Preventing Suicide and Promoting Mental Health Among Student-Athletes From Diverse Backgrounds

Karrie L. Hamstra-Wright, John E. Coumbe-Lilley, and Eduardo E. Bustamante
Applied Sport Psychology and Injury Research and Education (ASPIRE) Lab, Department of Kinesiology and Nutrition, University of Illinois at Chicago, Chicago, IL, USA

Suicide and contributing mental health conditions in athletes are shared concerns within health care and society at large. This commentary focuses on suicide risk among athletes and the role of sports medicine professionals in preventing suicide and promoting mental health. In this commentary, we draw on the scientific literature and our clinical experiences to pose and answer these questions: Does suicide risk among athletes vary by sociodemographic factors (eg, sex, gender, race/ethnicity, family income, sexual orientation) or if injured? Do sociodemographic differences influence access to and benefits from services among athletes? How do I know my athletes are at risk for suicide? What do I do if one of my athletes shares with me that they have considered suicide? Within our commentary, we review the current literature and clinical practices regarding these questions and close with actionable suggestions and recommendations for future directions.

Keywords: suicide interruption, death in sport, long-term injury

In the first 5 months of 2022, 4 female student-athletes died by suicide, bringing suicide in sport back to public discourse.1 According to the NCAA Student-Athlete Well-Being Study, a survey examining the experiences and well-being of approximately 9800 student-athletes in fall 2021, mental health concerns of student-athletes were 1.5 to 2 times higher than before 2020, and this included feelings of mental exhaustion, anxiety, and depression.2 Mental health concerns were highest in student-athletes of color, individuals who identified on the queer-spectrum, women, and those experiencing economic struggle.2

Depression and anxiety are associated with suicidal ideation and attempts3–5 and when both a mood disorder (eg, depression) and anxiety co-exist, suicidal ideation and attempts increase.6 In the general population, suicide risk is higher among racial/ethnic and sexual minorities.7,8 Specific to athletics, some athletes who experience injury, especially those resulting in significant time loss, involuntary retirement due to musculoskeletal injury, and sport-related concussion, are at greater risk of suicide.9–13 This is especially true when depression is present and personal identity is affected due to the injury.9,12–16

Best practices for sport medicine contexts and sport organizations are to include screening for suicidal ideation, refer to appropriate providers for psychosocial support and collaboration on a safety plan that includes lethal means restriction, and monitor those at risk.7,14 Sports medicine professionals, especially athletic trainers, are in a unique position to implement these best practices due to the relationship forged with athletes during injury prevention and rehabilitation efforts.

This commentary focuses on suicide risk among athletes and the role of sports medicine professionals in preventing suicide and promoting mental health. As practitioners, we have big questions about the state of the field broadly: Does suicide risk among athletes vary by sociodemographic factors (eg, sex, gender, race/ethnicity, family income, sexual orientation) or if injured? Do sociodemographic differences influence access to and benefits from services among athletes? We also share the questions of many sports medicine professionals: Are my athletes at risk for suicide? What do I do if one of my athletes shares with me that they have considered suicide? Where can I get more training and education on these issues? We draw from the scientific literature and our experience working with athletes in athletic training (Hamstra-Wright) and sport psychology (Coumbe-Lilley) to answer these questions and pose new ones. We close with suggestions for practice and future directions.

Does Suicide Risk Among Athletes Vary by Sociodemographic Factors or Injury Status?

Scope of the Problem

In the United States, suicide rates increased 36% from 2000 to 2018 and decreased 5% from 2018 to 2020.19 However, after 2 consecutive years of a small decrease, in 2021, suicide rates nearly reached the 2018 peak (48,344) with 48,183 people dying by suicide (14.1 suicides per 100,000 population).20 To put this into context, this is 1 death by suicide every 11 minutes.19 In 2021, 5% (12.3 million) of adults 18 years or older had serious thoughts of suicide, 1% made a suicide plan (3.5 million), and 0.7% attempted suicide (1.7 million) in the previous year.21 Since 2012, suicide has remained the second leading cause of death in the United States for those 1–44 years of age when data are aggregated across race/ethnicity.22

Specific to athletes, as noted in a recent review of 42 studies, at the college and professional levels, suicide rates appear to be lower in athletes compared with the general population, which may partially be related to the many ways sports contributes to better mental health.23 However, athletes experience unique demands such as increased professionalism at a young age, balancing academics with training loads, managing high expectations, and injury recovery.24,25 making mental health conditions and suicidal risk crucially important to address. In a retrospective review of 477 NCAA student-athlete deaths over a 9-year period, 7% died by
suicide. In this population of 477 NCAA student-athletes, suicide was the fourth leading cause of death; 50% died by accidents, 17% by cardiac events, and 8% by homicide. In a separate retrospective review of 182 sudden deaths of NCAA athletes over a 10-year period, 17% died by suicide, trailing 65% who died from cardiovascular disease, and making suicide the second leading cause of sudden death. The level of performance required of athletes and scrutiny involved—along with individuation from parents and exploration of new identities—creates vulnerabilities for anxiety, depression, stress, and relationships challenges. In fact, in 2021, 39% of female NCAA athletes and 22% of male athletes reported feeling mentally exhausted, 29% of female athletes and 12% of male athletes reported feeling overwhelming anxiety, and 10% of female athletes and 6% of male athletes reported experiencing hopelessness. These experiences are risk factors for suicide.

**Sociodemographic Disparities**

High prevalence of suicidality and mental illness among athletes is compounded by sociodemographic disparities in prevalence. From 2003 to 2012, 35 athletes in the NCAA died by suicide. Notably, although not statistically significant, African American NCAA athletes had a higher relative risk of suicide than White athletes. In a separate study evaluating sudden deaths of NCAA athletes from 2002 to 2011, 31 athletes died by suicide and the suicide rate was 3 times greater in males than in females. In both of these retrospective reviews, the highest rates of suicide occurred in men's football.

Given Maron et al and Rao et al analyzed data prior to 2012, an updated analysis will be important in informing prevention and care efforts for athletes; however, general population data correspond with the sociodemographic disparities emerging in athletics. The Centers for Disease Control and Prevention (CDC) recently reported 2021 age-adjusted suicide rates and found they were highest among non-Hispanic American Indian or Alaska Native (AI/AN) persons (28.1 per 100,000); this group also had the highest change, a 26% increase from 2018 to 2021. Since 2011, of all race/ethnic groups, the suicide rate has been highest in AI/AN persons. Among non-Hispanic Black or African American and Hispanic persons, age-adjusted rates also increased 19.2% and 6.8%, respectively. Non-Hispanic White was the only group demonstrating an overall age-adjusted decrease in the rate of suicide in compared to 2018 (3.9% decline). Of particular concern is the increase in suicide ideation and attempts in racial/ethnic minority youth. From 1991 to 2019, suicide attempts increased the most in Black adolescents (79.7%) followed by AI/AN adolescents (70.0%).

Sexual orientation also impacts suicidal ideation and attempts. In a public health survey with 28,029 respondents, 3.8% identified as nonheterosexual/sexual minorities. Compared with heterosexual men and women, bisexual men and women in addition to homosexual men had significantly higher odds ratios of suicidal thoughts and attempts. In a survey of over 17,000 high school students, 45% of students who identified as LGBQ+ seriously considering suicide compared with 26% of heterosexual students. Additionally, 58% of students who had same-sex partners seriously considered suicide compared with 26% of those with opposite sex only partners.

In addition to race/ethnicity, age, and sexual orientation disparities, suicidal ideation and attempts vary between sexes. From 2000 to 2020, in those 10 years and older, the age-adjusted suicide rate in males has surpassed that of females every year. In 2020, although the suicide rate in males was 4 times greater than that of females (22.0 vs 5.5 per 100,000), females had greater suicidal thoughts and attempts than males. When narrowing the population to high school students, the sex disparity exists in the opposite direction. From 1991 to 2019, females surpassed males every year both in suicide ideation and attempts.

**Injuries and Suicide**

Suicidality is especially a concern in injured athletes, particularly when depression is present. An athlete’s primary mode of expression is their body. When their body fails, the injury and precipitating loss of mastery and control can be devastating. Injury can result in student-athletes feeling disconnected from their teams and struggling with changes in their relationships, identity, and self-worth. In a case review of 5 athletes who attempted suicide postinjury, factors common to all were: sustained an injury requiring surgery, had a long and challenging rehabilitation that kept them out of their sport 6 weeks to 1 year, experienced a decline in their athletic skills despite commitment to their rehabilitation plan, felt a lack of preinjury athletic competency when returning to play, and were replaced by teammates at their positions. Injury requiring surgery can be a particular concern for suicidal ideation and behavior due to the demands of an extended rehabilitation, a wavering sense of competence relative to preinjury levels when returning to sport, and fears of being replaced by a teammate. Athletes also appear to have a higher capability for suicide, meaning it is thought athletes attempt suicide partially due to their increased pain tolerance and greater fearlessness about death compared with nonathletes. Furthermore, in college athletes, greater injuries and more physical contact both have been found related to an increased capability for suicide.

Regarding specific injuries and their relationship to suicide, concussions and/or mild traumatic brain injury are critical risk factors for suicide in youth and adults. Authors of a systematic review and meta-analysis of 17 studies and >700,000 youth and adults diagnosed with a concussion or mild traumatic brain injury found an association between concussion and/or mild traumatic brain injury and a 2-fold greater risk of suicide. In a sample of >28,000 youth, a history of concussion, depression, underrepresented race/ethnicity, and female sex all were associated with an increased odds of reporting a suicide attempt in the previous year. Similarly, in a study of 200 adolescents with persistent postconcussive symptoms, history of depression, non-White race, and Hispanic ethnicity were related to greater risk of suicidal ideation. In a sample of >17,000 high school students, those with ≥2 sport/recreation-related concussions in the previous year were at significantly greater odds of reporting suicidal attempts than those reporting a single concussion, highlighting the importance of close observation of mental health in youth who have had repetitive concussions.

Life events such as injury, and retirement (due to injury or not) are critical transitions for athletes. Retirement can be complex and challenging, injuries that end careers and/or continue postcareer can be debilitating, and body image and self-confidence can change postsport, all of which can have a negative impact on mental health. Furthermore, a strong identification with being an athlete and an elevated tendency toward identity foreclosure (have not explored occupational or ideological alternatives to athletics) are negatively related to the quality of an athlete’s career transition. Suicides in the aftermath of a professional sport career symbolize the destabilizing transition and period this can be for athletes as well as point to the need for greater support for athletes as they transition.

In addition to injury and retirement, other life stressors appear to contribute to death by suicide in athletes. In a cohort of professional football athletes, retired or not when they died by...
suicide, the majority were experiencing multiple life stressors prior to their death such as health complications, financial stress, and relationship issues. These same life stressors were found in a group of elite cricketers who also died by suicide.

Do Sociodemographic Differences Influence Access to and Benefits From Services Among Athletes?

Unfortunately, the same disadvantages that lead to inequities in suicidality and mental illness also influence access to care and benefit derived from care. In Davis et al’s review of 70,988 adolescent screens in a primary care setting, compared with White adolescents, the odds of being screened were lower for Black adolescents, which was the population more likely to endorse depression and suicidal risk. This finding demonstrates how critical it is for providers to implement structures for screening and support that overcome biases and/or barriers to care among high-risk populations. In a sample of 241 college varsity athletes, more than 78% of racial ethnic minority student athletes reported a mental health need within the last year, yet only 11% of the athletes reporting need used mental health services. Full schedules, stigma attached to mental health service utilization, negative previous experiences seeking mental health support, and lack of mental health literacy are some barriers to seeking mental health treatment. The NCAA Summit on Diverse Student-Athlete Mental Health and Well-Being (2023) identified several areas for improvement of service provision and quality for minority athletes including: stakeholder education, screening, staffing, transition from sport, clinical care, reporting discrimination, communication, health care practices and personnel training, staff hiring and retention, coaches training, and working with families of student-athletes.

Are My Athletes At-Risk for Suicide?

Sports medicine professionals are ideally placed to observe the language and behavior of injured athletes. Being equipped with knowledge of the signs and symptoms of suicidal ideation and behaviors are a vital first step in answering the question that leads this section. An expert panel representing the American Medical Society for Sports Medicine issued a consensus statement to guide sports medicine professionals to detect, treat, and prevent mental health issues including suicide. The statement examined the athletic culture and environmental factors impacting the mental health of athletes, including sexuality and gender issues, hazing, bullying, sexual misconduct, and transition from sport. Specific mental health disorders in athletes, such as eating disorders, disordered eating, and depression, and suicide, anxiety, stress, overtraining, sleep disorders, and attention-deficit and hyperactivity disorders are connected to depression and anxiety suggested connection to suicidal behavior. However, deeper connection to suicide and sports injury specifically was found by Smith and Milliner who observed that death by suicide was related to: serious injury necessitating surgery, an extended rehabilitation process (6 wk to 1 y), reduced athletic skills despite adherence to rehabilitation, a perceived lack of competence upon returning to sports when compared with preinjury levels, being replaced by a teammate at their given position, and disrupted social relationships. The relationship between suicide, risk factors, and treatment is highly multifaceted. Sports medicine professionals are instructed to accept the contributing factors above in addition to recognizing the unique qualities of the sports culture the athlete belongs to, the type of sport, the athlete’s beliefs, and the psychophysiological component. The application of evidence-based practices to detect, treat, and prevent athlete suicide is recommended.

Screening all athletes for mental health and suicidal thoughts in the preseason and postseason normalizes mental health care and creates an opportunity for recognizing risk. This process enables internal identification and risk stratification of at-risk athletes. This effort should be followed by individualized outreach and engagement with athletes who are at risk. Implementing the Ask Suicide-Screening Questions (ASQ) and the follow-up Brief Suicide Safety Assessment (BSSA) decision tree are standardized evidence-based approaches sports medicine professionals can take to intervene and help athletes cope and preserve their lives. Combined these tools take only approximately 10 minutes to complete (ASQ: ~20 s, BSSA: ~10 min). In addition to the ASQ and BSSA, we suggest integrating screening of other risk factors mentioned in the preceding paragraphs into your practice so they become a normal part of athlete care.

What Do I Do if an Athlete Shares With Me They Have Considered Suicide?

Be calm and listen as deeply as you possibly can. The athlete you are talking to is open and vulnerable and needs immediate understanding and acceptance. Accurately reflect what you hear and convey support in your body language, tone of voice, and attitude. Ask them to tell you more or as much as they feel comfortable expressing to you, and listen for context, pressure, emotions, and thoughts. Avoid judging, listen and reflect when there is space. Allow this communication process to unfold at its own pace. Avoid forcing more information from the athlete, pushing them to take another view or giving them advice and information. Your role is to be present, focused in your listening, and be a conduit to a higher level of appropriate care if it is required. Notice how they are coping. Be direct in your questions. You want to learn what the athlete is thinking, if they have a plan and a means to harm themselves, or take their life, and their degree of readiness.

You need to know the difference in suicide risk levels. We suggest using the ASQ and BSSA decision tree as your guide. The BSSA provides steps to take should an athlete screen positive for suicide risk on the ASQ. The BSSA also provides strategies for engaging the athlete further about suicide risk factors, assessing the athlete’s willingness/ability to actively be involved in their safety, collaborating on their safety plan, and determining risk level. If you discern the athlete is at imminent risk for suicide, contact the athlete’s current mental health provider when possible, and if not possible, ensure the athlete receives an emergency psychiatric evaluation. For athletes not at imminent risk, review the safety plan with the athlete and assist in helping the athlete see a mental health specialist as soon as possible (for those at intermediate risk, within 72 h is preferable). For all athletes, regardless of risk level, follow-up with them via a phone call or in-person within 48 hours to express your care, assess their well-being, and determine next steps.

Where Can I Get More Training and Education?

As clinicians in the field, our experiences are that many of us over time will experience the loss of a patient, client, and/or athlete to suicide. We acknowledge that focused, specific, and ongoing training is critical for prevention and care, and horribly,
even our best efforts to recognize risk factors can fail. However, as sports medicine and psychology professionals, the relational depth formed with our athletes puts us in a better position than most to see our athlete’s mental health struggles and help them find the appropriate levels of care for their individualized situation.

According to the National Institute of Mental Health, most individuals who die by suicide visit a health care provider in the months prior to their death, yet most health care settings do not screen for suicide risk. A recent systematic review found approximately 80% of individuals had contact with primary health care services in the 12 months prior to suicide. Given that athletes have greater contact with sports medicine professionals such as certified athletic trainers than primary care physicians, sports medicine professionals are in a favorable position to identify suicidal risk factors. We share the view of Anchuri et al who noted the number of struggling student-athletes illustrates the importance of pursuing suicide prevention as a public health priority and it would be careless for colleges, universities, and athletic departments not to take swift proactive steps to recognize and help students at risk for suicide. Below we provide practical recommendations regarding suicide prevention and care education and training for health care providers working with athletes.

Professional education and training in addition to regular screening are important first steps for health care providers. Various educational and training opportunities exist, including, but not limited to these: American Association of Suicidology, CAMS-care, Mental Health First Aid Training, National Institute of Mental Health, Suicide Awareness of Education, Suicide Prevention Resource Center, and Tribal Training and Technical Assistance Center. In addition to education and training, it is critical health care providers regularly screen for suicide. A mental health screening as a part of the preparticipation exam with a suicide-specific question is a first step if not already in place. The ASQ referred to above is a well-researched and efficient screen to implement. It was developed by the National Institute of Mental Health and is a 4-question, 20-second screening tool for youth and adults. Given the relationship between depression and suicide, we also encourage a preparticipation depression screening such as the Harvard Department of Psychiatry/National Depression Screening Day Scale. Because of the unique attributes of each health care setting, in addition to the preseason participation exam, we strongly encourage sports medicine professionals to collaborate with their local mental health professionals to determine the timing and type of additional screenings and follow-up action plans.

Because a student-athlete may be experiencing intense sadness, hopelessness, and isolation that might indicate suicidal ideation, planning is a sensitive and serious process. Here are 12 steps you can take to support your athletes:

1. Collaborate as sports medicine and psychology professionals to develop your suicide prevention and care action plans.
2. Utilize your institutional resources and professional networks.
3. Complete training in using and implementing the ASQ and BSSA.
4. Get trained in recognizing signs and symptoms of distressed mental health, including risk factors for suicide.
5. Acquire skills so that you can comfortably ask open questions, affirm the individual, reflect what you hear from the athlete, and summarize so you catch details and meaning.
6. Approach an athlete with genuine empathy and concern but avoid undermining their resilience.
7. Normalize your engagement and undermine stigma so that the student-athlete understands this is a common process.
8. Be confident research does not support that asking about suicide increases suicide ideation or attempts.
9. Have a list of go to referral resources for your student-athletes.
10. Follow up on the referred student-athlete’s well-being.
11. Reflect on and evaluate your practices regularly, evolving them as indicated.
12. Document your process to share it with your colleagues and our fields at large.

Call to Action

Better empirical research that explicitly evaluates mental health and suicide in athletes is needed so we can better understand the scope of the problem. To our knowledge, the most current reviews of suicides in athletes were published in 2014 and 2015 evaluating data from 2002 to 2012, highlighting an important area of research. We also need more research into specific barriers and facilitators in underrepresented minority athletes and how to address them. Additionally, we need more research on the intersection of suicide and injury between and among sociodemographic groups so we can better individualize prevention and care of athletes.

From a practice standpoint, as a professional responsibility to care for our whole athletes, we recommend all sports medicine and psychology professionals obtain training on suicidal risk factors and screening, and implement screening and follow-up care plans within their practice. Because underrepresented groups are at a greater risk of suicide, especially when depression and concussion history are present, increasing awareness, screening, and appropriate follow-up care for this group is especially critical.

Conclusions

We began our commentary posing these questions: Does suicide risk among athletes vary by sociodemographic factors (eg, sex, gender, race/ethnicity, family income, sexual orientation) or if injured? Do sociodemographic differences influence access to and benefits from services among athletes? Are my athletes at risk for suicide? What do I do if one of my athletes shares with me that they have considered suicide? Where can I get more training and education on these issues?

As we have reviewed above, suicide risk among athletes likely varies by sociodemographic factors and injury, as does access to, and benefits from, services. We strongly recommend training, education, and implementation of best practices for suicide prevention in athletes. Our commentary is intended to increase awareness and generate action among sports medicine and psychology professionals. We, and our organizations, must be prepared to recognize suicidal risk factors and have a follow-up action plan in place that cares well for our athletes of all backgrounds. The prospect of an athlete dying by suicide when under our care is heavy. Yet, our training and character as service-minded professionals give us a strong foundation to confidently use the current and emerging research, as well as the practical tools available, to ask our athletes about suicide, listen, and respond in ways that preserve life and promote well-being.
References


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