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Article

Trauma Prevalence and Desire for Trauma-Informed Coaching in Collegiate Sports: A Mixed Methods Study

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Abstract: This study investigated trauma prevalence amongst collegiate student-athletes and openness towards trauma-informed coaching practices among athletes and coaches at two small Division III colleges. Surveys gathered quantitative data from athletes (n = 91) and coaches (n =18) and qualitative data from athletes (n = 33). Quantitative results indicated that 52.7% of athletes experienced at least one potentially traumatic event during their lifetime. The most prevalent trauma was unwanted sexual contact. Additionally, 50.5% of athletes experienced sport-based harassment or abuse during their lifetime, with 21.7% of affected athletes experiencing said abuse in college sports. Athletes reported that 8 out of 10 trauma-informed coaching techniques included in the study were already implemented or desired for implementation at rates between 73.2–93.1% on their teams. Coaches also showed support for trauma-informed coaching, with 88.2% indicating they believed the practice was necessary in college athletics and a large majority of coaches agreeing or strongly agreeing with 8 out of 10 techniques. Qualitative results highlighted the variety of impacts that traumatic experiences have on athletes. The most reported themes were negative psychological and performance effects. Findings support the idea that trauma-informed coaching is necessary and desired in collegiate athletics.

Keywords: trauma; trauma-informed coaching

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1. Introduction

Experiencing trauma is a widespread and common occurrence; between 50% and 80% of adults have experienced at least one traumatic event throughout their lifetime (Benjet et al. 2016; PTSD: National Center for PTSD n.d.; Kessler et al. 1995; Roberts et al. 2011). *The Diagnostic and Statistical Manual of Mental Disorders* (DSM) *V* defines trauma as exposure to death, threat of death, extreme violence, or sexual violence through directly experiencing the events oneself, witnessing the events as they happened to other people, learning that the aforementioned events happened to a close family member or friend, or experiencing repeated or severe exposure to the inhumane details of traumatic events through work (American Psychiatric Association 2013). Past literature measuring rates of trauma has often focused on combat veterans, abuse survivors, and refugees (Oakley et al. 2021). However, trauma is not a unique experience contained in only a few communities. Rather, trauma is common and affects people from different communities and backgrounds (McLaughlin et al. 2018; McCormick et al. 2018).

Traumatic event exposure has been tied to a variety of physical and mental health challenges. Chronic or repeated instances of trauma exposure, particularly in childhood, have been connected to negative psychiatric and physical health outcomes (Anda et al. 2006; Felitti et al. 1998). Acute or one-time exposure to trauma can also negatively impact both physical and mental health (D'Andrea et al. 2011). Depression, substance abuse, obesity, stroke, chronic bronchitis, diabetes, smoking, heart disease, bone fractures, hepatitis, aggression, low self-esteem, identity confusion, difficulties in interpersonal relationships,

and other physical health challenges have all been linked to previous traumatic event exposure or are considered secondary responses to trauma (Carlson and Dalenberg 2000; Felitti et al. 1998). Due to the prevalence of trauma and the severity of related outcomes, it is increasingly viewed as a widespread public health threat (Magruder et al. 2017).

Addressing trauma as a public health threat requires an interdisciplinary approach that incorporates trauma-informed care into many or all sectors of life and makes the world more accessible to individuals who have experienced trauma (Magruder et al. 2017). While research is mixed, some studies show that black, white, and Latino Americans experience trauma at roughly the same rate, with Asian Americans experiencing less than the other groups (McLaughlin et al. 2018). Additionally, LGBTQ+ youth experience trauma at higher rates than their straight and gender-conforming peers (McCormick et al. 2018). These findings indicate that utilizing more trauma-informed approaches could increase rates of access and inclusion by building more positive and supportive spaces.

Trauma-informed care has been incorporated into many levels of education and youth-level sports. This has been shown to help promote growth and healing for children who have experienced trauma (Brunzell et al. 2016a; D'Andrea et al. 2013). Frameworks for trauma-informed pedagogy at the college level have also been theorized with the goal of prioritizing student mental wellbeing to help individuals learn to the best of their ability (Wood 2021). Despite the first steps towards the incorporation of trauma-informed pedagogy at the collegiate level and trauma-informed sport practices at youth levels, currently no research exists on the need for or approaches to trauma-informed coaching with college athletes. This paper will begin to address this gap with the goal of making collegiate athletics a more positive experience and thus more accessible.

1.1. Trauma-Informed Coaching

Trauma-informed coaching focuses on specific tactics designed to make the sports environment more accessible and inclusive for trauma-affected individuals. These techniques were created by pulling together common elements from a number of therapeutic approaches like cognitive behavioral therapy, dialectical behavioral therapy, and more (Bergholz et al. 2016). Some possible trauma-informed coaching techniques include, but are not limited to coaching in pairs to allow for more one-on-one support for athletes, implementing consistent, predictable practice plans that include thoughtful transitions and warm-ups and cool downs that engage the body and brain, creating time for personal and group reflection for the athletes, focus on progress not performance, allowing athletes to opt in or out of some activities, refraining from yelling at athletes currently playing and providing most of the coaching instruction to players on the bench or during substitutions, being available before or after practice for informal conversations and inviting athlete input on how to improve the team experience (Bergholz et al. 2016). Creating trauma-informed spaces would make sports more accessible for a variety of marginalized populations while encouraging a coaching style that benefits all.

Through building a supportive atmosphere and developing strong relationships with players, trauma-informed coaches can help athletes work on skills to cope with stress, regulate their emotions, and build concentration that they can use in sports and in life (Bergholz et al. 2016). Trauma-informed coaching cannot act as a cure for athletes' trauma symptoms, and clinical intervention is beyond the scope of coaches. Yet, coaches are uniquely positioned to help athletes who have been exposed to trauma because of the respect and trust their athletes frequently place in them and their ability to connect athletes to further mental health resources and professionals (Leibovitz and Martin 2022).

While coaches are often ideally positioned to create supportive environments for athletes and refer them to additional support, they can misidentify athletes' symptoms as disengagement or resistance to authority and identify the athletes as having inherent deficits (Leibovitz and Martin 2022). A deficit perspective based on ignorance about trauma can have detrimental impacts on coaches' opinions of athletes' abilities. Furthermore, this perception can be destructive for the coach-athlete relationship, eroding trust and making

it harder for the coach and athlete to work together cooperatively, thus preventing the coach from fully supporting their athlete (Leibovitz and Martin 2022) and the athlete from reaching their full potential. Trauma-informed coaching not only has the power to give athletes safe access to sports and work on emotional coping strategies (Bergholz et al. 2016); training on trauma-informed coaching can also improve coach efficacy and increase coaches' confidence in providing effective coaching, whether or not they are aware of which athletes have experienced trauma (Leibovitz and Martin 2022).

1.2. Benefits of Trauma-Informed Youth Pedagogy and Sports

Significant trauma experience is associated with a multitude of implications, such as "difficulty regulating affect and impulses, disengagement and low motivation for rewarding activities, difficulties with attention, low self-awareness, damaged sense of self, difficulty with peers, and exaggerated threat reactivity" (Bergholz et al. 2016, p. 244). Thus, it is challenging for traumatized youth to participate in age-appropriate events like athletics, music, and other structured activities from which they might enjoy and significantly benefit (Bergholz et al. 2016). School can be challenging for trauma-affected children, and much research has gone into trauma-informed pedagogy at the K-12 level. Strength-based models of trauma-informed pedagogy outline three areas where trauma-affected students most need support: repairing regulatory capacities, repairing disrupted attachment, and increasing psychological resources (Brunzell et al. 2016b). Examples of trauma-informed teaching techniques that can help accomplish this include brain breaks, mindfulness exercises, escalation maps, and physical regulation techniques like heart rate awareness (Brunzell et al. 2016a). Trauma-informed approaches have been implemented at the school, district, or statewide levels in at least 17 U.S. states, and both interest and support for trauma-informed schooling continue to grow (Overstreet and Chafouleas 2016). Training in trauma-informed pedagogy has been shown to cause meaningful change. Professional development on trauma-informed instruction for teachers and administration at one K-12 school led to over half of the participants reporting at least some change in their thinking and teaching practice with the general theme of increased empathy (Koslouski 2022).

Sports are frequently part of the K-12 educational experience, and while there is considerable evidence of trauma survivors benefiting from participating in sports, it is possible for sports to cause considerable, unintended harm by amplifying trauma symptoms, lowering self-esteem, and even promoting gender-based violence towards participants, especially if time, space, and local culture are not considered (Massey and Williams 2020).

Despite the potential for retraumatization, sports can be a positive, impactful experience for many children. Sports are ideal as an additional therapy for traumatized children because they can be fun, cooperative, skill-based, physically engaging, goal-directed, easy for coaches or interventionists to learn, and can be modified to include the most effective techniques as they emerge (D'Andrea et al. 2013). Sports and recreation activities may also help young people navigate and communicate nonverbally, thus creating a minimally confrontational coping method for otherwise overwhelming situations (Henley 2005).

D'Andrea et al. (2013) found that trauma-informed sport is feasible in a youth sport context and that sport can benefit youth impacted by trauma. Their study confirmed and expanded upon earlier findings that trauma-informed sport (yoga) is a positive adjunctive therapy for trauma-affected youth in residential treatment facilities for mental illness (Spinazzola et al. 2011). While there are risks that must be carefully mitigated (Massey and Williams 2020), trauma-informed coaching at the youth level can provide children with the opportunity to experience and learn the difference between good and bad stress in a controlled, supportive environment, potentially building resilience that they can use to thrive (Bergholz et al. 2016).

1.3. Trauma-Informed Pedagogy in Higher Education

Between 52% and 89% of undergraduate students have experienced at least one potentially traumatic event (Anders et al. 2012; Bernat et al. 1998; Frazier et al. 2009; Im et al.

2020; Owens and Chard 2006). Despite not reaching consensus on an exact prevalence rate of trauma in undergraduate students (and the relative datedness of some sources), these results are consistent with the finding that the peak age for exposure to potentially traumatic events is 16–20 (Breslau et al. 1998), an age range through which all undergraduates have passed while some have moved beyond the limits of the range. In order to adequately address these widespread rates of trauma among college students, a holistic, institutional approach is needed. Institutions, educators, and other authority figures must be able to recognize the signs and symptoms of trauma, which may manifest in the classroom as resistant or avoidant behaviors (Wood 2021), and actively resist retraumatizing their students (Palmer 2020; Harper and Neubauer 2021), which aligns with the Substance Abuse and Mental Health Services Administration's 2014 recommendations for trauma-informed organizations (Huang et al. 2014).

For many people, mental illnesses like PTSD, anxiety, or depression begin their onset in college (Cusack et al. 2019; Pedrelli et al. 2015). In response, research indicates that a trauma-informed approach to mental health services can be especially beneficial for college students in general (Sweeney et al. 2018). Places of higher education require a high level of coordination between administration, faculty, staff, and students to meet the safety needs of trauma-affected individuals so they can thrive socially and academically. Additionally, all university personnel should be provided with professional development on trauma and best practices for students and should work toward developing academic and nonacademic strategies to make campus a safe place for trauma-affected students (Palmer 2020). Applying these recommendations to collegiate sports would require coaches and sports administrative staff to receive trauma-informed training and be considered part of this holistic system of cooperation.

While trauma-informed pedagogy is developing at collegiate and lower levels and trauma-informed sports seem to benefit youth, we were unable to identify any studies examining attempts to implement trauma-informed coaching at the collegiate level. By outlining the benefits of these practices in other contexts, we hope to demonstrate the possible power of trauma-informed coaching with college athletes.

1.4. Trauma-Informed Sports and Coaching in Collegiate Sports

College students and athletes are both groups with reportedly high rates of trauma (Frazier et al. 2009; Mountjoy et al. 2016), yet hardly any literature exists that investigates trauma prevalence at the intersection of these two groups: college athletes. Earlier in this review, we summarized the research that explores trauma in other groups, like college students and youth athletes. But before universities can truly begin to holistically address trauma on their campuses as recommended (Palmer 2020), the trauma of some of the most highly pressured students, student-athletes, must be assessed. Given the prevalence of trauma at a national level (Benjet et al. 2016; PTSD: National Center for PTSD n.d.; Kessler et al. 1995; Roberts et al. 2011) and trauma's status as a public health threat (Magruder et al. 2017), it is likely that trauma is prevalent among student-athletes and could have detrimental impacts on their lives if it goes unaddressed. While trauma-informed coaching cannot replace clinical intervention or treatment (Bergholz et al. 2016), there are numerous cases of trauma-informed sport/coaching being used with other populations, like positive youth development (Weiss et al. 2016; Whitley et al. 2018), institutionalized youth (D'Andrea et al. 2013; Spinazzola et al. 2011), a national youth-serving organization (Shaikh et al. 2021), refugees (Whitley et al. 2022), and veterans (Braun et al. 2021; Steele et al. 2022). Student-athletes and coaches from a variety of settings must be surveyed in order to broaden collective knowledge of trauma prevalence in collegiate athletes and to begin the first step towards implementing trauma-informed collegiate coaching: gauging openness and interest in the practice.

To address this lack of information, the present mixed-methods study investigates the following: In terms of trauma prevalence, what is the prevalence of trauma among collegiate athletes? Existing research is not in agreement on how different racial groups

are impacted by trauma when compared to each other, yet it is clear that LGBTQ+ youth experience more trauma than their non-LGBTQ+ peers. Therefore, we investigated if college athletes who hold identities experienced more trauma or certain types of trauma at different rates than their peers. In terms of trauma-informed coaching, are collegiate athletes and coaches interested in integrating trauma-informed practices into their sports programs? What kinds of practices are they interested in? The goal is that this research can be a step towards making sports a more safe and accessible space for all athletes, especially those who have experienced trauma.

2. Methods

2.1. General Study Design

This study was conducted at two Division III, small, private liberal arts colleges in New England. One was a co-ed institution, while the other was a historically women's college[1]. The institutional review board at one of the institutions completed a full review of the study and approved it; the institutional review board at the second institution received and reviewed a copy of the proposed research and requested minor edits before approving it and allowing the researchers to contact student-athletes.

Two surveys were distributed at each institution via email; one survey was sent to student athletes, and the other to coaches. The surveys and corresponding informed consent forms were distributed by contacting the athletic directors and requesting permission to share the surveys with coaches and athletes. At one college, the athletic director shared the links to the two surveys directly with coaches and athletes. At the other college, participants were recruited via an email sent by the athletic department; following this, a member of the athletic department sent two additional emails two weeks apart encouraging athletes to participate in the study.

At the end of the survey, participants were provided with a list of mental health resources on a national level, as well as mental health resources specific to their school. To protect the anonymity of participants and prevent disclosure of traumatic event experiences, no identifying information was collected.

When participants completed the survey, the data were imported directly into Qualtrics. From that platform, researchers downloaded the data to Excel and later to SPSS version 28.0.1.1.

2.2. Participants

2.2.1. Athletes

Across two different liberal arts institutions, 91 athlete responses were collected. The ages of the athletes ranged from 18–24 (M = 20.68, SD = 1.67). In our sample, 64% of athletes (n = 58) identified as being women or female, and 29% of athletes (n = 26) identified as being men or male. Two athletes identified as transgender or another gender identity, and five athletes left the gender question blank or provided a response that could not be analyzed. In total, 85% of athletes (n = 77) identified as white. The other 15% of athletes identified as Asian (n = 3), black or African American (n = 4), white and Asian (n = 4), Metis (n = 1), or white and Arab (n = 1). One athlete preferred not to disclose their racial identity. In this sample, 35% of athletes (n = 32) identified as part of the LGBTQ+ community.

Out of 91 athletes, 9.8% (n = 9) played individual sports, 4.4% (n = 4) played both individual and team sports, and the other 85.7% (n = 78) played team sports. 10.9% (n = 10) of the participants were multi-sport athletes. The sports played by participating athletes are volleyball, rowing, swimming and diving, lacrosse, soccer, field hockey, cross country/track and field, basketball, softball, esports, golf, ice hockey, wrestling, and baseball. Length of sport participation in years ranged from 1.5–22 (M =14.19, SD = 4.39).

2.2.2. Coaches

Within the coaching sample, 18 coaches listed white as a primary racial identity, and two out of 18 (11%) listed an additional racial identity (in addition to also identifying

as white) as either Asian and/or black. A total of 15 out of 18 coaches indicated their gender identity, with 66% (n = 10) identifying as female/woman, 20% (n = 3) identifying as male/man, 6% (n = 1) identifying as queer, and 6% (n = 1) identifying as trans masc/nonbinary. Out of the 18 total coaches, 5.6% (n = 1) were assistant coaches, 27.8% (n = 5) were graduate assistants, and 66.6% (n = 12) were head coaches. Years of coaching experience ranged from 1–28 (M = 9.73, SD = 6.64), with only 15 coaches reporting their years of coaching experience.

2.3. Measures

2.3.1. Quantitative

The athlete survey included demographic questions, sports history questions, general trauma assessment questions, sport-specific trauma questions, and questions about the desire to see trauma-informed techniques implemented in their sports programs.

2.3.2. Brief Trauma Questionnaire

The trauma assessment questions were adapted from the Brief Trauma Questionnaire (BTQ), a research assessment measure utilized by the National Center for PTSD that has been implemented consistently in studies assessing trauma exposure (e.g., Sumner et al. 2015). Athlete participants were asked three yes-or-no questions about exposure to ten possibly traumatic events (see Table 1). Example questions included: "Have you ever been in a major natural or technological disaster, such as a fire, tornado, hurricane, flood, earthquake, or chemical spill?" followed by: (1) Has this ever happened to you? (2) If the event happened, did you think your life was in danger or you might be seriously injured? (3) If the event happened, were you seriously injured? (Schnurr et al. 1999). For the purposes of this study, we only required an athlete participant to answer "yes" to having experienced one of the 10 listed traumas in order to code them as having experienced trauma. We did not also require them to answer "yes" to the follow-up questions: "If the event happened, did you think your life was in danger or you might be seriously injured?" or "if the event happened, were you seriously injured?" to count their experience as traumatic.

2.3.3. Sport-Specific Trauma

To assess sport-specific trauma, athletes were asked questions about their experience with sport-based harassment and abuse as outlined by the International Olympic Consensus Statement (Mountjoy et al. 2016). Athletes were asked about sports harassment and abuse in their entire athletic career as well as during college specifically. The sport-based harassment and abuse questions followed the same format as the general trauma questions, in which participants were asked questions about different categories of harassment and abuse and follow-up questions about the nature of their experience. The categories included psychological abuse, physical abuse, neglect, sexual abuse, sexual harassment, and racial trauma. For example, athletes were asked, "Have you experienced psychological abuse in sport?" Then they were asked the follow-up questions: (1) "If this happened, did you think your life was in danger or you might be seriously injured?", (2) "If this happened were you seriously injured?" and (3) "Did this happen in the collegiate sports environment?"[2] Just as with the general trauma assessment questions, we did not require participants to answer "yes" to the first two follow-up questions to count their experience as traumatic.

2.3.4. Trauma-Informed Practices

The survey distributed to both athletes and coaches included questions about the desire to implement and active implementation of trauma-informed coaching techniques taken from Bergholz et al. (2016) and colleagues. For example, athletes were asked, "Rate each of the following trauma-informed coaching practices based on whether you as an athlete would like to see the practice implemented on your team. Ex. "Offering opt in/opt outs: players are allowed to step out and are encouraged to know their limits", and then

they were prompted to respond if each technique was already implemented on their team, if they would like to see it implemented, if they were unsure if they wanted to see it implemented, or if they did not want to see the technique implemented. Coaches used a Likert-like scale with five points to indicate their level of agreement with each technique. For example, coaches were asked to "Rate each of the following practices based on whether you as a coach would implement these on your team. he team focuses on progress and effort instead of performance and outcome". Coaches could choose whether they strongly agreed, somewhat agreed, neither agreed nor disagreed, somewhat disagreed, or strongly disagreed with the technique.

2.3.5. Qualitative

Athletes were asked two open-ended questions at the end of the survey. Qualitative data was collected from these open-ended responses. The athlete survey included the following questions: "If you have experienced trauma, how has it affected your athletic performance, mental health, or well-being?" and "Which resources (for trauma management) did you find helpful?"

2.4. Data Analysis

2.4.1. Quantitative

Participants submitted responses via Qualtrics Survey Software. The link to the survey was provided via email. After the survey was closed, researchers downloaded the data from Qualtrics Survey Software into an Excel file. Researchers removed incomplete data sets and analyzed the remaining data via SPSS (version 26). Two main statistical tests were used to assess differences between groups and individuals' self-reported experiences with trauma in order to ascertain if group differences existed. An independent sample *t*-test was used to examine differences between groups and overall rates of trauma, while a chi-square test allowed for the examination of differences in individual types of trauma. The level of significance was set at $p < 0.05$. To calculate differences in overall trauma rates, we coded the first response in each category of the BTQ as 1 (yes) or 0 (no) and summed the responses.

In this study, the researchers chose to divide athletes into two groups across two different social identities: LGBTQ+ identity and race. Both gender identity and sexual orientation can lead someone to identify as LGBTQ+, so this was used as the main category and compared to those who did not identify as LGBTQ+. Likewise, we chose to combine BIPOC individuals into a single category due to the limited number of participants who identified as BIPOC. The experiences of people of color of different races are not always similar, so this may not be an ideal solution. However, given the current sample size, this method seemed most effective.

2.4.2. Qualitative

Qualitative data were collected through responses to open-ended questions in the athlete survey. The exact wording of these questions is listed in the measures section of the methods. After reflecting on the purpose of the study, researchers decided to only include qualitative data gathered from the first question on the athlete survey, as the other qualitative data did not align well with the research questions. Thematic analysis was used to analyze athletes' responses to the first open-ended question. Thematic analysis has previously been used in similar mixed-method, entirely survey-based studies (Shipherd et al. 2021; Willson et al. 2022). The researchers engaged in the six phases of thematic analysis: data familiarization, initial coding, theme development, refinement/revision, naming, and writing up (Braun et al. 2016). The four primary researchers all individually familiarized themselves with the data before engaging in three rounds of semantic-level coding and theme generation. For the first round, the four primary researchers individually generated codes and themes, then came together to reach a consensus on a master list of codes and themes to apply to the data. For the second round, the researchers all applied

these codes and themes individually. Lastly, the four primary researchers met one final time to reach a consensus on the application of these codes and themes to the data. Revisions and naming were primarily conducted by only one of the primary researchers, but they received agreement from all other primary researchers before finalizing every change. The number of athlete responses that corresponded with each theme was tallied to indicate the most commonly mentioned themes.

3. Results

3.1. Quantitative Results

Traumatic Experiences of Athletes

Of the 91 athletes surveyed, 52.7% (n = 48) experienced at least one traumatic event, with 7.7% of athletes (n = 7) reporting three or more traumatic events as defined by the DSM V (see Table 1). The most common form of trauma was unwanted sexual contact, with 26.3% of athletes (n = 24) reporting this. Following that, 20.8% (n = 19) witnessed a situation in which someone was or could have been seriously injured or killed, 10.9% (n = 10) experienced being in a situation where they feared being significantly injured or killed, and an additional 10.9% (n = 10) experienced the violent death of a significant other.

Table 1. Rates of traumatic event exposure.

Type of Trauma	Number of Respondents
Involved in warzone	0
Serious car accident or other accident	10
Major natural disaster	9
Life-threatening illness or injury	1
Physical punishment or abuse before 18	4
Physical attack or mugging	5
Unwanted sexual contact	24
Violent death of family or friend	10
Witnessed death or serious injury of another	19
Other situation with serious risk of personal injury or death	10

3.2. Group Differences

3.2.1. LGBTQ

While identifying as LGBTQ+ was not correlated to or predictive of higher rates of trauma in general, t(df) = 1.33 (89), p = 0.19, athletes who identified as LGBTQ did report higher rates of unwanted sexual contact, χ^2 (2, n = 91) = 7.68, $p < 0.05$. Of the 32 total athletes who reported being LGBTQ, 14 (43.8%) reported experiences of unwanted sexual contact, while only 10 (16.9%) of the 59 non-LGBTQ athletes reported experiencing this form of trauma.

3.2.2. Race

Conversely, identifying as a race other than white was significantly related to higher rates of overall trauma t(df) = 2.30 (88) $p \leq 0.05$, as well as a higher likelihood of being involved in a serious accident χ^2 (1, n = 90) = 7.28, $p < 0.05$, experiencing a life-threatening illness or injury χ^2 (1, n = 90) = 4.28, $p < 0.05$, and experiencing physical abuse. Of the 13 athletes of color, 4 (30.8%) reported being involved in a serious accident, whereas five of the 72 white athletes (6.9%) reported this form of trauma. Only one athlete (a person of color) in the sample reported experiencing a life-threatening illness or injury, so this result should be considered in that context. Lastly, two of the 13 BIPOC athletes (15.4%), as compared to two of the white athletes (2.6%), reported experiencing physical abuse.

3.3. Sport-Based Harassment and Abuse Experienced by Athletes

The sport-based harassment and abuse scale asked athletes to report on the trauma experienced in sports as well as in college sports specifically. Within our sample, 50.5%

of athletes (n = 46) reported experiencing sport-based harassment or abuse. Of those 46 athletes, 10 reported that harassment and abuse had occurred in a collegiate athletic setting (see Table 2). Two athletes reported both psychological abuse and neglect within the collegiate sports setting. No significant differences appeared based on race or identification within the LGBTQ+ community.

Table 2. Sport-based harassment and abuse by type and setting.

Type	Sport in General	Collegiate Sport
Psychological abuse	38	10
Physical abuse	3	0
Sexual abuse	1	0
Sexual harassment	4	0
Neglect	15	2
Racial trauma	3	n/a[3]

3.4. Athlete Perception of Trauma-Informed Coaching Techniques

Athletes indicated that they believed many of the 10 suggested trauma-informed techniques were already implemented on their teams. The top techniques that the most athletes believed were already implemented were: coaches arriving early and staying late after practice to be available to players 69.4% (n = 50), the reframing of mistakes in a positive manner 57.7% (n = 41), and the use of consistently structured practice plans with phases of high and low intensity 57.7% (n = 41).

Athletes reported a willingness to implement almost all of the trauma-informed coaching techniques described in the surveys[4]. After removing responses that indicated a practice was already implemented on their teams, eight of the 10 techniques were desired for implementation by athletes at rates ranging from 54.1% to 86.1%. The techniques with the largest percentages of athletes saying they would like to see them implemented were coaches inviting player input, desired by 86.1% (n = 31), mistakes being reframed in a constructive manner, desired by 80% (n = 24), and coaches arriving early and staying late after practice to be available to players, desired by 77.3% (n = 17). The top techniques that athletes did not want to see implemented in their programs were: praise the play, coach the bench, 22.9% disapproval (n = 8), individualized schedules for practice and competition, 21.6% disapproval (n = 8), and providing space for breathing meditation and visualization, 20.1% disapproval (n = 10). In total, between 73.2% and 93.1% of athletes indicated that a technique was either already implemented or that they wanted to see it implemented for 8/10 techniques.

3.5. Coach's Perception of Trauma-Informed Coaching Techniques

Within the coaching sample, 88.2% (n = 15) indicated that they believed trauma-informed coaching is necessary at the collegiate level, based on their response to the question "Do you think trauma-informed coaching practices are necessary for collegiate sports teams?". When asked which trauma-informed techniques they would consider implementing in their programs, in general, most techniques were viewed favorably by the coaches[5]. For 8 of the 10 suggested trauma-informed coaching techniques, between 88.8% and 100% of coaches strongly agreed or somewhat agreed with 8 of them. The techniques most agreed with were giving feedback and support during substitutions, with 100% of responding coaches (n = 14) strongly agreeing with the technique; reframing mistakes in a positive and constructive manner, which 100.0% of coaches strongly or somewhat agreed with ((n = 15) strongly agree and (n = 2) somewhat agree); and planning consistent, structured, and predictable practices with periods of high and low-intensity activities, with 94.1% of coaches strongly agreeing or somewhat agreeing with the practice ((n = 13) strongly agree (n = 3) somewhat agree). Coaches least supported the idea that players on the bench are in a better mindset to listen and should therefore be coached rather than

players on the court or field. Only 50.0% of responding coaches agreed with this technique ((*n* = 2), strongly agree (*n* = 4), somewhat agree), 33.3% neither agreed nor disagreed (*n* = 4), and 16.7% somewhat disagreed (*n* = 2).

3.6. Qualitative Results

Near the end of the survey, student-athletes had the option to answer, "If you have experienced trauma, how has it affected your athletic performance, mental health, and wellbeing?" Responses revealed eight major themes and 12 corresponding sub-themes and categories. These themes were (1) psychological effects; (2) performance effects; (3) desire to quit; (4) general negative; (5) resilience/drive/motivation; (6) relationship effects; (7) injury; and (8) no impact. Responses corresponding with each theme were tallied to indicate the most commonly reported themes (see Table 3).

Table 3. Themes and sub-themes from open-ended responses.

Theme	Sub-Theme	Sub-Theme	Number *
Psychological Effects			23
	Anxiety		10
		Symptoms of anxiety	3
	Fear of Failure		2
	Decreased self-confidence/self-esteem		4
	Depression		2
	General negative to mental health		8
	Body image		2
Performance Effects			10
	Performance Impacts		6
	Focus		3
Desire to Quit			5
General Negative			5
Resilience/Drive/Motivation			4
Relationship Effects			4
	Issues with trust		4
		Fear of reactions	3
Injury			4
	Stress about future injury or dying		2
No impact			3

* 33 total athletes responded to the prompt, one response could fall under multiple themes or subthemes.

3.7. Psychological Effects

The impact of trauma most commonly reported by athletes in their open-ended responses was psychological. Seven sub-themes and categories were included under psychological effects: anxiety, symptoms of anxiety, fear of failure, decreased self-confidence or self-esteem, depression, general negative impacts on mental health, and negative body image. Many athletes reported experiencing psychological consequences that fell under several sub-themes or categories because of their trauma. Athlete 10 described how their desire for control was caused by their trauma, saying, "it drives me to want to be in control, to always be thinking about all contingency plans, and to be preparing for the worst-case scenario". Other athletes recounted how their trauma impacted them mentally, making them lose confidence. Athlete 4 said "the psychological abuse really damaged my self confidence, made me play poorly, and gave me nightmares" and athlete 48 said "it made me lose confidence in my abilities". Some athletes described specific psychological conditions and how they were related to their trauma, like athlete 35, who asked, "Does your coach making you weigh yourself three times a day and report it to him when you struggle with body dysmorphia count as trauma? In that case it definitely affected my mental health". Still others reported multiple negative psychological effects like athlete 13 who reported that their trauma experiences caused "anxiety and mental distress, self esteem issues".

3.8. Performance Effects

The second most reported result of an athlete's trauma was its effects on their performance. These effects included reduced ability to focus, increased difficulty in playing but no decrease in performance outcome, and decreased ability to perform. Athlete 52 candidly described how "It can become hard to focus on sports and trying to train when some[one] dies. I'm so mentally exhausted from other things tugging at my mind". Athlete 7 also experienced difficulty focusing, saying, "It's heavily weighted on me and impacted my ability to focus athletically". Athlete 6 noticed that their trauma made doing their sport more difficult, yet this increased difficulty was not reflected in worsened outcomes. They reflected, "I don't think it affected athletic performance, but it did make competing and practices more difficult at times". Still, others saw their performance suffer because of their trauma. Athlete 83 shared that their trauma experiences "made me get into my head and caused me not to perform to my best ability".

3.9. Desire to Quit

For five athletes, their trauma resulted in them wanting to quit their sport. Athletes 82 and 57 described this loss of athletic motivation, saying, "It made me want to quit a couple times" and "[the trauma] made me want to quit, not play, want to skip practices/lifts". Athlete 17 described in detail how psychological abuse from a coach made them want to quit their sport: "One of my high school soccer coaches almost pushed me to quit. I was starting varsity as a Freshman & even then he never thought anything I did was good enough. Some of the things he would say seriously hurt me psychologically & emotionally as a young female athlete".

3.10. General Negative Effect

A number of athletes gave brief, vague descriptions of their traumatic experiences impacting them negatively. Without additional information, the primary researchers chose to code responses such as "negatively, it affects how I live my life and see myself", athlete 14; "makes it not fun", athlete 64; "negatively all-around", athlete 25; and "negatively", athlete 47, as general negative effects. Although these responses lack detail, they indicate that trauma exposure had a detrimental impact on some collegiate student athletes' lives.

3.11. Resilience/Drive/Motivation

Contrary to the loss of motivation described by those whose trauma made them consider quitting, four participants reported that their trauma experiences ultimately pushed them to be better. Their trauma motivated them or created drive and opportunities to practice resilience. Athlete 53 reported that "it was more motivating than anything". Athlete 3 similarly noted that "At the time [the traumatic event] impacted my mental state and made me a very angry person but overall it made me a stronger individual". Athlete 17 shared how they found motivation in their trauma from an abusive coach, saying, "I thought a lot about why I was going to let this man who has no place in my life dictate my future. I let his gross words and remarks push me to be better & always strive to do better".

3.12. Relationship Effects

Trauma-affected athletes described how their experiences impacted their sport-based relationships, causing trust to break down and creating fear of peers' and coaches' reactions. Athlete 58 said that their trauma made them "not very trusting towards coaches". Athlete 45 shared how, "I was forced to play through injuries, so now I have to treat and recover from them but have a lot of anxiety about coaches/teammates being mad at me or being kicked off of my team". Similarly, athlete 59 shared that "I'm constantly afraid of how my coach might react to me doing something wrong because of previous trauma".

3.13. Injury

Some participants conveyed that their trauma experiences caused them to play through injuries or become anxious about future (re) injuries. Athlete 44 described that "when [I am] injured [I am] less likely to take care of my body and have recovery anxiety". Other athletes described their fear of (re)injury. Athlete 19 said, "after my trauma I was afraid of being hurt as severely again. I was afraid of my skill deteriorating", and athlete 5 said "seeing a serious injury happen in my sport has increased my anxiety and made it more difficult to perform certain events".

3.14. No Impact

Lastly, some athletes responded that their traumatic experiences did not impact them at all. Responses such as "no", athlete 65; "none", athlete 60; and "has not", athlete 81, indicate that for some athletes, experiencing trauma did not impact their athletic performance, mental health, or lives in general. However, this was only reported by three athletes. The majority of athletes who chose to respond said that they were impacted by their trauma in some way (as detailed above).

Overall, the qualitative findings indicate that trauma impacts student-athletes in a number of different ways. Our findings indicate that athletes' experiences vary greatly, with negative psychological effects and performance effects being the two most commonly shared results of trauma. The quantitative data show that over half of collegiate student athletes experienced at least one potentially traumatic event. The qualitative findings expand upon these findings and show, in their own words, how these traumatic experiences impact student athletes following their trauma, showing that trauma can have an impact on health and performance.

4. Discussion

The purpose of this study was to investigate trauma prevalence among the collegiate student-athlete population and gauge receptiveness to trauma-informed coaching practices among collegiate athletes and coaches. This research was informed by existing literature on trauma prevalence, trauma-informed pedagogy at the youth and undergraduate levels, and trauma-informed youth sports. This pilot study builds upon existing literature and provides a new foundation for further investigation into trauma-informed coaching at the collegiate level.

In response to the question of trauma prevalence, just over half of the athletes reported experiencing at least one traumatic event in their lifetime. This indicates that collegiate student-athletes experience trauma at rates that are consistent with the low end of the range that is reported for the broader college student population (Anders et al. 2012; Bernat et al. 1998; Frazier et al. 2009; Im et al. 2020; Owens and Chard 2006; Scarpa 2001). While sport is often considered a protective factor that can help manage mental health concerns (Babiss and Gangwisch 2009), it clearly does not result in immunity from traumatic events. In general, campus-wide trauma-informed approaches have been recommended as holistic support for undergraduates (Palmer 2020). The present study shows that athletes have high rates of trauma, some of which is specific to their sport. Therefore, colleges need to implement athlete- or sport-specific trauma-informed practices in order to best serve all students.

In this sample, the most frequently reported type of trauma among student-athletes was experiencing unwanted sexual contact. This finding did not match previous studies, which reported experiencing or witnessing domestic violence or a natural disaster (Owens and Chard 2006) or witnessing someone being killed, seriously injured, or sexually or physically assaulted (Im et al. 2020) as the most common traumatic experience among undergraduate students. Perhaps this difference can be attributed to the overall high proportion of LGBTQ+ athletes in the sample. In this study, 35% of student-athlete participants identified as being members of the LGBTQ+ community, whereas only 7.1% of the general U.S. population identifies as LGBTQ+ (Gallup 2022). LGBTQ+ individuals in

general (Flores et al. 2020) and LGBTQ+ athletes, specifically, are at higher risk of sexual violence in sport than their non-LGBTQ+ peers (Mountjoy et al. 2016).

LGBTQ+ athletes in our study were not found to experience higher rates of trauma in general compared to their peers, conflicting with previous literature that reports LGBTQ+ youth experience all types of trauma at higher rates than their non-LGBTQ+ peers[6] (McCormick et al. 2018). Yet our study found that LGBTQ+ student-athletes experienced unwanted sexual contact at a rate over 2.5 times higher than the straight and gender-conforming athletes in the sample. This is consistent with other previously mentioned studies that report LGBTQ+ people are at a higher risk of experiencing sexual violence than straight or gender-conforming individuals (Flores et al. 2020). However, it is important to note that only one participant in the study indicated that their experience of sexual abuse happened in a sporting context, meaning that for the vast majority of LGBTQ+ participants, the sexual abuse they experienced was not connected to the athlete part of their identity. This is an interesting finding given that LGBTQ+ athletes are at a higher risk of sport-based sexual abuse than their peers (Mountjoy et al. 2016), yet it appears almost all participants in the present study, regardless of LGBTQ+ status, had their experiences of sexual abuse occur outside of sport.

Additionally, the present study found that athletes of color were significantly more likely to experience overall higher rates of trauma, involvement in a life-threatening accident, and experiencing physical abuse than white athletes. Existing literature is not in agreement when it comes to trauma prevalence in relation to race. McLaughlin and colleagues (2018) found that black, white, and Latino Americans experience three or more traumatic events at roughly the same rate, with Asian Americans being the least likely to have experienced three or more traumatic events. On the other hand, another study found that white Americans are the most likely to report having experienced any traumatic event, followed by black Americans, then Latino Americans, and finally Asian Americans (Roberts et al. 2011). Therefore, the present studies' findings indicate a higher rate of trauma among BIPOC individuals than would be expected based on previous research. However, it is important to note that this study had a small number of BIPOC participants and, for the sake of statistical analysis, grouped all BIPOC athletes into one category, unlike the previously mentioned studies. It is difficult to draw strong conclusions from such a small sample.

In terms of sport-based trauma, 50.5% of athlete participants experienced sport-based harassment or abuse, with 21.7% of athletes reporting their experience happened in a collegiate setting. Although slightly more athletes experienced trauma in general across their lifetime compared to sport-based harassment and abuse, these findings indicate a need for additional interventions beyond trauma-informed coaching to make sport a safe and enriching environment for all athletes. In their consensus statement, the IOC recognizes how widespread sport-based trauma is. Our study aligns with the findings of Mountjoy et al. (2016), which indicate that athletes are not just experiencing trauma outside of sport but also within it.

Coaches are much more likely to draw upon personal experience, observation of other coaches, and tradition in the creation of their coaching practice than new emerging evidence-based techniques or training (Cushion et al. 2003; Harvey et al. 2010). Therefore, it is possible that coaches would reject trauma-informed coaching for more familiar, traditional approaches. Yet, many coaches and athletes responded favorably to the techniques that have been created for youth (Bergholz et al. 2016). A majority of athletes reported a willingness to implement almost all techniques or reported that they believed these techniques were already implemented on their teams. Between 73.2% and 93.1% of athletes indicated eight out of 10 of the trauma-informed coaching techniques were already implemented or that they wanted to see them implemented in their programs. The most popular technique, coaches inviting player input, was desired by 86.1% of athletes, and the least popular technique, having coaches praise the play and focus on coaching the bench, was only rejected for implementation by 22.9%, leaving 45.7%[7] who still wanted even the least popular tech-

nique to be implemented in their program. These results indicate that, overall, the athlete participants were very open and eager to have trauma-informed coaching techniques used in their programs. Importantly, 88.2% of sampled coaches indicated that they believed trauma-informed coaching is necessary at the collegiate level, showing that it is also desired by a large majority of the coaches. When asked about specific coaching techniques, between 88.2% and 100% of the coaches agreed or strongly agreed with eight of the 10 techniques. Coaches and athletes did not share a favorite trauma-informed technique, yet both were least enthusiastic about praising the play and coaching the bench. These findings show that both athletes and coaches approve of the trauma-informed coaching methods that have been successful in youth contexts. We take that as a hopeful sign that trauma-informed training for coaches and trauma-informed programming on an organization-wide level would be welcomed if offered at small, liberal arts, DIII schools such as those included in our study.

Even more importantly, our findings indicate that trauma-informed coaching would not represent a fundamental shift in sports coaching as we know it because many of the sampled athletes reported that trauma-informed practices are already being used on their teams. Athletes were asked about trauma-informed coaching techniques, and, at minimum, over a quarter of the sampled athletes believed that each technique was already implemented in their programs. Some techniques were even more common, with the majority of athletes reporting that coaches arrive early and stay late after practice to be available to athletes, mistakes are reframed in a positive manner, and practices are consistently structured with phases of high and low intensity. These results indicate that trauma-informed coaching is not only desired but doable at the collegiate level because elements of the practice are already in place.

In the open-ended responses, athletes revealed the wide range of effects that traumatic exposure had upon them, both within sport and in their lives in general. The majority of athletes reported that the impacts of their trauma experiences were decidedly negative, with the two most commonly reported themes being psychological and performance effects. Given that 10 out of 33 athletes who responded to the open-ended questions described their trauma as negatively impacting their ability to perform or focus in games or practice, we believe that trauma-informed coaching could help these athletes cope with their trauma and potentially improve performance.

A number of mental health conditions and symptoms have been identified as secondary or associated responses to trauma, including depression, aggression, low self-esteem, identity confusion, relationship difficulties, and guilt or shame (Carlson and Dalenberg 2000). Many of these conditions or symptoms were mentioned explicitly by athletes in their responses. Our findings are therefore consistent with previous literature and allow athletes to express these experiences in their own words. However, our findings also indicate that trauma impacts athletes in ways that are more unique to the athlete experience, like making athletes want to quit their sport or have strained relationships with coaches or teammates.

A notable minority of sampled athletes reported that their trauma did not affect them at all or that it affected them positively through increased motivation or resilience. There is a widespread belief that hardship is the best way to build hardiness or resilience. This belief is prevalent in sports culture and reflected in literature like Collins and MacNamara's (2012) paper, which argues that youth athletes benefit from or need to overcome adversity to become successful in their adult lives. Upon a brief inspection, it would seem that our qualitative data somewhat supports this position, with four athletes describing how their traumatic experiences motivated them and pushed them to come back stronger. However, only seven athletes out of 33 athletes described their trauma as not impacting them or impacting them positively. The vast majority of athletes described severe, negative results of their trauma, indicating that even if trauma is a site of motivation or resilience for some athletes, it is the opposite for most. While Collins and MacNamara (2012) may be right that overcoming adversity helps build resourcefulness or resilience, there is a

difference between moderate adversity and a traumatic experience, and it would be false and potentially dangerous to believe that any type of trauma, without necessary support or coping mechanisms, is beneficial.

4.1. Limitations

The main barrier researchers faced when conducting this study was the unwillingness of universities to participate, resulting in a small sample size. Numerous higher education institutions were contacted all over the country via their athletic director's email. Yet most institutions did not respond or declined to participate. While we received enough participation for this pilot study, a larger sample would have been desirable. Additionally, both of the colleges at which the survey was distributed were small, DIII, liberal arts institutions. This context must be considered when interpreting the results of this study. If the study included data from DI or DII sports programs, it would be possible that the willingness to use trauma-informed coaching would have been very different given the greater influence of athletic scholarships and sport-based revenue for the university on the athletic environment. It must also be considered that the trauma-informed coaching techniques referenced throughout this paper were created with youth in mind (Bergholz et al. 2016). While we believe these techniques are a good starting point, in order to ascertain the effectiveness of these or other practices, applied research must take place in a collegiate setting.

Lastly, this research relies on definitions and tools based on the DSM, such as the Brief Trauma Questionnaire. The questions within the BTQ largely focus on individual events that are considered traumatic and do not contain questions about experiences that are unique to people of color or touch on historical trauma or systemic oppression. The negative physical and mental health outcomes from trauma associated with experiencing systemic racism are well documented in research conducted with African American and Indigenous communities (Borrell et al. 2006; Kaholokula et al. 2012). Yet commonly used measures to assess and diagnose trauma, like the DSM or BTQ, do not contain questions about these kinds of trauma because these measures were created and are used in ways that center whiteness (Riquino et al. 2021). We acknowledge that our reliance on the DSM and BTQ in our research limits it because of these flaws and the DSM's allowance for and encouragement of racial bias (Riquino et al. 2021). It is beyond the scope of the current paper to construct a new way of assessing racial trauma in sport; however, the results indicate that an awareness of social identities such as race, gender, and sexual orientation should be taken into account. This paper provides evidence that collegiate athletes have experienced trauma and are open to trauma-informed coaching practices. To conduct this research, we worked with the tools and within conventions that are currently available, namely the DSM-V and the BTQ.

4.2. Recommendations for Future Research

Future research should assess trauma prevalence and willingness to implement trauma-informed coaching with a more diverse athlete sample in terms of race, school size, and NCAA Division level. Potential future research with such populations as well as the findings in this study can act as justification for the creation of trauma-informed coach training or pilot trials using the techniques outlined by Bergholz et al. (2016) in college sports programs.

Additionally, future research that seeks to assess trauma prevalence should attempt to break from these conventions set in the DSM-V and find or create new tools to assess trauma in sport that do not center whiteness and are actively anti-racist.

Lastly, given the established relationship between trauma exposure and other mental health conditions like anxiety and depression (Carlson and Dalenberg 2000), which are prevalent among collegiate athletes (Brown et al. 2014), future research could investigate if trauma-informed coaching is beneficial for athletes with depression and anxiety symptoms and whether or not these symptoms are secondary conditions caused by trauma exposure.

4.3. Recommendations for Applied Practice

We recommend the entire sporting community learn and implement the recommendations given in *The IOC Consensus Statement: Harassment and Abuse (non-accidental violence) in Sport* (Mountjoy et al. 2016) and continue to otherwise work to fundamentally change sport to become a safe, enriching, and accessible place for all.

5. Conclusions

The present study found high levels of exposure to at least one potentially traumatic event (52.7%) among undergraduate student-athletes. Additionally, 50.5% of athletes reported experiencing sport-based harassment and abuse, with 21.7% of impacted athletes reporting that this harassment or abuse occurred in the collegiate setting. These results provide sufficient evidence to argue that trauma-informed coaching is needed at the collegiate level. Furthermore, a vast majority of athletes and coaches thought trauma-informed coaching techniques were already implemented in their programs or wanted to see them implemented. These findings show that DIII coaches and athletes from small liberal arts colleges are open to the implementation of trauma-informed coaching and already use some of the suggested techniques in their programs. If all the techniques were intentionally and thoughtfully implemented together, coaches would be doing trauma-informed coaching as described by previous research (Bergholz et al. 2016). Lastly, qualitative analysis of athlete statements about the impacts of their traumatic experiences revealed that athletes experience a diverse range of impacts from their trauma, with the two most frequently reported effects being negative psychological and performance effects. Almost all athletes experienced negative repercussions after their traumatic event exposure, with a minority of seven participants not being impacted by their trauma or being impacted positively. These results show that trauma has a detrimental impact on student-athletes. We believe trauma-informed coaching could help mitigate some of these impacts. In summary, trauma-informed coaching at the collegiate level is both necessary and desired.

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Notes

[1] Although official admissions policies vary across Historically Women's Colleges and definitions of womanhood and inclusion vs. exclusion are constantly being debated (Nanney and Brunsma 2017), students with many gender identities attend Historically Women's Colleges and these institutions are significantly more supportive environments for transgender students than coed colleges (Freitas 2017).

[2] Due to a data collection error, data on whether or not athletes experienced racial trauma in the collegiate setting was not collected.

[3] Due to a data collection error these responses were not recorded. The researchers believe that the data which was recorded regarding racial trauma was essential to include despite this error.

[4] Not all athletes answered all questions regarding the trauma-informed practices. Percentages are calculated based on the number of athletes who responded. Response rates ranged from 69 to 73. The informed consent form advised athletes they could stop answering questions whenever they felt the need to. Therefore, some participants skipped some questions but continued to answer others.

[5] Not all coaches answered all questions regarding the trauma-informed practices. Percentages are calculated based on the number of coaches who responded. Response rates ranged from 14 to 18. The informed consent form advised participants they could stop answering questions whenever they felt the need to. Therefore, some participants skipped some questions but continued to answer others.

[6] LGBTQ+ youth are used for comparison here because college students have spent most of their lifetime as youth.

[7] Percentages calculated after removing responses which indicated a practice was already implemented.

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