse and disclosure.

4 Discussion

The study's aim was to ascertain correlations between experienced and observed emotional abuse, athletic identity, and disclosure of emotionally abusive coaching behaviors. The current study is the first to our knowledge to present empirical data on these relationships. First, the initial study results revealed that athletes reported fewer instances and observations of emotional abuse compared to the findings of prior studies [e.g., (56)]. However, it is important to acknowledge that, in the current study, emotional abuse was evaluated using a continuous scale, which might influence the reporting outcomes. Furthermore, participants were found to exhibit salient athletic identities. In contrast to initial expectations, the amount of disclosure of emotional abuse was greater than anticipated, given past research indicating athletes' reluctance to disclose instances of abuse (37).

Second, in-between group research results reaffirmed prior findings that elite athletes experience and observe the most emotional abuse from coaches in comparison to the other levels of sport participation [e.g., (57)]. Female and other gender (e.g., non-binary) athletes reported more emotional abuse than men. While research shows women to be more at risk of sexual abuse and harassment and men of physical abuse [e.g., (9)], emotional abuse shows varying results or no clear gender difference (18, 58). Recent research highlights the vulnerability of sexual and gender minorities to abusive coaching (11, 58). However, the present study suggests that women might be more vulnerable to emotional abuse by coaches.

Moreover, the study unveiled that children were notably susceptible to emotional abuse from coaches when contrasted with other age demographics. This finding aligns with broader research on child abuse within familial and educational settings [e.g., (47)], further emphasizing the vulnerability of children. Children were also the least likely to disclose emotional abuse. In contrast, adults aged 30–39, typically aligning with post-retirement from elite sports, were more likely to disclose emotional abuse. This may be attributed to a diminished athletic identity and a broader sense of self that

develops after leaving the competitive sports environment, which could contribute to an increased willingness to discuss abusive experiences (24). In contrast to adults who showed low athletic identities, children had the most salient athletic identities. The findings call attention to the need for research to focus on children within sports contexts and emphasize the importance of educating young athletes about emotional abuse.

Third, our research indicated that a salient athletic identity was associated with experienced emotional abuse by coach. Thus, a salient athletic identity could serve as a risk factor, exposing athletes to emotionally abusive coaching practices. Previous studies indicate that coaches' emotionally abusive actions could be driven by expressive issues, such as poor communication and social skills and instrumental reasons aiming to improve athlete performance (60). These behaviors are prevalent in competitive sports where athletes prioritize success (61, 62). In line, numerous studies indicate that sports culture tends to prioritize athletic performance and success over athletes' physical and psychological wellbeing (18, 63). This culture is embraced by coaches, athletes, and most importantly sport organizations on an international scale (13, 36). The danger with the culture of "winning at all costs" is that it can be used to justify abusive coaching practices, as they may be argued as necessary means for achieving success (13, 64).

Fourth, the results revealed that salient athletic identity was associated with observed emotional abuse. Consequently, emotional abuse is often experienced by more than one athlete at a time and in public spaces with bystanders—individuals not directly involved in either perpetrating or receiving the abuse but who possess the capacity to intervene in these situations—contributing to the public shaming and humiliation of the survivor (5, 65). For instance, coaches have been seen demeaning athletes about their physique in front of others as a misguided form of motivation (21). While it is important for athletes to disclose abusive behaviors, many are deterred by the fear of backlash and pressure to conform to sporting norms (46). Promoting bystander intervention becomes essential in creating a safe environment in sports as it increases the likelihood of investigating and sanctioning perpetrators of abuse (45, 46).

Lastly, the findings showed that both salient athletic identity and emotional abuse negatively predicted athletes' disclosure of emotionally abusive coaching practices. The results suggest that a salient athletic identity decreases the likelihood of disclosure of emotional abuse. More precisely, the results of the mediation analysis revealed that the aspect of athletes' athletic identity influencing disclosure of emotional abuse by coaches was self-identity. Self-identity refers to an athlete's sense of self (value and worth) in the athlete role (25, 26). An athlete with a strong self-identity is likely to interpret situations in terms of their impact on their athletic performance, as most athletes judge their value, self-worth and self-esteem through their role of an athlete (25, 36). In this sense, athletes with a strong athletic identity, and particularly self-identity, who are deeply committed to their athletic success and team affiliation, may overlook the harmful aspects of emotional abuse by a coach if they perceive the abuse as means to achieve their performance goals in sport and as a necessary part of the athlete experience. This interpretation gains further support from previous findings of sport ethic norms. Studies indicate that athletes who exhibit strong adherence to the sports ethic are more likely to experience abuse within the athletic context (23).

4.1 Strengths, limitations and future directions

The novelty of the present study lies in that it is the first research that offers insights into the relationships between emotional abuse, athletic identity and disclosure of emotional abuse. The study explored experienced and observed emotional abuse and included children in the participant group. Both aspects are rarely included in abuse research in sports (33). Furthermore, the data sample size is strong for sport psychology research, particularly from a small population country like Finland.

However, the study's broad age range of participants posed challenges in identifying whether the older individuals were active or retired athletes.

Regarding statistical analyses, the regression analyses the models explained only a small percentage of variance (0%–2%). While regression analyses with low R-squared values are acceptable, it indicates that the regression model scarcely fits our data. This could be due to greater unexplainable variation in the data and perhaps other factors affecting the associations between emotional abuse, athletic identity and disclosure. Factors influencing this include individual characteristics like limited sociability and mood states (40).

It should be noted that the reason why emotional abuse, athletic identity and disclosure are associated remains speculative, as the cross-sectional data does not definitively establish causality. Future research should address the questions of how and why the study variables are related by using qualitative research. Furthermore, we want to acknowledge that while this study concentrated on emotional abuse within the athlete-coach relationship abuse also occurs within other relationships (12, 57). Future research should investigate abuse in various sports relationships beyond the coach-athlete dynamic. The insights of coaches on this subject are valuable as they are directly affected, yet often overlooked, in research that predominantly focuses on athletes' experiences (13). Similarly, the perspectives of children

and equity-deserving groups are underrepresented in sports research, and their viewpoints are critical to a comprehensive understanding of emotional abuse in sports (1, 33). Diversifying research to encompass these different perspectives is essential (57).

4.2 Practical implications

Based on this study's results, future initiatives aimed at preventing and reducing abuse in sports should hence forward acknowledge the role of athletic identity in their safeguarding processes. Athletes must be able to disclose abuse without fear of repercussions, highlighting the need for a safe and empowering environment (40, 66). In this respect, encouraging athletes to develop well-rounded identities that encompass of various life areas, not solely their sport, is key. While sports can still be part of their identity, it should not completely define them. Consequently, a holistic approach to athlete development has been associated with improved performance and increased enjoyment and motivation in athletes [e.g., (27)]. Athletes are unfortunately often discouraged from expanding their identities, due to concerns that anything but a salient athletic identity development may detract athletes from success (27). Coaches in particular often view pursuits outside sports as distractions and may consequently limit athletes' involvement with friends and family (67). This is particularly significant for children, who are more susceptible to the pressures exerted by adults and authority figures to conform to sport ethic norms (23, 35). It is imperative, therefore, that coaches, support staff, and sports organizations facilitate and support the holistic development of athletes' identities (26). To this end, avenues of education such as workshops, seminars, and curated educational materials serve as indispensable tools.

Furthermore, sports organizations must cultivate a culture of trust and accountability surrounding reporting channels. As demonstrated by the results, coming forward with experiences or concerns of abuse is not a straightforward process for athletes. To encourage athletes to report their experiences and observations of abuse it is vital that sport organizations foster a safe environment. Athletes should feel empowered to come forward with their concerns, knowing that their reports will be taken seriously and addressed promptly. To this end researchers have for long advocated for independent reporting, investigation and sanctioning channels for athletes (29, 37). Establishing clear communication channels and upholding a transparent approach during the reporting procedure is crucial (66). Additionally, survivors should be consistently kept informed and provided with timely updates about their case, providing the survivors with a sense of control and assurance (37, 66). Survivors should also be provided with opportunities for delivering feedback and dialogue about the disclosure process, ensuring any concerns or questions they have are adequately addressed and their voices heard throughout the process (37, 66).

5 Conclusion

This research extends the growing body of work examining factors that contribute to emotional abuse in the athlete-coach relationship.

This study aimed to show the intricate and challenging nature of emotional abuse within sports and to illustrate the harmful nature of a salient athletic identity. In summary, the study findings highlight salient athletic identity as a risk factor that can expose athletes to emotional abuse by coaches, both experienced and observed. We particularly want to emphasize the vulnerability of children to emotional abuse by coaches. In this study, athletic identity is also presented as a barrier that prevents disclosure of emotionally abusive coaching practices. Ultimately, by recognizing and addressing the complex interplay between athletic identity, emotional abuse, and disclosure of this abuse in sports, we can work towards creating safer and more inclusive sporting where children's and human rights are upheld, and athletes feel empowered to speak out against abuse without fear of repercussions. The responsibility of this lies with all adults in the sport sector.

Data availability statement

The presented dataset in this article is not readily available because all members of the research group need to accept any requests to data. Access can be provided upon request and approval by the researchers. Requests to access the datasets should be directed to jatta.muhonen@helsinki.fi.

Ethics statement

This study involved humans and therefore ethical approval was obtained from the University of Helsinki's ethical review board in the humanities and social and behavioral sciences. The study was conducted in accordance with the local legislation and institutional requirements. Full informed consent was obtained from all participants prior to participation. Under-aged participants' parents were informed of the study and its purpose prior their children's participation.

Author contributions

JM: Conceptualization, Data curation, Formal Analysis, Funding acquisition, Methodology, Resources, Visualization,

Writing – original draft, Writing – review & editing, Project administration. AS: Conceptualization, Writing – review & editing, Supervision, Visualization. MK: Funding acquisition, Methodology, Resources, Supervision, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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The Safe Sport Allies bystander training: developing a multi-layered program for youth sport participants and their coaches to prevent harassment and abuse in local sport clubs

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Harassment and abuse represent a pervasive and critical problem in sport with far-reaching consequences. Survivors' testimonials underscore the profound and enduring impact of these experiences at individual, interpersonal, organizational and community level. Many of their stories reveal painful inaction from responsible adults in the sport organization, aggravating the harm. Other contributing factors to the harm inflicted include a culture of silence, lack of knowledge and understanding of what constitutes abuse, unawareness of reporting and supporting mechanisms, and fear of potential consequences. While effective bystander interventions have been developed outside the sport context, particularly targeting students in higher education, such initiatives have yet to be extensively adapted and assessed within the sport context. To address this gap, the Safe Sport Allies Erasmus+ collaborative partnership relied on the intervention mapping approach as a guiding framework to systematically develop a bystander training program (i.e., Safe Sport Allies) to train youth sport participants and youth sport coaches to act as effective bystanders. The current paper describes the comprehensive development process and provides an overview of implementation and evaluation possibilities. Throughout the paper, it is explained how each step of the Intervention Mapping approach shaped the Safe Sport Allies bystander training program. The program development, and the developed plans for implementation and evaluation are presented, shedding light on challenges encountered. The bystander training program developed in this paper and the implementation and evaluation plans can serve as an outline to build future interventions within this critical domain of safeguarding in sport.

KEYWORDS

prevention, education, harassment, abuse, sport, bystander, intervention mapping, efficacy

1 Introduction

1.1 Background

Violence against children is a widespread problem and an unfortunate daily reality for millions of children around the world (Pinhiero, 2006; Hillis et al., 2016), also in sport (Hartill et al., 2023). Providing a uniform term and/or definition to conceptualize violence against children is difficult due to the varied terminology that is being used within literature, policy, and practice. The United Nations Convention on the Rights of the Child defines violence against children as “all forms of physical or mental violence, injury or abuse, neglect or negligent treatment, maltreatment or exploitation, including sexual abuse, while in the care of parent (s), legal guardian(s) or any other person who has the care of the child” (United Nations, 1989, art. 19). Additionally, and specifically related to sport, different conceptual frameworks define maltreatment or violence against children participating in organized sport (Stirling, 2009; Mountjoy et al., 2015, 2016; Fortier et al., 2020). The 2016 IOC consensus statement specifically refers to harassment and abuse as an umbrella terminology for all the above described forms of violence (Mountjoy et al., 2016). Therefore, throughout this article when referring to violence, abuse, maltreatment, etc., the terminology of harassment and abuse is used. Harassment and abuse constitutes out four types: psychological (e.g., threatening, shouting, or humiliating a youth sport participant), physical (e.g., shaking, punching, or hitting a youth sport participant), sexual (contact and non-contact; e.g., sexting with, masturbating with, or showing genitals to a youth sport participant), and deprivation or neglect (e.g., failing to provide sport safety equipment, refusing providing necessary medical care) (Krug et al., 2002; Mountjoy et al., 2016; Fortier et al., 2020).

Prevalence estimates of harassment and abuse in sport vary strongly (Vertommen and Parent, 2020), with recent research indicating that up to 80% of youth sport participants report at least one negative experience that could be defined as harassment and abuse in sport before the age of 18 (Parent and Vaillancourt-Morel, 2020; Willson et al., 2021; Hartill et al., 2023). Across these prevalence studies and other studies, the form of harassment and abuse that is being reported the most by youth sport participants is psychological abuse (Alexander et al., 2011; Parent and Vaillancourt-Morel, 2020; Willson et al., 2021; Hartill et al., 2023). These findings highlight that, although participation in organized sport is generally assumed to be accompanied by many benefits for the physical and psychological health of children (Biddle, 2016), and that most youth sport participants enjoy doing sport (Alexander et al., 2011), exposure to harassment and abuse in this context can jeopardize these benefits (Krug et al., 2002). Experiencing childhood harassment and abuse, either outside (Petrucelli et al., 2019) or inside of sport (Fasting et al., 2002; Krug et al., 2002; Stafford et al., 2013; Mountjoy et al., 2016; Parent and Fortier, 2018; Wilinsky and McCabe, 2020; Parent et al., 2021; Schmidt et al., 2022) is linked to poorer physical health, diminished well-being, psychological disturbances, decreased self-esteem, and social consequences. Hundreds of testimonials from (former) youth sport participants during the last decade have demonstrated similar outcomes in youth sport participants, underlining the high burden and many different adverse consequences (e.g., Fasting et al., 2002; Krug et al., 2002; Stafford et al., 2013; Mountjoy et al., 2016; Parent and Fortier, 2018; Wilinsky and McCabe,

2020; Parent et al., 2021; Schmidt et al., 2022). These negative outcomes are even greater when the child is of young age and when others do not intervene (Tillman et al., 2010; Cunningham and Clark, 2023).

Such high prevalence estimates, found consistently across countries, sport levels and disciplines, require a strategic approach to prevention in the sport sector. One avenue for the prevention of harassment and abuse is focusing on stimulating positive bystander behaviors. As such, the current study aims at systematically developing a positive bystander training program to prevent all forms of harassment and abuse in sport.

Bystanders are people who are witnesses of worrying incidents or situations, including suspected situations of harassment and abuse (Banyard et al., 2016). Bystanders are in a position where they can intervene and/or respond in and/or end situations of harassment and abuse. By doing so, they may limit the impact of violence against children. Bystander behaviors encompass both positive and negative behaviors, as well as reactive and proactive behaviors (McMahon and Banyard, 2012). Positive reactive bystander behaviors include helping someone during an incident of harassment and abuse, gaining advice when having suspicions, or reporting suspicions to the necessary authorities. Positive proactive behaviors include such as following educational programs on harassment and abuse. Unfortunately, bystanders can also perform negative bystander behaviors by doing nothing or looking away (i.e., reactive), joining in with the perpetrator (i.e., reactive), or spreading rape myths (i.e., proactive) indicating that negative bystanders behaviors are not only passive behaviors (Banyard et al., 2016). Such negative bystander behaviors are often raised in testimonials of (former) youth sport participants. Too often, bystanders did not react (adequately) to signs or incidents of harassment and abuse (Cunningham and Clark, 2023). When engaging in negative bystander behaviors, for instance, bystanders contribute to significant adverse consequences including potentially longer duration of abuse, reduced likelihood of disclosure and recovery, and reduced/hindered access to both physical and psychological help for individuals experiencing harassment and abuse (Tillman et al., 2010; Cunningham and Clark, 2023).

Given that bystanders when engaging in positive bystander behaviors can prevent or stop harassment and abuse, it is crucially to guide and support bystanders in how to properly act before, during and after incidents of harassment and abuse. Darley and Latané (1968) highlight that in order for a person to perform positive instead of negative bystander behavior, they need to notice signs of harassment and abuse, label the incident as a problem, notice that their help is needed, and take the responsibility to take action or have the skills to do so. While these steps offer insights into the requirements for performing positive bystander behaviors, it is crucial to understand the key behavioral determinants underlying these behaviors in order to stimulate them to foster positive bystander behavior. The Reasoned Action Approach, RAA (Fishbein and Ajzen, 2010), is a theoretical model that says that people's intentions towards a specific behavior are caused by their attitudes, norms, and beliefs regarding the behavior. More specifically, and related to positive bystander behavior, following the RAA it can be stated that the intention to perform positive bystander behaviors is determined by (A) the attitudes one has toward bystander behaviors, (B) the beliefs one has about whether relevant others approve of one engaging in bystander behavior (i.e., perceived norms), and (C) the beliefs one has about the fact that performing

bystander behaviors is within their control or potential (i.e., perceived behavioral control) (Fishbein and Ajzen, 2010). Negative bystander attitudes, norms and perceived behavioral control, and a lack of knowledge, encompassing a culture of silence or tolerance for harassment and abuse (i.e., norms), lack of knowledge and understanding of what constitutes abuse, unawareness of reporting and supporting mechanisms, and fear of potential consequences are extensively described in the literature (Tillman et al., 2010; Banyard, 2011; McElvaney, 2019; Roberts et al., 2020; Cunnington and Clark, 2023) as factors that can explain the negative bystander behaviors (Tillman et al., 2010; Cunnington and Clark, 2023). All of this highlights the importance to improve and shift attitudes and norms, so that positive bystander behaviors are valued more and that it becomes the social norm (Verhelle et al., 2022).

With regard to the prevention of harassment and abuse through fostering positive bystander behaviors, most work originates from the US, targets high school students and has focused on the prevention of sexual abuse (Foubert et al., 2010; Miller et al., 2012; Katz and Moore, 2013; Coker et al., 2017; Mujal et al., 2019). A meta-analysis of Katz and Moore (2013) focused on evaluating the effectiveness of bystander programs for the prevention of sexual assault in college communities. The authors highlighted that those students following a bystander education program showed an increase in bystander efficacy, bystander behaviors, intentions to help others, and less rape myth acceptance and rape proclivity. The systematic review of Mujal et al. (2019) found similar results when evaluating sexual violence bystander intervention programs. They concluded that the use of in-person bystander interventions directed at college students can have positive effects on their bystander attitudes and self-reported bystander behaviors. Specifically, the findings underscored that the majority of the included studies consistently demonstrated favorable impact of bystander interventions on bystander attitudes, bystander efficacy, willingness to help, confidence to help, and a decrease in rape myth acceptance. Though both reviews shed a positive light on the use of bystander intervention in the prevention of harassment and abuse, both indicate specific limitations which focus on the limited number of available studies, limited statistical power, questionable practical effects of the attitudinal changes within the studies, and they highlight the need for longitudinal evaluations (Katz and Moore, 2013; Mujal et al., 2019).

Looking at specific programs, an example of a bystander program is the Green Dot violence prevention program which is a theory-based bystander program training high school students to recognize situations of violence (Coker et al., 2017). The program has been developed to reduce sexual violence and related forms of interpersonal violence by promoting positive bystander behaviors among high school students. Methods used in the program were the popular opinion leader strategy and individual feedback. Implementation and evaluation of the program, using a randomized controlled trial, showed a long-term significant decrease in sexual violence perpetration and victimization. Though the program focuses on bystander behaviors, the outcomes of this study did not focus on bystander behaviors, rather on the presence of violence perpetration and victimization. Additionally, using a randomized controlled trial for a complex phenomenon as changing behavioral determinants might not be the most feasible option as it is questionable if the results are representative for the real-life context that is more complex compared to an experimental set-up. Another program that has been

developed specifically for college women, is a rape awareness program called the Women's Program (Foubert et al., 2010). This program has been designed to empower college women to engage in positive bystander behaviors in potential rape situations by providing them with theory and discussions on how to help a friend during and after dangerous situations. The results of an experimental study showed a decrease in rape myths acceptance, an increase in confidence in ability to intervene, and perceived willingness to help. Nevertheless, an important limitation of this study is that the observed attitudinal changes are not assessed for their long-term effects, indicated that it is not sure if these changes remain present and that the participants will continue to perform positive bystander behaviors. A third program within a high school context that has been studied extensively is the Coaching Boys Into Men (CBIM) program (Miller et al., 2012). This program has been set up as an easy-to-implement program, implemented by athletic coaches in high school contexts and focused on altering youth sport participants' norms about dating violence. Athletic coaches were trained to facilitate brief team discussions during their practice by using predefined conversation topics related to violence prevention. These discussions are used with the intention to improve youth sport participants' attitudes and behaviors regarding dating violence (Miller et al., 2012). The results of a randomized controlled trial showed an increase in recognition of abusive behaviors and intentions to intervene, and an increase in positive bystander behaviors (Miller et al., 2012). These interventions adapt to fostering positive bystander behaviors among college students (Foubert et al., 2010; Coker et al., 2017) and high school athletic coaches (Miller et al., 2012) show promising results in terms of preventing sexual or dating violence. Yet, up until today no interventions have been developed that can be implemented at the level of the sport club hereby targeting positive bystander behaviors in relation to all four types of harassment and abuse. To our knowledge, only two bystander interventions have been implemented and evaluated within the specific context of the sport club, both focusing on sexual violence (Schäfer-Pels et al., 2023). Verhelle et al. (2024) developed a theory-driven bystander intervention, called All Aboard, specifically targeting youth sport coaches in Flanders. The main aim of the All Aboard intervention was to stimulate positive bystander behaviors among youth sport coaches in relation to adequately detecting, assessing, and responding to signs of sexual harassment and abuse. Different strategies were used including theory, watching testimonials and discussions. Results showed that after the intervention, youth sport coaches showed more positive attitudes related to positive bystander behaviors (Verhelle et al., 2024). The main limitation of this study was the limited sample size, single focus on sexual harassment and abuse, focus on only one target group, and high drop-out rates. Schäfer-Pels et al. (2023) developed an intervention, called Qualifizierungsmodul "Gegen sexualisierte Gewalt im Sport" or Module Against Sexualized Violence in Sport, to act against sexual violence in sport by focusing on raising awareness, prevention and handling cases of potential harassment and abuse. The module consisted of a sensitizing workshop focusing on knowledge of sexual violence, personal attitudes towards the prevention of sexual violence, intentions to act against sexual violence, and preventive measures against sexual violence. The methods used included awareness raising and discussions. The module was available for coaches, youth sport participants, board members, supervisors of the team, and parents. The results of the study indicated positive short- and long-term effects on attitudes, perceived behavioral control,

intentions to act, and knowledge (Schäfer-Pels et al., 2023). Although the results were promising, and the authors focus on both coaches, youth sport participants, board members, supervisors of the team, and parents, it is not clear what the benefits could be of tailor-made modules.

Both the All Aboard program (Verhelle et al., 2024) and the Module Against Sexualized Violence in Sport (Schäfer-Pels et al., 2023) showed some first promising results in stimulating determinants that are at the basis of positive bystander behaviors to prevent sexual harassment and abuse in sport. These programs can serve as a starting point to build upon to develop more extensive bystander programs that focus on all types of harassment and abuse. Indeed, acknowledging the high prevalence of other non-sexual forms of harassment and abuse and often co-occurring experiences of psychological, physical, sexual harassment and abuse and/or neglect, a broader focus is recommended. Additionally, it is important to acknowledge that everyone in a sport club can be a witness of an incident of harassment and abuse (Banyard et al., 2016). The previous mentioned studies outside (Foubert et al., 2010; Miller et al., 2012; Katz and Moore, 2013; Coker et al., 2017; Mujal et al., 2019) and inside sport (Verhelle et al., 2024) solely focused on one target group. In contrast, the module of Schäfer-Pels et al. (2023), expanded their module to also coaches, parents, and so on. This indicates the need and importance to include different target groups and to develop tailored-made programs to foster positive bystander behaviors within the sport club when focusing on the prevention of harassment and abuse.

1.2 Present study

The objective of the current paper is to describe the theory-driven development of the Safe Sport Allies bystander training program for youth sport participants and youth sport coaches, and to describe future research plans that include the implementation and evaluation of the program. While many people in grassroots sport clubs (e.g., parents, club administrators, referees, ...) can act as positive bystanders, we focus in the current study on youth sport participants and their coaches. The process of developing such interventions is complex and challenging, therefore the Intervention Mapping approach (Bartholomew et al., 1998, 2016) was used. The Intervention Mapping approach serves as a comprehensive guide for the development and planning of health promotion programs, offering a structured framework with distinct and clear steps (Bartholomew et al., 1998). The approach consists of six steps: (1) logic model of the problem, (2) program outcomes and objectives, (3) program design, (4) program production, (5) program implementation plan, and (6) evaluation plan (Bartholomew et al., 2016). In what follows, the different steps of the Intervention Mapping approach will be explained and applied to the development of an intervention to promote positive bystander behaviors among sport participants and sport coaches (i.e., Safe Sport Allies) within the grassroots sport club context.

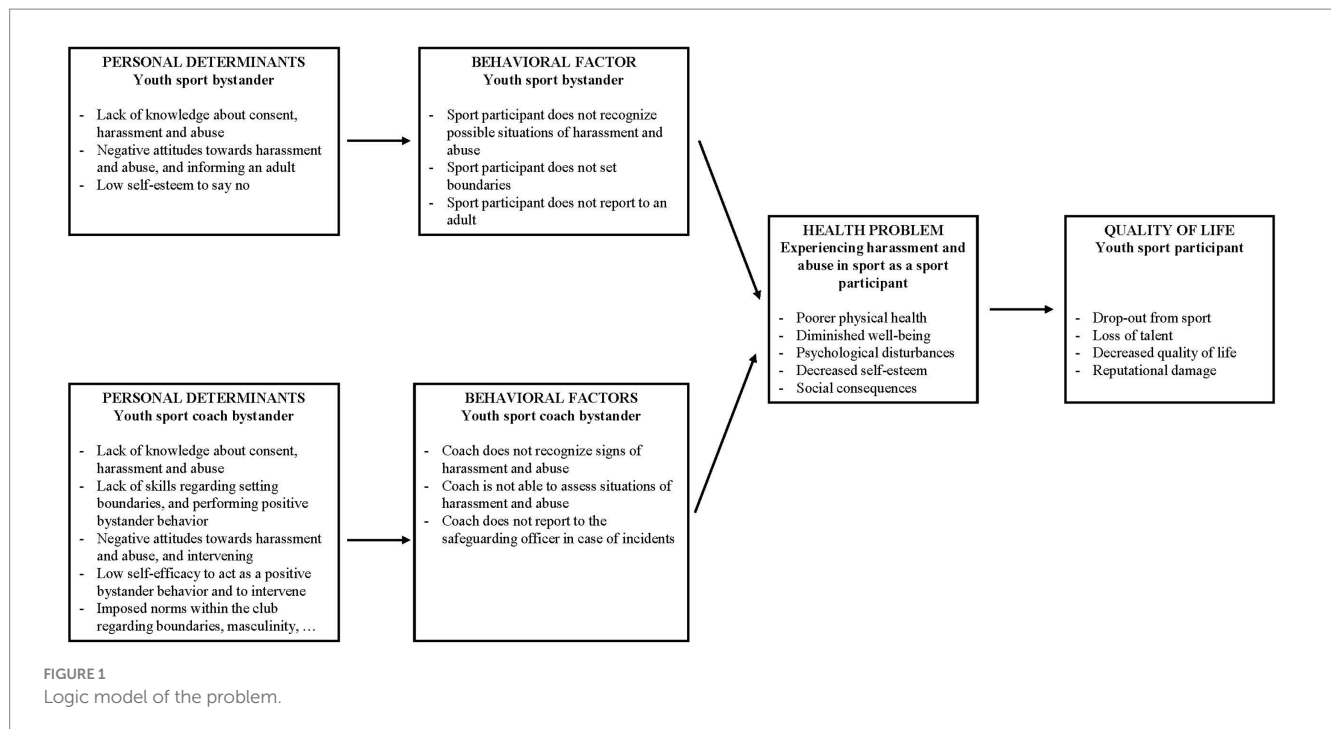
2 Methods

Based on the undeniable issue of harassment and abuse, the discussed bystander programs available outside and inside sport, and how these programs often only target one target group, the Safe Sport

Allies consortium aimed at systematically developing tailor-made bystander training programs for youth sport participants and youth sport coaches to be implemented in local sport clubs. Safe Sport Allies is an international collaborative partnership, co-funded by Erasmus+ (622589-EPP-1-2020-1-BE-SPO-SCP), between two sport organizations (Cyprus Sport Organization, CY; Athletic Club Foundation Bilbao, ES), three institutes of higher education (Thomas More University of Applied Sciences, BE; Open University, NL, Haaga-Helia University of Applied Sciences, FI) and one research center (Mulier Institute, NL), one international child protection agency (Terre des Hommes, RO), one safe sport practice developer (Center Ethics in Sport, BE) and one survivor led organization (De Stilte Verbroken, NL). These organizations have a complementary background, experience, and expertise in safeguarding policies in and outside sport. The objectives of the Safe Sport Allies partnership and project was fourfold: (1) developing bystander interventions for youth sport participants, youth sport coaches, and parents, and developing a policy and implementation trajectory for club administrators, (2) developing a measurement toolkit for the monitoring and evaluation of the interventions, (3) longitudinal testing the effectiveness of the bystander interventions for youth sport participants and coaches, and (4) disseminating the findings and Safe Sport Allies materials. All partners (including the authors of the current paper) within the consortium worked together during the different phases of the project and development, implementation and evaluation of the Safe Sport Allies bystander training program from January 2021 until June 2023. The current paper focuses on how the Intervention Mapping approach was applied to the development of the bystander training program for youth sport participants and youth coaches.

2.1 Step 1 intervention mapping: logic model of the problem

The first step of the Intervention Mapping approach is to establish a *needs assessment* of the health problem by identifying what needs to be addressed and for whom, which results in a logic model of the problem (see Figure 1) (Bartholomew et al., 2016). Based on the literature overview presented in the introduction, the needs assessment focused on the target groups of youth sport participants and youth sport coaches. In addition to this literature review, the partners in the consortium completed a mapping regarding the currently available prevalence studies of harassment and abuse, legal and policy frameworks, and an overview of the current educational, safeguarding and bystander intervention programs available in their country. This mapping resulted in a safe sport comparative analysis in seven countries (Stevens et al., n.d.). Additionally, interviews were carried out with survivors and bystanders to gain more insights into their needs when it comes to safeguarding (Stevens, n.d.). Based on the literature review, country mapping, and the interviews, the needs assessment indicates that the current health problem encompasses youth sport participants' exposure and victimization of harassment and abuse in sport (Krug et al., 2002; Mountjoy et al., 2016; Fortier et al., 2020; Hartill et al., 2023), see Supplementary Table S1. As opposed to other health problems (e.g., smoking, alcohol abuse), the consequences of harassment and abuse felt by the victim are caused by another individual displaying harmful behavior. In this case, the health problem is initiated and/or maintained by perpetrators and/or



bystanders who lack intervening in cases of harassment and abuse. The problem of bystanders not intervening can be related to their lack of noticing signs of harassment and abuse, being unable to judge the signs or incident, not labeling the incident as a problem, not noticing that their help is needed, being in doubt about what to do, not feeling confident to respond, and not taking the responsibility to take action or have the skills to do so (Darley and Latané, 1968; Fenton and Mott, 2018; Spaaij and Schailée, 2019).

Finally, using the results from the needs assessment, Step 1 of the Intervention Mapping approach ends with stating the *program goals*. Based on the health problem of youth sport participants being exposed to harassment and abuse in sport, the many negative consequences this has, and its accompanying environmental risks, the current program goal can be defined as stimulating positive bystander behaviors among youth sport participants and youth sport coaches in grassroots sport clubs. Changes will be measurable at the level of the different individual behavioral determinants that will be touched upon during the different programs (see further).

2.2 Step 2 intervention mapping: program outcomes and objectives, and logic model of change

Step 2 of the Intervention Mapping approach focuses on which determinants need to be changed to improve the health problem (Bartholomew et al., 2016). In this case, the focus in Step 2 lies on determining which behavioral determinants must be changed among youth sport participants and youth sport coaches to stimulate positive bystander behaviors (i.e., behavioral outcome). Therefore, the bystander training programs focuses on stimulating and increasing positive bystander behaviors by targeting key behavioral determinants related to this behavior defined by the reasoned action approach (Fishbein and Ajzen, 2010): (A) the attitudes one has toward bystander

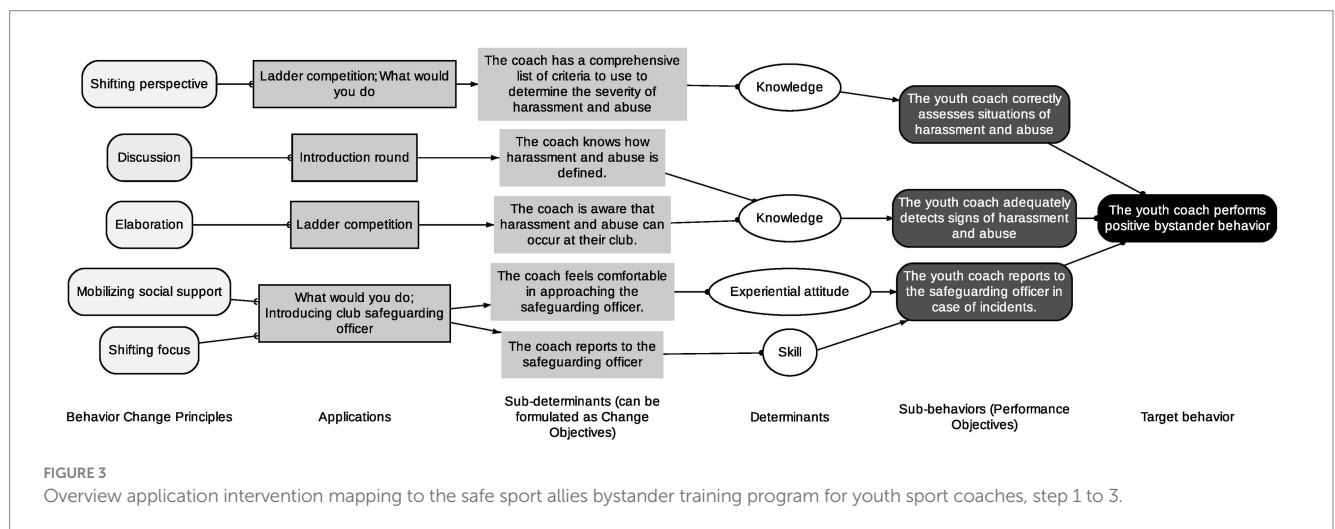
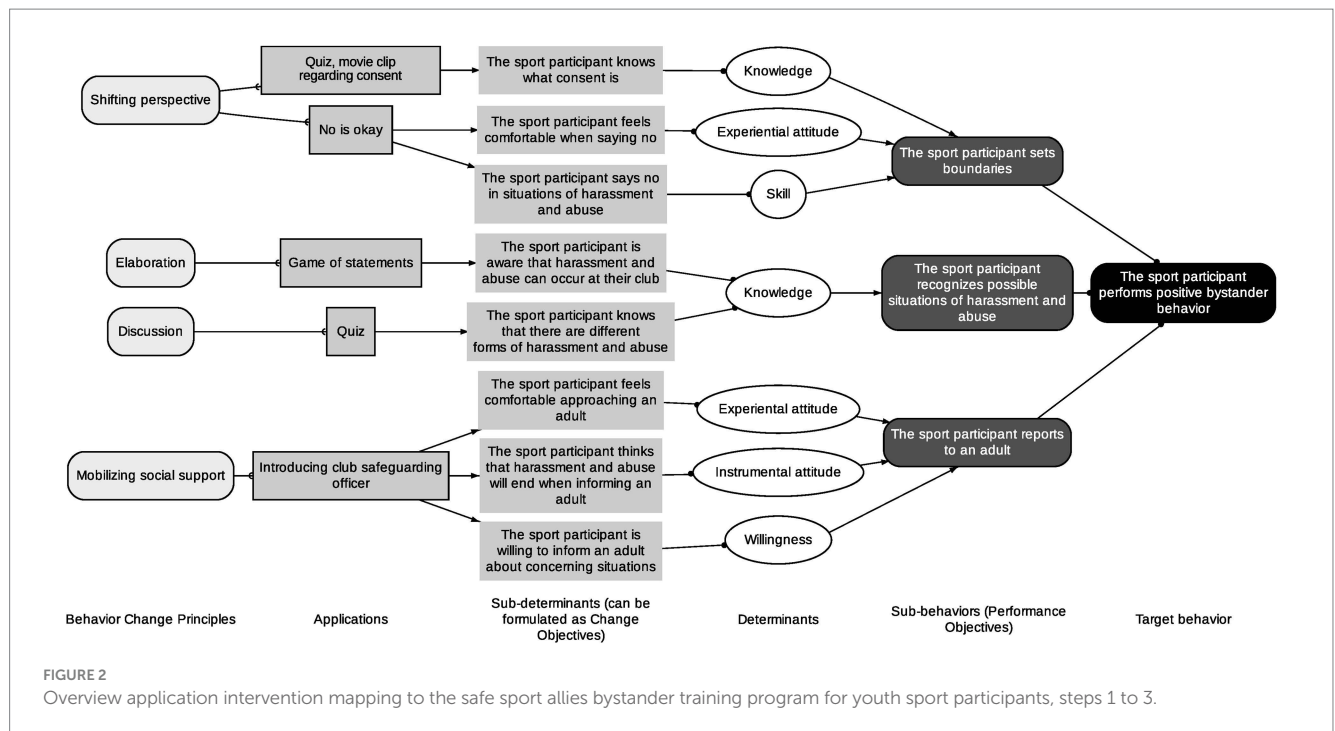
behaviors, (B) the beliefs one has about whether relevant others approve of one engaging in bystander behavior (i.e., perceived norms), and (C) the beliefs one has about the fact that performing bystander behaviors is within their control or potential (i.e., perceived behavioral control) (Fishbein and Ajzen, 2010).

The overall behavioral outcome for each of the different programs and therefore for both target groups is the same, more specifically performing positive bystander behaviors. However, the specific performance objectives of each of the target groups differ. Performance objectives are specified actions and behaviors that must be taken to achieve the behavioral outcome (Bartholomew et al., 2016). Subsequently, all performance objectives are linked to specific change objectives that represent specific behavioral determinants. All details regarding the health problem, performance objectives, and change objectives for each of the target groups are presented in Figures 2, 3 and in Supplementary Table S1.

2.3 Step 3 intervention mapping: program design

Next, the program design was developed which firstly focuses on generating the *intervention themes* (Bartholomew et al., 2016), which for the current intervention was stimulating positive bystander behaviors among youth sport participants and youth sport coaches. In order to develop the program, the mapping (see Step 1 Intervention Mapping) across countries was used to inventory current available bystander programs which could be adapted for the current bystander training programs. Regarding the training programs, subthemes such as setting and respecting boundaries, consent, assessing situations of harassment and abuse, and learning where to report were included.

Secondly, the *change methods* used include discussion, elaboration, shifting perspective, and mobilizing social support (Bartholomew et al., 2016). These methods were chosen as they have been used previously



(Foubert et al., 2010; Miller et al., 2012; Coker et al., 2017; Schäfer-Pels et al., 2023; Verhelle et al., 2024), but also have a theory-based foundation in increasing knowledge, changing attitudes, beliefs, and outcome expectations, changing social norms and social influences which are the main behavioral determinants upon which the training program will focus. In the next step, the different themes and methods were paired with appropriate practical applications. Some examples of practical applications include a quiz, video, introduction safeguarding officer, etc., see Figures 2, 3 and Supplementary Table S1 for all the details.

2.4 Step 4 intervention mapping: program production

The chosen methods and practical applications guided the development process of the *program materials* for the different

bystander training programs. Table 1 provides an overview of all the details of the two bystander training programs. Additionally, detailed information regarding the content of the programs can be found on the project's website www.safesportallies.eu. Because it is well-established that adolescence is an important period (and also opportunity) for youth to develop specific skills, values, attitudes that are needed for their own well-being but also for their social development and social interaction with others later on in life (Bornstein et al., 2012), the bystander training program for *youth sport participants* targets 12- to 14-year-olds. The bystander training program is designed to be implemented in groups of eight to 12 youth sport participants to allow for sufficient peer interactions. The program includes a one-time in-person workshop of 90 min that focuses on learning about setting and respecting boundaries, consent, and where to report (i.e., getting acquainted with the club safeguarding officer).

TABLE 1 Overview bystander training program, aims, and components.

Target group	Bystander training program	AIMS	Components
Youth sport participants (12-14 years)	<ul style="list-style-type: none">- Face-to-face workshop (90 minutes)	<ul style="list-style-type: none">- Learning to set and respect personal boundaries- Learning how to recognize situations of harassment and abuse- Knowing where to report	<ul style="list-style-type: none">- Based in part on 'Child sexual abuse stays offside' (Spanish High Council for Sport, 2018) and 'Sport op jongerenmaat' (Centrum Ethiek in de Sport, 2021)- Exercises that stimulate interaction and discussion- Cases of physical, psychological, and sexual harassment and abuse, and neglect- IOC Consent in Sport video (IOC Athlete 365, n.d.)
Youth sport coaches	<ul style="list-style-type: none">- Face-to-face/online workshop (120 minutes)- Three online booster sessions	<ul style="list-style-type: none">- Learning to recognize signs of harassment and abuse- Learning to assess situations of harassment and abuse- Knowing where to report	<ul style="list-style-type: none">- Exercises that stimulate interaction and discussion- Examples and cases of physical, psychological, and sexual harassment and abuse, and neglect

The bystander training program for youth sport coaches includes a one-time in-person or online (upon request of the sport club) workshop of 120 min and three online booster sessions that follow in the three consecutive weeks after the actual workshop. Based on the experiences of previous research from Verhelle et al. (2024) the bystander training program is designed to be implemented in groups of five to eight youth sport coaches. During the workshop, the youth sport coaches learn to recognize signs of harassment and abuse, and how to assess and react to such situations. Like the intervention for youth sport participants, youth sport coaches got to know the club safeguarding officer. The idea is that the safeguarding officer of the club is invited to the workshop and that they can explain their role, in order that both youth sport participants and youth sport coaches get acquainted with the person and their role. The additional online booster sessions included movie clips (IOC Athlete 365, n.d.; NOC*NSF, n.d.) and a scenario-based exercise (for an example see the Supplementary materials, section 2). These online booster sessions are included because the brief literature review on bystander interventions, from the Safe Sport Allies consortium, highlighted that increasing the 'dosage' of the intervention or program content can enhance positive outcomes, in this case further improving positive bystander behaviors (Stevens, 2022).

2.5 Step 5 intervention mapping: program implementation plan

Step 5 of the Intervention Mapping approach includes the development of the implementation plan to enable the implementation of the Safe Sport Allies bystander training program. The Safe Sport Allies bystander training program is developed to be implemented in grassroots sport clubs.

The implementation plan consists of the following steps: (1) distributing a call for participation using a flyer, (2) signing up of clubs for the whole program or specific modules, and (3) organizing workshops for youth sport participants or coaches.

The youth sport participants bystander training program is developed for 12 to 14-years-olds. The module for youth sport coaches aims at coaches of at least 18 years old with a coaching experience of at least 6 months. No other specific criteria need to be considered when implementing these modules.

2.6 Step 6 intervention mapping: evaluation plan

2.6.1 Research design

The developed evaluation plan of the bystander training programs for youth sport participants and youth sport coaches includes a longitudinal quasi-experimental design. The bystander training program for youth sport participants is developed in such a way that they can be evaluated using pre and post measurements (T0, T1). Because the program for youth sport coaches also includes booster sessions after the in-person or online workshop, the intervention can be longitudinally evaluated by comparing pre-, post-, and follow-up measurements (T0, T1, T2).

2.6.2 Questionnaires

To evaluate the different bystander training programs, it is suggested to use questionnaires that focus on the different key behavioral determinants that the programs try to target upon. For youth sport participants the developed questionnaire that can be administrated consists of four sections (see Table 2 for all details): (1) basic sociodemographic variables, (2) knowledge of harassment and abuse, (3) behavioral determinants such as knowledge, perceived norms, instrumental attitudes, and intentions toward consent, setting and respecting boundaries, and reporting, and (4) a slightly adapted version of the Student Bystander Behavior Scale (Thornberg and Jungert, 2013), and (5) user feedback.

The questionnaire for the evaluation of the bystander training program for youth sport coaches can include an assessment of the (1) basic sociodemographic variables, (2) knowledge of harassment and abuse, (3) Readiness to change scale (Banyard et al., 2009) adapted to the Flemish sport context, (4) behavioral determinants such as youth sport coaches' knowledge, attitudes, perceived behavioral control, intentions, and current behavior (i.e., past behavior and intention) towards consent, setting and respecting boundaries, noticing signs of harassment and abuse, and reporting when concerned, (5) the adapted Student Bystander Behavior Scale (Thornberg and Jungert, 2013) (see Table 3)

2.6.3 Analysis plan

The developed analysis plan for the evaluation of the bystander training programs for youth sport participants and coaches is similar.

For both programs, the main aim is to evaluate the programs by assessing whether the programs result in a positive change regarding the behavioral determinants that influence the intentions and positive bystander behaviors of these target groups. Firstly, descriptive analyses (frequencies, proportions, and means) will be used to analyze the sociodemographic variables of youth sport coaches and youth sport participants, as well as for the youth sport coach coaching related variables (e.g., coaching experience). Exploratory qualitative analyses will be used to analyze the open-ended knowledge questions focusing on the definition and examples of harassment and abuse.

Next, a bystander index will be calculated based on the responses to the statements that focus on the different behavioral determinants that influence positive bystander behavior. For youth sport participants, the statements focus on their knowledge, perceived norms, instrumental attitudes, and intentions towards consent, setting and respecting boundaries, and reporting when concerned. For youth sport coaches, these include statements on their knowledge, attitudes, perceived behavioral control, intentions, and current behavior towards consent, setting and respecting boundaries, noticing signs of harassment and abuse, and reporting. Additionally, for each of the behavioral determinants and objectives of the intervention, a subscale is calculated.

To evaluate the changes over time after having participated in the workshops, general linear models will be used that include the T0 and T1 data for the youth sport participants and coaches and subsequently also including T2 data for the coaches. Similar analyses are conducted for the data from the Readiness to change and Student Bystander Behavior scale. Lastly, descriptive analyses are used for the user feedback from youth sport participants and coaches.

3 Discussion

To our knowledge, while harassment and abuse is a clear problem in grassroots sport clubs (Fasting et al., 2002; Krug et al., 2002; Mountjoy et al., 2016; Parent et al., 2021; Schmidt et al., 2022), limited positive bystander programs have been systematically developed and tested for the prevention of harassment and abuse in grassroots sport clubs. Nevertheless, bystander programs in sport are available, such as the bystander empowerment program developed by Coaching Association of Canada (n.d.), though it is not clear to what extent these programs are evaluated and tested. The Safe Sport Allies Erasmus+ collaborative partnership aimed at developing, implementing, and testing tailor-made bystander training programs for youth sport participants and youth sport coaches. The current paper describes the application of the Intervention Mapping approach for the bystander training program for youth sport participants and youth sport coaches. The Safe Sport Allies bystander training program was developed from a holistic point of view (Banyard, 2011; Roberts et al., 2020) using the Intervention Mapping approach (Bartholomew et al., 2016), and the Reasoned Action Approach (Fishbein and Ajzen, 2010), as a scientific foundation. In the current paper, we described the different steps of the Intervention Mapping approach and how we have applied these steps to the Safe Sport Allies bystander training program. The training program was presented here, including all causal-structural assumption chains underlying its hypothesized effectiveness as an acyclic behavior change diagram, as well as in machine-readable ABCD matrices (Metz et al., 2022). These

TABLE 2 Sections and content questionnaire youth sport participants.

Section	Content questions
Sociodemographics	Two items – Open-ended question and predefined categories - Age - Gender
Knowledge harassment and abuse	Two items – Open-ended questions - Understanding – definition - Examples
Behavioral determinants	Five items – 5-point Likert scale; ranging from totally disagree – totally agree, e.g., - ‘Consent is important when it comes to indicating your own boundaries’ - ‘I intend to inform an adult when someone crosses my boundaries’
Student Bystander Behavior Scale (Thornberg and Jungert, 2013)	Eight items – 5-point Likert scales ranging from definitely not – definitely yes Focus on different types of bystander behavior: defender, outsider, pro-bully behaviors
User feedback (only at T1)	Four items – 7-point Likert scales: - Interesting - Learned - Recommend - Difficulty level

provide insight into the putative mechanisms of action and facilitate adoption of the intervention to different contexts.

The novelty of the Safe Sport Allies bystander training program is twofold. On the one hand, the bystander training programs have been tailor-made for specific target groups. After a thorough needs assessment, the health problem (i.e., exposure to harassment and abuse by youth sport participants) and the specific program goals were described for youth sport participants and youth sport coaches, while the performance and change objectives have been described separately for each group to match their needs. On the other hand, the Reasoned Action Approach has been used as a guiding theory to disentangle the health problem and the target behavior (i.e., performing positive bystander behaviors) to specific behavioral determinants at the individual level upon which the bystander training program should focus.

The training programs have been developed in such a way that they are ready to be implemented in grassroots sport clubs. Nevertheless, the program can also be considered for other applications as well, such as elite sport, youth work, and youth academies. Important here is to consider a reassessment of the needs assessment, as it is possible that new settings might indicate or suggest necessary changes to the current program if one wants to implement the program in, for example, an elite sport context. The Intervention Mapping approach includes ways to use this approach to adapt evidence-based interventions (Bartholomew et al., 2016).

Regarding the proposed implementation and evaluation plans, a main objective is to evaluate whether the intervention improves or changes the different behavioral determinants that were targeted during the program. The focus is not to evaluate the theory that is used for the development of the program, but evaluate the changes in behavioral determinants, such as knowledge, attitudes, norms, and perceived behavioral controls. Questionnaires have been developed

TABLE 3 Sections and content questionnaire youth sport coaches.

Section	Content questions
Sociodemographics	Seven items – Open-ended and predefined questions <ul style="list-style-type: none"> - Age - Gender - Sport club - Reason for participation - Expectations of the intervention - Coaching experience - Current coaching career
Knowledge harassment and abuse	Two items – Open-ended questions <ul style="list-style-type: none"> - Understanding – definition - Examples
Readiness to change scale (Banyard et al., 2009)	Six items – Likert scales with varying anchor points <p>Adapted to the Flemish sport context, e.g.,</p> <ul style="list-style-type: none"> - ‘I can do something about harassment and abuse in my sport club’ - ‘I intend to figure out what I can do against harassment and abuse’
Behavioral determinants	Sixteen items – Likert scales with varying anchor points, e.g., <ul style="list-style-type: none"> - ‘I listen to my youth sport participants when they indicate their boundaries’ - ‘When I intervene in situations of harassment and abuse, the situation will worsen’ - ‘I intend to ask consent from my youth sport participants when I want to touch them at the arm or shoulder in order to perform a movement’
Student Bystander Behavior Scale (Thornberg and Jungert, 2013)	Eight items – 5-point Likert scales ranging from definitely not – definitely yes <p>Focus on different types of bystander behavior: defender, outsider, pro-bully behaviors</p>
User feedback (only at T1 and T2)	Six items – Likert scales with varying anchor points <ul style="list-style-type: none"> - Interesting, learned, recommend, difficulty level - Value different parts of the workshop - Interesting and value online boosters

that focus on these behavioral determinants that are related to positive bystander behaviors. Important here is to acknowledge that actual positive bystander behaviors cannot be assessed, and that only the underlying behavioral determinants will be measured as a proxy for positive bystander behavior. Additionally, previous research (Miller et al., 2012; Schäfer-Pels et al., 2023) mostly evaluated bystander interventions in the short-term, the current program and proposed evaluation tools allow for longitudinally assess changes regarding behavioral bystander determinants, especially for sport participants and youth sport coaches.

Although the Safe Sport Allies bystander training program and the way it has been developed can be a starting point for the further development of such programs in sport, it is important to consider the following limitations, especially in context of future research. The presented bystander training program focused mainly on the individual determinants related to positive bystander behaviors, however, it is

important to acknowledge that incidents of harassment and abuse do not occur in a vacuum and that there is a need to develop a whole-system approach (Roberts et al., 2020). A whole-system approach can be seen as an inclusive and systematic approach in which different target groups are included and targeted. By establishing a whole-system change, the different environmental (risk) factors can positively be influenced (Mountjoy et al., 2016; Roberts et al., 2020) both at an individual but also at the club policy level. The different environmental risks at the interpersonal, organizational, community, and societal level may thus also impact bystander behaviors (Bartholomew et al., 2016). When looking at environmental risks, Roberts et al. (2020) highlighted two main organizational factors that can be seen as a catalyst for all forms of harassment and abuse, more specifically organizational tolerance and conformity to dominant values. Organizational tolerance for harassment and abuse can lead the way for the occurrence of it as it implies that perpetrators will not be punished, that notifiers most likely experience some form of repercussion, that bystanders should stay passive, and that the definition of harassment and abuse is not clear in the organization. When such organizational tolerance is displayed in these dominant values, norms and beliefs, this will result in a continuous and reinforcing process of the occurrence of harassment and abuse in sport (Roberts et al., 2020). For future research, it is suggested to also include the community and societal levels when establishing a whole-system change.

In addition to the presented bystander training programs in this paper, the Safe Sport Allies Erasmus+ project also focused on sport parents and club administrators. In future research, it would be interesting to include these levels (and additional levels such as officials) as well and to systematically develop the bystander training programs for these groups as well. Although in the overall project, for example, a policy trajectory for club administrators was developed which focused on establishing changes in policies, it was not based on a systematic needs assessment. It is thus recommended to carry out a new cycle of the Intervention Mapping approach, or use Intervention Mapping as a way to adapt evidence-based interventions (Bartholomew et al., 1998, 2016). The same is true for other important target groups that are around the youth sport participants, such as parents or officials.

Furthermore, it is important to highlight that throughout the development of the Safe Sport Allies bystander training program, feedback has been gathered from different target groups and experts to improve the content of the program. The Intervention Mapping approach allows for adjusting the interventions during the development process when needed (Bartholomew et al., 2016). Secondly, in step 6 of the Intervention Mapping approach it is described how self-reported questionnaires can be used to evaluate the changes regarding the behavioral determinants related to performing positive bystander behaviors. For future research, it is imperative to consider additional methodologies to evaluate the programs, such as using mixed methods. Finally, a challenge for the implementation of the Safe Sport Allies program is the lack of awareness of the importance of preventing harassment and abuse in sport among club administrators and those involved in the club. Raising awareness among these clubs is of importance to minimize thresholds that might be related to unfamiliarity or ignorance of the problem. Clubs also need to be supported when thresholds related to capacity and resources are observed when implementing the program.

4 Conclusion

Experiences of harassment and abuse are frequently reported by sport participants in grassroots clubs. Such experiences can be prevented if people within the sport club display positive bystander behaviors such as noticing signs of harassment and abuse, helping others when noticing incidents, or going to the safeguarding officer when having concerns. The current paper delved into the comprehensive development process of the a positive bystander intervention program (i.e., Safe Sport Allies) for youth sport participants and youth sport coaches that can be implemented in grassroots sport clubs to prevent all types of harassment and abuse. The program, and implementation and evaluation plans described in this paper can serve as a starting point and source to build future interventions within this critical domain of safeguarding in (and outside) sport.

Data availability statement

The original contributions presented in the study are included in the article/[Supplementary material](#), further inquiries can be directed to the corresponding author.

Author contributions

KA: Conceptualization, Investigation, Methodology, Project administration, Visualization, Writing – original draft, Writing – review & editing. HV: Conceptualization, Funding acquisition, Investigation, Methodology, Project administration, Writing – review & editing. G-JP: Writing – review & editing, Conceptualization, Methodology. LH: Writing – review & editing. TV: Conceptualization, Funding acquisition, Investigation, Methodology, Project administration, Supervision, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpsyg.2024.1389280/full#supplementary-material>

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Exploring print media coverage of elite athletes' mental illness between 2010 and 2023 in Germany: a quantitative content analysis

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Objectives: Recently, the stereotype of elite athletes' invulnerability has begun to be challenged by an increasing number of elite athletes who talk openly about struggling with mental health. Relatedly, previous research has focused primarily on specific incidents like the media's portrayal of personal disclosures. The purpose of this study was to expand this perspective and give a systematic overview of media coverage related to elite athletes' mental illness by examining more than one decade (2010–2023) of German print media reporting. Specifically, we were interested in changes over time and between broadsheet and tabloid press regarding content-related and formal aspects.

Methods: Based on a systematic search and screening process in eleven German newspapers and magazines, 699 print media articles were analyzed with a codebook, forming a framework of content-related (reported mental disorder; central thematic focus; sources of comments and quotations; perspectives on the high-performance sports system) and formal categories (article genre; elements of responsible journalism). Univariate analyses and binary logistic regression models were used to examine changes over time (2010–2016 vs. 2017–2023) and differences between types of press (tabloid vs. broadsheet press) regarding content-related and formal characteristics.

Results: The results indicate an enhanced awareness towards the topic of mental illness and those affected in recent years within German print media. This was demonstrated by the increased integration of responsible reporting elements, the inclusion of diversified perspectives and the considerate selection of content. Despite this positive trend over time, the findings also suggest that media reporting in the tabloid press bears an increased risk for inappropriate storytelling, focusing primarily on personal tragedies.

Conclusion: As personal fate of prominent figures like elite athletes will always meet great interest in the public, it is of utmost importance that the media report responsibly and promote critical thinking in society. The study shows the media's willingness to question conventional ideals embedded in the sports culture and take a more critical approach to the topic of mental illness in high-performance sports. By demonstrating a greater understanding of the importance and the seriousness of the issue, the media might also contribute to improved mental health awareness in society.

KEYWORDS

media coverage, mental illness, elite athletes, responsible journalism, mental health awareness

1 Introduction

The traditional picture drawn by the media as well as within the sports system presents athletes as self-confident, disciplined, unbreakable and faultless (1, 2). However, high-performance sport constitutes a rather closed setting to which the general public has limited access, often only through media representations. To keep up the idealized image of a mentally strong athlete, those elite athletes affected by mental health problems often stay quiet for fear of stigmatization and loss of credibility (1, 3, 4). The biased but still common association between weakness and mental illness leads to the assumption that being labeled as “mentally ill” (5, p. 150) constitutes the absolute “antithesis of what athletes want to portray” (6, p. 10).

Recently, the prevalent stereotype of elite athletes' invulnerability has begun to be challenged by an increasing number of elite athletes who talk openly about struggling with mental health problems on their social media channels or within the traditional mass media (4, 7). A prominent leader of this ongoing process is the Olympian Michael Phelps. While still competing, Phelps shared his personal story about anxiety, depression, and suicidal thoughts with the public, at a time when mental health problems were still silenced in public discourse (8). The French Open as well as the Olympic Games in Tokyo 2021 turned out to reinforce the discussion about mental health risks elite athletes face, with international stars Simone Biles and Naomi Osaka withdrawing from competition to protect their mental health (9, 10). Although the initiation of public disclosures is not always solely in the hands of the athletes themselves, but can be coerced to some extent (e.g., Simon Biles felt compelled to disclose her attention-deficit hyperactivity disorder after a cyberattack on the World Anti-Doping Agency in 2016), such authentic stories can be regarded as emblematic of a gradual shift towards more openness and acceptance for sensitive issues like mental illnesses being discussed openly within society (7–10). As prominent figures in the world of high-performance sports have emphasized the importance of mental health, media portrayals of affected athletes have recently become a focus of media-related research (9, 11–13).

In this context, the public's perception of and reaction to athletes' disclosures appears to be strongly shaped by the way

the media connotes their statements (14, 15). Due to the use of familiar narratives that conform to cultural norms and societal expectations, journalists tend to unintentionally present a selective reality of facts, leading audiences to unconsciously adopt prescribed values, ideas and expectations conveyed by media texts (16–18). Thereby, the media exert a strong and systematic impact on its recipients (19) and are attributed with possessing the power to enhance or reduce societal stigma towards sensitive issues like mental illness (20, 21). For instance, Gwarjanski and Parrott (22) found severe mental illnesses like schizophrenia to be frequently associated with violence and criminal behavior in news stories, leading to social alienation from those affected. In contrast, Ross et al. (23) reported an increased willingness to support people living with a mental illness when media content focused on the successful recovery from severe mental illness. It has widely been discussed how mass media content and the public discourse interact and interfere with each other (20, 24). According to a variety of media analyses, public discourse shapes mass media content but is also influenced by media reporting, resulting in an interactively constructed reality (19, 20).

Despite the media's substantial role in influencing public opinion, exploring media coverage of elite athletes' mental illness presents a relatively young research area (14, 25). In light of current developments, studies examining media depictions of elite athletes' disclosures of mental health problems have increased considerably (4, 7, 26). However, most studies focused on single incidents, rather than providing an analysis of the overall media coverage related to mental illness in high-performance sports (7, 11–13, 27, 28). In this study, we therefore aim to give a systematic overview of German media coverage related to mental illness in high-performance sports during the last decade, with formal as well as content-related aspects of print media articles being taken into account. Research on public stigma in Germany indicates that there is still a gap between individual perceptions of public stigma and personal attitudes towards people with mental illness (29). In light of the persistent yet often unrecognized reluctance towards people with mental illness in Germany, our study provides a basis for further research on the understanding, awareness, and societal perception of mental health and illness (30).

1.1 Trends in media coverage of mental illness in the general population

Research on media coverage of mental illnesses illustrates that the general picture of people with mental illness displayed by the media is frequently inaccurate and of lay understanding (4, 31). Within media reports, mental illness is regularly associated with violence, aggressiveness, unpredictability and social incompetence, which in turn might further reinforce negative attitudes towards those affected by mental illness within the general population (21, 22, 31, 32). In particular, media sources pertaining to the tabloid press have been found to contain more placative and metaphoric descriptions concerning people affected by mental disorders than the broadsheet press (33, 34). Örnebring and Jönsson (35) described the way tabloid media reports news and stories in general as simplified and personalized, focusing particularly on scandals, drama, and entertainment [see also (34, 36)].

Over the past decade, however, there has been a general shift in media coverage of mental illness in the general population, with media-related research indicating a reduction in inappropriate and stigmatizing language in the broadsheet press (34). This finding stands in line with the recent establishment of guidelines for responsible journalism in a variety of countries, which aim to implement attentive storytelling concerning mental health issues in the media (2, 37–41). In particular, the portrayal of death by suicide has been central to recent media-related studies, as “misinformation, such as [...] offering simplistic, monocausal explanations that imply suicide is a solution to immediate trigger” might lead to imitation effects by vulnerable people who identify with the individual exhibiting suicidality [(37), p. 48]. Other potentially harmful features in reporting about suicide were defined as detailed descriptions of the suicide method and photos of the individual deceased, as well as placing the story on the front page or mentioning the method exhibiting suicide in the article’s headline (37, 41). Numerous studies have already demonstrated the positive influence considerate and responsible media reporting could achieve, outlining effects related to prevention and help-seeking within the general population (4, 5, 11, 14, 28, 34). Further, media studies have hinted at the important role prominent figures like elite athletes could play for initiating an open and de-stigmatizing discourse about mental illness (13, 14, 42, 43).

1.2 Trends in media coverage of mental illness in elite athletes

However, in accordance with the prevalent “winning-at-any-cost”-mentality in high-performance sports, the media traditionally used to portray professional athletes as heroes who sacrifice their bodies for the team and are admired for their fearlessness and courage (1, 2, 43, 44). This dominating picture of *hypermasculinity*, which is deeply embedded within the elite

sports system, might hinder affected athletes from discussing their mental health openly and consequently promotes a culture of silence (1, 12, 45, 46).

If the conventional image of the perfect and invulnerable athlete is repeatedly perpetuated in the media, perceptions of mental illness in high-performance sports as well as the risks thereof may be distorted (11). In this context, Teismann et al. (47) examined the media’s reporting on the death by suicide of the popular German goalkeeper Robert Enke in November 2009, who kept his longstanding depression private to protect his career. Robert Enke’s death by suicide led to intensified but mostly highly inappropriate media reporting. Media reports tended to picture Enke’s death as the outcome of a tough and tragic battle, reinforcing the traditional belief in athletes’ valor and resilience instead of pointing out alternative approaches to address mental health issues. Particularly tabloid papers tended to place more value on heroizing and sensationalizing reportage than on providing psychoeducational references for people affected (47).

In the aftermath of Enke’s death by suicide, not only inappropriate media coverage was criticized, but also the culture of self-sacrifice within the world of high-performance sports (2, 48). As a result, an international discussion has been initiated that questions this culture and rather encourages open conversations about mental health struggles among elite athletes (3, 25, 26, 48). The rise of mental health conversation has also significantly shaped the portrayal of elite athletes and their struggles with mental health in mass media coverage within the last decade (11, 26, 48). Recent studies have shown that athletes who disclose their personal experiences with mental health problems to the public are meanwhile viewed as courageous and mentally strong, embodying role models to look up to (5, 8, 11, 13). For instance, after publicly prioritizing their mental health over athletic success, the female sport stars Naomi Osaka and Simone Biles were highly praised and rewarded by the media (9, 10, 13). Portrayed as strong and brave personalities in the media, these “spokespeople” have become advocates of mental health in the fight against stigmatization (13). Reinforcing the fact that mental illness can affect anyone, media depictions of elite athletes’ struggles with their mental health might also carry significant potential for enhancing public understanding of mental illness and its treatment (4, 5, 12, 13, 49).

Overall, the depiction of sensitive topics like mental health and mental illness in the media has just begun to be explored. The specific context of high-performance sports presents a fertile setting for examining media coverage and its effects, as elite athletes are predominantly recognized by the public via their media portrayal (11). Previous research on media portrayals of mental illness has mainly focused on the general population rather than examining depictions of specific social subgroups such as elite athletes (22, 31–33). Looking at media coverage from a broader perspective that extends beyond single events or incidents such as athletes’ public disclosures of their mental illness, we sought to develop a general understanding of how the German

print media covered mental illness in elite athletes, particularly in light of the recent increase in mental health conversations.

1.3 Purpose of the study

Examining the media landscape has been proven to serve as an established method for appraising “the national dialogue around societal issues”, as McGinty et al. (42, p. 1121) pointed out. Thus, the purpose of this media analysis was to give a systematic overview of German print media reportage about elite athletes’ mental illness since 2010. In this regard, we aimed to (1) examine if media coverage of mental illness in high-performance sports has changed over time considering content-related (e.g., reported mental disorders, central idea of the article) as well as formal aspects (e.g., article genre, elements of responsible journalism) of media reporting. Further, we were interested (2) in differences between the quality broadsheet press and the tabloid press in Germany. This study is the first to give a systematic overview on media reporting of elite athletes’ mental illness over a time period of more than decade. Therewith, the current study expands previous media-related studies examining the portrayal of specific incidents related to mental health issues among elite athletes.

2 Method

2.1 Data collection

The media analysis comprises articles on mental illnesses of elite athletes published between January 2010 and July 2023 in German newspapers and magazines. The time frame chosen complied with the death by suicide of Robert Enke in November 2009, initiating a rise of mental health awareness within German high-performance sports (26, 48). Our choice for data sources was based on readership and popularity (50), resulting in seven sources identified as traditional broadsheet media (*Frankfurter Allgemeine Zeitung*; *Süddeutsche Zeitung*; *Die Zeit*; *Die Welt*; *Der Spiegel*; *Focus*; *taz*) and four sources assigned to the tabloid media (*BILD*; *SportBILD*; *BUNTE*; *Stern*). Newspapers and magazines were identified as pertaining to the broadsheet or tabloid press dependent on their quality of reporting, language, style, diversity, and sources (51). To achieve an equal distribution, further magazines with great popularity pertaining to the tabloid press (*Men’s health*, *Women’s health*, *Fit for Fun*, *Gala*) were screened but deemed as irrelevant, as they did not report on any content related to our research topic. The estimated readership per issue of the included print media sources ranged from 0.34 million (*taz*) to 10.39 million (*BILD*) in 2010 and from 0.3 million (*taz*) to 6.2 million (*BILD*) in 2022. The search for data sources was limited to the German press landscape, excluding the area of social media. Social media presents a platform of multidirectional communication without identifiable positions of sender and receiver. Consequently, the area of social media did not comply with our aim to analyze depictions of elite athletes’ mental illness originating from media institutions.

The search for articles was conducted using three different databases. The international online portal LexisNexis, which provides exact textual replica of published print media articles worldwide, contained nine of the pre-selected newspaper and magazine sources. Two of the traditional broadsheet sources (namely, *Frankfurter Allgemeine Zeitung* (F.A.Z.) and *Süddeutsche Zeitung* (SZ)) were not included within the LexisNexis database but have established their own online libraries. The strings used to conduct the systematic search were developed by screening related academic work on media presentations of mental illness in elite athletes, as well as published print media articles within the German press. Using Boolean operators, two sets of search terms were combined. To cover a wide range of discussed mental health issues in the media, the first string contained general terms like “mental illness*” or “psychiatric disorder*” as well as specific diagnoses, resulting in a set of 45 search terms. To restrict the search to the specific setting of high-performance sports, the second string included terms related to high-performance sports and contained 11 search terms (e.g., “Olympia”, “high-performance sports”, “athlete”; see [Supplementary Table S1](#) for the complete search string). As the online libraries of the F.A.Z. and SZ did not allow to conduct a search using Boolean operators, we limited the electronic search to the “Sports” section of each newspaper and applied only the first string of search terms. In total, the systematic search resulted in 17.300 print media articles.

2.2 Screening process and final sample

The first author and two trained research assistants screened the title and *highlight* (often consisting of two to four sentences summarizing the articles’ main focus) of all 17.300 print media articles, before they read the full texts of the remaining 1,006 articles. For inclusion, print media articles were required to (1) focus on the topic of mental illness of elite athletes (defined as reporting on the mental illness of a specific athlete, mental health issues within high-performance sports in general, specific events or experiences during the athletic career associated with mental health problems, or potential consequences of mental illness on performance, the team, everyday life or the athletic career) and (2) contain more than 75 words. Articles were excluded when they (1) used mental illness-related terms solely in a non-clinical or metaphorical manner (e.g., “...current restrictions resemble a winter depression for passionate skiers...”), (2) mentioned mental illness only peripherally as additional information for the reader, and (3) were classified as “letters to the editor” written by readers. The full-text screening resulted in a final sample of 699 print media articles that were included in further analyses.

2.3 Quantitative content analysis

As we aimed to describe selected characteristics of the articles in a systematic and intersubjective manner, we conducted a

quantitative content analysis (52) encompassing deductive as well as inductive elements (52, 53).

2.3.1 Deductive and inductive coding

To assess content-related as well as formal aspects of media coverage depicting mental illness, we developed a structured coding scheme based on previous research findings [cf (13, 18, 33, 39, 42, 52, 54)] and inductively derived categories. The final coding scheme consisted of eight elements and 78 outcome items [see Table 1; for more detailed information, see Supplementary Table S2]. Articles were coded for (1) year of publication; (2) type of press (broadsheet or tabloid); (3) article genre (news, feature, interview, comment/column; see Table 1 for their definition); (4) reported mental disorder (in order to explore the media's attention and knowledge regarding specific disorders); (5) central thematic focus, (6) inclusion of elements of responsible journalism (i.e., providing information on helpline-seeking; perspectives of a mental health expert; use of statistics; using appropriate language) (18, 40, 41); (7) quotes from different sources, and (8) perspectives on the high-performance sports system (either criticizing the high-performance sports system or advocating for changes in the sports system with regard to elite athletes' mental health issues).

To increase transparency and consistency of coding, a detailed codebook was developed and tested by two coders (i.e., the first author and one trained research assistant) with 5% of the final sample. Some coding criteria were revised and refined to facilitate and clarify the identification of elements. For instance, the initial element "perspectives on the high-performance sports system" was revised in such a way that only statements that either clearly criticized the high-performance sports system or advocated for changes in the sports system with regard to elite athletes' mental health were coded. Inter-coder reliability was

tested with a random sample of 10% of the articles in each newspaper/magazine ($n = 70$ articles) that were coded by both coders independently as suggested by Neuendorf (57). To determine inter-coder reliability, we used Cohen's kappa (κ) for those variables with multiple response options and applied the McNemar test to binary variables (58, 59). The three items with multiple response options met acceptable to substantial inter-coder reliability (i.e., $\kappa_{\text{central thematic focus}} = .824$; $\kappa_{\text{article genre}} = .633$; $\kappa_{\text{diagnosis}} = .62$). McNemar test results ranged from $p = .625$ to $p = 1.000$, which is also considered as acceptable to substantial inter-coder reliability (13, 42, 58). As a result, the remaining 90% of articles were coded by only one of the two coders.

2.3.2 Statistical analysis

Statistical analyses were conducted using SPSS Version 28 and Microsoft Excel. To provide a systematic overview of the German media coverage of elite athletes' mental health issues, descriptive statistics were calculated, determining frequencies and proportions of coded elements on an overall item level. To explore changes over time, the investigation period was split into time period 1 (January 2010–December 2016) and time period 2 (January 2017–July 2023) as recommended and applied by previous media studies to improve comparability and enhance practicability [cf. (33, 42)]. Further, those elements offering more than one response option (i.e., "article genre"; "reported mental disorder"; "central thematic focus of the article" and "elements of responsible journalism") were converted into dichotomous yes/no variables.

Univariate analyses (χ^2 tests) were conducted to assess significant associations between the independent variables (*time period*; *type of press*) and the categorical elements ("article genre"; "reported mental disorder"; "central thematic focus of the

TABLE 1 Variables covering formal and content-related aspects.

Variable	Description
Formal aspects	
Time period 1/2	Captures the year of publication, subsequently divided into period 1 (January 2010 until December 2016) and period 2 (January 2017 until July 2023).
Type of press	Determines whether articles pertain to the tabloid or broadsheet press.
Article genre	Refers to the specific genre of the article based on its style, purpose and content (<i>news, feature, interview, comment/column</i>). News articles were defined as informational and factual texts. Feature articles involve a shift in perspective, allowing the author to move from a factual, objective narrative to subjective insights and a personal focus. Articles classified as <i>Comment</i> or <i>Column</i> reflect the author's personal attitudes and/or experiences and are therefore significantly shaped by personal opinion (55).
Elements of responsible journalism	Refers to the considerate and accurate dissemination of information concerning mental illness by journalists or media outlets. Responsible reporting is represented by four outcome items: help-seeking information; statistics; appropriate language and the perspective of a mental health expert (defined as an individual with an educational background in medicine, science, health, or psychology who provides general public health information without offering professional opinions or diagnoses regarding the mental health of public figures [in accordance with the <i>Goldwater Rule</i> (56)]).
Content-related aspects	
Reported mental disorder	Captures the type of mental disorder(s) discussed in the article or the absence thereof (i.e., if no specific diagnosis is mentioned).
Central thematic focus of the article	Describes the central thematic focus of the article (e.g., death by suicide of a famous athlete; end of career; disclosure; treatment/hospitalization).
Sources of comments and quotations	Captures direct quotes from (1) the person affected, (2) the social or professional environment of the person affected, (3) a mental health expert defined as persons with an educational background in medicine, science, healthcare, or psychology.
Perspectives on the high-performance sports system	Captures either (1) any critical statement, quote, or expression, indicating disapproval or concerns related to the established framework of the high-performance sports system or (2) describe any positive change or development initiated for preventing mental illness as well as support for those affected (e.g., launch of charities).

article”; “elements of responsible journalism”; “perspectives on the high-performance sports system” and “sources of comments and quotations”). Further, binary logistic regression was conducted to calculate the odds a categorical element was influenced by the predictors *time period* (2010–2016) and *type of press* (tabloid vs. broadsheet). A significance level of $\alpha < .05$ was applied to all statistical tests.

3 Results

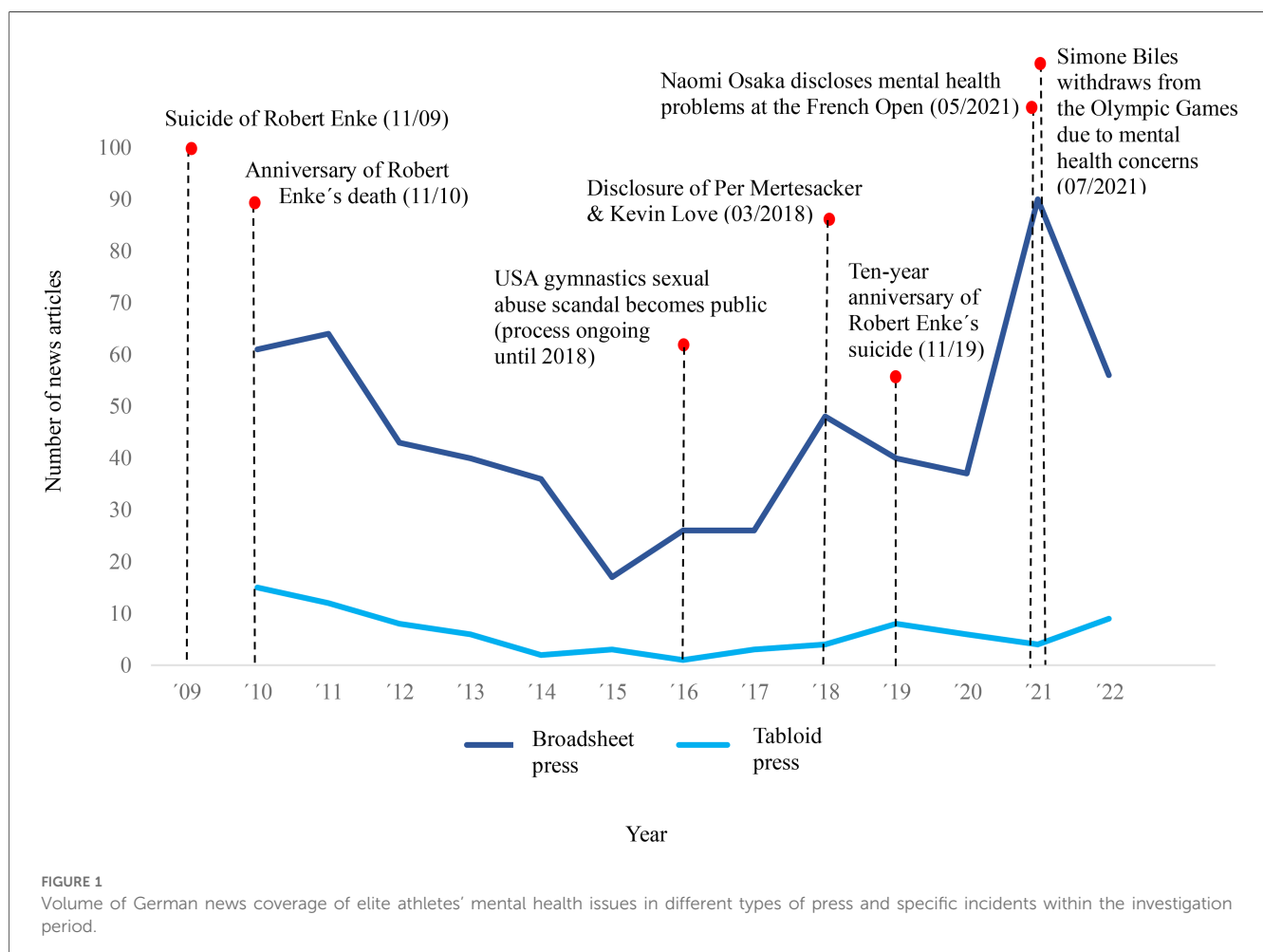
The final data sample ($n = 699$) contained 609 articles pertaining to the broadsheet press (F.A.Z., $n = 79$; SZ, $n = 222$; Die Zeit, $n = 14$; Die Welt, $n = 75$; Der Spiegel, $n = 152$; Focus, $n = 16$; taz, $n = 51$), and 90 articles from the tabloid press (BILD, $n = 16$; SportBILD, $n = 42$; Stern, $n = 23$; BUNTE, $n = 9$). Considering the dominance of broadsheet sources included in our study, data analyses were adapted to the uneven distribution. The average word count for all included articles was 837 (Min = 94, Max = 5,932). There was no statistically significant difference in the average word count between print media articles pertaining to the broadsheet press ($M = 817$, $SD = 676$) and the tabloid press ($M = 963$, $SD = 754$); $t(697) = -1.87$, $p = .061$.

3.1 Time trends within the amount of media coverage

The volume of print media articles covering the mental illness of elite athletes was found to be highly associated with specific events and incidents (see Figure 1). Peaks of media reporting could be observed concerning tragic incidents (e.g., the death by suicide of goalkeeper Robert Enke in 2009), scandals being uncovered within the world of high-performance sports (e.g., sexual abuse of under-age gymnasts within the association USA gymnastics, revealed in 2016), or disclosures of famous personalities (e.g., the soccer player Per Mertesacker talking openly about the pressure he experienced as unbearable in professional soccer in the context of his retirement in 2018).

3.2 Article genre

The most common article genre was news ($n = 393$), followed by features ($n = 132$), interviews ($n = 109$), and comments/columns ($n = 65$). While changes over time could not be detected, a significant difference was found between the broadsheet and the tabloid press for almost every article genre,



except for features (for detailed descriptive statistics see [Tables 4, 5](#)). The results indicate that news ($n = 393$, $\beta = -.701$, odds ratio = .498, 95% CI: 0.316–.778, $p = .002$) as well as comments/columns ($n = 65$, $\beta = -1.190$, odds ratio = .304, 95% CI: .093–.991, $p = .048$) were more likely to appear in the broadsheet press than in the tabloid media. In contrast, the genre interview showed a strong association with tabloid papers ($X^2 = 20.608$; $p = .001$), with a 3.4 times higher likelihood for interviews to appear in the tabloid press than in the broadsheet press ($\beta = 1.210$, odds ratio = 3.354, 95% CI: 2.039–5.519, $p < .001$).

3.3 Central thematic focus of the article

The three most frequent topics appearing in the included print media articles were “current status” ($n = 132$, 19%), “disclosure” ($n = 108$, 16%) and “criticism of the system” ($n = 91$, 13%). Articles were coded as “current status” if the print media article reported on the athlete’s mental health condition in the context of future or past performances and competitions. Articles whose central thematic focus was coded as “disclosure” narrated the affected athlete’s act of *revealing* a mental health condition and, consequently, sharing details or facts that were previously unknown or private. Articles were coded as “criticism of the system” if they primarily focused on disapproval or dissatisfaction with the high-performance sports system, its structure or embedded values and beliefs. Often, areas that needed improvement or reform were highlighted within these articles (for further information on the different central thematic focuses of the articles see [Supplementary Table S3](#)).

Looking at changes over time, four of the 14 predefined outcome items in the category of thematic focus differed significantly between the first and the second investigation period (for a detailed descriptive overview see [Table 2](#)). Articles

pertaining to the first time period (2010–2016) reported much more frequently about deaths by suicide than articles published later than 2017 ($\beta = -1.711$, odds ratio = .181, 95% CI: .092–.354, $p < .001$). The clear predominance compared to the second time period might be explained by the death by suicide of Robert Enke, which elicited intensified media reporting in Germany.

A further reduction from the first to the second time period was detected regarding the topic of “neurological disorders” ($\beta = -1.615$, odds ratio = .199, 95% CI: .043–.928, $p = .040$). The difference in the number of articles can probably be explained by the discovery of an association between repeated concussions due to head traumata and the occurrence of mental health impairments (e.g., depression, death by suicide, behavior change) within the first time period (60). This discovery brought great attention to the risks of participating in contact sports, particularly in the US, and led to intensified research and media coverage (61).

The central thematic foci, which were found to appear significantly more often in the second investigation period dealt with (sexual) abuse ($\beta = 2.428$, odds ratio = 11.333, 95% CI: 3.477–27.263, $p < .001$) and changes of the system ($\beta = .510$, odds ratio = 1.666, 95% CI: 1.003–2.767, $p = .049$). The strong association of the topic of sexual abuse with the later investigation period ($X^2 = 24.647$, $p < .001$) can likely be attributed to the sexual abuse scandal within the association *USA gymnastics*, which provoked intense controversy about safety in sports and led to international media attention. Enhanced awareness is also part of the outcome item “change of the system”, where print media articles reported on initiated improvements within the high-performance sports system (e.g., the creation of foundations for athletes affected by mental health problems).

With regard to press type, some differences could be observed. While in broadsheet papers only 8% of all included articles were

TABLE 2 Central thematic focus of articles according to the year published and the type of press.

	2010–2016 (N = 334)	2017–2023 (N = 365)	Chi square		Broadsheet press	Tabloid press	Chi square	
	No. (%)	No. (%)	Value	p	No. (%)	No. (%)	Value	p
Central idea of the article								
Current status	66 (20)	66 (19)	.443	.506	116 (19)	16 (18)	.105	.746
End of career	15 (5)	22 (6)	.821	.365	33 (5)	4 (4)	.148	.700
Portrait of life	30 (9)	33 (9)	.001	.978	49 (8)	14 (16)	5.392	.020*
Abuse	3 (1)	34 (9)	24.647	<.001**	34 (6)	3 (3)	.792	.374
Disclosure	50 (15)	58 (16)	.019	.891	96 (16)	12 (13)	.269	.604
Death by Suicide	49 (15)	11 (3)	30.202	<.001**	47 (8)	13 (14)	4.522	.033*
Therapy	3 (1)	3 (1)	.012	.913	6 (1)	0 (0)	.894	.344
Injury	2 (1)	2 (1)	.301	.583	3 (1)	2 (2)	3.303	.069
Deviating behavior	22 (7)	25 (7)	.019	.890	44 (7)	3 (3)	1.893	.169
Neurological disorder	9 (3)	2 (1)	5.189	.023*	9 (2)	2 (2)	.281	.596
Hospitalization	7 (2)	0 (0)	7.727	.005*	5 (1)	2 (2)	1.553	.213
Criticism of the system	42 (13)	49 (13)	.111	.739	80 (13)	11 (12)	.058	.810
Description of the system	9 (3)	15 (4)	1.053	.305	24 (4)	0 (0)	3.673	.055
Change of the system	26 (8)	45 (12)	3.947	.047*	63 (10)	9 (11)	.182	.670

* $p < .05$.

** $p < .001$.

coded as “portrait of life”, the outcome item was found to be significantly associated with the tabloid press ($X^2 = 5.392$, $p = .029$). “Portraits of life” usually provided information about an athlete’s childhood and family situation, the beginning of her/his sportive career as well as failures and successes, often highlighting personal issues that jeopardized or strengthened their mental health. Logistic regression revealed that portraits of life appeared twice as often in the tabloid media as in the broadsheet media ($\beta = .744$, odds ratio = 2.105, 95% CI: 1.110–3.994, $p = .023$).

Further, the share of articles reporting on “death by suicide” was significantly higher in the tabloid press (14% of all articles, $n = 13$) than in the broadsheet press (8% of all articles, $n = 47$) ($X^2 = 4.522$, $p = .043$). The likelihood for “death by suicide” representing the focus of an article was two times higher in tabloid papers than for articles originating from broadsheet media ($\beta = .702$, odds ratio = 2.019, 95% CI: 1.045–3.901, $p = .037$). None of the remaining outcome items revealed a significant association with the *type of press*.

3.4 Reported mental disorders

The three most common mental disorders reported on within the included print media articles were depression ($n = 352$), burnout ($n = 164$) and substance use disorder ($n = 99$) (for a detailed descriptive overview see Table 3). It is important to mention that these mental disorders were recorded based on the way they were referred to in the articles, not based on established diagnostic criteria.

The mental disorders mentioned in print media articles changed substantially throughout the entire investigation period. Depression and burnout decreased significantly in their media appearance within the second time period (2017–2023). The likelihood of depression being mentioned in a print media article was found to be significantly lower in more recent years ($\beta = -.317$, odds

ratio = .728, 95% CI: .541–.981, $p = .037$). The decline of articles mentioning burnout was even more pronounced ($\beta = -1.075$, odds ratio = 0.341, 95% CI: 0.236–0.494, $p = <.001$), with the number of articles reporting on burnout of elite athletes in the first time period ($n = 111$, 33%) being reduced by more than half after 2016 ($n = 53$, 15%). A similar decline was found for the diagnosis of substance use disorder ($\beta = -.804$, odds ratio = .447, 95% CI: .288–.696, $p = <.001$) and behavioral addictions (e.g., gambling addiction) ($n = 6$, $\beta = -1.284$, odds ratio = .277, 95% CI: .100–.764, $p = .013$), which, however, constituted only a minor subset of all reported mental disorders.

The opposite time trend was observed concerning panic disorders ($\beta = .979$, odds ratio = 2.662, 95% CI: 1.037–6.835, $p = .042$) and eating disorders ($\beta = .908$, odds ratio = 2.480, 95% CI: 1.517–4.055, $p = <.001$). The greatest increase over time was detected for articles reporting no diagnoses at all ($n = 126$). While in the first period, only 8% of the articles did not mention a specific mental disorder, the amount has more than tripled within recent years (27%). Performing logistic regression, a 4.2 times higher likelihood was identified for the second period to include articles without mentioning any specific disorders ($\beta = 1.439$, odds ratio = 4.218, 95% CI: 2.673–6.656, $p = <.001$), and rather referring to mental health problems in general [e.g., “The 2017 mass start world champion took a voluntary break at the World Cup in Oberhof in January this year, feeling physically and mentally exhausted.”, see (62)].

Concerning the type of press, less differences were detected. Burnout was reported on more frequently in tabloid papers than in the broadsheet media ($\beta = .512$, odds ratio = 1.669, 95% CI: 1.031–2.702, $p = .037$). Logistic regression revealed similar results concerning behavioral addictions, presenting a 3.6 times higher likelihood to appear in tabloid papers than in the broadsheet press ($\beta = 1.275$, odds ratio = 3.578, 95% CI: 1.404–9.123, $p = .008$). In contrast, articles without mentioning a specific mental disorder were detected to mostly pertain to the

TABLE 3 Reported mental disorder according to the year published and the type of press.

	2010–2016 (N = 334)	2017–2023 (N = 365)	Chi square		Broadsheet press	Tabloid press	Chi square	
	No. (%)	No. (%)	Value	p	No. (%)	No. (%)	Value	p
Reported mental disorder								
Depression	182 (55)	170 (47)	4.371	.037*	302 (50)	50 (56)	1.119	.290
Burnout	111 (33)	53 (15)	34.010	<.001**	135 (22)	29 (32)	4.148	.042*
Panic disorder	6 (2)	17 (5)	4.457	.035*	20 (3)	3 (3)	.000	.983
Substance use disorder	64 (19)	35 (10)	13.146	<.001**	83 (14)	16 (18)	1.110	.292
Behavioral addiction	16 (5)	5 (1)	6.968	.008*	14 (2)	7 (8)	6.055	.014*
Anxiety disorder	19 (6)	27 (7)	.828	.363	38 (6)	8 (9)	.895	.344
Bipolar disorder	8 (2)	6 (2)	.502	.479	14 (2)	0 (0)	2.111	.146
Without diagnosis	27 (8)	99 (27)	42.562	<.001**	119 (20)	7 (8)	8.750	.003*
Obsessive-compulsive disorder	3 (1)	2 (1)	.301	.583	3 (1)	2 (2)	3.303	.069
ADHD	2 (1)	2 (1)	.008	.929	3 (1)	1 (1)	.527	.468
PTSD	4 (1)	8 (2)	1.022	.312	12 (2)	0 (0)	1.804	.179
Eating disorder	14 (4)	36 (10)	13.763	<.001**	43 (7)	7 (8)	.001	.980

* $p < .05$.

** $p < .001$.

broadsheet press ($\beta = -1.060$, odds ratio = .347, 95% CI: .156–.769, $p = .009$). Logistic regression revealed that the likelihood of a mental disorder being mentioned was almost three times higher for tabloid media ($\beta = 1.078$, odds ratio = 2.940, 95% CI: 1.325–6.521, $p = .008$). To illustrate, 92% of articles published in tabloid papers included a specific diagnosis in their reporting (compared to 80% in the broadsheet press).

3.5 Sources of comments and quotations

Overall, the most frequent source to be cited directly in the print media articles throughout the entire investigation period as well as in both types of press was the affected athlete him- or herself ($n = 548$, 78%) [e.g., “It’s okay not to be okay,” Osaka recently wrote in a Time magazine article. And Biles said in Tokyo that athletes are ‘not just athletes—at the end of the day, we are human beings.’”, see (63)]. The person affected became an element of even greater attention within the second time period (see Table 4) with 82% of all articles including direct quotations by the affected athlete ($\beta = .436$, odds ratio = 1.546, 95% CI: 1.076–2.223, $p = .019$).

Quotes of the (social) environment—including for instance coaches, teammates, friends, or family—were found to have a slightly lower chance to appear in articles published later than 2016, decreasing from 65% in time period 1 to 58% in time period 2 ($\beta = -.314$, odds ratio = .730, 95% CI: .538–.992, $p = .044$). A mental health expert was only cited in 16% ($n = 112$) of articles, with no significant change over time. Regarding the

type of press, no significant differences could be detected for any of the three sources (see Table 5).

3.6 Elements of responsible journalism

Most media guidelines for reporting on mental illness discuss four elements of responsible journalism, including the integration of statistics, the use of appropriate language, the provision of help-seeking information, and the inclusion of an expert opinion (18, 40, 41).

Concerning the *time period* as predictor, the integration of statistics in media articles [e.g., “In a study conducted by Deutsche Sporthilfe (German Sports Aid Foundation), more than a thousand top athletes were surveyed. [...] One in five suffers from occasional depression or burnout, one in ten has an eating disorder.”, see (64)] was significantly less likely in the second investigation period, decreasing from being mentioned in 19% of the articles to 13% ($\beta = -.448$, odds ratio .639, 95% CI: .425–.961, $p = .031$). In contrast, a highly significant association could be determined between the second time period and the outcome item “appropriate language” ($X^2 = 24.125$, $p = <.001$). Articles used appropriate language with an almost three times higher likelihood between 2017 and July 2023 ($\beta = 1.085$, odds ratio = 2.961, 95% CI: 1.886–4.648, $p = <.001$). The use of the remaining two elements of responsible journalism (i.e., helpline information, inclusion of an opinion of a mental health expert) did not differ significantly between both time periods (see Table 4).

When focusing on the proportion of implemented elements of responsible journalism, logistic regression revealed a significantly

TABLE 4 Results of chi-square tests and logistic regression analyses for both time periods.

	2010–2016 No. (%)	2017–2023 No. (%)	Chi square (df = 1)	p	β	Odds ratio (95% CI) for period 1/2	p
Article genre							
News	177 (53)	216 (59)	2.711	.100	.251	1.286 (0.953–1.735)	.100
Feature	71 (21)	61 (17)	2.350	.125	-.297	.743 (0.508–1.087)	.126
Interview	55 (17)	54 (15)	.370	.543	-.127	.881 (0.585–1.326)	.543
Comment, Column	31 (9)	34 (9)	.000	.988	.004	1.004 (.602–1.674)	.988
Sources of comments and quotations							
Person affected by a mental illness	249 (75)	299 (82)	5.590	.018*	.436	1.546 (1.076–2.223)	.019*
Mental health expert	62 (19)	50 (14)	3.066	.080	-.362	.696 (.464–1.045)	.081
Family/friends/teammates/colleagues	217 (65)	210 (58)	4.066	.044*	-.314	.730 (.538–.992)	.044*
Elements of responsible journalism							
Helpline information	76 (23)	68 (19)	1.812	.178	-.252	.777 (.538–1.122)	.179
Statistics	64 (19)	48 (13)	4.686	.030*	-.448	.639 (.425–.961)	.031*
Perspective of a mental health expert	85 (25)	71 (20)	3.616	.057	-.346	.707 (.495–1.011)	.058
Appropriate language	262 (79)	334 (92)	24.125	<.001**	1.085	2.961 (1.886–4.648)	<.001**
0 Elements	35 (11)	17 (5)	8.701	.003*	-.874	.417 (.229–.760)	.004*
1 out of 4 Elements	177 (53)	233 (64)	8.463	.004*	.448	1.566 (1.157–2.120)	.004*
2 out of 4 Elements	66 (20)	70 (20)	.038	.846	-.037	.964 (.662–1.402)	.846
3 out of 4 Elements	43 (13)	31 (9)	3.540	.060	-.465	.628 (.386–1.023)	.062
4 out of 4 Elements	11 (3)	14 (4)	.149	.699	.158	1.171 (.524–2.617)	.700
Perspectives on the high-performance sports system							
Criticism of the system	157 (47)	198 (54)	3.661	.056	.290	1.337 (.993–1.800)	.056
Change of the system	111 (33)	153 (42)	5.613	.018*	.371	1.450 (1.065–1.974)	.018*

* $p < .05$.

** $p < .001$.

TABLE 5 Results of chi-square tests and logistic regression analyses for type of press.

	Broadsheet press No. (%)	Tabloid press No. (%)	Chi square (df = 1)	<i>p</i>	β	Odds ratio (95% CI) for type of press	<i>p</i>
Article genre							
News	356 (59)	37 (41)	9.508	.002*	-.701	.496 (.316–.778)	.002*
Feature	112 (18)	20 (22)	.725	.394	.237	1.268 (.741–2.170)	.387
Interview	79 (13)	30 (33)	20.608	<.001**	1.210	3.354 (2.039–5.519)	<.001**
Comment, Column	62 (10)	3 (3)	5.474	.019*	–1.190	.304(.093–.991)	.048*
Sources of comments and quotations							
Person affected by a mental illness	474 (78)	74 (82)	.928	.335	.276	1.317 (.743–2.337)	.346
Mental health expert	98 (16)	14 (16)	.017	.897	–.040	.961 (.522–1.767)	.897
Family/friends/teammates/colleagues	371 (61)	56 (62)	.056	.813	.055	1.057 (.670–1.667)	.813
Elements of responsible journalism							
Helpline information	117 (19)	27 (30)	.152	.023*	.589	1.802 (1.100–2.953)	.019*
Statistics	99 (16)	13 (14)	.196	.658	–.140	.870 (.465–1.626)	.662
Perspective of a mental health expert	135 (22)	21 (23)	.061	.805	.066	1.069 (.632–1.806)	.804
Appropriate language	532 (87)	64 (71)	13.983	<.001**	–1.032	.356 (.213–.596)	<.001**
0 Elements	41 (7)	11 (12)	2.995	.084	.657	1.929 (.952–3.908)	.068
1 out of 4 Elements	365 (60)	45 (50)	3.150	.076	–.403	.668 (.429–1.042)	.075
2 out of 4 Elements	112 (18)	24 (27)	3.200	.074	.478	1.614 (.969–2.688)	.066
3 out of 4 Elements	66 (11)	8 (9)	.328	.567	–.220	.803 (.372–1.733)	.576
4 out of 4 Elements	23 (4)	2 (2)	.621	.431	–.546	.578 (.134–2.499)	.464
Perspectives on the high-performance sports system							
Criticism of the system	307 (50)	48 (53)	.268	.605	.117	1.124 (.721–1.725)	.605
Change of the system	223 (37)	41 (46)	2.616	.106	.370	1.448 (.927–2.263)	.104

p* < .05.*p* < .001.

lower likelihood for articles to contain no element of responsible journalism within the second time period ($\beta = -.874$, odds ratio = .417, 95% CI: .229–.760, $p = .004$). Similarly, a highly significant association could be detected between the appearance of one element of responsible journalism and the second time period ($X^2 = 8.463$, $p = .004$), with 64% of all analyzed articles between January 2017 and July 2023 containing either helpline information, statistics, appropriate language, or the opinion of a mental health expert ($\beta = .448$, odds ratio = 1.566, 95% CI: 1.157–2.120, $p = .004$).

For the predictor *type of press*, two out of the four elements of responsible journalism reached levels of significance: The item “helpline information” had a significantly higher likelihood to appear in the tabloid press than in broadsheet articles ($\beta = .589$, odds ratio = 1.802, 95% CI: 1.100–2.953, $p = .019$). In contrast, the use of appropriate language was clearly associated with the broadsheet press ($X^2 = 13.983$, $p = <.001$). Here, 87% of articles were written responsibly ($\beta = -1.032$, odds ratio = 0.356, 95% CI: .213–.596, $p = <.001$), in contrast to 71% of articles in the tabloid press. Examining the influence of the type of press on the proportion of implemented elements of responsible journalism revealed no significant differences (see Table 5).

3.7 Perspectives on the high-performance sports system

Over time, we observed a nonsignificant increase ($\beta = .290$, odds ratio = 1.337, 95% CI: .993–1.800, $p = .056$) of print media

articles including statements that criticized the high-performance sports system, such as “Ewald Lienen talks about the revelations of his former protégé Per Mertesacker and the reasons why the Bundesliga makes you sick.” (65). In contrast, statements that described a “change of the system” (i.e., reporting on enhanced mental health awareness in high-performance sports, or drawing attention to implemented or planned initiatives to prevent or reduce mental illness among members of the sports system) were significantly more likely to appear in articles within the second time period ($\beta = .371$; odds ratio = 1.450; 95% CI: 1.065–1.974; $p = .018$).

Regarding the *type of press*, no significant influence on the occurrence of criticizing statements ($\beta = 0.117$, odds ratio = 1.124, 95% CI: .721–1.725, $p = .605$), nor on statements referring to a change of the system ($\beta = .370$, odds ratio = 1.448, 95% CI: .927–2.263, $p = .104$) could be detected.

4 Discussion

Our analysis is the first to our knowledge that examines more than one decade (2010–2023) of print media reporting about elite athletes’ mental illness. Previous studies have assessed changes in media coverage of mental illness in elite athletes often in reference to specific events or incidents, such as examining media coverage before and after Michael Phelps ended his career at the 2016 Olympics in Rio (4, 8). The increasing attention that the topic of mental health receives in media-related research can be attributed to the growing mental health awareness partly

guided and supported by elite athletes who talk openly about their mental health struggles in the media (11). In line with the gradual shift towards enhanced mental health awareness within the world of high-performance sports, our systematic analysis of the German print media landscape indicated that the understanding and openness towards the sensitive topic of mental illness have increased throughout the entire investigation period as well as across different press types.

4.1 Discussion of time trends

In prior research, mass media content has been identified as an indicator of public discourse, thus representing public opinion and changes thereof (19, 33, 39, 42). Examining the media landscape over time, our results suggest that single incidents like the death by suicide of a popular athlete have the power to strongly influence the amount and prioritization of overall reporting on mental illness.

Focusing on the central thematic idea of the included print media articles, our findings show that recently published articles tended to report more frequently on topics that question the glamorous appearance of the high-performance sports system and took a more critical stance towards high-performance sports. Conventionally, media coverage used to reflect values typical of the culture of risk deeply embedded in the sports system (such as the win-at-all-costs mentality) and celebrated athletes as invincible heroes (8, 12, 15, 43). In this regard, Sanderson et al. (43) designated the interaction between sports media and the sports system as a “symbiotic relationship” (p. 8), with the media reinforcing the spectators’ imagination of elite athletes as the ideal of human perfection. However, our study revealed that the idealized notion of the high-performance world has recently come under increasing criticism in the media. For instance, in articles covering the well-known abuse scandal occurring within the association *USA gymnastics* revealed in 2016, the media not only highly despised the deliberate concealment of those responsible but also criticized prevailing hierarchies and dependencies in the world of high-performance sports, questioning high-performance sports’ heavy emphasis on performance [cf. (66)].

This trend is further reinforced by the increasing implementation of first-person narratives and direct speech in the context of sports media coverage, complementing the predominant focus on just performance. Our findings show that people affected by mental health issues were the source most frequently cited within the included print media articles, specifically within the second investigation period. This finding supports latest research on media coverage, which demonstrates that athletes are nowadays more frequently quoted in news stories related to mental disorders, giving them the chance to speak up for themselves (8, 11–13, 48). Further, as Gwarjanski and Parrott (22) have pointed out, the most effective way to combat stigma related to mental illness is through personal contact with individuals affected (5, 22, 34, 67). In this context, research on health communication and sport showed that also *parasocial contact*, defined as the “one-sided relationship with

media personae” (5, p. 149), has the potential to reduce prejudices and sensitize people for mental health (5, 11, 67). The increasing number of athletes talking openly about their mental health struggles in the media therefore carries the potential to reduce mental illness stigma (5, 14, 67). However, in this context, it is also important that the media do not unquestioningly and uncritically present the personal attitudes and opinions of athletes themselves. For instance, the presentation of a celebrity athlete’s treatment or lifestyle advice that is mainly based on their own experiences and not on scientific evidence could indeed adversely affect public understanding and, in the longer term, have negative real-world consequences [see also (68)].

Also, mental illnesses were found to be no longer depicted in a sensationalist or stigmatizing manner, as criticized in some studies of the past decade (18, 31, 33, 39). Instead, print media articles tended to handle medical diagnoses more cautiously and neutral. Although mental illnesses are nowadays better researched and understood (4), most articles from the second investigation period did not mention any diagnosis at all. An explanation for this trend could be the rising societal importance of various mental health issues leading to an increasing incorporation of the topic by the media. The example of Simone Biles’ withdrawal from the 2021 Tokyo Olympics illustrates the great attention that mental health issues are nowadays receiving in the media (9). By being honest about her need to protect her mental health, Biles was highly praised by the media for her courage while rumors of a possible mental illness were rarely found in articles (9, 10). The growing awareness for confidentiality and privacy rights may offer another explanation for the finding. In this context, new ethical guidelines, such as the *Goldwater Rule* established by the American Psychiatric Association (56), which prohibits psychiatrists from offering a professional diagnosis of public figures without having conducted a personal examination, might also have repercussions on how mental health is addressed in the media.

The rise of mental health awareness was not only evident regarding content-related aspects of print media articles but was also reflected in formal aspects, particularly with regard to responsible journalism. In collaboration with the World Health Organization, specific media guidelines have been established to enhance sensitivity and diligence in the context of journalistic work (2, 37). Our results indicate that the media increasingly report considerably on mental illness of elite athletes, as pointed out by prior media-related research (14, 18, 22, 38, 54). This is particularly reflected in the more frequent use of accurate language in recent years, avoiding metaphoric or dramatizing expressions.

4.2 Discussion of press type

Nevertheless, the intention of the media to “entertain” the audience carries the risk of emphasizing certain aspects of a story while minimizing other information and, thereby, shape the perception and salience of a story (22, 43, 69). Caught between fulfilling expectations and educating the public, journalists tend to structure their narratives according to the ideas and attitudes

of the respective interest groups their stories are addressed to (8, 15). Our study revealed that there are significant differences between press types in terms of their approach to the topic of mental illness.

Overall, our results suggest that the examined German tabloid media mostly did not meet common professional standards in media coverage (51). Particularly with regard to story content and responsible journalism, our findings confirmed the lack of quality reporting on mental illness within tabloid media as indicated by previous studies (33, 35, 51). It was clearly noticeable that tabloids attached great importance to sensationalizing reports. According to our comparative analysis, tabloid papers tended to present their news and stories more in a lively manner, emphasizing personal fate and focusing preferably on personal experiences than on data and facts (34, 36, 70). To illustrate, the proportion of interviews that by default provide personal insights rather than neutral information was found to be significantly higher in tabloid papers than in the broadsheet press. However, including more first-person narratives (such as interviews) in reporting can also be seen as counteracting stigma. Wahl (71) pointed out that the absence of interviews in the media with people who have experienced mental illness might lead to the assumption that they are “too disordered, too disorganized, too unreliable to speak for themselves” (p. 1598).

In terms of responsible reporting, broadsheet papers were found to report more responsibly on mental illness, particularly with regard to the use of appropriate language. In contrast, tabloid papers seemed to place far more emphasis on the emotional impact of their coverage, by using emotive and placative expressions when portraying people affected. Our results confirm previous findings regarding the increased use of metaphorical and equating descriptors in tabloid media coverage (33, 72, 73). Clement and Foster (33) attributed the use of inappropriate language to the goal of enhancing the entertainment value of news stories. The only exception regarding the predefined elements of responsible journalism was the inclusion of helpline information, which appeared more frequently in tabloid papers. This deviation could be explained by the fact that the sensitive topic of suicide represented the third most common thematic focus in tabloid press articles. According to established media guidelines (40, 41), references to helpline information are obligatory when reporting about death by suicide and similar incidents (e.g., suicidal behavior, attempts to exhibit suicide).

The accurate reporting in broadsheet papers was further demonstrated by a higher sensitivity to the reported mental disorders. Broadsheet articles appeared to be more cautious, focusing less on official diagnoses and more on the wellbeing and current mental health of the athletes concerned. This approach to sensitive issues indicates that broadsheet papers may have been more effective than tabloids in responding to increasing public awareness of mental health. Another possible explanation for reporting on elite athletes' mental health problems in general, even in the absence of a diagnosis, may be a recognition by the broadsheet press of the inherent value of discussing mental health more broadly.

In this context, our findings also show that tabloid papers presented far fewer critical comments in their reportage that questioned embedded values of the high-performance sports system and encouraged critical thinking. Previous research has indeed demonstrated that the tabloid press tends to attract readers by focusing on sensational and dramatic stories, supplemented by private details, thereby neglecting the educational function of the media (35, 70). From the media's point of view, finding a balance between the search for sensational stories and acting with consideration could be a difficult challenge.

4.3 Limitations and future research

Applying a systematic search strategy in the LexisNexis database represents a strength of the current study. However, the external appearance of a print media article, its positioning within the printed paper, typeface, and images could not be included in our study, as the databases used did not provide this information. The coding process represented another potential limitation of the current study due to the subjective assessment some outcome items required (such as deciding on the main thematic focus of the article). To counteract this limitation, we developed a detailed codebook that contained intersubjectively comprehensible rules for coding as suggested within similar media-related research (39, 42, 73). Further, both reviewers coded 10% of the sample demonstrating substantial intercoder reliability (39, 74).

In the context of interpretation, it is also important to consider the journalistic perspective when analyzing print media articles. Journalists' own experiences and predispositions may result in possible biases (24, 75). We must consider that media personal might diagnose a mental illness more quickly than necessary to fit their story line and to attract the reader's interest. Also, once an official mental disorder diagnosis has been made, journalists may interpret and present an athlete's behavior differently in future reports. It is therefore important to note that we did not examine the occurrence of mental illnesses in the world of high-performances sports, but its appearance in the media.

To bypass the media's role as gatekeeper of information and to take control of their own narrative, many athletes have recently chosen to share their stories through social media (11–13). Excluding social media from our analysis can be seen as a limitation. With its specific features such as allowing for multidirectional communication and *parasocial contact* (11, 34), social media represents a promising avenue for future media and mental health research within the context of high-performance sports.

Although the perceived taboo of mental illness is increasingly lifted, there is a clear need for future media-related studies to explore the traditional media's and social media's role in this process (11). In this regard, a promising direction for future research could be comparisons across different national contexts, examining how cultural and traditional narratives shape media representations and how the public is influenced by them. To build specifically on our findings and thus complement the broad overview presented in this paper, future qualitative research could also explore print media articles at a more interpretive

level, examining the frames in which stories about elite athletes' mental health are embedded.

5 Conclusion

Media stories presenting personal fate like the rise and fall of prominent figures like elite athletes will always meet great interest in the public (12–14, 27). To promote critical and independent thinking in society, it is of utmost importance that the media report responsibly on sensitive issues such as mental illness or death by suicide rather than undermining facts with emotion and prurience to capture readers' interest. Overall, the findings of the current study suggest that the media seem to be taking a more critical and responsible approach to the topic of mental illness in high-performance sports. By increasingly giving voice to those affected, the media are demonstrating a greater understanding of the importance and seriousness of the issue. Furthermore, our media analysis shows that the media have begun to distance themselves from the ideology of the sports culture. The media's willingness to question conventional ideals embedded in the sports culture may reflect and further contribute to mental health awareness in society.

Data availability statement

The data analyzed in this study is subject to the following licenses/restrictions: The data included in the manuscript are articles published in newspapers and magazines. Therewith, they are publicly available, however, sometimes behind a paywall. Requests to access these datasets should be directed to Marcia Hapig, marcia.hapig@uni-tuebingen.de.

Author contributions

MH: Conceptualization, Data curation, Formal Analysis, Methodology, Writing – original draft, Writing – review & editing. GZ: Conceptualization, Funding acquisition, Writing – review & editing. JM: Conceptualization, Funding acquisition, Writing – review & editing. AT: Conceptualization, Funding acquisition, Supervision, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fspor.2024.1446680/full#supplementary-material>

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“You’re made to feel like you’re the crazy one”: an interpretive description of former college student-athletes’ views of emotional abuse

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Many normalized coaching behaviors are often abusive yet are seen by coaches and athletes as instrumental in achievement and competition. The current study was designed to extend past research and theory by subjectively exploring how and why former intercollegiate athletes identified their head coach as emotionally abusive. Twenty former intercollegiate student-athletes ($M_{\text{age}} = 26.0$ years) from nine sports participated in semi-structured interviews ranging from 65 to 189 min ($M = 105.8$, $SD = 58$). Interpretive description methodology was used with reflexive thematic analysis to generate a coherent conceptual description of the themes and shared experiences that characterized emotionally abusive coaching. The themes that associated with an athlete labeling a coach as emotionally abusive fall under two aspects of Stirling and Kerr’s 2008 definition: *non-contact coach behaviors* and the resulting *harmful outcomes* experienced by the athletes. Non-contact behaviors were ones that *diminished performance*, *neglected holistic development*, and were *inconsistent*. The harmful effects were the *negative emotional responses* and *dehumanization* experienced by athletes. Finally, participants felt that a coach’s desire for *power and control* over athletes explained the coach’s behaviors generally. Based on these results, we put forth the conceptual claim that emotional abuse, and psychological violence more broadly, *cannot be defined or identified based solely on the perpetrator’s behaviors*. The athlete’s cognitions, perceptions, emotions, and behaviors are critical in determining whether emotional abuse occurred, and these interpretations are shaped by an athlete’s existing relationship with the coach.

KEYWORDS

emotional abuse, student-athletes, intercollegiate athletics, coaching practices, interpretive description

1 Introduction

Although sport is recognized as a context for the development of life skills, it is not an inherently positive experience (1). Current research indicates that more “elite” sporting environments are associated with athletes’ perceptions of abuse (2–5). One of the most experienced forms of abuse is emotional abuse, wherein there is a power imbalance in the coach-athlete relationship (6). One of the earliest and most common definitions of emotional abuse comes from Stirling and Kerr’s investigation of 14 retired, elite female swimmers (7). It includes “a pattern of deliberate non-contact behaviors by a person

within a critical relationship role that has the potential to be harmful” and breaks down this type of abuse in terms of perpetrator behaviors, victim outcomes, and relationship-specific patterns (8). This conceptualization of emotional abuse has been used in several extensive investigations seeking to quantify the prevalence of such maltreatment in sport [see (9–12)]. Given the relatively short history of abuse research in sport, this foundational definition has provided great insights for potential policies, interventions, and preventions for safeguarding child athletes. While this conceptualization of emotional abuse has been accepted by researchers and policy makers, it was originally proposed almost 15 years ago. Now that there is greater attention on emotional abuse in sport, it is important to explore whether this definition remains an accurate reflection of how athletes subjectively identify emotionally abusive relationships with their coach.

The coach-athlete relationship is unique because of the interdependence between the two parties, where the coach and the athlete need each other to meet their individual and shared definitions of success [e.g., satisfaction, skill development, performance (13)]. Both coaches and athletes have been found to believe that certain behaviors are essential to “drive performance, deter failure, test resilience and commitment, develop toughness, assure interpersonal control, and promote internal competition” [(14), p. 1]. Coaches may also be predisposed to engage in certain hostile or abusive behaviors due to their positions of power (15), coupled with their desire to bring out the highest levels of performance in their athletes (16). All these factors may hinder an individual’s recognition of emotional abuse. Further complicating this recognition is that identifying emotional abuse is inherently context-dependent (8). Determining what is a pattern, and if and to what extent behaviors cause harm, are decisions that are dependent on the individuals and institutions involved. While Stirling and Kerr’s definition arose from investigation of adult athletes, these athletes were training at a national and international level and in an individual sport (swimming). This is a specific training context, meaning this operationalization might not completely reflect the adult athlete experience, especially in the decentralized sport system in the United States.

One area of adult sport within the United States where athletes may be particularly vulnerable to abuse is that of intercollegiate sport. Intercollegiate athletics is an umbrella term that includes multiple forms of varsity-level sport involvement colleges or universities. Three of the largest organizations falling under this umbrella include the National Collegiate Athletic Association (NCAA), the National Association of Intercollegiate Athletics (NAIA), or the National Junior College Athletic Association (NJCAA). While intercollegiate athletics are considered to be the highest level of amateur sport, many consider intercollegiate athletics to be an elite or sub-elite form of sport due to a large time commitment and a focus on performance outcomes (17). Intercollegiate student-athletes often face similar challenges associated with life stages, including a need to adapt to the transition from adolescence to adulthood and a need to simultaneously adapt to more intense athletic and academic demands (18, 19). Furthermore, intercollegiate coaches are expected to ensure competitive success of their team, while simultaneously

providing mentorship to student-athletes, a balancing act that has been noted as a source of stress (20). Finally, in addition, financial and academic control exerted over student-athletes, the potential for organizational rule-breaking, and a general lack of oversight by schools and systems alike (21, 22) make intercollegiate athletics a unique context for student-athlete exploitation and maltreatment (23–25). Despite the cultural cache of intercollegiate sport and its exploitation-conducive environment, most abuse research has been conducted on international, non-American athletes, with few works on intercollegiate athletes.

Given the aforementioned gaps, the present study aims to extend past research and theory [e.g. (26, 27)] by subjectively exploring how and why former intercollegiate athletes identified their head coach as emotionally abusive. We strategically interviewed former intercollegiate student-athletes to ensure participants had time to adjust to retirement and reflect on their sport experience (7, 8, 28), and to avoid participant concerns about potential retaliation.

2 Method

The authors aimed to center and elevate the voices of former student-athletes in the current study through the illustrative methodology of interpretive description (29). Aligned with the goals and purpose of interpretive description, the researchers utilized a social constructivist paradigm of knowledge, wherein reality is subjective (relativist ontology) and meaning is co-created through interactions between researchers and participants (subjectivist & transactional epistemology) (30). This aligns with the proposed purpose of the study in understanding how and why former intercollegiate athletes subjectively identified emotionally abusive coaching behaviors and allowed the authors to balance researcher perspective and knowledge with participant experience.

2.1 Participants

Participants included a total of 20 (4 male, 16 female) former intercollegiate student-athletes. All were former intercollegiate student-athletes and had experienced abuse for at least one full year of participation. Seventeen participated at NCAA institutions, one participated at an NAIA institution, and two participated at NJCAA institutions. Of the 17 former NCAA student-athletes, 13 were Division I student-athletes, two were Division II student-athletes, and two were Division III student-athletes. Participants ranged in age from 19 to 44 years at the time of data collection, and 13 of the former student-athletes had been supported by full or partial athletic scholarships while competing across nine sports. Student-athlete characteristics are detailed in Table 1. Please note that we follow the recommendation of Martinková and colleagues (31) by identifying participants by sex rather than gender because biology is what sport categories are based on, and sex, not gender, is subject to “verification.”

The lack of balance across the number of male and female participants is illustrative of the differing social contexts that

TABLE 1 Participant characteristics.

Participant number	Sex	Sport	Age at time of interview	Years on an abusive intercollegiate team
1	Female	Lacrosse	24	1
2	Female	Softball	23	3
3	Female	Volleyball	24	4
4	Female	Lacrosse	21	3
5	Female	Volleyball	22	4
6	Female	Soccer	23	3
7	Male	Swimming	30	4
8	Female	Basketball	27	3
9	Female	Soccer	23	1
10	Female	Soccer	29	4
11	Female	Track/cross country	29	2
12	Female	Basketball	24	2
13	Female	Track/cross country	27	4
14	Female	Volleyball	23	4
15	Male	Football	31	1
16	Female	Soccer	35	4
17	Female	Basketball	19	1
18	Female	Basketball	19	1
19	Male	Basketball	23	4
20	Male	Baseball	44	4

arise from athlete sex. Social expectations may lead males to report less frequently on instances of abuse (9, 12). We intentionally sought out male athletes with the goal of having a more balanced sample, but it remained difficult to recruit male participants during the screening process, as potential participants expressed discontent and fear in acknowledging that they experienced emotional abuse, despite IRB protections and associated assurances of anonymity [see (27)].

2.2 Procedure

The present study utilizes the 18 cases previous discussed by Alexander and colleagues (26, 27) and additional interviews conducted as part of an ongoing data collection. The sample was recruited using a variety of methods, including targeted social media posts, contact with institutional stakeholders (e.g., coaches and administrators), referrals, and via publicly accessible documents (i.e., media stories). After the second author made initial contact, prospective participants completed a short online screening survey to ensure they believed that they had experienced some form of emotional abuse during their intercollegiate athletic career. Specifically, each potential participant was provided a definition based in Stirling and Kerr’s (7, 8) operationalization of emotional abuse, along with examples of potential behaviors, and were instructed to self-select whether they met criteria. Use of a common definition in screening ensured that participants were at least familiar with more empirically based definitions of what constitutes emotionally abusive coaching, even if their detailed experiences were likely to differ across contexts.

The second author conducted semi-structured, in-depth interviews online via Zoom with former student-athletes who believed they had experienced some form of emotional abuse during their intercollegiate athletic career. It is important to note that some participants expressed discomfort with labelling emotionally abusive

behaviors as abusive, so the second author allowed them to utilize the language most comfortable for them and also questioned cases where participants did not want to utilize this terminology. The experiences of participants were centered around their own definitions and interpretations of emotionally abusive behaviors and follow-up probes were used to allow participants to expand on their previous responses without inferring meaning (32). To gain a better understanding of how and why these former student-athletes identified their coaches as emotionally abusive, participants were asked about how their abusive college coaches compared to other coaches throughout their athletic career. These opportunities for participants to compare and contrast different coaches clarified athlete’s personal perspectives of what kind of coach behavior was “good” or “bad.” Interviews ranged in length from 65 to 189 min ($M_{\text{length}} = 101.75$ min), and audio recordings were transcribed verbatim and cross-checked for accuracy by two members of the research team, resulting in 736 pages of single-spaced text.

2.3 Data analysis

In this analysis the authors relied heavily on how individual participants categorized, compared, and contrasted coaching practices throughout their career to understand how and why athletes would be compelled to describe their coaches as emotionally abuse. Follow-up yes or no clarifications (e.g., “Do you consider those behaviors to be abusive?”)—in addition to specific follow-up probes (e.g., “What makes those behaviors non-abusive?”)—were also utilized to ensure that the interview was understanding each participant’s perspective. As such, the current study employed interpretive description (29) as an illustrative qualitative research methodology. Interpretive description enables researchers to interpret the subjective meanings and perceptions of participants by identifying themes and patterns that encapsulate the phenomenon under investigation. Interpretive description was useful

in this study because it provided opportunities for nuanced and multifaceted descriptions of the nature of emotional abuse in the coach-athlete relationship in intercollegiate sport that went beyond current researcher-created definitions to better encapsulate *context*. It is also important for the authors to mention that the conceptual description presented in this study is not intended to be an operationalized definition or universal portrayal of emotional abuse in intercollegiate athletics. Rather, it is a more subjective interpretation of the shared components across participants based on the researchers' reconstruction of the data (29). The interpretive description methodology was coupled with the analytic procedures of reflexive thematic analysis (33) to flexibly interrogate the interview transcripts individually and as a whole, while comparing within and across participants to articulate the common themes that led to the identification of emotionally abusive coaching. The first and second authors engaged separately in inductive coding procedures to understand participants' experiences of abuse, noting that there were shared emotional responses and generalizations of coach behavior. As a result, the first author reexamined the transcripts to semantically code how participants explicitly described abuse or compared their abusive coaches to non-abusive coaches. Participants' descriptions of abuse were then compared within and across transcripts to understand how or why they identified experiences with certain coaches, but not others, as emotionally abusive.

As a subsequent step, the first and second author worked together to map the thematic relationships between participants' descriptions of coaches. The first author focused on *depth*, with specific descriptions of coach behavior, whereas the second author focused on *breadth* to ensure that the holistic context of each athlete's career was considered. In line with Braun and Clark (33), the goal of this analytic approach was to gain rich and nuanced insight into abusive vs. non-abusive coach behavior, while also highlighting the factors that were most relevant to whether an athlete characterized a coach as emotionally abusive. Finally, to serve the applied purpose of interpretive description, a conceptual claim was written with the intent to "capture the important elements within the phenomenon in a manner that can be readily grasped, appreciated, and remembered in the applied practice context" (29, p. 188).

Given the interpretive nature of the study, the authors brought their own experiences into the data analysis. The personal influence of the authors is not separated from the participants in interpretive description and instead assert that research outcomes are the result of reciprocal interaction between the inquirer (researcher) and objects of inquiry (participants) (29). Therefore, it is essential for researchers to be clear about their own experiences (and by extension, assumptions) so readers can appropriately assess a study's methodological coherence (30). The first author was involved in competitive gymnastics for nearly three decades as an athlete, judge, and coach and regularly witnessed and heard about emotional abuse of athletes. The second author was a competitive athlete from a young age, facing many instances of emotional and physical abuse throughout her youth sporting career. The third author experienced harsh coaching and often watched other athletes walk away from sport due to experiences of maltreatment throughout his career in youth, high school,

NCAA, and professional sport. Organized sport remains a vital part of all three authors' identities and value systems, and influences the way they engaged in the research process.

3 Results

Due to the nature of interpretive description as a methodology, and its goal to develop a conceptual claim, the themes may not be as clearly defined as in a study using only thematic analysis. Subsequently, the provided themes should not be viewed as categorically distinct and should be instead viewed as interrelated ideas that encapsulate how contextual factors influenced the interpretations of this group of student athletes.

3.1 The performance-oriented intercollegiate sport context

The overarching contextual factor shared across all 20 participants was *their personal and societal understanding of what it meant to be an athlete at intercollegiate level and how this related to a more "intense" intercollegiate sporting environment*. Across gender, types of sport, and competitive divisions, participants described the thrill of earning a spot on a college team after a childhood of athletic commitment [see (26)] and the pressure and responsibility that came with the privilege of being able to continue their athletic career at this higher level. For example, Participant 1 described how being able to continue lacrosse in college was not just about being able to play: it was an avenue to support her higher education goals as a member of an equity-deserving group. This context influenced how she perceived and reacted to the behaviors of her abusive head coach:

I referenced earlier me being a first-generation college student as being naïve, being unaware of what lies ahead after high school. I took this opportunity as a way to make my parents proud, make myself proud, make my peers proud, my community proud. And going into this, I kind of saw some red flags from my head coach in the beginning. But because I, you know, race, ethnicity, my background experience; I never spoke out about it.

Community influence extended beyond families and hometowns and also included the cultural factors attached to the school or the program. Participant 19 describes the pressure that come from the privilege of playing on a "winning" team:

We're one of the best division three programs in the state. And a lot of people, especially alumni, really, really bank on us to have a good season. Especially because we had, you know, a lot of success. We have double digit conference championships, we've kind of ran through our conference, a lot of people watch our games, a lot of people come to our games, even though we're a small school... We used to have packed gyms. So there's a lot of pressure on you to perform well, and for us to win.

Participant 19 goes on to describe how this external pressure to win influenced the coach’s actions (“if you made a mistake, you were sitting on the bench, there was no time to make it up ... if you made a mistake you were sitting”) and how he perceived the coach’s decision-making related to playing time [“You have your players who had played well last season, who you really want to key in on for the next season, and (you need to) bring up the freshmen”].

The contextual meaning of intercollegiate athletics was informed by participant’s previous sport experiences and their relationships with other coaches in the past. Participants specifically compared their coaches to one another throughout the interviews by highlighting positive and negative aspects of behaviors, typified by Participant 13:

I had a mixed bag of experiences leading up to college.. Like, I had some coaches tell me, “you don’t look like an athlete,” and they would just be really hard on me, if I made a mistake, bench me, you know, right off the bat...But then in high school, I had a cross country coach that just like, absolutely changed my life, because he was one of the first coaches to actually believe in me and really push me to do better..he’s really the reason that I got my scholarship...he really viewed us as people first, and athlete second.

Crucially, an individual’s specific perceived context served to shape personal experiences and expectations for coaching behaviors, highlighting that both actual and perceived contexts mattered in how athletes interpreted their experiences.

3.2 Determining coaching behaviors as abusive

When describing how and why participants came to recognize a coach as emotionally abusive, they noticed incongruencies between their expectations for a positive, performance-oriented, and professional coach vs. the actual behaviors these coaches demonstrated over time. Given actual previous experiences in sport coupled with perceived context, former student-athletes expected their coaches to support them, to primarily focus on

athlete performance, to provide adequate feedback, and to serve as a professional authority figure. Some participants also voiced expectations for holistic athlete development and for more humanization of student-athletes within these relationships. A coach was labeled as emotionally abusive only after participants were able to engage in self-referential processing related to what each individual athlete personally understood to be good or appropriate coaching and bad or inappropriate coaching.

Emotionally abusive coaches were fundamentally seen as not focusing on aspects of performance, feedback, or professionalism and not being concerned with overall athlete development or wellbeing. The themes that best encapsulate the contextual factors the led to an athlete labeling a coach as emotionally abusive within the intercollegiate athletics are organized under two aspects of Stirling and Kerr’s 2008 definition: *non-contact coach behaviors* and the resulting *harmful outcomes* experienced by the athletes. Non-contact behaviors were ones that *diminished performance*, *neglected holistic development*, and were *inconsistent*. The harmful effects were the *negative emotional responses* and *dehumanization* experienced by athletes. Finally, participants felt that a coach’s desire for *power and control* over athletes explained the coach’s behaviors generally. [Table 2](#) displays the frequencies of responses across and between participants to provide a high-level summary of the themes discussed in each interview.

3.3 Non-Contact behaviors

3.3.1 Diminished performance

While participants came into intercollegiate sport with the assumption that coaches were going to help them be competitively success, emotionally abusive coaches were described as acting in ways that did not help or even hindered athletic performance. One way this was exemplified was through hostile verbal behaviors. Participant 9 explained how she would get frustrated in practices following games because of a lack of actionable critique: “It was overall, ‘y’all played like crap. Y’all played like shit” ... but that’s nothing specific to soccer. Like, please, tell me exactly what I did wrong.” Participant 7 also heard similar comments from his coach: “And instead of asking, ‘okay, what went wrong?’ He’d be like, (imitates), ‘I can’t believe

TABLE 2 Data matrix showing themes discussed by participants.

	Participant																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Intercollegiate Sport as Performance-Oriented	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Non-contact Behaviors																				
Diminished Performance	X	X	X	X			X	X	X		X	X	X	X			X	X		
Neglected Holistic Development		X	X			X	X		X	X				X		X		X		X
Coach Inconsistency	X	X	X	X			X	X	X		X	X	X				X	X	X	X
Harmful Outcomes																				
Athlete Negative Emotional Responses	X	X	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X
Athlete Dehumanization by Coach	X	X		X	X	X	X	X	X	X		X	X	X	X		X	X		X
Coach Demonstration of Power and Control	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X

it, we've trained all week" like very dramatic ... he could be angry too. But the goal was to humiliate you always." Other participants described coaches insulting them, including Participant 12's coach calling them "dumb and stupid" for not executing a new drill properly and Participant 9's coach berating substitute players because they "aren't f-ing [fucking] good enough to even be playing." The emotionally abusive behavior of the coach also affected gameday performance when coaches were censured by the referee. Participant 1 describes an instance: "one time during the game, she started cussing so much. She was like: 'you F-ing pansies! You are so F-ing slow, you guys are brats!'" ...The referee ended up having to give her a yellow card, and a red card." The general frustration of participants related to a lack of performance-focused feedback is evoked by Participant 17: "He wasn't honestly a coach. He never taught us anything. I didn't get better whatsoever. Like you're supposed to get better in college ... he just yelled at us just to yell at us."

Another way participants felt their performance was impaired was through arbitrary and excessive conditioning and punishments. As high-level athletes, participants recognized the importance of physical fitness for their individual and collective success and for injury prevention. Participant 9 explains when extra conditioning might be appropriate: "If coach said 'hey, we're gonna have to do a little extra running because y'all were physically not able to keep up with the other team.'" Most participants also agreed that some degree of physical punishment, such as conditioning, was appropriate, like Participant 3: "Yes, a running punishment is fine. If we didn't, if we didn't play good, like that makes sense." However, participants reported that their emotionally abusive coaches assigned extreme physical conditioning for reasons other than enhancing performance. For example, Participant 10 described how her coach leveraged extra conditioning to excessively punish individual student-athletes or a majority of the team:

We had some girls go follow him and run, maybe 10 plus miles ... Some of the other girls had to do a bunch of sprints ... But none of it seemed like it would have benefited us in a soccer game, uhm. He told us that we lost a game in the first half. So, we had to run 45 min of like excruciating sprints to make up for the 45 min...

Some participants reported that they held more informal measures around defining *appropriate* and *excessive* levels of conditioning, including a lack of safety, general cruelty, and vomiting as a signal of "significant conditioning." Safety became an issue with coaches completely disregarded the health and safety of student-athletes, even when these athletes voiced concerns about their wellbeing. Participant 18, a basketball player, reported that her coach utilized treading water as a form of conditioning. She tried to warn them that she could not swim, but they did not listen, leading to an instance where she almost drowned: "If we grabbed onto the wall, we would have to start over...I started drowning...My friend actually pulled me out of the water.. I [just] didn't want to make our team tread water for 20 min." No lifeguards were on-duty, and no alternatives were

given to athletes that could not swim, meaning that Participant 18 had a near-death experience. Furthermore, Participant 2 explains that her coach made her engage in push-ups to punish her, even when she was contraindicated by medical personnel for push-ups and other activities due to a shoulder injury:

She knew my labrum was not the best and I was going to physical therapy for it... [After a drill] she was like, 'okay, y'all do pushups until I say, stop, because y'all teams lost.' And I was like, 'hey, can I, instead of doing pushups because the trainer said I can't do that. Do you mind if I do sit ups or something instead?' And then she was like, 'Oh, so you want to get smart. Good news team. Since [Participant 2] is trying to be smart, she's gonna do all of the pushups.' And then she made me do pushups in front of everybody until like I literally started crying because of the pain, because it was so bad.

This lack of care or presentation of alternatives to promote safety hindered performance by making activities anxiety-producing and putting unneeded strain on the body as evidenced by Participants 18 and 2.

General cruelty was another marker of excessive conditioning and subsequent performance impairments. Participants explained that some conditioning exercises or punishments could be cruel or unusual, including making adaptations to sport-specific trainings to make them impossible to complete or physical punishment activities that were not necessary for sport performance. Participant 7, a swimmer, explained that his coach often utilized extreme breathing exercises to "promote conditioning" but that these practices were unsafe and torturous:

[Special swimmer snorkel] already constricts your airflow and is a great way of training [breath control], but he would put tape over the top of it and poke a few holes in it.... And there were other exercises where you'd have to swim with a mesh bag over your head. Which is just like waterboarding, when you pick your head up, you're struggling to breathe.

This type of training was clearly unsafe and was also deemed to be cruel since athletes were subjected to physical pain and simulated drowning when wearing bags over their heads.

Training could also be considered unsafe when it was not balanced with adequate rest and recovery. Participant 10 recognized the benefits of extra conditioning "while sure, you're getting more in shape and all that stuff" there were longer-term consequences:

It definitely caused people to start getting injuries ... overworking ... and then no rest, it has a significant impact on your body. And as women who are young adults, we're still growing, and those growing pains on top of overexertion...

Furthermore, Participant 4 reported that their coach would have them do specific exercises when the field was wet or it rained as a way to mock and punish the athletes: "She was like,

‘oh, it’s wet, isn’t it? Yeah, I thought sit-ups would be better today than pushups.” Participant 13, in contrast, explains how a non-essential sport punishment for tardiness aimed specifically to have track and cross-country athletes roll horizontally until they vomited: “And the whole design of that was to get the athlete to throw up because it does something with your vision where it stimulates motion sickness... it wasn’t for fitness or anything like that.” These behaviors were deemed cruel and unusual due to a general lack of safety and a perception that the coach was engaging in these behaviors to intentionally harm student-athletes.

Vomiting as a marker of excessive conditioning was mentioned by multiple participants. Oddly, vomiting was often reported to be a sign to emotionally abusive coaches that student-athletes were experiencing “good” conditioning, were working hard, or were successfully being punished. Many student-athletes explain that their coaches had them engage in excessively intense conditioning activities that had made many athletes sick or ill. Participant 2 describes a conditioning drill aimed to promote conditioning via excessive exercise, with vomiting as a marker for *hard work*: “We would get ... on the foul line, and we would have to do like bear crawls back and forth until somebody would throw up.” Participant 20 also describes the consequences for student-athletes that faced extreme punishment workouts for disobeying coaches, which frequently made them vomit or pass out: “It’d make most guys vomit. I mean, some guys passed out, some guys vomited.”

In sum, emotionally abusive coaches were described to act in ways that did not help or even hindered performance via hostile verbal behaviors with unclear performance instructions, in addition to arbitrary and excessive amounts of conditioning and punishments. Some participants also specified that excessive amounts of physical activity were able to be specifically demarcated by being classified as unsafe, cruel, and/or not grounded in scientific standards for training or fitness.

3.3.2 Neglected holistic development

Half of the 20 participants reported that they expected more positive outcomes out of the relationship with their coaches, including a focus on more holistic student-athlete development in the relationship. Participants recognized that college coaches played an important role in their overall holistic development specifically via academic success, ensuring general compliance with the many rules and regulations of intercollegiate sport governing bodies, and influencing their lives outside of sport. Some participants explained that their emotionally abusive coaches did not clearly follow some academic rules. Participant 2 explained how her coach would meddle during study hall: “She would walk around and say, ‘I would definitely suggest that you do this [course] because I think that that’s more of a *priority* than your other stuff. The other stuff you can get done later.’” This coach also made recommendations about classes without having appropriate knowledge or expertise, telling student-athletes, “I wouldn’t take that class ... That’s a harder class, push that off to the fall when you have a little bit more time.” Participant 2 reported that some student-athletes needed to stay in school for an extended period due to this meddling.

Furthermore, coaches were assumed to have partial responsibility for general compliance and student-athletes’ lives outside of sport. Most participants reported, however, that emotionally abusive coaches disregarded broader rules and regulations in favor of their own whims, such as Participant 10 being forced to do 3 h of running before official practice later in the day. Participant 6 also described illegally losing her scholarship at the end of her freshman year:

He goes, “I’m gonna take your scholarship away, because you didn’t perform like we were anticipating you to perform” And mind you, I’d only been able to play in the preseason [before being diagnosed with a season-ending tibial stress fracture]... I didn’t know at the time what all of the rules were... But at the end of the day, he removed my scholarship because I was injured, because I was not able to participate in the remainder of the season. And now being heavily involved in collegiate athletics, I know that as a coach, you’re not allowed to take a scholarship away from an athlete for being injured.

All participants recognized that intercollegiate coaches had a unique amount of control and influence in their lives due to rules and regulations from their conference and the national organization (i.e., NCAA, NAIA, NJCAA). Participants hoped that their coaches would utilize this position of authority support their development as a student and athlete. Instead, emotionally abusive coaches were seen as detrimentally impacting the holistic development and wellbeing of athletes.

3.3.3 Inconsistency in coach behavior

While participants expected that coaches would act in organized and rationale ways to best promote performance and winning, emotionally abusive coaches were described as inconsistent and unpredictable. These former student-athletes tried to explain this inconsistency from various lenses. Some participants described this inconsistency in more emotional terms, indicating that the coach acted in ways that were either overly kind or overly abusive, using phrases like “complete 180” (Participants 2, 13, 15); “you never knew what you were gonna get” (Participants 1, 3, 7); “a switch flipped” (Participants 8 and 9). Some attributed these behaviors to mental health diagnoses or concerns: “I know full fact you are showing symptoms of bipolar disorder. Going from screaming at us to ‘Oh how’s your dog?’” (Participant 12). Others explained that their coaches were disorganized across all aspects of their lives, with Participant 8 explaining that her experiences with her coach “was [sic] just this roller coaster.”

These inconsistencies were perceived to be especially egregious given that this *atmosphere of uncertainty* often negatively impacted performance: “I was always afraid of just not living up to her standards uhm. But her standards were unrealistic, and they weren’t really clearly defined” (Participant 13). Participants also explained that this inconsistent and erratic behavior had general impacts on their perceptions and wellbeing, with one explaining that these behaviors “made you feel like you’re crazy”

(Participant 8) and another echoing this sentiment: “you’re made to feel like you’re the crazy one” (Participant 20). Although these former student-athletes were highly confused about why their coaches engaged in these behaviors, they were ultimately most concerned due to detrimental impacts on athlete performance and wellbeing.

3.4 Harmful outcomes

3.4.1 Negative emotional responses

Experiencing emotional abuse—in addition to being in a high-demand and intense sport performance environment—led to more intense and long-term negative emotional responses. In fact, these negative emotional responses were some of the most consistent and long-lasting “symptoms” or “signs” of emotional abuse as reported across participants, with half explicitly discussing being afraid or scared of what their abusive head coach would say to them or make them do in practice. Participant 8 even stated: “I mean, why am I going to practice scared as hell all the time?! Like you’re just terrified. You’re just scared, and it does not make any sense.” Several participants also discussed how they regularly cried before, during, or after practice, and many still held strong emotions towards the coach at the time of the interview: “I hate him. He promised my parents he’d take care of me, when I was 12 h away, and he just, emotionally was terrible, draining, demeaning, belittling. I hate him” (Participant 10). Regardless of how participants identified specific coaching behaviors as abusive or non-abusive, they acknowledged that their own feelings and their teammates’ emotional responses were most salient in helping them to understand if these coaching behaviors were acceptable or more abusive.

3.4.2 Dehumanization

A majority of the participants voiced that they expected their coaches to humanize them and to not objectify them, meaning that they expected coaches to prioritize individual athlete wellbeing over overall sport involvement or sport statistics. These former student-athletes wanted their coaches to explicitly show care for student-athletes’ physical health and wellbeing since it would indirectly promote optimal performance; instead, they felt that their coach generally disregarded their health and wellbeing. Dehumanization often manifested in coaches choosing to be cruel to injured student-athletes or regularly encouraging them to continue playing through serious injuries and pain, as described by Participant 6 while she was struggling with what was later diagnosed as a tibial stress fracture:

He continued to make me practice even after it was very apparent that I was affected by something ... my biomechanics were completely off ... but there were no questions about how I was doing, there were no questions about why I was moving the way that I was, there was no questions about how I was feeling, how much pain I was in, or anything along those lines ... There was just really no communication in there.

Some participants also reported dehumanization since their coaches did not support their psychological wellbeing, with Participant 18 explaining that her coach “did not believe” in mental disorders:

My senior year, I did attempt suicide ... And so, I kind of wanted to like, inform my head coach about that. And uhm, he told me that I was just faking, and that mental health and depression is [sic] not real.

Both negative emotional responses and a general sense of dehumanization were harmful outcomes for athletes and led to a general sense of distrust and a lack of athlete autonomy or choice in coach-athlete relationships.

3.5 Coach demonstration of power and control

Aspects of non-contact behaviors and harmful outcomes explain how participants described and emphasized aspects of emotionally abusive coaching. In contrast, these former student-athletes generally utilized a frame of power and control to explain *why* emotionally abusive coaches often demonstrated certain behaviors. Like their broader expectations related to intercollegiate sport involvement, these student-athletes generally expected that coaches utilize their authority appropriately to achieve athletic performance-based goals and to promote the life success of athletes. Participant 20 explains these expectations: “Coaches are in charge of steering behavior and molding young men and women. So, with that ... you might have to redirect bad behavior if a player is out of line or a player gets in trouble.” However, emotionally abusive coaches were perceived to make demands of student-athletes that were not in line with these outcomes. Punishments, specific behavioral rules not grounded in either performance or life-based outcomes, one-off demands, and more implicit forms of power were reported to be wielded by coaches to control and abuse athletes. Coaches sought to overly regulate the lives of athletes outside of sport through highly specific behavioral rules, such as one described by Participant 4:

We had this weird rule that we couldn’t call her ma’am ... And if someone said it, she would run us right away. Like ... her face would drop, and she’d be like, ‘get on the line now.’ And we would run for however long ... After one of our last games our bus broke down. So, we all got stuck on the bus...and then someone called my coach, ma’am, and then she kicked us all off the bus. We all had to walk down a hill and stand in the woods for like 20 min in the cold before she let us get back on the bus.

Participant 3 described similar restrictions:

No social media all preseason, all season. We can’t go home at all during the season, not allowed to talk to your parents about volleyball during the whole season ... These poor freshmen, some people pick this university because it’s close to their homes, and they weren’t even allowed to go home.

Both Participant 4 and Participant 3 could not understand why these coaches held such rules for athletes since neither of their coaches provided strong justification for such team rule, ultimately interpreting these behaviors as an excessive use of coaching authority. Other participants believed their coach's inconsistent behavior stemmed from this need for power and control: "I think she did that, in an effort to control us, in an effort to sort of keep us on her on our toes and establish who was the boss in that relationship" (Participant 13). Furthermore, one-off demands could be used by coaches to demonstrate their power over athletes, especially concerning holidays and special events. Participant 12 described how a full practice session was scheduled at 5pm on Thanksgiving Day as a punishment. Participant 14 also highlights how these one-off demands could disrupt other meaningful days, as her coach decided to punish athletes instead of letting them celebrate their final day of practice:

So our last practice as seniors in our home court ... He just gets mad, like in the last 10 min of practice. And he's like, "everyone leave, get out of the gym." It was like our last practice as seniors, we didn't even say bye.

Ultimately, punishments, rules, and demands were interpreted as direct ways of abusing and controlling athletes. Coaches were also able to wield their power over athletes in more subtle or implicit ways via social connections and general rejection. For example, Participant 15 describes getting his complimentary tickets for family and friends taken away:

As a football player, you get complimentary tickets.... You know, my mom and my friends were still in town. So ... I'd just give them tickets. They never got a ticket into a game. When we went and played [another institution in same state], my mom tried to give her name at rollcall. They had given my tickets away to someone else. So she couldn't even go in the game.

Some coaches were reported to utilize more longer-term strategies to implicitly take advantage of athletes. Participant 10 felt that her coach purposefully recruited players who would have less power and agency:

I would say that it seemed like [coach] recruited the same types of girls because none of us could quit. Our families couldn't pay for us to have a full scholarship otherwise. So, we felt really stuck. We had to stay and put up with it cause that was the only way we were going to get our degree paid for. So lots of kind of middle class girls that were, just came from really hard working families that couldn't pay for out-of-state tuition. So we felt really stuck.

In sum, many participants interpreted coaching behaviors to be more arbitrary (i.e., not grounded in performance expectations) and were instead primarily about the abusive coach demonstrating power and control over athletes. This is partially because any rationale for such rules, punishments, demands were not explained to athletes. Some also reported that coaches could utilize more implicit forms of power and control to abuse

athletes. It is additionally important to mention that some participants held some alternative explanations for the behaviors of their abusive coaches, with Participant 1 describing some of the abusive behaviors in terms of a lack of professionalism:

She would act like a two-year-old, pout her face ... She would walk off during practice if something wasn't going her way ... She would share a lot of her personal details [about her pregnancy] too, which was I think, looking back now is super, I don't think professional in any way.

4 Discussion

This paper expands on previous work (26, 27) by subjectively exploring how and why former intercollegiate athletes identified their head coach as emotionally abusive. The present study adopted an interpretive description approach to better understand how and why participants identified their head coach as emotionally abusive. Based on the experiences of 20 former intercollegiate student-athletes, emotionally abusive coaches were identified based on the performance oriented intercollegiate context, non-contact behaviors of their coach, the personal harm resulting from their coach's behaviors, and a belief that their coach prioritize power and control over athletes. an interpretive lens of power and control These themes are similar to those identified in the UK's Whyte review as facilitators of abuse: a culture of fear and a coach-led culture (34). In a coach-led culture, coaches are assumed to be all-knowledgeable, and athletes are expected to uncritically follow directions, without providing input into their own training or development (35, 36). Similarly, in a culture of fear, athletes refrain from "speaking one's mind or taking one's own decisions" (36, p. 106) as such behaviors could result in rejection, punishment, or ostracization (36).

Conceptually, these participant descriptions of emotionally abusive coaches provide further depth to Stirling and Kerr's (7, 8, p.178) proposed definition of emotional abuse in athletics: "A pattern of deliberate non-contact behaviors within a critical relationship between an individual and caregiver that has the potential to be harmful." When assessing their experiences in intercollegiate athletics to determine whether there was a "pattern," participants compared multiple aspects of incongruencies across generally *positive expectations* for a performance-oriented and professional coach vs. the *actual behaviors* they demonstrated over time. Interestingly, the behavioral pattern that supported participants' conclusions that they were being emotionally abused was idiosyncratically, a pattern of inconsistency. It was unpredictable and abusive behavior from the coach that student-athletes associated most with their mistreatment and the fear and harmful outcomes that resulted from such inconsistencies in treatment.

When considering aspects of "deliberate," student-athletes interpreted why coaches engaged in emotionally abusive practices through a lens of *power* and *control* (instead of *performance* or *athlete holistic development*). They also recognized "potentially

harmful behaviors” in terms of potential performance deficits, neglected development, negative emotional responses, and general dehumanization. That is to say, student-athletes experienced abuse that was “deliberate” because it was under the guise of “training,” but the results were actually detrimental to their performance and their emotional well-being. Furthermore, it is also important to highlight a general gray area expressed across the participants around coach expectations that are performance- and non-performance-based. Perspectives of participants were framed within the perceived context of over-regulation experienced by intercollegiate student-athletes across various domains of their lives (37, 38) and the belief that coaches should support holistic athlete development, including life outside of sport (39). This potentially indicates that there is a broad need to consider and include nuanced aspects of context when theorizing about emotional abuse, violence, or maltreatment.

The need for autonomy-supportive coaching and nuance in defining abuse may be particularly important when considering adult high-performance athletes. This group has been outside much of the current literature on athlete safeguarding, despite clear vulnerabilities (34). The results from this study support previous assertions that guidelines and policies to prevent and address abuse should recognize the “fluctuating vulnerabilities” of adult athletes. This fluctuating vulnerability is particularly salient in intercollegiate sport because of the influence of academic status and finances (23–25). Intercollegiate athletics is highly performance driven while simultaneously being an avenue for tertiary education and a runway for transferring away from an athletic identity (39). Results and winning matter, and programs and coaches (and to a lesser extent, athletes) have a financial stake in the success of the team. Simultaneously, athletic eligibility is tied to enrollment in and maintaining certain academic standards in a tertiary education setting, which is intended to prepare participants to “go pro in something other than sports” (40). All of this means that age, race, economic background, migrant status, and a host of other characteristics intersect to influence the effects a coach’s behavior may have on athletes. A non-scholarship athlete may be less vulnerable than their teammate who is relying on their athletic scholarship to be able to attend college. A top performer may be more vulnerable than a lower performer because they have status to protect; or inversely, the higher-performing athlete may be less vulnerable because of their importance to the team’s success. A first-semester freshman just beginning their intercollegiate sport journey has a different level of vulnerability compared to a senior about to graduate. This complex sporting context necessitates a thoughtful and adaptive approach to balance the monetary, competitive, and ethical aspects of intercollegiate sports. The employers of coaches must provide policy and oversight to ensure coaches are willing and able to support the holistic development of their student-athletes. Without such institutional oversight, economic pressures will be likely to prevail (23).

Studies done with an interpretive description method typically include a conceptual claim to capture the overall contribution of the study. Thus, the researchers posit that emotional abuse, and psychological violence more broadly, *cannot be defined or*

identified based solely on the perpetrator’s behaviors. The athlete’s cognitions, perceptions, emotions, and behaviors are critical in determining whether emotional abuse occurred, and these interpretations are shaped by an athlete’s existing relationship with the coach. As such, future research, educational efforts, and safeguarding must consider the context in which coaches’ behaviors occur as well as the qualitative characteristics of the coach-athlete relationship. Within research, the importance of individual interpretation is a valuable insight given some of the newly cited difficulties in assessing emotional abuse quantitatively (11, 41). The addition of items that assess the individualistic aspects associated with emotional abuse may lead to more valid and reliable measures of prevalence and the outcomes associated with experiencing emotional abuse in sport.

Practically, this conceptual claim highlights the importance of coaches having clear, consistent, well-communicated expectations, along with a need to foster an emotional environment where athletes feel safe communicating their needs and feelings. This echoes existing work on the positive effects of autonomy supportive coaching on athlete needs, motivation, and well-being (42, 43). In a survey of 4,119 current NCAA athletes (44), those that reported a more supportive style from their coach were 5% less likely to report instances of interpersonal violence. Conversely, athletes with coaches that ridicule, are rude toward, or blame athletes are 11 to 17 percent more likely to report instances of interpersonal violence. Though there is unlikely to ever be complete and total adoption of autonomy-supportive coaching, it is becoming increasingly easier to conclude that abuse is less likely to occur when coaches are supportive, and athletes feel they have agency. This contrasts with the weak or nonexistent policies from governing bodies, conferences, and institutions that address appropriate and inappropriate coach behavior towards student-athletes (45–49).

4.1 Limitations & future directions

Although this study offers valuable insights, limitations should be noted. The study focused on the experiences of athletes, and did not include data from teammates, coaches, or athletic support staff. Another limitation is the underrepresentation of male athletes, who are less likely to report emotional abuse—but not necessarily less likely to experience it (9, 27). Given the limitations in the sample, future studies should examine violence towards athletes from a broader range of perspectives. Other roles (coaches, trainers, academic support staff, etc.) in the intercollegiate sport system are likely facing their own unique pressures to maximize athletic and financial performance while meeting a litany of rules and regulations (50–52). While coaches across sports face pressure to win in order to maintain their job, this pressure may be particularly pronounced for so-called “revenue producing” sports such as football (23, 53, 54). Given their own unique perspective, individuals in these roles may observe, interpret, and react to abuse towards athletes in differing ways. Furthermore, it would be useful to examine both sides of the coach-athlete dyad both subjectively and objectively to determine how student-athletes and

coaches understand implicit and explicit emotions. Multiple methods for empirically assessing athlete abuse should be deployed simultaneously to compare how perspectives from coaches, athletes, parents, and observers are congruent and incongruent.

5 Conclusion

This study adds to a growing body of literature articulating the complex relationships that shape an individual's experience with the intercollegiate sport system in the United States. Using interpretive description methodology allowed the researchers to better understand how and why former intercollegiate athletes identified their coaches as emotionally abusive. The themes and resulting conceptual claim highlight the inherently personal and highly contextual nature of emotional abuse. The stated purpose of intercollegiate sport—to support educational and athletic success—may necessitate the development and use of specific indicators and strategies to ensure the development of the student and athlete aspects of those participating in this sport setting.

Data availability statement

The datasets presented in this article are not readily available because data contains highly personal anecdotes and therefore is not publicly available in order to protect the identities of the participants. Requests to access the datasets should be directed to k.alexander@usu.edu.

Ethics statement

The studies involving humans were approved by Utah State University Institutional Review Board. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

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Author contributions

KVA: Data curation, Formal Analysis, Methodology, Writing – original draft, Writing – review & editing. KNA: Conceptualization, Data curation, Project administration, Software, Writing – original draft, Writing – review & editing. TD: Supervision, Validation, Writing – original draft, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Threatening and nurturing mental health: insights from Danish elite athletes on the dynamic interplay of factors associated with their mental health

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Introduction: Numerous factors have been identified that potentially influence athletes' mental health. Given the predominant focus in the literature on athletes' mental health risk factors, our study aimed to explore elite athletes' perceptions of factors associated with their mental health and thriving based on the combination of holistic developmental and ecological approaches.

Methods: Seven Danish international elite athletes representing diverse sports were interviewed twice. The initial interview delved into their retrospective perspectives on career and mental health development, while the subsequent interview, conducted two months later, centered on recent events.

Results: Thematic analysis yielded a map outlining four overarching themes. Elite sport was perceived as a (1) *relentless performance context* marked by rigorous demands, which evoked (2) *personal reactions* among athletes characterized by heightened expectations, self-blame, and anxiety. In response to these challenging demands, athletes have cultivated (3) *coping resources and strategies* over the course of their careers, such as self-reflection, emphasis on recovery, planning and prioritization skills, and passion for their sport. Nonetheless, the development of these resources and strategies was a gradual process, often informed by past experiences of mental health difficulties during adolescence. Additionally, they have found support for their mental health within a (4) *nurturing environment* consisting of supportive coaching, camaraderie among teammates, guidance from experts, and caring relationships.

Discussion: The findings of this study highlight the complex interplay of factors affecting mental health and emphasize the need for creating supportive environments that help athletes manage the intense demands of elite sport.

KEYWORDS

mental health, elite sport, qualitative, protective and risk factors, environment

1 Introduction

Elite athletes are often celebrated for their exceptional physical abilities and achievements in the world of sports. However, concerns have publicly been raised over the high prevalence of mental health disorders among elite athletes due to the demanding nature of elite sports, including intense training and competitions, injuries, deselection, and public scrutiny (1, 2). In prevalence studies, researchers typically utilized cross-sectional designs to elucidate the incidence rates of mental health disorders

(e.g., depression, anxiety, and eating disorders) in correlation with specified risk factors (for reviews, see (3, 4). However, this approach provides a limited understanding of factors that help athletes to protect and nurture mental health and neglects the dynamic nature of mental health (1).

Mental health is a broad concept and is sometimes used to describe a desirable mental condition of well-being, and at other times it is used to describe mental ill-being or mental disorders (1). In this study, we refer to the following definition that has been proposed by Kuettel and Larsen (3) in relation to elite sport:

Mental health is a dynamic state of well-being in which athletes can realize their potential, see a purpose and meaning in sport and life, experience trusting personal relationships, cope with common life stressors and the specific stressors in elite sport, and are able to act autonomously according to their values (p. 23).

In their scoping review of research on mental health risk and protective factors in elite athletes, Kuettel and Larsen (3) identified 82 factors and grouped them into four categories creating a framework to be used in this study. These categories are: (a) personal risk factors (e.g., adverse life events, injury and overtraining, and low social support); (b) personal protective factors (e.g., protective behaviors, positive social relationships, and recovery); (c) sport-environmental risk factors (e.g., sport-specific stressors, stigma towards help-seeking); and (d) sport-environmental protective factors (e.g., mental health literacy and support, trusting sport climate). While only 11% of the 43 empirical studies in this review were qualitative, these studies contributed to over half of the factors perceived by athletes as associated with their mental health. Another review looked at the mental health of student-athletes (5) and divided the many factors identified in (a) demographic, (b) generic (e.g., sleep quality, stress, social support); (c) sport-specific; and (d) dual career specific factors. Both reviews conclude that the factors affecting athletes' mental health are numerous and originate from various personal development and environmental levels, pointing to the complexity of the issue. The authors requested further qualitative studies to provide insights into the complexities of athletes' lived experiences and the mental health factors interplay. The present study was designed with this quest in mind.

Within the athlete career sport psychology discourse (6), elite athletes' mental health is considered based on the holistic developmental and ecological approaches, that is as incorporated into their multilevel development and accommodation with related micro-and macro-environments. This integrated approach acknowledges mental health as both a resource and an outcome of career development, leading to the conceptualization of career excellence as "an athlete's ability to sustain a healthy, successful, and long-lasting career in sport and life" (6, p. 14). Throughout their careers, athletes proceed through different sporting environments – each with its unique culture – that can either nourish or malnourish their mental health (7). Stigmatization within elite sports culture can discourage individuals from seeking help as sports organizations might view mental health issues as an undesirable weakness inconsistent with high-level

sports (8). Contrary, mental health literacy (9), encompassing the knowledge, attitudes, and skills needed to promote mental well-being and complementing support, can play a pivotal role in recognizing and addressing mental health difficulties both among athletes and within their support networks (10).

In Denmark, elite sport guided by the current law (11) should be conducted in a socially responsible manner supporting the welfare and education of elite athletes. There has historically been a focus on athletes' dual career (i.e., combining sports with study/work) and creating supportive talent development environments in Denmark with an emphasis on mental health (e.g., 12, 13). However, scandals within elite swimming have exposed unethical practices such as public weighing and bullying, leading to psychological distress in several athletes. This has sparked a public and political debate about the role of mental health in elite sport and led to the development of the Team Denmark applied model of mental health (14). The model underscores the importance of extending focus beyond individual athletes and their daily routines, urging consideration of the training environment and leadership in mental health prevention, early detection, and referral. In a recent quantitative study among Danish elite athletes, three distinctive mental health profiles (i.e., flourishing, moderate mental health, and languishing) were discovered (15). Most athletes were flourishing, and differences in perception of stressors, social support, and the role of their sporting environment were evident between athletes in the different profiles. Yet, these findings provided only a snapshot of the mental health state of athletes and certain contributing factors. Therefore, to deepen our understanding of contributing mental health factors in a holistic and developmental perspective, this study was guided by the following research question: *How do Danish elite athletes perceive the dynamic interplay of personal and environmental factors as influencing their mental health, specifically in terms of risk (negative/threatening) and protective (positive/nurturing) factors, within the context of their mental health and career development?*

2 Material and methods

2.1 Philosophical underpinning

We grounded our research in ontological relativism which posits that reality is multifaceted, created, and dependent on the mind. Additionally, we adopted a socio-constructionist paradigm, recognizing that knowledge is shaped by cultural influences and relational interactions, rather than being objectively observed or discovered (16). This perspective entails that we as researchers always bring our personal background and experience into the knowledge construction (17).

2.2 Researchers, participants, and data collection

To increase the credibility of our claims, we share the research group experiences. The first author is a former elite athlete who

competed in three Olympic Games. Upon athletic retirement he completed a PhD focusing on athletes' careers and transitions. He also provides sport psychology consulting to elite athletes and teams. The co-authors are all scientist-practitioners in youth and elite sports, as well as experienced qualitative researchers in sport and exercise psychology.

2.2.1 Participants

We aimed for information-rich cases of elite athletes who were willing to share personal insights in their careers and mental health. Potential participants were recruited through Team Danmark's sport psychologists and included athletes that had experienced difficulties with their mental health in the past. The sample consisted of seven Danish elite athletes (including four females), who competed at the pinnacle of international competitions, such as the Olympics, World Championships, or equivalent levels in professional sports (18). These athletes represented a diverse range of sports (athletics, badminton, kayaking, cycling, handball, soccer). The athletes were on average 26.7 years of age (range: 23–38 years) and all had experience with a dual career. Two athletes had recently turned professional, while the other five were balancing their elite sports careers with university studies. This sample was deemed to provide sufficient information power (19) to address the study aim.

2.2.2 Procedure

After receiving approval from the regional ethics committee, potential athletes were contacted via sport psychologists of Team Denmark (Danish elite sport governing body). Participants were informed about the scope of the study and ethics with written consent provided before the first interview. Each athlete was interviewed twice. The first interview was conducted face-to-face and took on average 85 min (range 65–107 min). The follow-up interview was conducted online due to athletes travel commitments via Zoom roughly two months after the first interview and lasted on average 40 min. The first interview took a retrospective approach, focusing on past events and the associated risk and protective factors for mental health. In contrast, the second interview centred on more recent events, and allowed for a deeper exploration of specific topics mentioned in the first interview (e.g., relationship with coach, strategies for recharging, coping with injury).

2.2.3 Interviews

For the first interview, a semi-structured interview guide was developed that contained five parts. The *first part* served as an icebreaker. The interviewer shortly described his own sporting background and asked about the interviewee's career and present situation, for example: "Can you tell me a little about your sporting and family background? What is happening in your life right now?". The *second part*, focused on their understanding of mental health: "When you hear mental health, what pops up in your mind?". In the *third part*, we discussed different mental health definitions to establish a common understanding before continuing with the interview. The *fourth part* dealt with the specific context of elite sport in relation to mental health: "How

is mental health a topic in your team or your collaboration with coaches?". In the *fifth part*, applying a biographical mapping method (20), athletes were asked to draw a line of their perceived development of mental health level as well as their subjective performance level using different colours and mark significant life events that they thought were influential for either their mental health or performance: "Can you tell me more about the particular event/experience you marked here? How did it influence your mental health?". The participants' line drawings and annotations were subsequently used as reference points in the interview to stimulate responses and to invite the athletes to make sense of the dynamics of mental health and related incidents. In the second interview, we explored recent mental health fluctuations in connection with current events. With the rapport and trust established in the first interview, we were able to delve more deeply into sensitive topics previously mentioned ("Let's talk again about this period when you were injured and had a lot of self-doubts..."), adding an additional layer of reflection on the protective and risk factors.

2.3 Data analysis, representation, and reflections on rigor

During the reflexive thematic analysis, we were guided by the six steps (i.e., familiarizing with data, initial coding, searching for themes, reviewing themes, defining and naming themes, and producing the report) suggested by Braun and Clarke (19). Given that the first author led on every aspect of the data collection process, he was immersed in the data prior to formal analysis reading and listening to the recordings and making preliminary notes in the reflexive journal (Step 1). The preliminary iteration of coding (Step 2) was conducted in NVivo14 for each of the interviews by identifying data that could be useful in answering the research questions. Throughout this process, the first author double-coded each interview in accordance with the semantic meaning communicated by participants, and the latent meaning that was interpreted by writing a short summary (21). This was guided by a predominantly inductive approach to best represent meanings communicated by the athletes. However, a deductive analysis was performed to ensure that the inductive coding was relevant to the study's aim and its underpinning four categories framework (3).

Once all the data were coded, in Step 3, the focus shifted from the interpretation of individual data to aggregating meaningful ideas across the dataset. These initial codes were subsequently grouped around themes as patterns of shared meaning that were internally coherent, consistent, and distinctive (19). In Step 4, themes were constructed as creative and interpretive stories about data (16) in a process going back-and forth between the data and the theoretical framework (3). As Braun and Clarke (19) emphasize, themes do not passively emerge from the data, and neither are they waiting to be simply identified. Rather, themes are creative and interpretive stories about the data and produced at the intersection of the researcher's theoretical assumptions, their analytic resources and skill, and the data themselves. To ensure

the analytical rigor, we drew upon the key indicators including topic worthiness, member reflections, significant research contribution, naturalistic and transferable generalizability, critical friends, and reflexivity (22). During the analytical process (Step 5), co-authors and former elite athletes now working in academia acted as critical friends who encouraged the first author to reflect upon the interpretation of the data, the thematic map, as well as exploring alternative explanations. Last, we re-worded the themes in a collaborative effort to represent them as the athletes' voices to be presented in the text and the thematic map (Step 6).

3 Results

The findings are structured around four overarching themes, comprising a total of 22 sub-themes that were developed from the interviews. The four main themes are (a) demanding elite sport context, (b) personal reactions to elite sport demands, (c) personal resources and strategies, and (d) supportive and caring environment. We refer to the sub-themes as factors portraying athletes' positive or negative associations with their mental health. These are visually represented in Figure 1 as a thematic map.

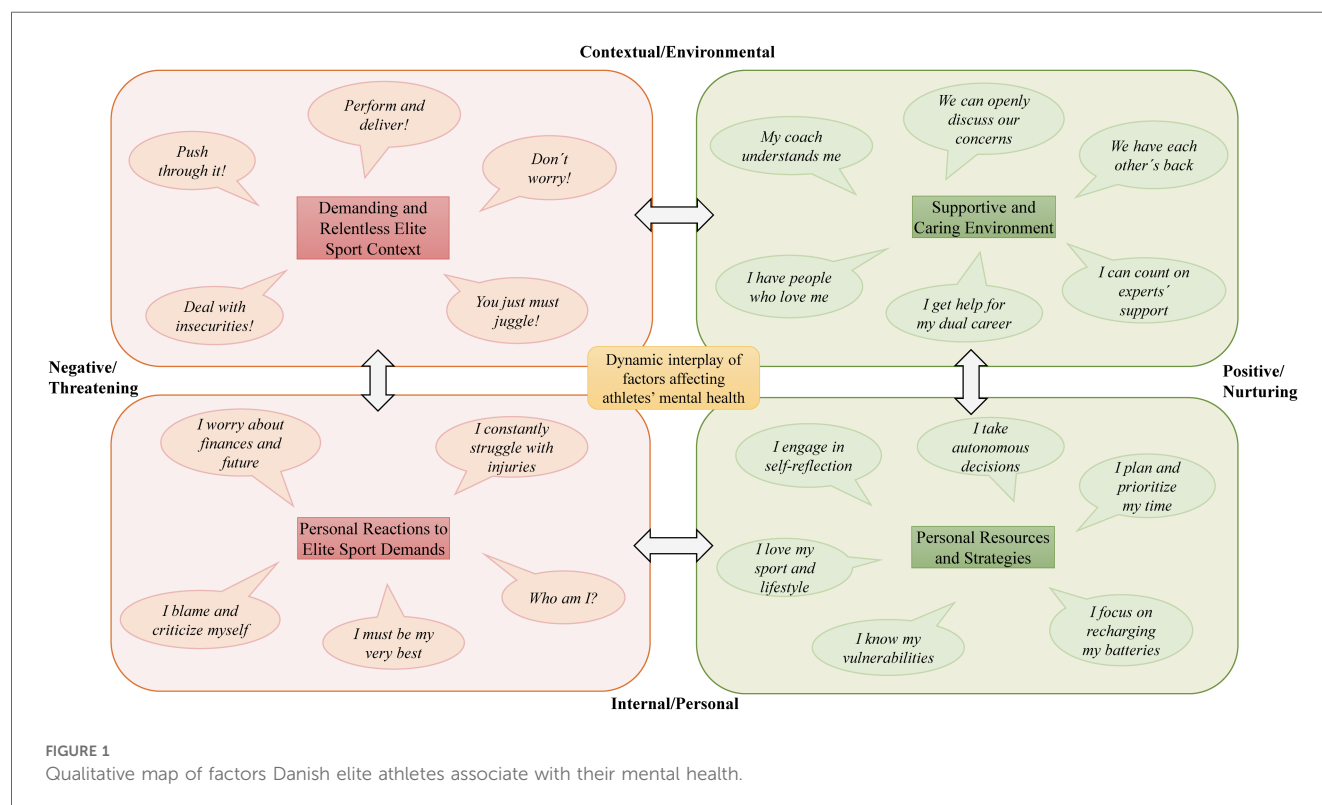
3.1 Demanding and relentless elite sport context

Within this theme, the elite sport context and its culture were sometimes perceived as a relentless performance context where athletes felt they must (a) push through no matter what, (b)

perform and deliver on a daily basis, (c) tolerate not to being taken seriously, (d) juggle with all kinds of different demands and expectations, and (e) deal with the insecurities inherent in elite sport.

Push Through It! Through acculturation in the elite sport context along their careers, athletes learned that within elite sport, one is expected to have a tough mindset, show no weakness, pushing through injuries, and putting in relentless effort. Participant 2 (P2) shared the advice he received when dealing with serious issues in his private life: “..well, you just have to pedal it away!”. P7 perceived his old team “as a macho-culture where you don’t talk about difficult things.” Mental health problems were then not taken seriously, and athletes felt that they were expected to wear a mask and deal with problems on their own.

Don’t Worry! During periods when athletes were struggling and tried to articulate their mental health difficulties, they perceived a lack of serious consideration and felt that their concerns were merely brushed aside, particularly evident within coach-athlete relationships where trust and closeness were lacking. P1 asked herself: “Why do we avoid discussing the things that don’t work out? And then you get a superficial response like: Don’t worry, everything will be fine...”. Athletes believed that it is not solely their responsibility to discuss concerns, rather, coaches should also possess the ability to recognize issues and proactively address them in a timely manner, demonstrating authentic interest and engagement in the athlete. Athletes emphasized that when their coaches provided superficial responses, it can lead them to overlook their own mental health issues.



You Just Must Juggle! Athletes felt pressured from the demands and expectations stemming from the various life domains, especially in relation to the dual career in their late teenage years that also included a lot of commuting between home, school, and training. P6 vividly remembered this period: “I was expected to be in four different places at the same time. I had no energy left and was rarely at home; it was incredibly stressful”. Looking back, all athletes remembered this phase as a chaotic period in their lives where their mental health was under pressure, and they felt like they were merely surviving rather than thriving. The athletes found it challenging to set boundaries and to recognize when they had reached their limits which caused frustration and mental breakdowns. They expressed a sense of being left to fend for themselves, as no one seemed to have a comprehensive understanding of their overall situation.

Deal With Insecurities! Athletes discussed various external factors associated with their athletic career that are beyond their control and were perceived as detrimental to their mental health. P4 explains: “At the end of the last season, my coach announced he stops. This sparked a multitude of uncertainties about the future, leading me to question whether I should quit, continue, or if my last race had already been history...”. Athletes often felt helpless and left alone to deal with the uncertainties and insecurities inherent in elite sport, such as lack of transparency about selection procedures, unexpected changes in coaching, and the risk of contract termination.

3.2 Personal reactions to elite sport demands

This theme relates to the struggles that athletes experience with their involvement in elite sport and includes factors they perceive as negatively affecting their mental health. These internal factors include (a) worries about finances and future, (b) the constant struggle with injuries, (c), identity issues, (d), high personal standards, and (e) self-blame and criticism.

I Worry About Finances and Future. Despite being among the top in Danish elite sport, most athletes find it difficult to make a living from their sport, and some still rely on financial support from their parents or partner. Athletes expressed insecurity and financial concerns, especially if their income depends on prize money, which is never guaranteed and cannot be earned during periods of injury. Athletes conveyed existential fears when facing uncertainty related to contract renewal, as they are responsible for supporting their families: “My contract expires in just four weeks, and I’m getting more and more concerned. With a wife and two kids to support, I find myself becoming more easily irritable, and I’m filled with anxiety about what lies ahead.” (P7).

I Constantly Struggle With Injuries. Every interviewed athlete talked about episodes when they were bothered by either acute or overuse injuries, or general physical health problems such as a virus infection that put them out of the game for a long time. Even though athletes were aware that it is quite normal to be injured, they have difficulties acknowledging it. “There’s an expectation

that you should just accept getting injured, but I find it hard to embrace this attitude. When I’m in pain, it’s challenging to concentrate because I’m constantly worried about a rupture in my hamstrings or somewhere else.” (P4). Athletes also expressed frustration that despite doing everything possible to prevent injuries (e.g., stretching, using physiotherapy), there remains no assurance that the next injury isn’t looming just around the corner. Recognizing that their athletic achievements depend on a functioning body capable for peak performance, this awareness caused a constant sense of anxiety and discomfort in their everyday life.

Who Am I? The participants identified strongly with their athletic self since this gave them a sense of competence and believe that they were somehow special. However, the strong identification and perception with their athlete role had also a downside, especially during periods of injuries and prolonged performance slumps. “I believe my weakness was that I identified myself too much as an athlete, and suddenly I didn’t have it anymore...so who was I?” (P2). During such periods, athletes were troubled with existential questions about who they were and what their purpose was, thus questioning and doubting their overall value as individuals beyond their achievements in sports.

I Must Be My Very Best. The athletes expressed the inner urge to always give their best effort and hold themselves to high standards. They put forward a perfectionistic and self-critical mindset, constantly striving for improvement. This mindset had developed over the years and resulted in feelings of inadequacy and a persistent struggle to meet own expectations: “I constantly focus on performance. Want to be the best version of myself. Didn’t do anything that made me happy because I was supposed to improve, improve, improve” (P1). Athletes also experienced self-doubt, especially when they were injured or making a comeback. Despite being international athletes, they worried about their abilities, whether they will be prepared when it counts, or whether they prioritize right things to improve their performance.

I Blame and Criticize Myself. Athletes mentioned that they often deal with re-occurring thoughts about not being good enough both as an athlete and as a person in general, and although they know it is just in their head, they struggle to stop these thoughts. P5 explains: “I banged myself on the head many times, like this was stupid! I shouldn’t have done this or should have chosen that instead! Why couldn’t I just pull myself together?!”. Even though it is common for athletes to engage in negative self-talk and self-criticism, especially when under pressure, this sub-theme reflects their frustration of being so disciplined and goal-orientated on one hand, and not being able to control one’s thoughts and emotions, on the other.

3.3 Personal resources and strategies

This theme outlines personal resources and strategies athletes found beneficial for nurturing their mental health. Among these strategies are (a) engaging in self-reflection, (b) taking autonomous decisions, (c) planning and prioritization skills, (d)

focusing on recovery, (e) knowing one's vulnerabilities, and (f) having love and passion for one's sport and lifestyle.

I Engage in Self-Reflection. Athletes emphasized the importance of occasionally taking a step back, acknowledging the progress, and to be proud of personal achievements. In the fast-paced world of elite sport where there is a constant focus on improvement and optimizing, it helps athletes to elaborate on how they are doing and feeling. P4 shared some reflective questions: "What did I learn about myself, how did I develop, and did I act according to my values?". Athletes underscored the importance of adhering to their values, which provided them with a guiding framework, particularly during times of turmoil and crises. Recognizing the lessons from the past failures and setbacks was regarded as a vital step in cultivating the confidence necessary to tackle upcoming tasks and future challenges.

I Take Autonomous Decisions. Athletes commonly expressed a sense of being the architects of their own future, asserting that their decisions played a key role in shaping their career and ultimately determining their success. This includes transitional decisions to change the club or coach, or to prioritize their sport instead of studies or social events in certain periods. "For myself and my career, I had to change clubs because I felt like I didn't belong there anymore. I just think I need to feel connected to the environment I train in" (P2). Athletes stated that they are willing to invest time and energy in relationships that give them energy back but want to dismiss others that were detrimental to their athletic development. Being able to take autonomous decisions was essential for maintaining a sense of control over their lives.

I Plan and Prioritize My Time. Athletes found benefits in having a structured plan that helps them to allocate time and resources accordingly. They mentioned that having a weekly overview reduces stress, helping to maintain healthy routines and to include time for rest and recovery. As P4 explained: "I have planned my next weeks and became aware that the calendar is overloaded. If a heavy week is ahead, I need to be mindful... and to incorporate time for mental and physical restitution". These planning and time-management skills were recognised to be crucial but had to be learned the hard way especially during their dual career struggles in high school. Athletes also stressed the importance of continually improving their ability to remain fully present in the moment and consciously switch between different activities during a day: "I train when I train, I study when I study, and now I do something else" (P5).

I Focus on Recharging My Batteries. Athletes noted a heightened awareness of the significance of recovery as they progressed in their careers. This involves not just embracing the latest recovery trends but prioritizing fundamentals like maintaining a consistent sleep schedule and consuming appropriate nutrition. Some athletes found benefits in meditation and acceptance-based approaches as vital strategies to nurture their mental health, especially in periods when things become overwhelming: "I've begun practicing meditation, which offers a peaceful space, free from concerns about competition or studies. Here, I can simply unwind and relax." (P5). Additionally, engaging in social activities that foster a sense of balance, such as

going to the movies or enjoying recreational games with friends outside of their team, was emphasized.

I Know My Vulnerabilities. Athletes expressed a general understanding that their personality and genetic predisposition plays a role for their mental health. Throughout various stages of their careers, particularly in their late teenage years, all interviewed athletes encountered considerable difficulties regarding their mental health, such as acute stress syndromes, eating disorders, and substance abuse. Nonetheless, with the aid of expert support and interventions encompassing psychoeducation, therapeutic sessions, and, where necessary, medical treatment, these adversities have fostered heightened awareness. The learning of these periods has led to improved literacy and management of their mental health: "I believe, since then, I've become much more mindful of my mental health state, and whenever I am feeling down or see warning signs, I react promptly" (P3).

I Love My Sport and Lifestyle. Generally, athletes expressed a great love and passion for their sport. Athletes were aware that they are privileged to do what they love for a living, and they expressed that they enjoy many aspects of the elite sport lifestyle that provides structure, meaning, and joy: "I really love what I do. If you have the passion and ambition, then you can get far, even if there are all kinds of challenges and bumps along the way" (P2). For some athletes, the passion for their sport served as a valuable resource during times of personal turmoil and difficult periods when they were struggling with mental health issues: "I am convinced that my passion for my sport has saved my life in a way" (P3).

3.4 Supportive and caring environment

Holistic support and relationships with key people in the athletes' environment were perceived to be nurturing their mental health. Specifically, these positive environmental factors include (a) positive relationship with coaches, (b) culture of openness, (c) supportive teammates, (d) expert support network, (e) dual career support, and (f) unconditional love from others.

My Coach Understands Me. Athletes emphasized the significance of empathetic understanding as a crucial quality of a supportive coach for their mental health. "My coach is just an incredibly pleasant person. I think he is the best coach I have ever had, not only because of his sporting expertise but because of his human qualities" (P2). This entails coaches being able to empathize with the athletes' experiences and demonstrating willingness to engage in discussions beyond training and tactics. "I can talk with my coach about everything" (P3). Establishing enduring and close relationships with their athletes, coaches were especially valuable during challenging times and personal crises, showing a genuine interest in the person beyond their performance.

We Can Openly Discuss Our Concerns. Athletes recognized the importance of seeking assistance, understanding that without reaching out or sharing their concerns, they cannot expect support. Developing this willingness to seek help requires courage and represents a skill athletes needed to cultivate throughout their careers. As P1 reflected: "It just helps so much

to express and share my worries and issues. If I didn't do that, I am pretty sure it would have gone really wrong, because we [athletes] tend to believe we can manage everything by ourselves." Athletes valued the opportunity to openly discuss their daily struggles within their team, even when they didn't require immediate solutions. Athletes emphasized the importance of recognizing the delicate balance between expressing curiosity and inquiring, while also respecting the possibility that teammates may not wish to share or discuss their personal matters and mental health.

We Have Each Other's Back. Both individual and team sports athletes emphasized the importance of having strong bonds and supportive relationships with their teammates. Athletes simply spend so much time together and depend on each other in terms of performing at a higher level. Teammates can also offer support during times of defeat and difficult situations when negative emotions prevail: "My teammate has always had my back, and we share a strong friendship. Our communication is respectful and effective, and we are good to handling defeats together." (P1). Feeling of belonging to the team, with mutual support and respect, were regarded as central factors for athletes' daily thriving within their training environment.

I Can Count on Experts' Support. Athletes mentioned a range of professionals who provide help for their physical and mental health. These include mental coaches, psychologists, doctors, physiotherapists, and nutrition specialists. Athletes acknowledged that although these experts are part of their network and potentially available, it is their proactive approach in seeking help that makes a difference. A well-coordinated effort from the specialists surrounding the athlete is most beneficial, and P4 emphasized the importance of having quick access to assistance when needed: "I inquired about seeing a doctor, and the very next day, I underwent a scan. This efficient process provided a swift path to a solution, sparing me from prolonged speculation and having negative thoughts."

I Get Help for My Dual Career. The interviewed athletes felt well supported within the Danish dual career system in terms of flexibility and assistance from qualified support staff, highlighting particularly the dual career benefits related to higher education. The dual career provides them with a sense of balance, personal development, meaning, and autonomy (e.g., choosing the study subject), even though there may be periods of increased effort throughout the year. Especially during these stressful periods, receiving assistance with rescheduling exams, receiving extra tutoring, or planning the semester were immensely valuable. P3 shared: "I had incredibly helpful dual career support providers who guided me in setting priorities and ensuring my overall well-being. Without this specialized service, it would have been impossible."

I Have People Who Love Me. Family and parental support played a pivotal role in the lives of all athletes throughout their careers. Parents consistently stood by their children, offering support especially during challenging times. Athletes mentioned that they occasionally discuss personal issues with their parents but typically provide a more general overview to prevent their parents from becoming overly concerned. According to the athletes, the most important aspect of parental support was

simply having someone who would listen and understand. In addition to parents, athletes also pointed to their partners and friends outside of the sporting world as sources of unconditional love, irrespective of their athletic performance. In these relationships, athletes feel they can be themselves without the need to wear a mask. "I live together with my boyfriend who truly cares about me as a person. Then also my brothers and family, and friends outside sport. I am fortunate to have many people I can rely on" (P6).

4 Discussion

The aim of the current study was to conduct an in-depth exploration of the dynamic interplay of factors perceived by Danish elite athletes as influencing their mental health. Athletes articulated a myriad of factors, stemming from both external and internal sources, which they identified as either detrimental (risk) or beneficial (protective) to their mental health. Through the presentation of the thematic map (Figure 1), we aimed to streamline the complexity of the various factors while maintaining the dynamic interplay among them, illustrated by the arrows connecting the overarching themes. Following, we discuss the thematic map with a focus on the factors' interplay, moving from the environmental to the personal factors that athletes identified as impacting their mental health.

4.1 Nurturing environments can compensate for the relentless elite sport context

Different aspects of the elite sport context were perceived as a threat to mental health, including some of the risk factors that were identified in the scoping review by Kuettel and Larsen (3). For example, sport-specific stressors (e.g., pressure, deselection, weight control (23); resonate well with the subthemes identified in this study around *Perform and deliver!* and *Push through it!* Many of these elite sport stressors mentioned have previously been categorized by Arnold and Fletcher (24) as logistical and environmental issues (e.g., selection, travel), team issues (e.g., teammates behaviour, cultural norms), and leadership and personnel issues (e.g., coach behaviour, external expectations). Another risk factor identified in Kuettel and Larsen's review (3) was lack of social support from teammates and coaches. Our findings highlighted the dual role that coaches and teammates play in relation to athletes' mental health, supporting the conclusions drawn by Pankow et al. (25), who identified supportive and punitive coach behaviours as protective and risk factors, respectively.

The athletes interacted with different coaches throughout their careers. In coach-athlete relationships where performance was emphasized over mental health, athletes' mental health was affected negatively, fostering feelings of not being taken seriously which could result in mistrust, conflicts, and in some cases even bullying. In other examples, athletes highlighted coaches as

central contributors to their sporting development and mental health, emphasizing the significance of elements like closeness (built on trust and respect) and co-orientation (rooted in mutual understanding) in the relationship (26). These aspects, along with a caring approach (27), were seen as essential by the athletes to nurture their mental health, especially during times of personal struggles and performance slumps. Coaches, often regarded as cultural leaders (28), wield considerable influence over team dynamics and can create a psychologically safe environment where athletes feel at ease to show their authentic self and where mental health talks are normalized (29).

Athletes participating in this study generally felt comfortable around their teammates and emphasized the positive culture in which they could openly discuss and challenge each other. A recent report (30) found that less than 1% of the Danish elite athletes experienced boundary-crossing behaviour from teammates or coaches on a weekly basis. Nevertheless, the athletes also mentioned periods during their athletic career when they were integrated into subcultures marked by the prevalence of stigma around mental illness and the imposition of taboos (10). This added to their mental health difficulties, particularly during their late teens when they faced multiple stressors related to their dual careers (5), a period where the risk of developing a mental disorder is heightened (31). A quantitative study involving Danish soccer players found an increase in stressors and heightened symptoms of depression, alongside a decrease in mental health levels at age 18, supporting these findings (32).

Athletes emphasised the importance of having a dual career that gave them a sense of balance and contributed to their general development as human beings. Help for their dual career and collaboration of experts ensured that the burden of coordinating efforts didn't solely rest on the shoulders of the athlete. Case studies conducted in Danish dual career environments have highlighted the crucial role of a well-functioning dual career support team that can help athletes with planning and prioritizing, and to have focus on mental health (12). Moreover, the provision of general social support and the feeling of being loved and accepted by significant others (e.g., parents, partners, friends) were perceived as contributing to the overall mental health of the athletes. Altogether, while the athletes occasionally found the elite sports environment to be relentless and a threat to their mental health, they also observed that a supportive and functional environment acted as a nurturing and protective factor.

4.2 Personal resources and strategies can nurture mental health

The cultural theory of learning (33) highlights how learning cultures shape our habitual actions within specific contexts and situations. Regarding elite sports, this notion suggests that athletes' self-perceptions, actions, and approaches are heavily influenced by the prevailing norms and values of the elite sport context (34). Participants' personal reactions to the relentless elite sports context were expressed as a constant struggle with

injuries, worries about the future, identity issues, perfectionistic concerns, self-blame, and criticism. Ineffective coping (e.g., difficulties in expressing emotions and reduced help-seeking (23); or perfectionistic concerns (4) were previously identified risk factors that resemble the subthemes about self-blame and criticism, as well as athletes' high personal standards and unrealistic expectations for constant improvement.

To counterbalance these negative factors, athletes mentioned to have developed various resources and strategies over the course of their career. Among the nurturing factors at the internal level was the athletes' awareness of recovery that included physiological (e.g., sleep habits, massage, sauna), social (e.g., cinema with friends) or psychological (e.g., mindfulness) practices. However, their awareness of recovery had developed over time, supported by the collaboration with sport psychologists. Further, dual career competencies (35) such as time management, planning and prioritizing, and emotional awareness were highlighted as factors supporting one's career excellence and "winning in the long-run" (6).

Knowing one's vulnerabilities was seen as a key factor to be mindful of one's current mental health state. This awareness was heightened based on the periods of developmental crises and the corresponding occurrence of mental health issues, which could be described as a mismatch between athletes' resources (the positive/nurturing factors) and demands (the negative/threatening factors). In retrospect, the learnings of these periods were crucial for growth following adversity (36) and helped the athletes to become the persons they are today. Therefore, coping with career transitions and developmental crises can be interpreted as inherent parts of athletes' pursuit of career excellence (6). During the interviews, the athletes came to realize that their overall mental health literacy (9) was lower at the time of crises compared to their current level. This discrepancy also influenced their willingness to openly share their struggles and actively seek assistance (8). On top, when injuries made athletes to question their future and identity, combined with inappropriate coping strategies and negative self-talk, it led to mental health issues that needed attention and in some cases treatment. Insofar, it was not a single risk factor that made athletes develop mental health issues in certain career phases, but rather the complex combination of several negative personal and environmental factors that put athletes at risk.

4.3 Elite sport lifestyle as a double-edged sword

Even though we have attempted to group mental health factors in Figure 1 into positive/nurturing (green) and negative/threatening ones (red), we recognize that the categorization does not consider the dual nature of some factors. Previously, we have outlined the adverse aspects of the high-pressure elite sport environment and the associated negative repercussions on athletes' mental health at the personal level. Despite these struggles, the athletes universally conveyed a sense of profound gratitude for being able to pursue their greatest passion as a career and to fully embrace the elite sport lifestyle. Gratitude has been identified as one of the key

elements of mental health (37). Moreover, athletes perceived their elite sport lifestyle as offering significant autonomy, such as making their own decisions and setting personal goals. They also expressed a strong sense of competence and uniqueness, deriving from their exceptional skills and achievements in sport, which further contributed to their athletic identity that was seen as a resource for their mental health (6, 7).

Other positive factors of the elite sport lifestyle included the importance of meaningful relationships both within and outside the sports context, as emphasized by all athletes. Altogether, athletes expressed that autonomy, competence, and relatedness as the three basic human needs (38) appeared to be essential for facilitating their functioning, growth, and mental health. Basic psychological needs satisfaction was also found to be a strong predictor of Swiss athletes' mental health (39). Remarkably, many of the nurturing factors (e.g., trusting personal relationships, functional coping strategies, feeling of autonomy, and value-based decisions) mentioned by the athletes are integrated parts of the mental health definition by Kuettel and Larsen (3) presented earlier.

4.4 The benefits and crux of self-reflection

Athletes mentioned that they have used self-reflection throughout their career, starting with reflection about their strengths and weaknesses in terms of sporting development and performance, and later by reflecting over their values and life more in general (40). Engaging in structured self-reflection to build up confidence and to gain personal insights has been highlighted to be an important psychological skill to reach the elite level (41) and a predictor of enhanced resilience in athletes (42). Insofar, self-reflection emerged as a key element intertwined with various positive personal resources and strategies highlighted in our study. These include recognizing one's vulnerabilities, understanding when and how to prioritize recovery, and making informed choices and decisions concerning the dual-career lifestyle (5, 6).

On the downside, the constant self-evaluation of performance outcomes and high personal standards in the athletic, academic, and private domain led to self-doubt, self-blame, and a generally harsh tone towards oneself among the interviewed Danish elite athletes. While some athletes described rumination as a strategy to cope with stressors and adversity, the tendency to repeatedly focus on negative events and thoughts was dysfunctional and consequently led to greater distress in the long run (43). Corroborating these findings, Tahtinen and colleagues (44) have shown that British athletes with higher levels of rumination had a higher risk of experiencing clinical levels of depressive symptoms.

In summary, the impact of events, situations, and environments on athletes' mental health is neither inherently positive nor negative; instead, their influence depends on how these factors are perceived and managed. For instance, factors like coaching, team dynamics, injuries, or stressful periods can contribute to both positive and negative mental health outcomes, contingent upon the presence of a supportive environment and the athlete's coping resources and strategies. The Latin phrase *Quod me nutrit, me destruit* ("that which nourishes me destroys me") might serve as a fitting analogy

for the complex interplay of risk and protective factors in elite sports as they impact athlete mental health.

4.5 Limitations

Several limitations of this study should be noted. Firstly, all the participating Danish athletes had access to sport psychology services, which could influence their responses. Yet, considering naturalistic generalizability (16) and based on our experiences in international elite sport contexts, we believe the findings will resonate with elite athletes outside of Denmark and regardless of access to sport psychology support. Secondly, the thematic analysis, which involved extracting factors from individual interviews and presenting the findings in themes, cannot fully capture the dynamic nature of these factors throughout the athletes' career development. Thus, future research should aim to investigate this dynamism by examining how these factors evolve across different career stages or transitions. Thirdly, gender differences regarding factors were not accounted for in the present study. Research has revealed gender differences in help-seeking behavior (8), and female athletes have in general reported lower mental health levels than males (4). These differences were not apparent in our data; hence, the factors are presented as gender neutral in the thematic map. Finally, the thematic map is presented in an orthogonal format, which does not fully capture the duality and complexity of the relationships between factors. While no model is perfect, it serves as an attempt to simplify the complex phenomena of the many factors affecting athletes' mental health.

4.6 Practical implications

Consistent with the recommendations of the International Society of Sport Psychology (7), the present study highlights the need for creating psychologically safe environments (10) that can nurture athletes' mental health through supporting athletes' autonomy and facilitating team cultures where sharing mental health struggles is normalized. The Team Denmark applied model of mental health (14) provides a helpful lens for practitioners to work with prevention within the holistic ecological approach. Moreover, athletes emphasized the value of mental health education, yet expressing regret that they acquired this knowledge (too) late in their careers. This underscores the significance of implementing mental health literacy programs (9) early in the talent development phase. Additionally, coaches and sport psychology consultants are encouraged to assist athletes in cultivating the self-reflection skills both within their sport and personal lives (42). This can be achieved through facilitating constructive self-evaluations and emphasizing the implementation of effective recovery strategies and by developing an individualized wellbeing development plan (45). With youth athletes who have high self-expectations and a single-minded focus on success—often at the expense of their mental health—it is valuable to discuss the dual nature of these factors and the importance of finding balance.

The participating athletes noted that this sense of balance was something they only gained with greater experience and maturity. Their experiences and insights could therefore serve a mentoring role, helping younger athletes become more aware of the importance of mental health in pursuing a sustainable career. Finally, when supporting athletes engaged in a dual career, it is important to be mindful of critical career periods and to provide extra support during the late teenage years when transitions in several life spheres happen simultaneously, increasing the risk of developing a mental health disorder.

5 Conclusions

Given the increased interest in the mental health of elite sport performers and a dominance of quantitative prevalence studies, the present qualitative study provides a timely investigation into elite athletes' perception of factors that impact their mental health. We present a thematic map consisting of four overarching themes to illustrate the complexity and interplay of these factors. To counterbalance a relentless elite sport context and the personal struggles connected with an elite lifestyle, the interviewed athletes emphasized the importance of personal resources and strategies alongside a supportive and caring environment. However, we also discussed the dual nature of certain factors and their impact on athletes' mental health. The current study fills an important gap in the literature by examining not only risk factors for athletes' mental health, but also factors that contribute to their thriving and pursuit of career excellence from a holistic developmental and ecological perspective.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Videnskabsetiske Komitéer for Region Syddanmark 20212000-

175. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

AK: Conceptualization, Data curation, Formal Analysis, Methodology, Writing – original draft, Writing – review & editing. LS: Conceptualization, Formal Analysis, Methodology, Writing – review & editing. NS: Conceptualization, Writing – review & editing, Formal Analysis. KH: Conceptualization, Formal Analysis, Funding acquisition, Writing – review & editing, Methodology.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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The relationship between psychological abuse, athlete satisfaction, eating disorder and self-harm indicators in elite athletes

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Introduction: Psychological abuse continues to be the most frequently reported type of maltreatment among athletes leading to negative mental health such as low mood and self-esteem, increased anxiety, self-harm, and eating disorders. Preliminary evidence suggests athlete satisfaction can influence the perceived outcomes associated with psychological abuse. Despite its negative impacts on athletes, psychological abuse continues to be justified as a tool to enhance athletic performance.

Methods: This study sought to examine the effects of psychological abuse on athlete satisfaction and mental health indicators of eating disorders and self-harm. Participants consisted of Canadian National Team athletes who completed a survey of maltreatment in sport with items assessing psychological abuse, athlete satisfaction, eating disorder and self harm indicators ($n = 794$).

Results: Results indicated a negative correlation between psychological abuse and athlete satisfaction, and a positive correlation with eating disorders and self-harm indicators. Additionally, athlete satisfaction was a significant moderator of psychological abuse on eating disorder and self-harm indicators. High athlete satisfaction buffered against the negative effects of psychological abuse on self-harming indicators in non-aesthetic and weight based sport and non-team sport athletes. Conversely, the interaction between athlete satisfaction and psychological abuse was marginally significant in predicting increased negative effects on eating disorders in aesthetic and weight based sport athletes.

Discussion: These findings highlight the detrimental effects psychological abuse can have on athletes in relation to eating disorders and self-harm, and the buffering role of athlete satisfaction on self-harm but not eating disorder indicators in aesthetic and weight based sport athletes. Recommendations include increased attention to preventing psychological abuse in sport.

KEYWORDS

emotional abuse, abuse in sport, mental health, disordered eating, safe sport, non-suicidal self-harm, aesthetic sports

1 Introduction

Psychological abuse has consistently been identified as the most prevalent form of maltreatment among athletes (1–5), encompassing behaviors such as yelling, swearing, belittling, public humiliation, and negative comments about one's body (6–9). Prevalence studies have indicated psychological abuse can be perpetrated by coaches,

peers or teammates, trainers and others (5, 10). While psychological abuse is increasingly acknowledged and explored by researchers, empirical evidence on the impacts of this type of harm on athletes is in a nascent stage. Psychological abuse has been found to have negative impacts on mental health and well-being, particularly self-harm and eating disorder indicators (9, 11–14).

Broadly, eating disorders are defined as persistent disturbances in eating patterns and distressing thoughts or emotions related to food, body shape, and/or weight (15). Several researchers have demonstrated the links between psychological abuse in sport and eating disorders (1, 16, 17). Athletes who experience psychological abuse have reported eating disorder-related behaviors, such as excessive exercise, food and water restriction, obsessive weight/body preoccupation, and bingeing and purging (9, 12, 18). McMahon and McGannon (18) suggest these behaviors are potentially used to reconfigure and manage endured trauma. At this time, minimal quantitative data exist linking psychological abuse with eating disorder outcomes in athletes.

Self-harm has also been identified as a potential outcome of psychological abuse in sport (12, 13). Self-harming indicators can include ideation or attempts of suicide and non-suicidal self-injury (e.g., burning, cutting, scratching (19)). Self-harm has been reported as a common outcome of psychological abuse outside of sport, particularly in women and children (20, 21). Less attention has been given to this relationship in sport, however, preliminary evidence suggests a link. For instance, in a qualitative study on the effects of emotional abuse, Kerr and colleagues (12, p. 84) shared an athlete's reported suicide ideation: "I locked myself in the bathroom and like, I took a bath... and that's about the time I had really really hard ideas, like if I took my own life right now, like who would notice?" Additionally, Daignault and colleagues (11) reported athletes who experienced psychological harm were more likely to report non-suicidal self-injury. Further study of the relationships between psychological abuse and self-harm outcomes is warranted.

Reports of eating disorders and self-harm vary based on sex and sport. Eating disorders have been reported more frequently among women compared to men, in aesthetics and weight-based sports, and in individual sports (22–25). Suicidal ideation and attempts were more common among male athletes and athletes who played football and basketball (i.e., team sports), but also occurred in individual sports like swimming and track and field (26). A more recent study reported the highest rates of suicide in athletes occurred in shooting and fencing, which are both individual sports (27). While these findings provide some insight into the rates of eating disorders and self-harm in sport, there is still minimal investigation of the effects of psychological abuse on eating disorders and self-harm among different sexes and sport types (e.g., team and individual sports). As such, more work is needed to explore potential outcomes of psychological abuse across various populations.

The relationship between psychological abuse and performance is seemingly paradoxical. While some athletes and coaches have claimed these behaviors improve performance, other researchers have demonstrated psychological abuse can decrease satisfaction, motivation, and a desire to participate in sport (12, 28). Kerr and

colleagues (12, p. 64) studied the effects of emotional abuse, revealing both positive and negative impacts; for example, an athlete suggested it helped them work harder but also negatively impacted their mental health: "I will say that having a coach that was a bit of a bully didn't do me any favors. but in the same breath...that might have made me work harder". Stirling and Kerr (28) also investigated the effects of performance satisfaction, a facet of overall athlete satisfaction, or a "positive affective state" in relation to an athlete's experiences (29). Results demonstrated that when performance satisfaction is high, emotionally abusive practices were interpreted more positively. On the other hand, when performance satisfaction decreased, there was an increase in negative affect associated with emotionally abusive practices. Performance satisfaction may influence the interpretation and experiences of psychological abuse and thus may influence the relationship between psychological abuse and mental health outcomes. Satisfaction with one's athletic performance may potentially explain some of the variation in athletes' outcomes associated with psychological abuse, however, more extensive research is needed.

The paradoxical relationship between psychological abuse and performance satisfaction may be explained by over-conformity to the sport ethic. Hughes and Coakley (30) posited the sport ethic is comprised of four tenets: self-sacrifice, complete dedication, accepting risk and playing through pain, and believing there are no limits. While over-conformity isn't inherently negative, an uncritical adherence may lead to negative consequences. In other words, if there is a belief that experiencing pain and sacrifice (e.g., experiencing maltreatment, or engaging in disordered eating behavior) is a requirement for achieving excellence in sport, negative consequences are more likely to occur. The foundation of embodying the sport ethic is entrenched with having a strong athletic identity, because overconforming "confirms and reconfirms athletic identity" (30, p. 311). Moreover, previous researchers have linked an exclusive sport identity to increased athlete satisfaction (31) and increased vulnerability to experiencing emotional abuse (32).

Several researchers have linked experiences of psychological abuse to over-conformity of the sport ethic (33, 34). For instance, McGee and colleagues (34) found a bi-directional relationship such that the sport ethic both increased athletes' vulnerability to psychological harm and psychological harm was tolerated more because of the athletes' commitment to the sport ethic. Athletes acknowledged the dominant sport ethic, specifically relating it to the predominant win-at-all-costs pressure. Athletes reported not questioning their coaches' psychological abuse, rather accepted it as part of a high-performance culture, or believing it is a necessary sacrifice for performance success. Other athletes reported being willing to accept abusive behavior in order to achieve their desired results, which increased their vulnerability to psychological abuse. Additionally, Boudreault and colleagues (35) found extreme weight control behaviors (i.e., symptoms of disordered eating) were related to experiences of weight-related maltreatment, which has been proposed as a form of psychological abuse by Willson and Kerr (9). Disordered eating may be influenced by over-

conformity to the sport ethic, because athletes believe behaviors such as food restriction and excessive exercise are assets to performance and are praised by coaches (36, 37). However, there is a paucity of research correlating athlete satisfaction and the sport ethic. For instance, if an athlete is satisfied with their performance and their sport environment, they may believe it is necessary to engage in self-sacrificing or risk-taking behaviors to obtain such results. Additionally, they may feel proud of or justify their sacrifices or risks if their desired results were obtained, thus increasing their satisfaction (38). Further research is needed to explore potential links between psychological abuse, mental health outcomes, and the role of performance satisfaction.

Therefore, the purpose of this research was to examine the relationships between psychological abuse in sport, athlete satisfaction, and self-harm and eating disorder indicators, across sport types. Examining the influence of athlete satisfaction on the effects of psychological abuse is critical for informing intervention and treatment such as helping athletes understand why they may or may not be negatively impacted by experiences of psychological abuse, or why the impacts of psychological abuse may not be experienced immediately.

The first objective of this study was to investigate the relationship between psychological abuse, athlete satisfaction, eating disorder and self-harm indicators. The first hypothesis (H1) is that psychological abuse would be negatively related to athlete satisfaction, and positively related to eating disorder and self-harm indicators. The second objective was to investigate whether athlete satisfaction is a moderator in the relationship between psychological abuse and eating disorder and self-harm indicators. The second hypothesis (H2) is that athlete satisfaction would serve as a moderator or a buffer, such that athletes who experienced psychological abuse, and had high satisfaction in their sport would be less likely to experience eating disorders and self-harm. On the other hand, athletes who experienced psychological abuse and had low satisfaction in their sport would be more likely to report indicators of eating disorders and self-harm. Given the differing rates of psychological harm, eating disorders and self-harm in individual, team, and aesthetic sport athletes (22–27, 39), the third objective was to investigate whether there is a difference in the relationships between psychological abuse, athlete satisfaction, and mental health outcomes between athletes in aesthetic or weight-class sports (e.g., artistic swimming, gymnastics, wrestling) vs. non aesthetic or weight-class sports, and athletes in team sports (e.g., basketball, hockey, water polo) vs. individual sports. The third hypothesis (H3) is that the relationships between variables of interest would be stronger in aesthetic or weight-class sport athletes and in team sport athletes than their counterparts.

2 Methods

This study represents a component of a larger research project assessing experiences of maltreatment in a sample of Canadian National Team Athletes, including, prevalence of maltreatment, athletes' perceived impacts of maltreatment experiences on

athlete satisfaction, mental health and well-being, their disclosure and reporting behaviors, and their recommendations for improving their sport experiences. Previous reported findings include the prevalence of physical, sexual, and psychological abuse, and neglect (5), and the relationships between all types of maltreatment and mental health indicators of well-being, eating disorders, and self-harm (14). The present study differs from the previously published papers in purpose, research questions, some of the measures, analyses, and findings. Contrary to the previously published papers, the inclusion criterion was only on athletes who responded to questions about psychological abuse during their tenure on the Canadian national team ($n = 794$) to explore the relationships between psychological abuse and mental health indicators, and the potential role of athlete satisfaction in influencing these relationships.

2.1 Participants

Participants included current and retired (maximum of 10 years retired) Canadian National Team athletes, including para and non-para athletes from any sex and from any sport with a national team. Competing on the national team was a selection criterion, as the purpose was sought to explore the experiences of athletes at the highest level of competition. Participants were required to be over the age of 16 years to participate. AthletesCAN, the association of Canadian National Team athletes, was a partner of this study and involved in the development of the survey design and facilitated the recruitment of participants. AthletesCAN is dedicated to being the collective voice for athletes, representing and advocating for the interests of athletes (40). Eligibility criteria for membership in AthletesCAN include being a current member of a Canadian National Team or retired from a National Team within the past 8 years, which aligned with our study inclusion criteria.

There were 592 (75%) current athletes and 202 (25%) retired athletes ($M_{\text{years}} = 4.31$, $SD = 2.79$). The sample was comprised of 496 (63%) females and 295 (47%) males ($n = 3$ did not disclose sex) national team athletes, all of whom were over 16 years of age ($M_{\text{age}} = 27.85$, $SD = 9.08$). The athletes in this sample were participants in 64 sports with the highest proportions of athletes represented in gymnastics, volleyball, athletics, cycling, swimming, rowing, freestyle skiing, and rugby. Participants self-reported identity characteristics including having a disability ($n = 95$, 12%), being racialized or of a racial minority ($n = 76$, 10%), LGBTQ2I+ ($n = 59$, 8%), and Indigenous ($n = 13$, 2%). There were 115 (14%) aesthetic and weight-class sport athletes and 226 (28%) team sport athletes.

2.2 Measures

2.2.1 Psychological abuse

Psychological abuse was measured using 9 items adapted from Vertommen et al. (1) and refined by AthletesCAN. Questions included: “you were put down, embarrassed, or humiliated”, “you

have been criticised as a person when your performance was subpar”, and “you were called derogatory names or otherwise offended.” Participants were asked to report whether each instance of psychological abuse had occurred during their time in sport (response options = Yes, No, NA). For all participants, a score representing the number of items answered “Yes” (range = 0–9) was computed and used in all analyses.

2.2.2 Athlete satisfaction

Athlete Satisfaction was measured using a modified version of the Athlete Satisfaction Questionnaire (ASQ) (29), which is a comprehensive measure of the structure, processes, and outcomes of an athlete’s experience. This measure accounts for perceptions of the individual and team, as well as social components of the athletes’ experience, for instance, satisfaction with performance (individual and team), performance improvement, and with the coaching they received (e.g., treatment, technical style, choices in play). Some items from the original survey (29) were removed or reworded to ensure relevance. The adapted measure included 10-questions in which athletes were asked to rate their satisfaction with their sport performance, their team performance (if applicable), and their coach communication and training on a 7-point scale (1 = not at all satisfied to 7 = extremely satisfied) (29). Examples of items included: Identify the extent to which you are satisfied with, “The verbal instructions I have received from my coach”, “The guidance I have received from my teammates/training partners” and “Reaching my performance goals.” For all participants, a score representing the average item response was computed and used in all analyses. This scale demonstrated strong internal consistency $\alpha = .90$.

2.2.3 Eating disorder indicators

Eating disorder indicators were measured using three questions designed to gain an overall sense of athletes’ history with eating disorders. Participants were asked to report whether they had: (i) thought about engaging in disordered eating behaviors (e.g., restriction, bingeing, purging) during their time in sport; (ii) engaged in disordered eating behaviors (e.g., restriction, bingeing, purging) during their time in sport; and (iii) sought treatment for disordered eating or an eating disorder (response options: Yes, No, N/A). This scale was also used in a previously published paper on the relationships between experiences of maltreatment and mental health indicators (14). Item responses were reduced to individual scores using principal axis factoring and scores for each construct were extracted using the regression method. The three eating disorder items loaded onto a single factor accounted for 88% of the variance, and the regression method was used to extract scores for each participant on an eating disorder factor score. Factor scores for eating disorders were included in all analyses as composite scores.

2.2.4 Self-harm indicators

Self-harm indicators were measured using three questions designed to gain an overall sense of athletes’ history with self-harm and suicidality. Participants were asked to report whether they had: (i) thought about engaging in self-harm or suicide

during their time in sport; (ii) engaged in self-harm or suicide during their time in sport; and (iii) sought treatment for self-harm or suicide (response options: Yes, No, N/A). This scale was also used in a previously published paper on the relationships between experiences of maltreatment and mental health indicators (14). Item responses were reduced to individual scores using principal axis factoring. The self-harm items loaded onto a single factor accounted for 84% of the variance, and the regression method was used to extract scores for each participant on a self-harm factor. Factor scores for self-harm were included in all analyses as composite scores.

2.3 Procedure

Following ethical approval from the University’s Ethics Review Board, AthletesCAN conducted recruitment through email and posting publicly on their social media platforms (Instagram, Twitter and Facebook). AthletesCAN maintains a database which includes athletes’ contact information, which was used to distribute the recruitment email to 6,239 athletes. The recruitment email contained inclusion criteria, links to the anonymous survey, which was offered in French and English (Canada’s two official languages), and a letter of information. The letter of information outlined the voluntary nature of the study as well as assurances of confidentiality and anonymity with only aggregated data presented. The survey was available to participants for 1 month, during which time, two reminder emails were sent to encourage completion. Athletes were not compensated for their participation. The survey took approximately 15 min to complete and submitted surveys were received directly by the research team.

2.4 Data analysis

To address the research questions, Structural Equation Modeling (SEM) analyses were conducted using MPlus version 8 (41). All variables were grand mean centered prior to being included in the model. Relevant composite scores for each variable were compiled prior to analysis. To address the first research question, two separate models with athlete satisfaction and psychological abuse as the independent variables were constructed, with self-harm and eating disorder indicators as the respective dependent variables. To address the second research question, an interaction term was created (psychological abuse \times athlete satisfaction) and included in the model as an independent variable. Finally, four multigroup SEMs were conducted with aesthetic/weight-class athletes (aesthetic/weight-class = 1, non-aesthetic/weight-class = 0) and team sport athletes (team sport = 1, non-team sport = 0) as the grouping variables, and self-harm and eating disorders as outcome variables. Aesthetic athletes were classified as those who compete in appearance-oriented sports such as artistic swimming, diving, figure skating and gymnastics in which such aspects as lean, long, straight body lines influence performance outcomes.

Athletes in a weight-class based sport, such as boxing or wrestling, were classified as those who require a specific weight range to be eligible to compete. Team sport athletes are those who compete in a sport in which they are on a team of three or more athletes, such as baseball, basketball, field hockey, handball, hockey, lacrosse, ringette, rugby, soccer, volleyball, and water polo.

The fit of all models was evaluated using standard criteria to determine whether the model parameters are well estimated, including a nonsignificant χ^2 test, comparative-fit-index (CFI) and Tucker-Lewis-Index (TLI) $>.90$, root-mean-square-error-of-approximation (RMSEA) $<.08$ with 90% confidence intervals (CI) (42, 43). Parameters were calculated using the maximum likelihood with robust standard errors (MLR) estimator in *MPlus* 8 (41).

3 Results

3.1 Psychological abuse, athlete satisfaction and eating disorder and self-harm indicators

The proportion of athletes who reported experiencing psychological abuse was 60% ($n = 478$), eating disorder indicators was 24% ($n = 191$), and self-harm indicators was 18% ($n = 140$). Means, standard deviations and correlations for all variables are presented in Table 1. Supporting the first hypothesis (H1), psychological abuse was negatively related to athlete satisfaction and positively related to eating disorder and self-harm indicators.

3.2 Athlete satisfaction as a moderator of psychological abuse on eating disorders and self-harm

The first model examined the effects of psychological abuse, athlete satisfaction and their interaction (psychological harm

*athlete satisfaction) on self-harm indicators. With the exception of a significant chi-square test, the model fit the data well, $\chi^2_{(3)} = 63.02$, $p = .000$, CFI = 1.00, TLI = 1.00, RMSEA = .00 (90% CI = [.000, .000]). Psychological abuse was a significant predictor of self-harm indicators, while athlete satisfaction was not. The interaction between psychological abuse and athlete satisfaction was a significant predictor of self-harm indicators (Interaction = $-.42$, SE = .16, $p = .01$ $R^2 = .08$). Estimates, standard errors, p -values, and effect sizes are presented in Table 2. In accordance with our hypothesis (H2), the plotted interaction (Figure 1) demonstrates that when athlete satisfaction is high, the effect of psychological abuse on self-harm indicators is reduced.

The second model examined the effects of psychological abuse, athlete satisfaction and their interaction (psychological abuse *athlete satisfaction) on eating disorder indicators. With the exception of a significant chi-square test, the model fit the data well, $\chi^2_{(3)} = 85.06$, $p = .000$, CFI = 1.00, TLI = 1.00, RMSEA = .00 (90% CI = [.000, .000]). Psychological abuse and athlete satisfaction were not significant predictors of eating disorder indicators, but their interaction was significant (Interaction = .32, SE = .16, $p = .04$ $R^2 = .10$). Estimates, standard errors, and p -values are presented in Table 2. Contrary to our hypothesis (H2), the plotted interaction (Figure 2) demonstrates that athlete satisfaction does not buffer against the effects of psychological abuse on eating disorder indicators, as the relationship between psychological abuse and eating disorders is strengthened when athlete satisfaction is high.

3.3 Psychological abuse and athlete satisfaction in aesthetic/weight-class and team sport athletes

There were 105 aesthetic and weight-class athletes (13%) and 206 team sport athletes (26%). The mean of athlete satisfaction was higher in aesthetic/weight-class athletes ($M = 58.96$, SE = 1.13)

TABLE 1 Means, SDs, ranges and correlations between athlete satisfaction, psychological abuse, eating disorder and self-harm indicators.

	Mean	SD	Range	Psych. abuse	Self-harm	Eating disorder	Athlete satisfaction
Psychological abuse	.25	.28	0–1	1	.252*	.311*	–.316*
Self-harm	.10	.24	0–1		1	.315*	–.151*
Eating disorder	.15	.28	0–1			1	–.100*
Athlete satisfaction	57.32	11.59	18–80				1

$n = 794$.

*Correlation is significant at the .01 level.

TABLE 2 Estimates, SE and p -values for eating disorder and self-harm indicators.

	Self-harm			Eating disorders		
	Estimate	S.E.	p -value	Estimate	S.E.	p -value
Psychological abuse	.66	.17	.00	–.01	.16	.94
Athlete satisfaction	.00	.05	.98	–.06	.05	.19
Interaction	–.42	.16	.01	.32	.16	.04
R^2	.08			.10		

Estimates are considered significant at $p < .05$. $n = 792$.

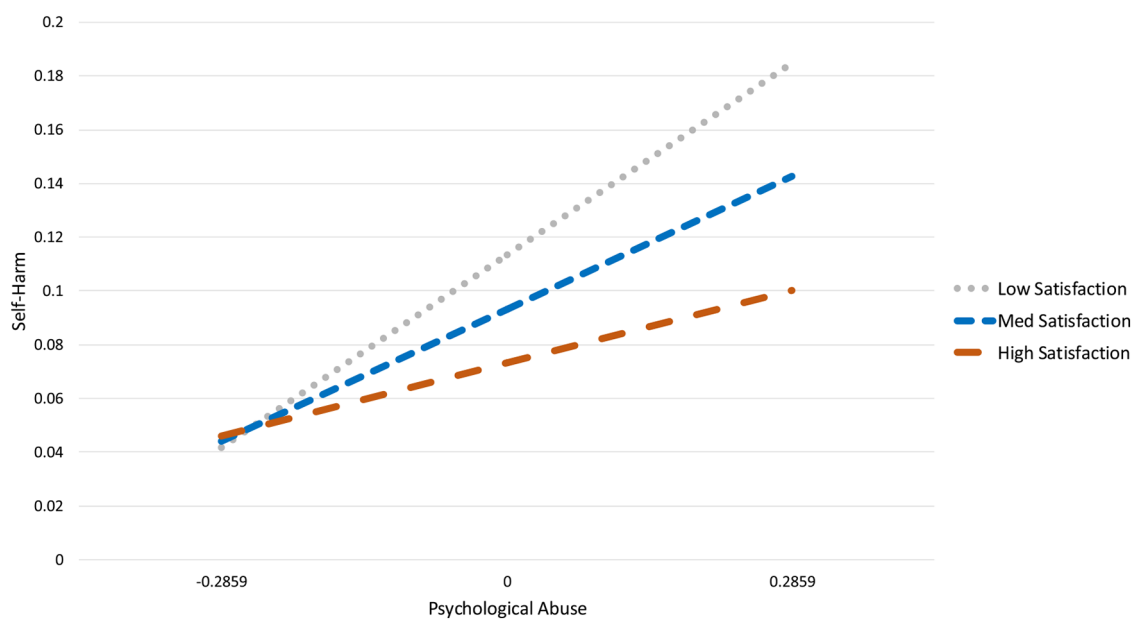


FIGURE 1
The moderating effect of athlete satisfaction on the relationship between psychological abuse and self-harm indicators.

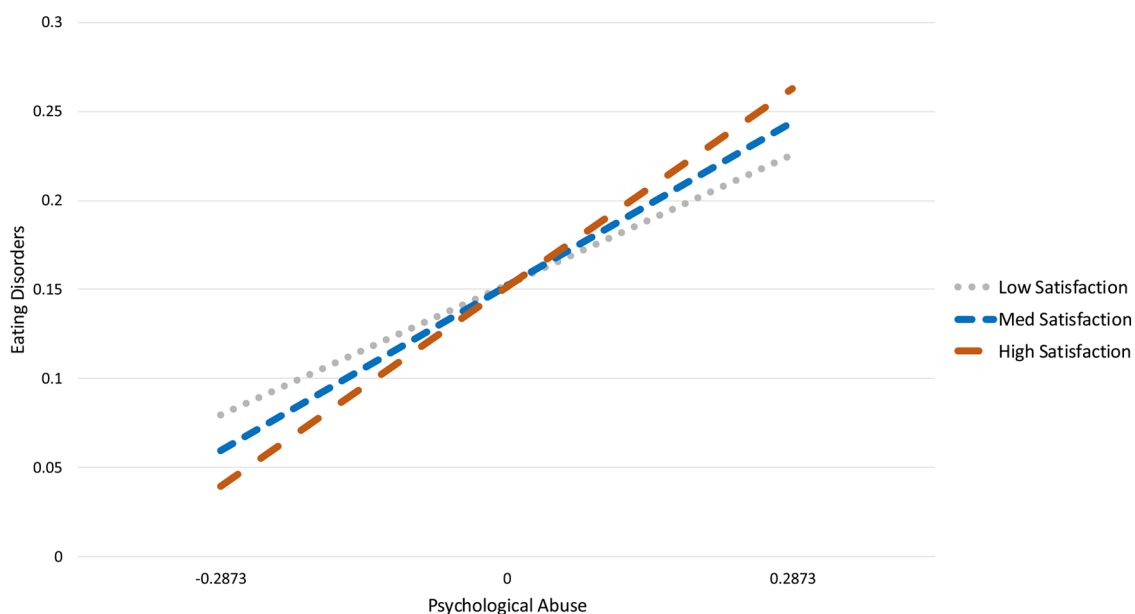


FIGURE 2
The moderating effect of athlete satisfaction on the relationship between psychological abuse and eating disorder indicators..

than non-aesthetic/weight-class athletes ($M = 57.00$, $SE = .44$) and in team sport athletes ($M = 58.71$, $SE = .70$) than non-team sport athletes ($M = 56.75$, $SE = .49$). Reported self-harm was higher in aesthetic and weight-class athletes ($M = .15$, $SE = .03$) than non-aesthetic or weight class athletes ($M = .09$, $SE = .01$) and in non-team sport athletes ($M = .11$, $SE = .01$) than team sport athletes ($M = .07$, $SE = .02$). Similarly, reported eating disorder indicators

were higher in aesthetic and weight-class athletes ($M = .26$, $SE = .03$) than non-aesthetic or weight class athletes ($M = .13$, $SE = .01$) and in non-team sport athletes ($M = .16$, $SE = .01$) than team sport athletes ($M = .09$, $SE = .02$).

Four multigroup models were constructed to examine the final research question of whether the interaction between psychological abuse and athlete satisfaction differs between groups of athletes

TABLE 3 Estimates, SE and *p*-values in aesthetic and non-aesthetic/weight-based sport athletes.

	Aesthetic/weight-based			Non-aesthetic/weight-based		
	Estimate	S.E.	<i>p</i> -value	Estimate	S.E.	<i>p</i> -value
Model 1: self-harm						
Psychological abuse	.34	.52	.51	.70	.17	.00
Athlete satisfaction	−.22	.13	.10	.04	.05	.48
Interaction	−.14	.50	.78	−.47	.16	.00
<i>R</i> ²	.13			.07		
Model 2: eating disorders						
Psychological abuse	−.42	.49	.39	.08	.17	.63
Athlete satisfaction	−.19	.13	.13	−.05	.05	.34
Interaction	.81	.47	.08	.17	.16	.29
<i>R</i> ²	.2			.07		

Estimates are considered significant at *p* < .05. *n* = 792.

TABLE 4 Estimates, SE and *p*-values in team and non-team sport athletes.

	Team sport			Non-team sport		
	Estimate	S.E.	<i>p</i> -value	Estimate	S.E.	<i>p</i> -value
Model 1: self-harm						
Psychological abuse	.04	.36	.91	.78	.19	.00
Athlete satisfaction	−.02	.09	.82	.01	.06	.85
Interaction	.18	.34	.61	−.54	.18	.00
<i>R</i> ²	.05			.09		
Model 2: eating disorders						
Psychological abuse	−.14	.34	.67	.00	.19	1.00
Athlete satisfaction	−.07	.09	.44	−.06	.06	.30
Interaction	.50	.32	.12	.29	.18	.10
<i>R</i> ²	.14			.09		

Estimates are considered significant at *p* < .05. *n* = 792.

who are in weight based/aesthetic sports vs. non aesthetic/weight-class (models 1 and 2) and athletes who are in team sports vs. individual sports (models 3 and 4). The first multigroup model examined aesthetic and non-aesthetic/weight-class sport athletes on self-harm indicators (Table 3). With the exception of a significant chi-square test, the model fit the data well, $\chi^2_{(6)} = 63.02$, $p = .000$, CFI = 1.00, TLI = 1.00, RMSEA = .00 (90% CI = [.000,.000]). The results demonstrated the interaction between psychological abuse and athlete satisfaction on self-harm indicators was significant only in non-aesthetic/weight-class sport athletes (Interaction = −.47, SE = .16, $p = .00$ $R^2 = .07$). The second multigroup model examined aesthetic and non-aesthetic/weight-class sport athletes on eating disorder indicators (Table 3). With the exception of a significant chi-square test, the model fit the data well, $\chi^2_{(6)} = 73.77$, $p = .000$, CFI = 1.00, TLI = 1.00, RMSEA = .00 (90% CI = [.000,.000]). The results demonstrated that in partial accordance with our hypotheses, the interaction between psychological abuse and athlete satisfaction on eating disorder indicators was marginally significant in aesthetic/weight-class sport athletes (Interaction = .81, SE = .47, $p = .08$ $R^2 = .20$), but not significant in non-aesthetic/weight-class sport athletes (H3).

The third multigroup model examined team and non-team sport athletes on self-harm indicators (Table 4). With the

exception of a significant chi-square test, the model fit the data well, $\chi^2_{(6)} = 64.18$, $p = .000$, CFI = 1.00, TLI = 1.00, RMSEA = .00 (90% CI = [.000,.000]). The results demonstrated the interaction between psychological abuse and athlete satisfaction on self-harm indicators was significant only in non-team sport athletes (Interaction = −.54, SE = .18, $p = .00$ $R^2 = .09$). The fourth multigroup model examined team and non-team sport athletes on eating disorder indicators (Table 4). With the exception of a significant chi-square test, the model fit the data well, $\chi^2_{(6)} = 86.36$, $p = .000$, CFI = 1.00, TLI = 1.00, RMSEA = .00 (90% CI = [.000,.000]). The results demonstrated that contrary to our hypotheses, the interaction between psychological abuse and athlete satisfaction on eating disorder indicators was not significant in both team and non-team sport athletes (H3).

4 Discussion

The current study contributes to existing literature by exploring the relationships between psychological abuse, athlete satisfaction, eating disorders and self-harm indicators. Experiencing psychological abuse was negatively related to athlete satisfaction, and positively related to self-harm and eating disorder indicators. The findings are unique in showing the potential buffering effect

of athletes' satisfaction on eating disorders and self-harm indicators. Building on Vertommen and colleagues' (39) findings of increased vulnerability of non-team sport athletes to psychological harm, team sport and non-weight-based sport athletes in the current study reported lower self-harm and eating disorder indicators compared to non-team sport athletes and weight-based sport athletes. Additionally, team sport athletes reported higher satisfaction. Further, results indicated that for athletes who have high satisfaction with their sport, the relationship between psychological abuse and self-harm is weakened, which suggests a potential buffering effect. The inverse effect was found for eating disorders, such that for athletes with high satisfaction, the relationship between psychological abuse and eating disorders was strengthened, specifically in aesthetic/weight-class sport athletes. Conversely, for athletes in non-aesthetic/weight-class sports and team sports, athlete satisfaction buffered the effects of psychological abuse on self-harm indicators.

While the present study indicated a negative relationship between psychological abuse and athlete satisfaction, previous studies have found conflicting results. For instance, Bekiari and Sympas (44) reported experiencing verbal aggression (e.g., insults, negative judgements) from coaches was significantly negatively related to athlete satisfaction and performance. In particular, verbal aggression emerged as an important negative predictor of athlete satisfaction. McGee and colleagues (34) explored the links between psychological abuse and over-conformity to the sport ethic, which illuminated the complexity of athletes' relationship to their belief in the functionality of psychological abuse. Athletes reported that psychologically abusive behaviors were discouraging, decreased enjoyment, and increased their desire to withdraw from sport, responses that reportedly became more salient over time. The present study's findings are congruent with athletes reporting less satisfaction when experiencing psychological abuse. On the other hand, the athletes in McGee and colleagues' (34) study reported psychological abuse contributed to higher effort, such that athletes were motivated to push harder, or sacrifice external commitments to avoid being yelled at by their coaches (34). This notion is consistent with previous qualitative studies on psychological abuse in which athletes have reported positive impacts on sport performance satisfaction (12, 28, 45).

The narrative of psychological abuse having a positive impact on performance has been perpetuated in sport by several stakeholders, including coaches, parents, and sport administrators (46). For instance, athletes have justified their coaches' negative behaviors as necessary because "if a coach is too lenient, that just doesn't get results" (28, p. 97) or are effective means of encouragement: "... they were just trying to get you motivated" (47, p. 131). Similarly, some coaches justify harmful behaviors as being in the best interest of the athlete: "I worked her really hard and really pushed her. She rose four places in the rankings and could go to international competitions. That is in a child's best interest" (46, p. 137). More research is needed to understand the links between athlete satisfaction and performance success; however, the findings from the present study add to this literature by demonstrating psychologically abusive behaviors can

have a negative impact on athlete satisfaction. Additionally, the negative relationship between psychological abuse and athlete satisfaction challenges the belief of psychologically abusive behaviors being necessary for performance and instead, may hinder performance satisfaction.

The negative impact of psychological abuse on self-harm indicators is consistent with previous literature in sport and general child abuse (12, 48–50), but the findings from the present study provide additional insight into the complexity of the relationships, namely athlete satisfaction can impact experiences of self-harm. Stirling and Kerr (28) identified athletes' responses to psychological abuse can differ over time, such that the same athlete may have a different response to the same coaching behaviors throughout their career. Additionally, the extent of athletes' reactions to psychological abuse was related to their satisfaction with performance (28), which is consistent with our current findings, namely athlete satisfaction provided a buffer between the effects of psychological abuse on self-harm. Specifically, athlete satisfaction weakened the relationship between psychological abuse and self-harm. Moreover, the present findings build on understanding the nuance between sport categories, such that self-harm can be buffered for non-team-sport athletes by athlete satisfaction. Previously, researchers have demonstrated non-team sport athletes are more likely to suffer from mental health disorders and self-harm indicators (26, 51, 52), as such, athlete satisfaction may be a protective factor in the outcomes, particularly for this subset of athletes. One interpretation of this finding is that the effects of abuse may be masked by one's perception of performance as satisfactory. Consistent with previous studies linking the over-conformity of the sport ethic to psychological abuse, when success has been achieved by the athlete, the methods used to achieve the success are not questioned or are justified by the athlete (33, 34). As such, the effects of harmful practices may not have negative effects in the moment but this does not mean they do not or will not be experienced later (34). Although psychological abuse has been reportedly normalised in sport (9, 50), athletes have reported not realizing the extent of its negative impacts until they left their sport (12, 47). For instance, one retired athlete reflected "I discovered a lot of things with therapy about how I was treated... I wasn't aware that like, that's not how a coach is actually supposed to treat you" (12, p. 85). Therefore, we urge practitioners to be cautious of engaging in psychologically harmful behaviors because the effects of these behaviors can be masked by successful performance outcomes. More research is needed to understand why these behaviors continue to be normalised and justified as a tool for performance and how to change these beliefs.

In contrast, the relationship between psychological abuse and eating disorders was strengthened by athlete satisfaction, particularly in athletes in aesthetic or weight-class sports, meaning satisfaction had a catalyzing rather than a buffering effect. The perceived connections between appearance and performance, or the "thin-to-win" discourse existing in aesthetic sport (53–56) may explain these findings. The "thin to win" discourse posits that a leaner body will produce a superior performance (57–59), a view that can be further attributed to the over-conformity to the sport ethic. Papathomas

(36) suggested engaging in disordered eating behaviors including abstaining from bad foods and tolerating persistent hunger uphold the values of the sport ethic. This author posited athletes are often pressured into engaging in disordered eating behaviors because of the belief they are necessary for performance. In particular, athletes feel they “must engage in disordered eating or risk being considered not committed enough or not tough enough... athletes in effect have a choice between becoming mentally ill or appearing mentally weak; damned if they do and damned if they don’t” (2015, p. 105). In relation to the present study, it is possible the desire to achieve high performance can drive athletes to engage in eating disorder behaviors because of the belief they enhance performance outcomes. Eating disorders are multifaceted and can be influenced by a multitude of external and internal factors (58). Individual risk factors can include genetics, age, self-esteem, and personality traits (e.g., perfectionism), whereas external risk factors can include body shaming and pressure on appearance, trauma, and coaching behaviors (53). Additionally, there continues to be a win-at-all costs mentality in sport, in which performance is valued over all else. The interconnected nature of eating disorders, therefore, could be exacerbated by experiencing psychologically harmful behaviors in sport and pressures to perform. For instance, experiences of psychological abuse (being screamed at, told you’re not good enough), combined with an internalised thin-to-win mentality, in a culture that values performance and self-sacrifice can create a volatile condition in which eating disorders can thrive. Aesthetic sports, in which scoring systems have appearance criteria embedded in them, may further exacerbate the problem (59). This could also explain the catalyzing effect of athlete satisfaction in weight-based sports, because athletes were more willing to self-sacrifice by way of disordered eating to achieve desired sport outcomes. Furthermore, athletes may have been more satisfied with their experience because of their belief self-sacrifice was necessary for performance attainment. The relationships between psychological abuse and eating disorders (12, 48, 60) and between aesthetic sports and eating disorders (23, 61), the drive for thinness for performance and eating disorders (23) have been studied independently, but not collectively. The findings from the present study contribute to the literature by exploring the relationship between multiple facets and are unique because it explored the relationship between these factors and athlete satisfaction. From a practitioner’s perspective, more attention is needed to address the underlying factors (i.e., maltreatment) that continue to have negative impacts on mental health and performance. Given the present findings, athletes in weight-based sports who have increased vulnerability deserve particular attention. A narrative shift is required to dispel the belief that psychologically abusive coaching styles and engaging in disordered eating behaviors are the most effective way to increase performance results.

Overall, the findings from this study demonstrate the salient influence of athlete satisfaction on the experiences of psychological harm and its outcomes. The results of this study can be partially explained by the over-conformity to the sport ethic, because athletes are expected to demonstrate commitment to their sport through self-sacrifice, dedication, and playing through pain (30). Athletes may also be more satisfied with their experience if they have overcome pain and suffering, as it reconfirms their athletic identity

and pursuit of distinction (30, 31, 62). In other words, if an athlete has self-sacrificed, they may be more satisfied with their results. This is seemingly apparent in the higher rates of athlete satisfaction in athletes of weight-based sports because athletes may self-sacrifice through disordered eating behaviors and become more satisfied as a result. The sport ethic could also partially explain the differences in the mental health outcomes of eating disorders and self-harm. Disordered eating behaviors can be viewed as facilitative of a performance outcome, thus experienced at higher levels, whereas self-harm is more destructive to performance, and thus may be under-reported. Despite these explanations, it is imperative to recognize these behaviors are potentially harmful to athletes’ health and well-being and, therefore, should be actively addressed and prevented.

5 Limitations and future directions

This study provided exploratory insights into the relationships between psychological abuse, athlete satisfaction, and two mental health indicators of self-harm and eating disorders. Given this was part of a larger project assessing maltreatment in sport, broad measures of mental health indicators were used. As such, the current methods were limited by the use of non-validated questionnaires, subsets of validated scales, and the use of a narrow population of athletes (i.e., national team athletes). Future studies could look at these relationships in more in-depth, including the use of psychometrically validated scales and a broader list of mental health indicators (e.g., anxiety, depression, well-being). While the present study looked at categories of sports as risk factors of eating disorders and self-harm, many other risk factors can contribute to mental health challenges were not considered, and it is important to consider the interplay between risk factors. Finally, findings did not differentiate between maltreatment perpetrated by coaches, teammates, parents, or other perpetrators. Future research could assess the outcomes of psychological abuse as it pertains to the various perpetrators of harm.

From an applied perspective, findings in this study indicate the associations between psychological abuse and negative mental health indicators. Given the high prevalence of psychological abuse (1–5), more work is needed to prevent and address psychological abuse in sport. Despite the growing body of evidence indicating the scope and negative outcomes of psychological abuse, it continues to be the most frequently reported form of harm. Future research could address the research-to-practice gap to cease this normalized practice.

6 Conclusion

The high prevalence of psychological abuse in sport is becoming increasingly reported in research and practice (1–5). This study contributes to emerging literature by demonstrating the detrimental effects of psychological abuse on athletes, specifically with respect to the increased risk of eating disorder and self-harm indicators. Additionally, findings from this study

demonstrate psychological abuse can negatively impact athlete satisfaction, and athlete satisfaction can both buffer and catalyze the effects of harm. Together, results indicate the need to prevent and address psychologically harmful practices in sport. Recommendations include increasing education for coaches and other sport participants, particularly on the scope of what behaviors constitute psychological abuse and the potentially harmful impacts of these behaviors on athletes. Increased awareness of the dangers of promoting adherence to the sport ethic, which emphasizes a culture that promotes self-sacrifice and accepting excessive demands, is also necessary given the potential negative impacts on athlete mental health. Stronger screening policies to uncover mental health challenges are needed. For example, athletes disclosing eating disorder and self-harm behaviors could be screened for experiences of maltreatment and provided appropriate psychological support (e.g., referral to a psychologist/psychiatrist). Interventions in coaching, including enforcing consequences (e.g., sanctions, removal of position) and education of appropriate coaching styles may also be needed. Overall, addressing the prevailing issue of psychological abuse is critical given its demonstrated negative impacts on athletes. Finally, from a mental health practitioner perspective, this study highlights the need for attention towards athletes in weight-based and individual sports given their increased risks of eating disorders and self-harm.

Data availability statement

The datasets presented in this article are not readily available because of the nature of this study, particularly the sensitive nature of maltreatment, participants of this study did not give written consent for their data to be shared publicly. Therefore, the supporting data is not available. Requests to access the datasets should be directed to erin.willson@utoronto.ca.

Ethics statement

The studies involving humans were approved by University of Toronto Health Sciences Research Ethics Boards. The studies were conducted in accordance with the local legislation and institutional

requirements. The participants provided their written informed consent to participate in this study.

Author contributions

EW: Conceptualization, Data curation, Investigation, Writing – original draft, Writing – review & editing. SB: Conceptualization, Formal Analysis, Visualization, Writing – original draft, Writing – review & editing. GK: Conceptualization, Writing – original draft, Writing – review & editing. AS: Conceptualization, Writing – original draft, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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