

Is Being Tough Always Good? Links Between Mental Toughness and the Perception of Sexual Harassment in Sports Context

Journal of Interpersonal Violence

1–32

© The Author(s) 2026

Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/08862605261437085

journals.sagepub.com/home/jiv

Lena Orlova¹, Amanda Champion¹,
Kari Walton¹, Jaclyn Perry¹,
and Cory L. Pedersen¹

Abstract

Mental toughness is commonly associated with enhanced performance and psychological resilience across various domains, including sport. However, its potential drawbacks remain underexplored. This study investigates the relationship between mental toughness and perceptions of sexual harassment in sport, focusing on how it may shape attitudes toward misconduct within coach-athlete dynamics. A sample of 1,532 participants ($n = 822$ athletes) completed an online survey assessing mental toughness, sexual harassment myth acceptance, and responses to two scenarios depicting inappropriate coach behavior: a quid-pro-quo vignette and suggestive text exchanges. Results indicated that individuals with sport participation reported significantly higher mental toughness compared to non-participants. Mental toughness was positively associated with greater acceptance of sexual harassment myths.

¹Kwantlen Polytechnic University, Surrey, BC, Canada

Corresponding Author:

Cory L. Pedersen, Department of Psychology, Kwantlen Polytechnic University, Surrey BC V3W 2M8, Canada.

Email: cory.pedersen@kpu.ca

and more tolerant responses to the depicted harassment, including reduced perpetrator blame, more favorable emotional reactions, and lower perceived inappropriateness. A generalized structural equation model revealed that mental toughness partially mediated the relationship between sport participation and tolerance toward questionable coach behavior. While effect sizes were small, the consistency across multiple scenarios underscores a potential unintended consequence of emphasizing mental toughness in sport contexts – namely, diminished sensitivity to harmful conduct. These findings highlight the need for sport organizations and educators to critically reassess how mental toughness is promoted. Integrating boundary-awareness and misconduct recognition into resilience training may help mitigate tolerance of inappropriate behavior, supporting athlete safety and ethical standards in sport environments.

Keywords

resilience, sexuality, victimization, athletics

Introduction

The benefits of sport participation are well-documented (Khan et al., 2012; Malm et al., 2019). Sports engagement can help improve self-esteem, psychosocial wellbeing (Eime et al., 2013, Guillén & Laborde, 2013), and physical health (Khan et al., 2012). However, playing sports also carries the risk of physical or psychological injury (Malm et al., 2019). Systematic research demonstrates that sexual harassment is a recognized problem in sports, at both competitive (Brackenridge, 1997, 2001; Mountjoy et al., 2016) and recreational levels (Sølvberg et al., 2024). In a recent Norwegian study of adolescents, 38.6% of athletes reported sexual harassment and abuse in sports context (Sølvberg et al., 2022), with a third of elite players and nearly half of recreational players being impacted. Similarly, in a national survey of Canadian sport participants, 20% experienced or witnessed harassment in their sport, consisting of unfair treatment and discrimination (Statistics Canada, 2024). In the last decade, several high-profile athlete abuse cases have emerged to shift public opinion to the seriousness of this issue (e.g., the case of Larry Nassar, Canadian gymnastic scandal; Hauser & Astor, 2018; McKeon, 2023; Pozzulo & Pica, 2022).

Sexual harassment and abuse have been linked to long-lasting, harmful effects on the psychosocial functioning of victim-survivors (Felitti, 2002). These include depression, anxiety, post-traumatic stress disorder, and

suicidal ideation (Gattis & Moore, 2022; Watters & Martin, 2021). Importantly, organizations and sport-stakeholders (e.g., medical professionals, policy-makers, parents, and consultants) play a significant role in creating environmental conditions that allow unethical behavior to foster and to continue unhindered (Fasting et al., 2007; Fogel & Quinlan, 2023; Kerr, 2022; Kerr & Stirling, 2017; Roberts et al., 2018). Although existing consensus maintains that sexual harassment and abuse of athletes is harmful and unacceptable (Fasting et al., 2007), there is a wide range of interpretations as to what constitutes sexual harassment and whether any given behavior counts as severe and unacceptable. To this end, social norms theory explains that an individual's response to and perception of an event can be considerably shaped by the norms and culture of the group to which the individual belongs (Asch, 1956; Deutsch & Gerard, 1955).

Drawing upon social norms theory, this research proposes a link between a central facet of sports culture – mental toughness – and a propensity to view sexual harassment with greater tolerance. Given that sport engagement inculcates mental toughness (Liew et al., 2019; Loehr & McLaughlin, 1990) and that this trait scales with levels of competitiveness (Golby & Sheard, 2004), it is necessary to interrogate whether the tendency to minimize the severity of sexually harassing behavior is rooted in a psychological hardness against vulnerability.

While we do not suggest that mental toughness inherently necessitates a tolerance for harassment, the conceptual relationship between these variables warrants investigation. Although no extant research has directly linked mental toughness to the normalization of sexual harassment, previous studies regarding its correlates provide a compelling foundation for this hypothesis. Using a framework similar to social norms theory, Zach et al. (2024) demonstrated that competitive athletes – who typically score higher on mental toughness measures (Golby & Sheard, 2004) – perceive a wide range of harmful behaviors as less disturbing than non-competitive athletes. Further evidence is found in Malovich and Stake's (1990) study of campus sexual harassment, which identified that women with high performance-based self-esteem who endorsed traditional gender roles were among the most tolerant of harassment. While self-esteem is not synonymous with mental toughness, it is a recognized correlate (Meggs et al., 2014), and confidence remains a core dimension of the mental toughness construct (Dagnall et al., 2019). Finally, the relationship between toughness and harassment tolerance may be explained by the cultural context of sport. Critical analyses (Kerr & Stirling, 2017) have outlined the interrelationship between mental toughness and hegemonic masculinity, which shapes how “toughness” is interpreted. Within sport culture, masculine values often dictate that toughness manifests as a

dominance over vulnerability and a resistance to acknowledging weakness (Kerr & Stirling, 2017). This cultural imperative is further reflected in the specific language used to describe coping with maltreatment in athletic environments (Kavanagh et al., 2017).

Given that the nature of sexual harassment suffers from individual differences in perception (Zach et al., 2024) and that individual perception is impacted by attitudes, experiences, and social norms (Asch, 1956), it is important to study facets of sports culture that may influence attitudes toward sexual harassment. We seek to extend and to build upon the current literature by offering the first quantitative study that directly explores the interrelationship between sports participation, mental toughness, and perception of sexual harassment.

Mental Toughness in Sports

It has long been taken for granted that mental toughness is a tenet of athletic success (Liew et al., 2019; Loehr & McLaughlin, 1990). It is a construct that encompasses four key dimensions: a sense of control, goal-orientation, confidence, and the ability to re-appraise obstacles constructively (Dagnall et al., 2019). Put simply, an individual high in mental toughness possesses a goal-oriented mindset, facing stressful situations with calm and assurance (Loehr & McLaughlin, 1990). Empirical research has produced interesting and important findings about the relationship between mental toughness, achievement, and well-being (Crust, 2007; Solomon, 2015). In the education and military sectors, mental toughness is associated with positive mental health outcomes (Lin et al., 2017). In young adults, it has the potential to shield against perceived stress and depressive symptoms (Gerber et al., 2013). For young athletes, higher mental toughness predicts openness to seek mental health support (Bird et al., 2021). Importantly, it is a characteristic that can be developed and trained (Liew et al., 2019), with some studies showing that experience in sports is positively correlated to mental toughness (Golby & Sheard, 2004; Golby et al., 2003; Guillén & Laborde, 2013; Nicholls et al., 2009).

Despite these evidenced benefits, mental toughness has been critiqued by various scholars. In a review of the literature, Crust (2007) argues that the construct itself suffers from conceptual overlap and vagueness and emphasizes that not enough critical research exists to fully rule out deleterious effects of mental toughness. Crust goes further to hypothesize that prioritization of toughness may lead an athlete to misperceive their own injury and downplay the need for recovery, though no research has yet either confirmed or disconfirmed this claim. Kerr and Stirling (2017) take a broader approach, arguing that mental toughness is rooted in hegemonic masculinity, which pedestals expressions of loyalty, competition, and aggression to the detriment

of athlete well-being (see also Fogel & Quinlan, 2023; Wellard, 2010). The anecdotal example of U.S. gymnast Kerri Strug (International Olympic Committee, 2020) is but one illustration. In the 1996 Olympics, Strug suffered an ankle injury following a vault performance and, despite the risk of worsening her injury, continued to perform. She was thereafter lauded in the media as the “gymnast who battled through pain for a taste of Olympic glory” (Olympic Games, 2020, para. 1). Not only does this example imply a significant degree of mental toughness on the part of the athlete to continue performing in the face of significant risk and pain, but also that a wider culture exists whose praise encourages and enables such decisions.

The danger of overemphasizing mental toughness is that, over time, a cultural context may form within which non-accidental violence and gender-based aggression are normalized (DeKeseredy et al., 2023; Kerr, 2022; Kerr & Stirling, 2017). For instance, Owusu-Sekyere and Gervis (2016) demonstrated that coaches who train mental toughness often legitimize emotionally abusive methods to do so. In turn, athletes trained to be mentally tough learn to rationalize this violence from their coaches. In a study of coping with emotional abuse from coaches, one participant uses the language of mental toughness to justify enduring maltreatment: “In my sport, it’s like man up and get on with it. . . . you need to just be able to deal with it and not let anything affect you” (Kavanagh et al., 2017, p. 407). Further, Fournier et al. (2021) demonstrated that in the context of individual sports, athletes who conformed to norms encouraging them to ignore their personal limits experienced less psychological violence from their coaches. This suggests a negative reinforcement mechanism in which the exhibition of “toughness” is reinforced by the absence of psychological punishment. Consequently, an interrelationship is established wherein maltreatment fosters mental toughness, and mental toughness, in turn, is utilized to cope with further maltreatment. This phenomenon may be explained by the cognitive foundations of the construct; specifically, mentally tough individuals possess a heightened capacity to inhibit information that could be perceived as an obstacle to their goals (Dewhurst et al., 2012).

Collectively, such findings provide indirect evidence that mental toughness may, in certain contexts, function maladaptively by overriding an individual’s instinctual appraisal of or response to obstacles. While it could be argued that these effects stem from hegemonic masculinity and its emphasis on perseverance (Kerr & Stirling, 2017) rather than the psychological construct of mental toughness itself, we contend that a compelling argument for the latter remains. Given the lack of empirical research ruling out the potential negative consequences of mental toughness, its role warrants direct investigation. Accordingly, the present study was designed to examine how

mental toughness functions within the relationship between sport participation and the perception of sexual harassment.

Sexual Harassment in Sports

Sexual harassment and abuse of athletes is a well-established systemic issue within sports (Brackenridge, 1997, 2001; Kirby et al., 2000; Tomlinson & Yoganci, 1997; Vertommen et al., 2015; Volkwein et al., 1997). In the past several years, a number of high-profile athlete groups have come forward to call for government intervention on the issue (Global Athlete, 2023; Gymnasts for Change Canada, 2022). Among those most at risk for sexual violence in sports are gender and sexual minorities, minors, elite athletes, and athletes with disabilities (Gattis & Moore, 2022). Power differentials is a significant facilitating factor for sexual abuse of athletes (Dodd et al., 2024; Fogel & Quinlan, 2023; Vertommen et al., 2015). Coaches are cited most often as transgressors, and women and minors as victim-survivors (Bjørnseth & Szabo, 2017; Brackenridge, 1997; Timon et al., 2022; Vertommen et al., 2015).

Sport Law, a Canadian group of advocates and legal professionals, defines sexual harassment as the “unwelcome conduct of a sexual nature that detrimentally affects the sport environment or leads to adverse consequences for those to whom the conduct is directed” (Sport Law, 2009, para. 5). This definition is meant to cast a wide net, capturing a wide range of behaviors that may be considered as transgressive but vary by degree of invasiveness, severity, and explicitness (Brackenridge, 1997; Fasting et al., 2003). However, this lack of specificity also makes it difficult in some cases to ascertain whether a particular interaction counts as sexual harassment (Sport Law, 2009), making the process of identifying whether a particular incident falls under this definition of sexual harassment vulnerable to subjectivity.

Extant research shows that factors such as gender and personal beliefs affect how a particular scenario of sexual harassment is perceived (Fejgin & Hanegby, 2016) and thus, how it is understood and responded to. Malovic and Stake (1990) have shown that women with high performance self-esteem and high endorsement of traditional sex roles tend to hold more tolerant views of sexual harassment. In a number of studies exploring the perception of ambiguous behavior, Hassall et al. (2002) demonstrated that athletes rated interactions such as social inquiries, invasions of space, and invitations to private meetings more tolerantly than did coaches. They also found a significant effect of gender, in that women were more tolerant toward social inquiries and invasions of personal space than men. Given that perception influences whether a particular incident is judged as a case of sexual harassment or not, it is important to study these individual differences and attitudes.

The Current Study

To our knowledge, our study is the first to explore how mental toughness influences the perception of sexual harassment in a sports context. Our research queried whether sport participants and non-participants differ in levels of mental toughness, and whether mental toughness influences the perception of and responses to sexual harassment – specifically, whether individuals with higher mental toughness are more likely to hold tolerant attitudes toward sexual harassment. We explored these questions in two contexts, both of which involved a coach-athlete relationship as the site of transgression, in alignment with data showing coaches to be the most common perpetrators of sexual misconduct (Gaedicke et al., 2021; Timon et al., 2022; Vertommen et al., 2015). Our first context was modeled on a previous study by Malovich and Stake (1990), which presented participants with fictional vignettes depicting a transgressive interaction between a professor and a student and asked participants about their reactions and feelings. The second context involved presenting participants with fictitious coach-athlete text exchanges, and similarly, asking them about their reactions and feelings.

To prevent extreme responding and ceiling effects, we avoided presenting participants with interactions involving a high degree of psychological or physical invasiveness (e.g., penetrative sex, explicit sexual advances). Instead, we gauged their responses to implied quid-pro-quo scenarios and sexually suggestive text exchanges. We reasoned that ambiguity allows for a greater variation of responses and has greater ecological validity, as real-life incidents are often ambiguous, especially from the perspective of the victims involved in them (Sport Law, 2009). Likewise, we did not use language that signaled sexual harassment in our recruitment materials. We included a measure of sexual harassment myth acceptance, which allowed us to control for baseline beliefs about sexual harassment. Our hypotheses and research questions were as follows:

H1: Controlling for sexual harassment myth beliefs, sport participants will have higher levels of mental toughness than participants who do not play sports.

H2a: Higher mental toughness predicts more tolerant attitudes toward a sexual harassment scenario, including blame attribution, action, and emotional reactions.

H2b: Higher mental toughness predicts more tolerant emotional reactions toward sexual harassment coach-athlete text correspondence.

RQ1a: Does mental toughness mediate the relationship between sport-participation status and participant responses to a sexual harassment scenario, including blame attribution, action, and emotional reactions?

RQ1b: Does mental toughness mediate the relationship between sport-participation status and participant emotional reactions to, and perceived inappropriateness of, coach-athlete text correspondence?

RQ1c: Does mental toughness mediate the relationship between sport-participation status and sexual harassment identification and sexual harassment disclosure of the coach-athlete text correspondence?

Method

Participants

Participants at least 16 years of age – regardless of engagement in sport – were recruited to a study on “relationships between coaches and athletes” via a research recruitment system at a large Western Canadian university (for course bonus credit), social media platforms (X, Instagram, Threads, Facebook, Reddit), and research recruitment sites for sexology and psychology studies (sexandpsychology.com, socialpsychology.org, and orgasmresearchlab.com).¹ A total of 1,788 participants were recruited. Based on recommendations by Garson (2019), surveys with insufficient completion rates (<75%) were excluded; given these exclusions, 256 survey responses were omitted, resulting in a final sample of 1,532 ($M_{\text{age}} = 23.06$; $SD_{\text{age}} = 7.74$).²

An independent samples *t*-test found no significant age differences between sport participants ($M = 22.89$, $SD = 8.20$) and non-participants ($M = 23.25$, $SD = 7.18$), $t(1530) = 0.912$, $p = .671$, and chi-square analyses indicated no difference in reported sex ($N = 1,524$), $\chi^2(2) = 3.02$, $p = .221$. However, differences were identified between sport participants and non-participants in reported gender identity, $\chi^2(2) = 46.14$, $p < .001$, ethnicity, $\chi^2(9) = 24.16$, $p = .004$, sexual orientation, $\chi^2(5) = 21.5$, $p = .001$, relationship status, $\chi^2(5) = 16.09$, $p = .007$, and education level, $\chi^2(5) = 28.72$, $p < .001$. Table 1 presents participant demographics by sport participation status.

Measures

Demographics. Participants responded to a 7-item questionnaire regarding their age, sex, gender identity, ethnicity, sexual orientation, relationship status, and highest level of completed education. Participants also provided information about whether they played a sport (yes/no) and, if so, were

Table 1. Distribution of Participant Demographic Characteristics by Sport Participation (N = 1,532).

	Non-participants	Sport participants
	<i>n</i> = 710	<i>n</i> = 822
Demographics	<i>M</i> _{age} = 23.35 (<i>SD</i> = 7.18)	<i>M</i> _{age} = 22.89 (<i>SD</i> = 8.20)
Gender Identity		
Woman	588 (82.8) _a	565 (68.7) _b
Man	110 (15.5) _a	248 (30.2) _b
Non-binary	12 (1.7)	9 (1.1)
Gender/sex		
Cisgender	681 (96.2)	794 (97.3)
Transgender	17 (2.4)	10 (1.2)
Intersex	10 (1.4)	12 (1.5)
Sexual Orientation		
Straight	557 (78.5) _a	687 (83.6) _b
Gay	14 (2.0)	7 (0.9)
Lesbian	6 (0.8)	12 (1.5)
Bisexual	96 (13.5)	88 (10.7)
Pansexual	32 (4.5) _a	14 (1.7) _b
Asexual	5 (0.7)	14 (1.7)
Relationship status		
Single	358 (50.4)	430 (52.3)
Casually dating	70 (9.9) _a	123 (15.0) _b
Non-married committed	198 (27.9)	199 (24.2)
Married/civil union	74 (10.4) _a	62 (7.5) _b
Separated/divorced	8 (1.1)	8 (1.0)
Widowed	2 (0.3)	0
Ethnicity		
African/Black	22 (3.1)	40 (4.9)
White	203 (28.6) _a	289 (35.2) _b
South Asian	319 (44.9) _a	295 (35.9) _b
Asian/East Asian	67 (9.4) _a	104 (12.7) _b
Indigenous/Aboriginal	5 (0.7)	2 (0.2)
Hispanic/Latinx	29 (4.1)	31 (3.8)
Middle Eastern	15 (2.1)	15 (1.8)
Pacific Islander	7 (1.0)	3 (0.4)
Multiethnic	33 (4.6)	34 (4.1)
Prefer not to say	10 (1.4)	9 (1.1)

(continued)

Table 1. (continued)

	Non-participants	Sport participants
	<i>n</i> = 710	<i>n</i> = 822
Demographics	<i>M</i> _{age} = 23.35 (<i>SD</i> = 7.18)	<i>M</i> _{age} = 22.89 (<i>SD</i> = 8.20)
Education		
Some high school	61 (8.6) _a	116 (14.1) _b
High school diploma	238 (33.5) _a	237 (28.8) _b
Some university	335 (47.2) _a	343 (41.7) _b
Completed university	41 (5.8) _a	90 (10.9) _b
Vocational/certificate	13 (1.8)	9 (1.1)
Postgraduate studies	22 (3.1)	27 (3.3)

Note. Eight participants did not provide information about gender/sex. Columns with differing subscripts are significantly different, $p < .05$. Percentages appear in parentheses.

requested to select all that applied from a list of 11 possible sports (e.g., hockey, golf), with the option to specify one not listed. Finally, sport participants were asked whether they played recreationally (for health or fun) or competitively (league, Nationals), and if both, to consider the option that best defined their overall involvement in terms of time and energy.

Mental Toughness. We presented participants with a 10-item Mental Toughness Questionnaire (Dagnall et al., 2019). Questions like, “Even when under considerable pressure, I usually remain calm” were answered on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), where higher scores indicated greater mental toughness ($\alpha = .78$).

Attitudes Toward Sexual Harassment

Coach-Athlete Vignette. We adapted a version of a sexual harassment attitudes scale from Malovich and Stake’s (1990) research on perceptions of sexual harassment on college campuses. The measure included a vignette, which we edited to suit the topic of our study. The vignette described a quid-pro-quo scenario, wherein a coach criticizes an athlete’s performance and then invites the athlete to a private dinner in exchange for help. We included a number of questions gauging attitudes toward the scenario depicted in the vignette. The measurement included a blame scale (6 items) with three subscales (2 items each): perpetrator blame ($CR = .90$), victim blame ($CR = .81$), and no blame ($CR = .83$). Additionally, the measure included a scale of predicted action

(6 items), with three subscales (2 items each): confront ($CR = .85$), comply ($CR = .87$), and ignore ($CR = .67$). In each of the subscales, higher scores indicated greater endorsement of the construct measured.

Finally, we included Malovich and Stake's (1990) 6-item measure of emotional reactions and requested participants to predict how they would feel if they were the athlete in the scenario. Participants indicated their predicted emotional reaction on a 7-point Likert scale where 1 represented a negative emotional reaction (e.g., insulted, intimidated) and 7 represented its inverse (e.g., flattered, powerful). We averaged scores for an overall predicted emotional reaction score, where lower scores represented negative emotional reactions to the scenario and higher scores represented more positive – or tolerant – emotional reactions toward sexual harassment ($\alpha = .87$).

Coach-Athlete Text Correspondence. A sexual harassment stimulus was presented to participants via an image of text based on scripts from a real sexual harassment case (Gatehouse et al., 2021). The text demonstrated exaggerated endearment (“you’re my world,” “my heart aches . . . I miss you so”), specialness (“you restored my faith in the sport”), befriending (“do you think you’ll ever get over the barriers and try to be my friend?”), and feigned concern for the athlete (“please be careful”). Emojis and spelling mistakes were retained to preserve the ecological validity of the text, but some comments were removed to fit the exchange on one text screen. A control text was obtained from a Google Search of “texts from a coach” and was selected for its similar friendliness, support of the athlete, and text length.

As with the coach-athlete vignette scenario, we included the same 6-item emotional reactions measure, where responses to each item were scored from 1 (*negative emotional reaction*) to 7 (*positive emotional reaction*). We averaged scores for an overall emotional reaction score to both the sexual harassment text ($\alpha = .87$) and the control text ($\alpha = .91$).

We also included three individual items to each of the sexual harassment and control texts that asked the extent to which participants believed the text was inappropriate (1 = *very appropriate*; 4 = *very inappropriate*), constituted sexual harassment (*yes/no/unsure*), and whether they would disclose receiving this text to someone else (*yes/no/unsure*).

Sexual Harassment Myth Acceptance. The 20-item Illinois Sexual Harassment Myth Acceptance Scale (Lonsway et al., 2008) – designed to assess mythology regarding men’s sexual harassment of women – was adapted to suit the topic of our study. We replaced “woman” with “athlete” and replaced the terms “supervisor,” “boss” and “man” with “coach.” Participants were prompted to review each item based on what might be observed in a sports

setting, using either their own experience or an imagined experience. Statements such as, “As long as an athlete’s status on the team isn’t threatened, their claim of sexual harassment shouldn’t be taken too seriously” were answered on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores indicating greater acceptance of sexual harassment myth ($\alpha = .93$).

Procedure

Recruited participants were invited to complete an anonymous online survey hosted on the Qualtrics platform. Data was collected between July 2022 and April 2024. Upon receiving consent, participants were directed to complete demographic questions to ascertain meeting eligibility criteria. Participants who progressed from the demographics first completed the mental toughness questionnaire, followed by the coach-athlete vignette scenario and the sexual harassment attitudes questionnaire in response to the scenario. Participants were then directed to each of the two coach-athlete text correspondences – presented in randomized order – and completed the sexual harassment attitudes questions and appropriateness, sexual harassment identification, and disclosure items in response to these texts. The sexual harassment myth acceptance questionnaire was presented last and was followed by a debriefing. The entire survey took approximately 30 min to complete, with a median completion time of 13 min.

Statistical Analyses

This study employed a one-way between-groups ANCOVA to compare sport participants and non-participants on the dependent variable of mental toughness, while controlling for sexual harassment myth acceptance. A series of linear regressions examined mental toughness as a predictor of sexual harassment tolerance in terms of blame, action, and emotional reactions separately for both the sexual harassment scenario and the coach-athlete text correspondence. Finally, we used a path analysis to explore mental toughness as a mediator of sexual harassment tolerance in terms of blame, action, and emotional reactions between sport and non-participants for the sexual harassment scenario. We conducted a second path analysis to examine mental toughness as a mediator of sexual harassment, emotional reactions, and inappropriateness in the coach-athlete text correspondence. Lastly, we conducted a generalized structural equation model to examine mental toughness as a mediator of sexual harassment identification (*yes/no*) and disclosure (*yes/no*) in the coach-athlete text correspondence, after removing participants who indicated

they were unsure whether the text was sexual harassment and unsure whether to disclose. We replaced missing data on dependent measures using expectation maximization procedures (Garson, 2019)³; no more than 6% of data was replaced for any item.

Results

H1: Differences in Mental Toughness

A one-way ANCOVA – controlling for sexual harassment myth acceptance – examined differences between sport and non-sport participants on the dependent variable of mental toughness. Confirming our hypothesis, a statistically significant effect of sport engagement was found, $F(1, 1529)=48.55$, $p<.001$, $\eta_p^2=.03$. Post-hoc pairwise comparisons with a Bonferroni correction indicated higher mental toughness scores in sport participants ($n=822$; $M=3.25$, $SE=0.02$) relative to non-participants ($n=710$; $M=3.02$, $SE=0.02$).

H2a: Relations of Mental Toughness to Sexual Harassment Tolerance in Scenario

In a series of linear regressions, we examined whether mental toughness predicts more tolerant attitudes toward the sexual harassment presented in the coach-athlete vignette scenario, using the blame subscales (i.e., perpetrator blame, victim blame, and no blame), the three action subscales (i.e., confront, comply, and ignore), and the emotional reaction scale as separate outcome variables. Our hypotheses were partially supported.

First, we examined whether mental toughness predicted tolerance to sexual harassment in each of the three blame subscales. The perpetrator blame subscale, $F(1, 1530)=23.80$, $p<.001$, $R^2=.02$, and the no blame subscale, $F(1, 1530)=11.80$, $p<.001$, $R^2=.01$ reached significance. For perpetrator blame, the statistically significant negative beta coefficient ($-.22$; $t[1530]=-4.88$, $p<.001$), indicated that mental toughness predicted less perpetrator (i.e., coach) blame and thus, greater tolerance of sexual harassment, as expected. For no blame, the significant positive beta coefficient ($.13$; $t[1530]=3.44$, $p<.001$) revealed that greater endorsement of mental toughness predicted blamelessness, and thus again, greater tolerance of the sexual harassment depicted in the scenario, as predicted.

Next, we explored whether mental toughness predicted tolerance to sexual harassment in each of the three action subscales. Here, only the comply subscale, $F(1, 1530)=8.77$, $p=.003$, $R^2=.01$ reached significance, with a

positive beta coefficient in the comply subscale (.13; $t(1530)=2.96, p=.003$); thus, greater endorsement of mental toughness predicted compliance with the coach's inappropriate request presented in the scenario and greater tolerance of sexual harassment, as expected.

Finally, mental toughness predicted tolerance to sexual harassment in the emotional reaction subscale, $F(1, 1530)=93.00, p<.001, R^2=.06$. A significant positive beta coefficient (.49; $t(1530)=9.64, p<.001$) revealed that greater mental toughness was associated with more positive feelings toward the harassment presented in the scenario.

H2b: Relations of Mental Toughness to Sexual Harassment Tolerance in Coach-Athlete Text Correspondence

A linear regression examined whether mental toughness predicts more tolerant attitudes toward sexual harassment, using emotional reactions to the coach-athlete text correspondence as the outcome variable. Our hypothesis was supported, $F(1, 1530)=33.76, p<.001, R^2=.02$, with the statistically significant positive beta coefficient (.27; $t[1530]=5.81, p<.001$) indicating that greater mental toughness was associated with more positive feelings toward the harassment presented in the text message. Further, regressing mental toughness on the single item inquiring whether the text exchange was perceived as inappropriate was also significant, $F(1, 1528)=8.73, p=.003, R^2=.01$, with the negative beta coefficient ($-.08$; $t[1528]=-2.95, p<.003$) indicating that greater mental toughness was associated with lowered perceptions of inappropriateness.

Our second regression – using emotional reactions to the control text as the outcome variables – was also significant, $F(1, 1530)=4.95, p<.03, R^2=.003$, with the statistically significant positive beta coefficient (.11; $t[1530]=2.22, p<.03$) revealing that greater mental toughness was associated with more positive feelings toward a typical coach–athlete text exchange. This suggests that participants may have felt positively about interactions with coaches more generally. This was further supported by a non-significant finding on the single item inquiring about the inappropriateness of the text exchange, $F(1, 1529)=2.20, p=.14$.

RQ1a: Mental Toughness as a Mediator of Sexual Harassment Tolerance in Scenario

We conducted a series of mediation analyses using Hayes' (2018) PROCESS macro model 4 in SPSS Version 30 with 5,000 bootstrap resamples to calculate bias-corrected 95% bootstrap confidence intervals (CI). A total of seven

Table 2. Descriptive Statistics and Pearson Correlation Coefficients.

Measures	M	SD	1	2	3	4	5	6	7	8	9
1. Sports Player _a	1 (1)	–	–								
2. Mental Toughness	3.15	0.60	.19**	–							
3. Victim Blame	2.38	0.97	.08**	.02	–						
4. Perpetrator Blame	3.78	1.05	-.11**	-.12**	-.39**	–					
5. No Blame	2.23	0.92	.09**	.09**	.59**	-.55**	–				
6. Confront Coach	3.87	0.92	.01	-.01	-.39**	.43**	-.31**	–			
7. Comply with Coach	2.31	1.04	.08**	.08**	.66**	-.50**	.59**	-.48**	–		
8. Ignore Coach	3.01	0.85	-.04	-.06*	.04	.07**	.07	.04	-.01	–	
9. Tolerance	2.76	1.24	.15**	.24**	.52**	-.51**	.56**	-.43**	.58**	-.08**	–

Note. Variables with subscripts are dichotomous and denote the mode value and median in parentheses instead of the average.

* $p < .05$. ** $p < .01$.

mediation models examined whether mental toughness mediated the relationship between athlete status (sport participants coded as “1” vs. non-participants coded as “0”) and participant responses to a sexual harassment scenario, including blame attributions (i.e., perpetrator blame, victim blame, and no blame), action (i.e., confront, comply, and ignore the coach), and emotional reactions (i.e., level of tolerance for inappropriate behavior). In all analyses, we controlled for gender, ethnicity, sexual orientation, relationship status, and education to account for demographic differences between groups. Table 2 presents the means, standard deviations, and bivariate correlations among all variables in our models.

Perpetrator Blame

Our results showed statistically significant total⁴ and direct effects⁵ of athlete status on perpetrator blame attribution ($b = -0.19$, $SE = 0.05$, $t = -3.63$, $p < .001$, 95% CI $[-0.299, -0.089]$ and $b = -0.16$, $SE = 0.05$, $t = -2.95$, $p = .003$ $[-0.266, -0.054]$ respectively). Additionally, a statistically significant – albeit very small – indirect effect was found, revealing that compared to non-participants, athletes scored higher on mental toughness, which in turn, predicted lower perpetrator blame attribution ($b = -0.03$, $SE_{(Boot)} = 0.01$, 95% Boot CI $[-0.059, -0.015]$). The full model was statistically significant, $F(7, 1524) = 14.28$, $p < .001$, and explained 6.2% of the variance in perpetrator blame scores (see coefficients presented in Figure 1a). Significant covariates in the final model included gender, sexual orientation, education, and ethnicity.

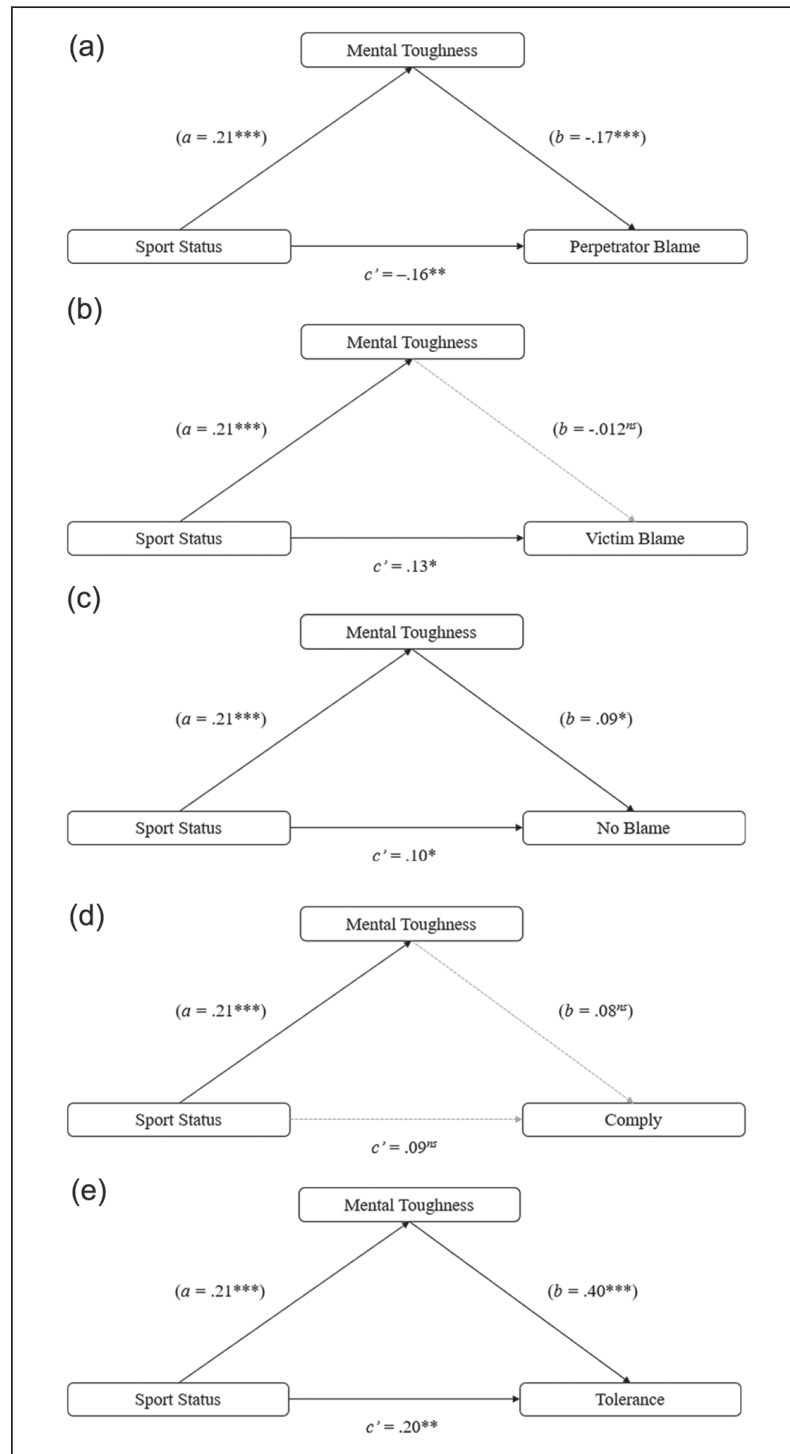


Figure 1. Path diagrams depicting the relationships between sport status (X), mental toughness (M), and blame attributions, action, and emotional reactions related to the scenario (Ys). Path a: The effect of the independent variable (X) on the mediator (M). Path b: The effect of the mediator (M) on the dependent variable (Y) controlling for (X). Path c': The direct effect of (X) on (Y), controlling for (M). * $p < .05$. ** $p < .01$. *** $p < .001$.

Victim Blame

Our analysis revealed statistically significant total and direct effects of athlete status on victim blame attribution ($b=0.12$, $SE=0.05$, $t=2.47$, $p=.014$, 95% CI [0.025, 0.220] and $b=0.13$, $SE=0.05$, $t=2.48$, $p=.013$ [0.026, 0.224], respectively). However, we found no statistically significant indirect effect. This suggests that sport participants assigned higher levels of victim blame compared to non-participants, regardless of their higher levels of mental toughness ($b=-0.003$, $SE_{(Boot)}=0.009$, 95% Boot CI [-0.021, 0.015]). The full model was statistically significant, $F(7, 1524)=6.66$, $p<.001$, and explained 3% of the variance in victim blame scores (see coefficients presented in Figure 1b). Significant covariates in the final model include gender.

No Blame

Statistically significant total and direct effects were observed for athlete status concerning no blame attribution ($b=0.12$, $SE=0.05$, $t=2.59$, $p=.010$, 95% CI [0.029, 0.211] and $b=0.10$, $SE=0.05$, $t=2.15$, $p=.032$ [0.009, 0.193] respectively). Furthermore, a statistically significant, very small indirect effect was found, indicating that sport participants scored higher on mental toughness compared to non-participants, which in turn, predicted higher levels of no blame ($b=0.02$, $SE_{(Boot)}=0.01$, 95% Boot CI [0.003, 0.037]). The full model was statistically significant, $F(7, 1524)=15.91$, $p<.001$, and explained 6.8% of the variance in no-blame scores (Figure 1c). Significant covariates in the final model included gender, sexual orientation, and education.

Confront

No significant, direct, or indirect effects were found for confronting the coach in the scenario.

Comply

We found a statistically significant total effect of athlete status on complying with the coach ($b=0.11$, $SE=0.05$, $t=2.04$, $p=.042$, 95% CI [0.004, 0.212]), and a non-significant direct effect ($b=0.09$, $SE=0.05$, $t=1.71$, $p=.088$ [-0.014, 0.197]), suggesting that once mental toughness was controlled for, athlete status alone was not a significant predictor of compliance. We found no significant indirect effect ($b=0.016$, $SE_{(Boot)}=0.010$, 95% Boot CI [-0.003, 0.034]). The full model was statistically significant, $F(7, 1524)=9.33$, $p<.001$, and explained 4.1% of the variance in compliance scores (Figure 1d). Significant covariates in the final model included gender and education.

Table 3. Descriptive Statistics and Pearson Correlation Coefficients.

Measures	M	SD	1	2	3	4
1. Sports Player _a	1 (1)	—	—			
2. Mental Toughness	3.15	0.60	.19**	—		
3. Positive Emotional Reactions	2.30	1.10	.05*	.15**	—	
4. Perceived Inappropriateness	3.63	0.64	-.05*	-.08**	-.53**	—

Note. Variables with subscripts are dichotomous and denote the mode value and median in parentheses instead of the average.

* $p < .05$. ** $p < .01$.

Ignore

No significant total, direct, or indirect effects were found for ignoring the coach in the scenario.

Tolerance

Our results showed statistically significant total and direct effects of athlete status on tolerance for inappropriate behavior in the scenario ($b = 0.28$, $SE = 0.06$, $t = 4.52$, $p < .001$, 95% CI [0.159, 0.404] and $b = 0.20$, $SE = 0.06$, $t = 3.20$, $p = .001$ [0.077, 0.320] respectively). Additionally, we found a statistically significant small indirect effect, revealing that compared to non-participants, athletes scored higher on mental toughness; this mental toughness, in turn, predicted higher tolerance of inappropriate coach behavior ($b = 0.08$, $SE_{(Boot)} = 0.02$, 95% Boot CI [0.053, 0.120]). The full model was statistically significant, $F(7, 1524) = 25.82$, $p < .001$, and explained 10.6% of the variance in tolerance scores (see Figure 1e). Significant covariates in the final model included gender and education.

RQ1b: Mental Toughness as a Mediator of Sexual Harassment Tolerance in Coach-Athlete Text Correspondence

Similar to the procedures used in RQ1a, we conducted two mediation analyses using Hayes' (2022) PROCESS macro model 4 to examine whether mental toughness mediated the relationship between athlete status (sport participants coded as "1" vs. non-participants coded as "0") and positive emotional reactions to, and perceived inappropriateness of, the coach-athlete text correspondence, after controlling for the gender, ethnicity, sexual orientation, relationship status, and education. Table 3 presents the means, standard deviations, and bivariate correlations among all variables in our models.

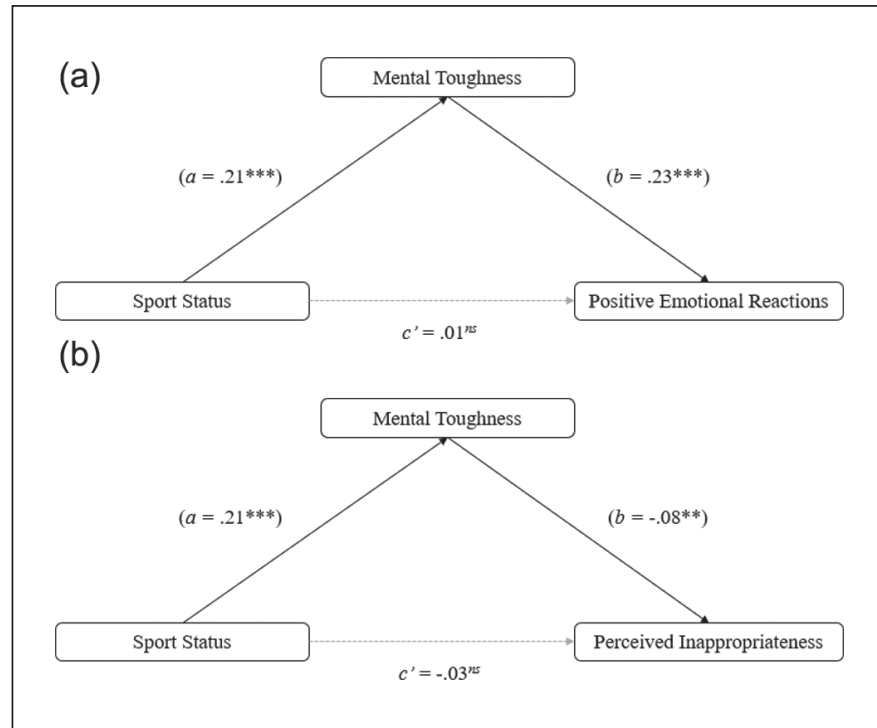


Figure 2. Path diagrams depicting the relationships between sport status (X), mental toughness (M), and sexual harassment tolerance related to the coach-athlete correspondence (Ys). Path a: The effect of the independent variable (X) on the mediator (M). Path b: The effect of the mediator (M) on the dependent variable (Y) controlling for (X). Path c': The direct effect of (X) on (Y), controlling for (M). $^{**}p < .01$. $^{***}p < .001$

Positive Emotional Reactions

Our results showed no statistically significant total or direct effects of athlete status on positive emotional reactions ($b = 0.06$, $SE = 0.06$, $t = 1.04$, $p = .299$, 95% CI $[-0.052, 0.169]$ and $b = 0.01$, $SE = 0.06$, $t = 0.19$, $p = .853$ $[-0.101, 0.122]$, respectively). Additionally, a statistically significant – albeit very small – indirect effect was found, revealing that compared to non-participants, athletes scored higher on mental toughness, which in turn, predicted higher positive emotional reactions ($b = 0.05$, $SE_{(Boot)} = 0.01$, 95% Boot CI $[0.025, 0.074]$), suggesting full mediation. The full model was statistically significant, $F(7, 1524) = 13.41$, $p < .001$, and explained 5.8% of the variance in positive emotional reaction scores (see coefficients presented in Figure 2a). Significant covariates in the final model included gender and sexual orientation.

Perceived Inappropriateness

No statistically significant total or direct effect of athlete status on perceived inappropriateness was found ($b = -0.05$, $SE = 0.03$, $t = -1.48$, $p = .138$, 95% CI

$[-0.114, 0.016]$ and $b = -0.03$, $SE = 0.03$, $t = -0.99$, $p = .324$ $[-0.099, 0.033]$ respectively). Additionally, a statistically significant – though very small – indirect effect was found, revealing that compared to non-participants, athletes scored higher on mental toughness, which in turn, predicted higher positive emotional reactions ($b = -0.02$, $SE_{(Boot)} = 0.01$, 95% Boot CI $[-0.029, -0.005]$), suggesting a full mediation. The full model was statistically significant, $F(7, 1522) = 4.91$, $p < .001$, and explained 2.2% of the variance in perceived inappropriateness scores (see Figure 2b). Significant covariates in the final model included gender and education.

Overall, although the size of the effects was small for the indirect effects, the results suggest that sports participation indirectly increases emotional tolerance of inappropriate sexual harassment behavior and lowers perceptions of inappropriateness in the coach-athlete text correspondence, through higher levels of mental toughness.

RQ1c: Mental Toughness as a Mediator of Sexual Harassment Identification and Disclosure in Coach-Athlete Text Correspondence

A generalized structural equation model was estimated in Stata 18 to examine whether mental toughness mediated the relationship between athlete status (sport participants coded as “1” versus non-participants coded as “0”) and sexual harassment identification (*yes/no*) and sexual harassment disclosure (*yes/no*) in the coach-athlete text correspondence. Similar to RQ1a and RQ1b, we controlled for gender, ethnicity, sexual orientation, relationship status, and education. Two binary outcomes were modeled: whether participants perceived the text correspondence to be a form of harassment or not (*yes/no*) and whether they indicated an intent to disclose the incident (*yes/no*), after removing participants who were “unsure.” Given that both outcome variables were binary, log coefficients on direct pathways were converted into odds ratios for ease of interpretation. Our model showed that sport participants reported significantly higher levels of mental toughness ($b = 0.21$, $SE = 0.03$, $z = 6.88$, 95% CI $[0.147, 0.264]$, $p < .001$). In turn, a one-unit increase in mental toughness significantly predicted a 34% lower odds of categorizing the event as a form of sexual harassment ($OR = 0.66$, $b = -0.409$, $SE = 0.134$, $z = -3.05$ $[-0.672, -0.146]$, $p = .002$) and a 26% lower odds of indicating an intent to disclose ($OR = 0.74$, $b = -0.307$, $SE = 0.159$, $z = -1.93$ $[-0.619, -0.010]$, $p = .045$). Gender was a significant covariate in explaining sexual harassment identification and intent to disclose.

There was a small, but significant indirect effect of sports player status on categorizing the event as sexual harassment through mental toughness ($b = -0.08$, $SE = 0.03$, $z = -2.79$, 95% CI $[-0.143, -0.025]$, $p = .005$). A

marginally significant indirect effect was also observed for disclosure intent ($b = -0.06$, $SE = 0.03$, $z = -1.86$ [-0.130 , -0.001], $p = .049$). These estimates reflect decreases in the log odds of both outcomes, suggesting that sport participants were less likely to identify the coach-athlete text correspondence as harassment or to disclose it, in part because they reported greater mental toughness than non-participants.

Discussion

This study examined the relationship between mental toughness and the perception of sexual harassment in the sports context, providing novel insights into how psychological traits cultivated in sports environments may influence athletes' recognition and interpretation of potentially transgressive behavior. Our findings support and extend previous research on the complex dynamics between mental toughness and athlete welfare, while raising important considerations about the potential drawbacks of traditionally valued psychological traits in sports.

Our first hypothesis, that sport participants would demonstrate higher levels of mental toughness than non-participants when controlling for sexual harassment myth acceptance, was supported. This finding aligns with previous research indicating that participation in sports predicts higher levels of mental toughness (Guillén & Laborde, 2013). Sports provide structured environments that expose participants to stressful situations and train them to effectively assess, resist, and respond to challenges. Given that mental toughness can be developed through training (Liew et al., 2019) and is often an explicit goal of coaching (Loehr & McLaughlin, 1990), this difference between athletes and non-athletes was expected.

Our second hypothesis – that higher mental toughness would predict more tolerant attitudes toward sexual harassment – was also supported across multiple measures. In both the vignette and the text message scenarios, greater mental toughness was associated with less perpetrator blame, greater acceptance of problematic behavior, and more positive emotional reactions to potentially harassing situations. These findings align with concerns raised by Crust (2007) about potential negative consequences of mental toughness, particularly regarding athletes' ability to recognize and respond to inappropriate treatment.

The positive correlation between mental toughness and sexual harassment myth acceptance is particularly noteworthy. Both constructs share an underlying emphasis on individual agency and control over external circumstances. While mental toughness emphasizes maintaining composure under pressure and viewing obstacles as challenges to overcome (Dagnall et al., 2019),

sexual harassment myth acceptance involves minimizing the seriousness of harassment by attributing responsibility to victims (Lonsway et al., 2008). This parallel suggests that, for some, the very psychological traits that can benefit athletic performance may also predispose individuals to discount or normalize concerning harassing behaviors.

This finding mirrors previous research by Malovich and Stake (1990), who found that women with high performance self-esteem paradoxically showed greater tolerance for sexual harassment. Our results suggest this phenomenon may extend beyond gender lines, indicating that individuals who pride themselves on their ability to overcome challenges may be particularly dismissive of experiences of harassment. This dynamic could create a concerning cycle where mental toughness both enables greater tolerance of inappropriate behavior and is reinforced by the sport environment's normalization of such conduct.

Beyond individual psychological traits, the structural power dynamics inherent in coach-athlete relationships significantly influence an athlete's decision to report or dismiss harassment (Dodd et al., 2024). Coaches often hold unilateral control over an athlete's playing time, scholarship eligibility, and future career trajectory (Parent & Vaillancourt-Morel, 2021). In competitive youth and elite settings, the fear of losing these vital opportunities can lead athletes to internalize harassment as a "price of admission" for success (Fogel & Quinlan, 2023). Our findings regarding compliance suggest that athletes may prioritize their athletic goals – a core component of mental toughness – over their personal safety (Kerr & Stirling, 2017). When mental toughness is framed as the ability to face stressful situations with calm and assurance (Loehr & McLaughlin, 1990), athletes may view the endurance of transgressive behavior as just another obstacle to be overcome with composure, rather than a violation to be reported (Kavanagh et al., 2017).

Our exploratory research questions – whether mental toughness mediated the relationship between sport-participation status and participants' responses to a sexual harassment scenario and text correspondence, including blame attribution, action, and emotional reactions or positive emotional reactions and perceived inappropriateness – yielded small, but preliminary patterns in the data. Further, our generalized structural equation model suggested that sports participants were less likely to identify the coach-athlete text correspondence as harassment or to disclose it, in part because they reported greater mental toughness than non-participants. While model effect sizes were very small and should be interpreted cautiously, our findings collectively provide initial evidence that sport participation may shape how individuals assign blame and tolerate inappropriate behavior – a pattern with theoretical significance for understanding social norms in sport culture.

Though practical significance is limited, the pattern is consistent and theoretically meaningful – even subtle shifts in blame or tolerance may reflect powerful underlying norms within athletic contexts. Findings highlight the need for athlete-centered harassment training that addresses not just behavior, but attitudes like compliance and tolerance. These results have important implications for sport organizations, coaches, and mental health professionals working with athletes. While mental toughness remains valuable for athletic performance, our results suggest that uncritical promotion of this trait may inadvertently increase athletes' vulnerability to harassment by reducing their likelihood of recognizing and reporting inappropriate behavior. Sport organizations may need to balance traditional emphasis on mental toughness with explicit education about appropriate boundaries and the importance of acknowledging and reporting misconduct.

Practical Implications for Prevention

Given the patterns in our findings, we propose that sports organizations administer mandatory education and awareness information programs for athletes about the risks of sexual harassment in sports contexts. Because youth and adolescents are more vulnerable to sexual harassment in sports, it may be beneficial to also provide this information to parents to help protect and monitor youth and adolescents from such risks.

To move from recognition to active prevention, sport organizations must also transition toward an integrated model that addresses both individual attitudes and organizational culture (Kerr, 2022). A primary strategy involves redefining resilience within athletic training to decouple mental toughness from silence (Liew et al., 2019). Coaches and sport psychologists should explicitly teach that recognizing boundaries and reporting misconduct are acts of psychological strength and integrity, rather than signs of weakness or lack of commitment (Mountjoy et al., 2016). Furthermore, the implementation of sport-specific bystander intervention programs can empower teammates and support staff to identify and disrupt “grooming” behaviors or boundary-blurring interactions before they escalate into more severe forms of abuse (Gould et al., 2020).

To specifically mitigate the fear of retaliation regarding playing time, organizations should adopt “Safe Sport” frameworks that utilize third-party, independent reporting channels (Global Athlete, 2023). By removing the conflict of interest inherent in internal reporting, athletes may feel more secure in disclosing inappropriate conduct without fear of losing their status on the team (Sport Law, 2009).

Finally, professional development for coaches should be anchored in trauma-informed practices that emphasize athlete welfare as a prerequisite for high performance (Watters & Martin, 2021). These codes of conduct must strictly define prohibited behaviors, such as suggestive texting or private social inquiries, to eliminate the subjectivity and ambiguity that currently allow for high levels of tolerance toward coach misconduct (Hassall et al., 2002).

Limitations and Future Directions

Considering the findings and scope of this study, future research should examine whether the relationships discussed vary across different sports, competitive levels, and cultural contexts. Additionally, investigating how mental toughness interacts with other psychological factors and organizational characteristics to influence harassment perception could provide valuable insights for developing more effective prevention programs.

Several limitations of the present study warrant consideration. First, our research design faces inherent constraints regarding generalizability due to the complex, multifaceted nature of both mental toughness and sexual harassment, and our limited exploration of the impact of individual characteristics on the perception of misconduct. While our scenarios depicted specific types of transgressive interactions, they cannot capture the full spectrum of sexual harassment experiences that athletes may encounter. Sexual harassment manifests in various forms, from subtle boundary violations to explicit misconduct, and our findings may not generalize across this continuum of behaviors. Moreover, mental toughness is an evolving concept with various definitions. The relationship between sexual harassment and mental toughness in our findings is limited to the operational definition of mental toughness that we used to measure the concept.

Though we used demographic data on participants' gender identity, ethnicity, sexual orientation, relationship status, and education as covariates in our models, future studies should analyze the moderating effects of these demographics on the relationships between mental toughness and misconduct perceptions, which is an important avenue for diversity-related research, given that the experience and impact of misconduct in sports varies widely across these demographic categories.

Additionally, "participation in sports" represents a broad category that doesn't fully capture the nuanced differences between various sporting contexts. Our analyses did not extensively differentiate between specific sports, competitive levels, or organizational environments, each of which may cultivate distinct cultural norms and attitudes. For instance, Biglari et al. (2015) suggest that there are differences in mental toughness between athletes who participate on team sports compared to athletes who participate in individual sports. Additionally, people often categorize sports as stereotypically feminine

or masculine (Plaza et al., 2017). Research on a wide variety of stereotypically masculine and feminine sports and the variation of mental toughness levels between participants of team and individual sports would be beneficial to further understand factors that influence the perception of sexual harassment. Future research would thus benefit from more granular examinations of how different sporting contexts might moderate the relationship between mental toughness and harassment perception.

The study's methodology also presents limitations regarding ecological validity. While vignettes and simulated text messages provide controlled conditions for examining perceptions, they may not fully replicate the complex interpersonal dynamics and contextual factors present in real-world coach-athlete relationships. Participants' responses to hypothetical scenarios may differ from their reactions in actual situations where power dynamics, emotional investment, and career implications come into play.

Further, our study builds on a body of research that has predominantly centered female victims' experiences of sexual harassment. While we intentionally used gender-neutral scenarios to broaden applicability, we did not control for participants' implicit assumptions about the gender of the coach or athlete in our scenarios. Participant assumptions may have influenced how they interpreted and responded to the scenarios, particularly given the gendered nature of many sexual harassment myths and sport-related power dynamics.

Lastly, the cross-sectional nature of our research design and convenience sampling methods prevents us from causal inferences. Because participants were not randomly assigned to sport participation conditions, we cannot establish whether mental toughness develops through sport participation or whether individuals with higher mental toughness are more likely to participate and persist in sports. This distinction has important implications for understanding how best to intervene in the relationship between mental toughness and harassment perception.

These limitations suggest valuable directions for future research, including longitudinal studies to examine the development of mental toughness and its relationship to harassment perception over time, cross-cultural investigations to understand how these dynamics manifest in different sporting contexts, and a more focused examination of how gender dynamics influence the relationship between mental toughness and harassment perception.

Conclusion

Our study offers novel insights into the complex relationship between mental toughness and the perception of sexual harassment in the sports context. Consistent with our hypotheses, sport participants reported higher levels of mental toughness than non-participants, and this trait was associated with

greater tolerance of potentially harassing behaviors and less emotional distress in response to such scenarios. These findings raise important concerns about how traditionally valued psychological traits in sport – such as perseverance, composure, and resilience – may inadvertently reduce athletes' sensitivity to inappropriate behavior, particularly in environments that normalize such conduct. While our models showed small effects, the consistency across measures underscores the need for targeted interventions. Sport organizations, coaches, and educators should be mindful of how mental toughness is taught and promoted, ensuring it is balanced with education on healthy boundaries, harassment awareness, and help-seeking behaviors. Athlete-centered harassment training should address not only behavior but also individual attitudes and cultural norms that shape tolerance and compliance.

Author Note

Portions of this paper were presented at the annual meeting of the Association for Psychology Science (2024).

ORCID iDs

Lena Orlova  <https://orcid.org/0000-0002-2404-4687>

Amanda Champion  <https://orcid.org/0000-0002-3627-8288>

Kari Walton  <https://orcid.org/0000-0002-5133-556X>

Cory L. Pedersen  <https://orcid.org/0000-0002-9769-3207>

Funding

The authors received no financial support for the research and/or authorship of this article.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

Notes

1. Due to IRB requirements of participant anonymity and privacy, survey metadata (e.g., IP addresses and geo-locations) were not collected. As such, participants cannot be identified or compared based on their recruitment avenues, nor can we determine which avenue was the most successful for recruiting participants.
2. The Ethics Review Committee at KPU approved our study (#2022-20). Respondents gave online consent before beginning the survey.
3. EM is suitable when data are missing completely at random (MCAR; Garson, 2019). This was assessed via Little's MCAR test, which was nonsignificant, $\chi^2(952)=60.64, p=1.00$, and therefore suitable for EM replacement.

4. Defined as the effect of athlete status on an outcome variable, considering the influence of the mediator, mental toughness.
5. Defined as the effect of athlete status on an outcome variable without the influence (controlling for) of the mediator, mental toughness.

References

- Asch, S. E. (1956). Studies of independence and conformity: I. A minority of one against a unanimous majority. *Psychological Monographs: General and Applied*, 70(9), 1–70. <https://doi.org/10.1037/h0093718>
- Biglari, S., Sanatkaran, A., Bahari, S. M., & Montazeri, M. (2015). The comparison of team and individual male athletes, mental toughness at different levels of skills. *International Journal of Basic Sciences & Applied Research*, 4(2), 127–132. <https://www.cabdirect.org/cabdirect/abstract/20153122790>
- Bird, M. D., Simons, E. E., & Jackman, P. C. (2021). Mental toughness, sport-related well-being, and mental health stigma among National Collegiate Athletic Association Division I student-athletes. *Journal of Clinical Sport Psychology*, 15(4), 306–322. <https://doi.org/10.1123/jcsp.2020-0043>
- Bjørnseth, I., & Szabo, A. (2017). Sexual violence against children in sports and exercise: A systematic literature review. *Journal of Child Sexual Abuse*, 27(4), 365–385. <https://doi.org/10.1080/10538712.2018.1477222>
- Brackenridge, C. (1997). “He owned me basically. . .”: Women’s experience in sexual abuse in sport. *International Review for the Sociology of Sport*, 32(2), 115–130. <https://doi.org/10.1177/101269097032002001>
- Brackenridge, C. (2001). *Spoilsports: Understanding and preventing sexual exploitation in sport*. Routledge.
- Crust, L. (2007). Mental toughness in sport: A review. *International Journal of Sport and Exercise Psychology*, 5(3), 270–290. <https://doi.org/10.1080/1612197X.2007.9671836>
- Dagnall, N., Denovan, A., Papageorgiou, K. A., Clough, P. J., Parker, A., & Drinkwater, K. G. (2019). Psychometric assessment of shortened mental toughness questionnaires (MTQ): Factor structure of the MTQ-18 and the MTQ-10. *Frontiers in Psychology*, 10, 1933. <https://doi.org/10.3389/fpsyg.2019.01933>
- DeKeseredy, W. S., Cowan, S., Schwartz, M. D., Mallick, H., & Todd, J. (2023) *Skating on thin ice: Professional hockey, rape culture, and violence against women*. University Toronto Press.
- Deutsch, M., & Gerard, H. B. (1955). A study of normative and informational social influences upon individual judgment. *The Journal of Abnormal and Social Psychology*, 51(3), 629–636. <https://doi.org/10.1037/h0046408>
- Dewhurst, S. A., Anderson, R. J., Cotter, G., Crust, L., & Clough, P. J. (2012). Identifying the cognitive basis of mental toughness: Evidence from a directed forgetting paradigm. *Personality and Individual Differences*, 53(5), 587–590. <https://doi.org/10.1016/j.paid.2012.04.036>
- Dodd, K., Solomon, C., Naughton, M., Salmon, P. M., & MacLean, S. (2024). What enables child sexual abuse in sport? A systematic review. *Trauma, Violence, & Abuse*, 25(2), 1599–1613. <https://doi.org/10.1177/15248380231190666>

- Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). A systematic review of the psychological and social benefits of participation in sport for children and adolescents: Informing development of a conceptual model of health through sports. *International Journal of Behavioral Nutrition and Physical Activity*, 10, 1–21. <https://doi.org/10.1186/1479-5868-10-98>
- Fasting, K., Brackenridge, C., & Sundgot-Borgen, J. (2003). Experiences of sexual harassment and abuse among Norwegian elite female athletes and nonathletes. *Research Quarterly for Exercise and Sport*, 74(1), 84–97. <https://doi.org/10.1080/002701367.2003.10609067>
- Fasting, K., Brackenridge, C., & Walseth, K. (2007). Women athletes' personal responses to sexual harassment in sport. *Journal of Applied Sport Psychology*, 19(4), 419–433. <https://doi.org/10.1080/10413200701599165>
- Fejgin, N., & Hanegby, R. (2016). Gender and cultural bias in perceptions of sexual harassment in sport. *International Review for the Sociology of Sport*, 36(4), 459–478. <https://doi.org/10.1177/101269001036004006>
- Felitti, V. J. (2002). The relation between adverse childhood experiences and adult health: Turning gold into lead. *The Permanente Journal*, 6(1), 44–47. <https://doi.org/10.7812/TPP/02.994>
- Fogel, C., & Quinlan, A. (2023). *Sport, sexual assault, and the law*. UBC Press.
- Fournier, C., Parent, S., & Paradis, H. (2021). The relationship between psychological violence by coaches and conformity of young athletes to the sport ethic norms. *European Journal for Sport and Society*, 19(1), 37–55. <https://doi.org/10.1080/16138171.2021.1878436>
- Gaedicke, S., Schäfer, A., Hoffmann, B., Ohlert, J., Allroggen, M., Hartmann-Tews, I., & Rulofs, B. (2021). Sexual violence and the coach–athlete relationship – A scoping review from sport sociological and sport psychological perspectives. *Frontiers in Sports and Active Living*, 3, Article 643707. <https://doi.org/10.3389/fspor.2021.643707>
- Garson, G. D. (2019). *Missing values analysis and data imputation*. Statistical Associates Publishing.
- Gatehouse, J., McNair, M., & Angelovski, I. (2021, April 15). *Fired junior hockey coach now subject of 2 police investigations*. CBC. <https://www.cbc.ca/news/canada/bernie-lynch-hockey-coach-police-1.5987225>
- Gattis, C., & Moore, M. (2022) A conceptual analysis of maltreatment in sports: A sport social work perspective. *Frontiers in Sports and Active Living*, 4, Article 1017308. <https://doi.org/10.3389/fspor.2022.1017308>
- Gerber, M., Kalak, N., Lemola, S., Clough, P. J., Perry, J. L., Pühse, U., Elliot, C., Holsboer, T. E., & Brand, S. (2013). Are adolescents with high mental toughness levels more resilient against stress? *Stress & Health: Journal of the International Society for the Investigation of Stress*, 29(2), 164–171. <https://doi.org/10.1002/smi.2447>
- Global Athlete. (2023, May 31). *Open letter to the Prime Minister of Canada* [Open letter]. <https://www.globalathlete.org/our-word/coalition-against-abuse-calls-for-the-government-of-canada-to-launch-a-national-inquiry>
- Golby, J., & Sheard, M. (2004). Mental toughness and hardiness at different levels

- of rugby league. *Personality and Individual Differences*, 37(5), 933–942. <https://doi.org/10.1016/j.paid.2003.10.015>
- Golby, J., Sheard, M., & Lavalley, D. (2003). A cognitive-behavioural analysis of mental toughness in national rugby league football teams. *Perceptual and Motor Skills*, 96(2), 455–462.
- Gould, D., Nalepa, J., & Mignano, M. (2020). Coaching generation Z athletes. *Journal of Applied Sport Psychology*, 32(1), 104–120. <https://doi.org/10.1080/10413200.2019.1581856>
- Guillén, F., & Laborde, S. (2013). Higher-order structure of mental toughness and the analysis of latent mean differences between athletes from 34 disciplines and non-athletes. *Personality and Individual Differences*, 60, 30–35. <http://doi.org/10.1016/j.paid.2013.11.019>
- Gymnasts for Change Canada. (2022, October 26). *Open letter: 500+ Canadian gymnasts' concerns about a toxic and abusive sport culture continue to be ignored* [Open letter]. <https://www.globalathlete.org/our-word/500-canadian-gymnasts-concerns-about-a-toxic-abusive-sport-culture-continue-to-be-ignored>
- Hassall, C. E., Johnston, L. H., Bringer, J. D., & Brackenridge, C. H. (2002). Coach and athlete perceptions of ambiguous behaviors and sexual harassment. *Journal of Sport Pedagogy*, 8(2), 1–21. <http://bura.brunel.ac.uk/handle/2438/3544>
- Hauser, C., & Astor, M. (2018, January 25). *The Larry Nassar case: What happened and how the fallout is spreading*. The New York Times. <https://www.nytimes.com/2018/01/25/sports/larry-nassar-gymnastics-abuse.html>
- Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford.
- International Olympic Committee. (2020, November 8). *Kerri Strug: The gymnast who battled through pain for a taste of Olympic glory*. <https://olympics.com/en/news/kerri-strug-the-gymnast-who-battled-through-pain-for-a-taste-of-olympic-glory>
- Kavanagh, E., Brown, L., & Jones, I. (2017). Elite athletes' experience of coping with emotional abuse in the coach-athlete relationship. *Journal of Applied Sport Psychology*, 29(4), 402–417. <https://doi.org/10.1080/10413200.2017.1298165>
- Kerr, G. (2022). Addressing cultural norms in sport. In *Gender-based violence in children's sport* (pp. 105–119). Routledge. <https://doi.org/10.4324/9781003035138-14>
- Kerr, G., & Stirling, A. (2017). Issues of maltreatment in high performance athlete development: Mental toughness as a threat to athlete welfare. In J. Baker (Ed.), *The handbook of talent identification and development in sport* (pp. 160–171). Routledge/Taylor and Francis.
- Khan, K. M., Thompson, A. M., Blair, S. N., Sallis, J. F., Powell, K. E., Bull, F. C., & Bauman, A. E. (2012). Sports and exercise as contributors to the health of nations. *Sports and Exercise Medicine*, 380(9836), 59–64. [https://doi.org/10.1016/S0140-6736\(12\)60865-4](https://doi.org/10.1016/S0140-6736(12)60865-4)
- Kirby, S., Greaves, L., & Hankivsky, O. (2000). *The dome of silence: Sexual harassment and abuse in sport*. Fernwood.
- Liew, G. C., Kuan, G., Chin, N. S., & Hashim, H. A. (2019). Mental toughness in sport. *German Journal of Exercise and Sport Research*, 49(4), 381–394. <https://doi.org/10.1007/s12662-019-00603-3>

- Lin, Y., Mutz, J., Clough, P. J., & Papageorgiou, K. A. (2017). Mental toughness and individual differences in learning, educational and work performance, psychological well-being, and personality: A systematic review. *Personality and Social Psychology*, 8, 1345. <https://doi.org/10.3389/fpsyg.2017.01345>
- Loehr, J. E., & McLaughlin, P. J. (1990). *Mental toughness: Log and guidebook*. https://nlpbookstore.com/shared-files/840/Loehr-McLaughlin_Mental%20Toughness%20Log%20and%20Guidebook.pdf
- Lonsway, K. A., Cortina, L. M., & Magley, V. J. (2008). Sexual harassment mythology: Definition, conceptualization, and measurement. *Sex Roles*, 58, 599–615. <https://doi.org/10.1007/s11199-007-9367-1>
- Malm, C., Jakobsson, J., & Isaksson, A. (2019). Physical activity and sports-real health benefits: A review with insight into the public health of Sweden. *Sports (Basel, Switzerland)*, 7(5), 127. <https://doi.org/10.3390/sports7050127>
- Malovich, N. J., & Stake, J. E. (1990). Sexual harassment on campus: Individual differences in attitudes and beliefs. *Psychology of Women Quarterly*, 14(1), 63–81. <https://doi.org/10.1111/j.1471-6402.1990.tb00005.x>
- McKeon, L. (2023, January 12). *The harder they fall: Inside Canada's gymnastics abuse scandal*. Maclean's. <https://macleans.ca/longforms/gymnastics-abuse-scandal-canada/>
- Meggs, J., Ditzfeld, C., & Golby, J. (2014). Self-concept organisation and mental toughness in sport. *Journal of Sports Sciences*, 32(2), 101–109. <https://doi.org/10.1080/02640414.2013.812230>
- Mountjoy, M., Brackenridge, C., Arrington, M., Blauwet, C., Carska-Sheppard, A., Fasting, K., . . . Budgett, R. (2016). International Olympic Committee consensus statement: Harassment and abuse (non-accidental violence) in sport. *British Journal of Sports Medicine*, 50(17), 1019–1029. <https://doi.org/10.1136/bjsports-2016-096121>
- Nicholls, A. R., Polman, R. C. J., Levy, A. R., & Backhouse, S. H. (2009). Mental toughness in sport: Achievement level, gender, age, experience, and sport type differences. *Personality and Individual Differences*, 47(1), 73–75. <https://doi.org/10.1016/j.paid.2009.02.006>
- Owusu-Sekyere, F., & Gervis, M. (2016). In the pursuit of mental toughness: Is creating mentally tough players a disguise for emotional abuse? *International Journal of Coaching Science*, 10, 3–13.
- Parent, S., & Vaillancourt-Morel, M. P. (2021). Magnitude and risk factors for interpersonal violence experienced by Canadian teenagers in the sport context. *Journal of Sport and Social Issues*, 45(6), 528–544. <https://doi.org/10.1177/0193723520973571>
- Plaza, M., Boiché, J., Brunel, L., & Ruchaud, F. (2017). Sport= male . . . But not all sports: Investigating the gender stereotypes of sport activities at the explicit and implicit levels. *Sex Roles*, 76(3), 202–217. <https://doi.org/10.1007/s11199-016-0650-x>
- Pozzulo, J., & Pica, E. (2022, November 14). *Abuse is widely accepted as part of organized sports culture but it should not be tolerated*. Carleton Newsroom. <https://newsroom.carleton.ca/story/abuse-in-sports-culture/>

- Roberts, V., Sojo, V., & Grant, F. (2018). Organizational factors and non-accidental violence in sport: A systematic review. *Sport Management Review*, 23(1), 8–27. <https://doi.org/10.1016/j.smr.2019.03.001>
- Solomon, G. (2015). Mental toughness among college athletes. *Journal of Applied Sports Science*, 5(3), 171–175. <https://doi.org/10.21608/jass.2015.84520>
- Sølvberg, N., Torstveit, M. K., Rosenvinge, J. H., Pettersen, G., & Sundgot-Borgen, J. (2022). Sexual harassment and abuse among young elite athletes, recreational athletes, and reference students: A prospective study. *Medicine & Science in Sports & Exercise*, 54(11), 1869–1878. <https://doi.org/10.1249/MSS.0000000000002972>
- Sølvberg, N., Torstveit, M. K., Solstad, B. E., Mountjoy, M., Rosenvinge, J. H., Pettersen, G., & Sundgot-Borgen, J. (2024). Risk factors for sexual harassment and abuse victimization among adolescent athletes and non-athletes: A one-year follow-up study. *Child Abuse & Neglect*, 147, Article 106592. <https://doi.org/10.1016/j.chiabu.2023.106592>
- Sport Law. (2009, April 10). *Harassment – Some definitions and guidelines for coaches and athletes*. <https://sportlaw.ca/harassment-some-definitions-and-guidelines-for-coaches-and-athletes/>
- Statistics Canada. (2024, March 4). *Discrimination and racism in sports in Canada*. The Daily. <https://www150.statcan.gc.ca/n1/daily-quotidien/240304/dq240304a-eng.htm>
- Timon, C. E., Dallama, S. J., Hamilton, M. A., Liuc, E., Kang, J. S., Ortiza, A. J., & Gelles, R. J. (2022). Child sexual abuse of elite athletes: Prevalence, perceptions, and mental health. *Journal of Child Sexual Abuse*, 31(6), 672–691. <https://doi.org/10.1080/10538712.2022.2100026>
- Tomlinson, A., & Yoganci, I. (1997). Male coach/female athlete relations: Gender and power relations in competitive sport. *Journal of Sport and Social Issue*, 21, 134–155. <https://doi.org/10.1177/019372397021002003>
- Vertommen, T., Schipper-van Veldhoven, N. H., Hartill, M. J., & Van Den Eede, F. (2015). Sexual harassment and abuse in sport: The NOC*NSF helpline. *International Review for the Sociology of Sport*, 50(7), 822–839. <https://doi.org/10.1177/1012690213498079>
- Volkwein, K. A. E., Schnell, F. I., Sherwood, D., & Livezey, A. (1997). Sexual harassment in sport: Perceptions and experiences of American female student-athletes. *International Review for the Sociology of Sport*, 32(3), 283–295. <https://doi.org/10.1177/1012690297032003005>
- Watters, E. R., & Martin, G. (2021). Health outcomes following childhood maltreatment: An examination of the biopsychosocial model. *Journal of Aging and Health*, 33(7–8), 596–606. <https://doi.org/10.1177/08982643211003783>
- Wellard, I. (2010). Men, sport, body performance and the maintenance of “exclusive masculinity”. *Leisure Studies*, 21(3–4), 235–247. <https://doi.org/10.1080/0261436022000030641>
- Zach, S., Davidovitz, M., & Cohen, R. (2024). Comparative perceptions of sexual harassment among athletes across different competitive levels. *Frontiers in Sports and Active Living*, 6, Article 1468534. <https://doi.org/10.3389/fspor.2024.1468534>

Author Biographies

Lena Orlova holds a BSc in Applied Psychology from Kwantlen Polytechnic University (KPU) and a diploma in Transpersonal Therapeutic Counseling from Clearmind International. She is a Registered Therapeutic Counselor with the Association of Cooperative Counseling Therapists of Canada, as well as a researcher within Observations and Research in Gender and Sexuality Matters Research Lab at KPU. Her interests include gender and sexuality, relationships, and trauma. She has presented her work at scientific conferences on topics ranging from weight stigma to sexual harassment in sports.

Amanda Champion, MA, is a doctoral student in the School of Criminology at Simon Fraser University and a Faculty member in the Department of Psychology at Kwantlen Polytechnic University. Her research interests include sexual violence, violent extremism, pathways to violence and suicide, and youth homicide in Canada. Amanda has published extensively, including work on sexual violence, the impact of the COVID-19 pandemic on intimate partner violence among women in Metro Vancouver, and the adverse mental health effects and suicide risk associated with technology-facilitated sexual violence victimization.

Kari Walton, BA, is currently completing a Master's degree at the SOAS University of London in Gender and Sexuality in Global Politics. As a member of the ORGASM Research Lab based out of Kwantlen Polytechnic University, she works on a range of projects exploring themes such as (hetero)sexism, gender-based violence, and social stigma, and is extensively published. Kari currently works full-time in the international development sector as an Analyst at Kore Global, supporting the design, implementation, and management of research and evaluation projects that promote gender equality and social justice in the Global South.

Jaclyn Perry is a Bachelor of Arts Honours graduate in Psychology at Kwantlen Polytechnic University. She is interested in topics related to sexual variation and sexual- and gender-based violence, including the role of AI technology in deep-fake child sexual abuse material. She has been a research assistant in the ORGASM Research Lab since early 2023.

Cory L. Pedersen earned her PhD from the University of British Columbia in 2004 and has worked in the Department of Psychology at Kwantlen Polytechnic University since 2005. In 2011, she founded the Observations and Research in Gender and Sexuality Matters Research Lab to further her interests in human sexuality, providing undergraduate and graduate students the opportunity to gain valuable research experience. Since its inception, several collaborative projects with the lab have been presented at psychology and sexology conferences and in publications.