

The epidemiology of mental health symptoms and disorders amongst elite athletes and the evolution of mental health literacy

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## Key points

- Amongst elite athletes, strategies are needed to address mental health epidemiological data disparities amongst different (dis)abilities, races, ethnicities, sexual orientations, and genders.
- Culturally competent mental health literacy strategies are needed to help individuals better understand mental health symptoms and disorders, address stigma, and promote help seeking behaviours.
- Sporting organizations need to ensure athletes have access to information on mental health and can access services quickly.

## Synopsis

Epidemiological evidence is needed concerning the incidence and prevalence of mental health symptoms in relation to (dis)ability, race, ethnicity, sexual orientations, and different genders. Mental health promotion campaigns are often based on mental health literacy strategies. Such strategies aim to increase knowledge of mental health symptoms and disorders, address aspects of self- and public stigma, and promote help-seeking behaviours. Sporting organizations need to take responsibility to ensure that policies, practices, and services reflect organizational values concerning mental health. Organizational mental health literacy ensures that information is culturally competent and responsive, easy to find, straightforward, and offers simple, legitimate opportunities to access support.

# The epidemiology of mental health symptoms and disorders amongst elite athletes and the evolution of mental health literacy

## Introduction

A considerable amount of epidemiological research has demonstrated that athletes who compete at elite or professional levels, such as the Olympics, are susceptible to and experience mental health symptoms and disorders.<sup>1-3</sup> Mental health symptoms and disorders can greatly affect not only the training and performance of athletes, but their lives outside of sport as well.<sup>4</sup> At times, mental health symptoms and disorders can cause an individual to exit their chosen sport and end their athletic career.<sup>1</sup> This chapter will examine the concept of mental health and explore its many facets in relation to sport participation. Epidemiological research of mental health symptoms and disorders amongst elite athletes will be reviewed with careful attention paid to representation of different population characteristics. Deficits of demographic representation as well as limited research and knowledge of certain populations will be highlighted and accompanied by suggestions for greater rigor in future epidemiological research. Lastly, elements of mental health literacy will be discussed, outlining different areas of knowledge of mental health symptoms and disorders and strategies to address stigma and strengthen pathways to promote help seeking behaviours amongst athletes. Suggestions for greater institutional responsibility with respect to mental health literacy will conclude the chapter.

## Mental health

Mental health, as defined by the World Health Organization,<sup>5</sup> is the “state of well-being in which the individual realizes his or her [or their] own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.” Mental health is best understood as a resource, one that allows individuals to recognize and understand their skills and potential that they may use to pursue their passions and dreams within sport. Mental health allows individuals to work in constructive ways either by themselves or collectively as a group or a community. Social health is an integral component of mental health, where individuals can integrate into society, feel accepted and trusted, contribute to collective efforts, and work toward strengthening their community for the future.<sup>6</sup> Mental health also allows individuals to recognize, understand, and address challenges as they may arise. For athletes, this may mean stressors within sport as well as outside of sport. Holistic life perspectives challenge athletes to critically reflect, explore, and understand their identities and self-concepts.<sup>4</sup> Such perspectives ask athletes to examine the many facets of their lives, including family, friendships, scholastic pursuits, hobbies, leisure activities, and non-athletic jobs and careers, in addition to training for and performing within their chosen sport(s).<sup>7</sup> A holistic life perspective allows individuals to be able to recognize where stressors originate, how they may affect multiple areas of their lives, and how they may be addressed and managed. Overall, mental health is an essential part of one’s health.

When individuals experience mental health disorders, they may experience distress and a wide range of clinically significant conditions where areas of functioning are affected.<sup>8</sup> Mental health disorders are characterized by changes that affect an individual’s emotional regulations, cognitive processes, and behaviour. Broadly, mental health disorders are diagnosed by mental health professionals who have evidenced that mental health symptoms meet diagnostic criteria for duration, frequency, and severity. For athletes, this may mean

they are no longer able to train or perform and may need to interrupt their athletic pursuits while they seek treatment.

## Epidemiology of mental health symptoms

Athletes who compete or have competed at professional or other elite levels have experienced mental health symptoms and disorders that have stemmed from multiple individual, social, and environmental conditions.<sup>9-10</sup> Epidemiological evidence on the prevalence of mental health symptoms and disorders has shown similar levels amongst current and retired elite athletes.<sup>2</sup> For instance, mental health symptoms and disorders range between 19% (alcohol use) and 34% (anxiety/depression) for current elite athletes. For retired elite athletes, mental health symptoms and disorders range between 16% (“distress” in general) and 26% (anxiety/depression). Athletes who compete in individual sports have been shown to be at greater risk of certain mental health symptoms and disorders, such as major depressive disorder, than those who compete in team-based sports.<sup>11</sup> This may be related to how individuals view psychological demands of competition, including views of success and failure. Those who compete on teams are more likely to use substances than individuals who compete individually.<sup>1</sup>

Epidemiological research has shown sex differences for certain mental health symptoms. For example, with respect to depressive symptoms, females are twice as likely as males to report such symptoms.<sup>12-13</sup> Female athletes are also more likely than male athletes to report symptoms of anxiety.<sup>3</sup> Research has shown that gender specific stressors can directly impact the mental health of women, including their overall career satisfaction and longevity in sport.<sup>14</sup> For example, women are more likely than men to experience individual stressors (e.g., family planning, caring responsibilities), interpersonal stressors (e.g., sexual harassment

and violence, abuse, bullying), organizational/structural stressors (e.g., disparity in wages, mistrust in leadership roles, sex verification to compete), and socio-cultural stressors (e.g., negative and sexualized media coverage, perceptions of less able athleticism). To date, in elite sport, less is known about the epidemiology of mental health symptoms and disorders of women when compared to men. For instance, meta-analytic research by Goutteborge and colleagues examined the prevalence of alcohol misuse, anxiety, depression, distress, and sleep disturbance amongst current and retired elite athletes.<sup>2</sup> For current elite athletes, 28% of the participants sampled represented women. For retired elite athletes, 3% of the participants sampled represented women. Greater efforts are needed to recruit diverse samples of women athletes across all sports to better understand epidemiological trends of incidence and prevalence of mental health symptoms and disorders.

Amongst other demographic characteristics, limited data exists on (dis)ability, race, ethnicity, sexual orientation, and trans or gender non-conforming athletes. A recent study by Olive and colleagues examined psychological distress, mental health caseness, risky alcohol consumption, body weight and shape dissatisfaction, self-esteem, life satisfaction, and problem gambling amongst 749 Australian para-athletes and athletes.<sup>15</sup> Similar rates of mental health symptoms were found amongst both groups of individuals, except that para-athletes reported less alcohol consumption and lower levels of self-esteem. Similar findings were reported in another recent comparative cross-sectional study of Australian para-athletes and athletes.<sup>16</sup> Results from a narrative review on mental health symptoms and disorders amongst para-athletes by Swartz and colleagues has found limited available epidemiological data prompting researchers to issue calls for greater efforts to better understand aspects of descriptive epidemiology (i.e., incidence and prevalence of mental health symptoms and disorders) and analytic epidemiology (i.e., factors responsible for mental health symptoms and disorders) in para-sport.<sup>17</sup>

Epidemiological research has shown that racial-ethnic minority athletes are at high risk of mental health symptoms and disorders. From a student athlete perspective, although there has been a rise in the number of racial-ethnic minority athletes who compete within the National Collegiate Athletic Association (NCAA) since 2011, few studies have addressed racial and ethnic disparities in mental health.<sup>18-19</sup> Research by Ballesteros and colleagues examined the prevalence of mental health symptoms and mental health service use amongst African American, Latin(x) American, and Asian American student athletes.<sup>18</sup> Their research found that amongst African American student athletes, 22% were very lonely, 14% were depressed, and 16% were overwhelmingly anxious. Amongst Latin(x) student athletes, 32% were very lonely, 15% were depressed, and 21% were overwhelmingly anxious. Amongst Asian American student athletes, 26% were very lonely, 18% were depressed, 18% were overwhelmingly anxious. Amongst the three groups of athletes, approximately 11% of individuals have received mental health service support. Other mental health studies conducted within the NCAA have shown an increased risk for racial-ethnic minority athletes. For instance, research on suicide has shown that African American student athletes are at greater risk (1.22/100,000) than white student athletes (0.87/100,000).<sup>20</sup> Increased risk of mental health symptoms and disorders may be due to experiences of racism within higher education and athletics.<sup>18</sup> Such disparities have resulted in calls for changes to mental health training including anti-racism and the history of institutional racism in sport, communication enhancements to address mental health symptoms and disorders and how to access services, quality improvement and accountability strategies to report and address racism, and clinical care practices.<sup>21</sup>

Few epidemiological research studies have examined the mental health of athletes where data on sexual orientation, trans identities, and gender non-conformity were collected. Work by Oftadeh-Moghadam and Gorczynski examined the mental health literacy, distress,

help-seeking intentions, and wellbeing of semi-elite rugby players in the UK.<sup>22</sup> In addition to measures of mental health, they collected demographic data on ethnicity, sexual orientation, and whether individuals identified as trans, amongst other key demographic variables such as age, years of competition, mental health rating, education level, family history of mental health disorders, and previous diagnosis of mental health disorders. Of 208 participants, 195 identified as white (94%), 118 were heterosexual (57%), and no participants identified themselves as trans. With respect to sexual orientation, bisexual individuals were significantly more likely than heterosexual individuals to experience distress. Bisexual individuals also reported lower levels of wellbeing in comparison to heterosexual individuals. Research by Kroshus and colleagues investigated the mental health and substance use of minority college students and athletes using pre-existing data from the National College Health Assessment administered through the American College Health Association.<sup>23</sup> Their research examined responses from 19,869 varsity athletes and found that sexual minority athletes were at increased risk of experiencing mental health difficulties compared to their heterosexual peers. Substance use was higher amongst sexual minority athletes when compared to heterosexual individuals. Although no epidemiological data is available on the mental health of trans or gender non-conforming athletes, several researchers have reported that given risks of non-accidental violence and abuse non-athlete trans and gender non-conforming individuals face in society, these athletes are most likely at an increased risk of mental health symptoms and disorders and are also less likely to seek support.<sup>24-25</sup> Although steps are being taken within certain sporting organizations, such as the NCAA, to improve the inclusion and mental health of trans or gender non-conforming athletes,<sup>26</sup> the measurement of mental health symptoms and disorders and demographic data capture practices need to reflect these steps. Overall, research strategies rooted in comprehensive demographic information



collection are needed to better understand the mental health needs of sexual and gender minority athletes.<sup>27</sup>

### Mental health literacy, stigma, and help seeking

Epidemiological evidence concerning mental health symptoms and disorders within sport provides the foundation for structuring mental health promotion strategies to aid those in greatest need. Such evidence helps not only identify groups who may be at greatest risk of mental health symptoms and disorders, but also helps identify and address potential individual and environmental factors associated with poor mental health and whether individuals will seek support.<sup>28</sup> Mental health promotion strategies within sport are largely designed around the concept of mental health literacy.<sup>29</sup> Mental health literacy refers to how individuals understand and recognize mental health symptoms and disorders, how they address both self- and public stigma with respect to mental health, and how they may make decisions to seek support from mental health professionals or other sources.<sup>30</sup> Within strategies that aim to improve mental health literacy, steps are designed to help individuals identify, question, and adjust their beliefs and perspectives about mental health symptoms and disorders, stigma, and mental health treatment.<sup>29</sup>

Mental health literacy has evolved from health literacy, which largely focused on functional literacy so that individuals could read basic health information often found in pamphlets and prescriptions to help improve their decision-making skills around their health.<sup>31-32</sup> Health literacy has moved on from its early functional literacy focus to incorporate aspects of information sourcing, information quality assessments, cognitive processing, broader social and environmental awareness and engagement around health, and health advocacy, be it for one's own health or the health of a community.<sup>33-36</sup> Health

literacy's progressive path forward has fully embraced the social determinants of health as well as aspects of cultural competence, where information is designed and delivered in a specific manner to a particular population to address their unique health needs.

Mental health literacy within an elite sport context is also evolving.<sup>10</sup> Much like strategies to strengthen health literacy, strategies to strengthen mental health literacy have had to incorporate aspects of information dissemination channels, quality, and sources; address aspects of cognitive processing; and address challenges with help seeking, such as availability of treatment and wait times, administrative processes and clinical pathways with accessing treatment, and costs associated with treatment.

A major component of mental health literacy is to address stigma associated with mental health, both self- and public.<sup>30</sup> Stigma, in this context, represents stereotypes or prejudices individuals have toward mental health symptoms and disorders.<sup>37-38</sup> Individuals who hold such stereotypes or prejudices often view individuals living with mental health symptoms and disorders as inferior, when compared to some sort of perceived social norm or expectation. These forms of stereotypes or prejudices are known as public stigma.<sup>39</sup> When an individual begins to apply such stereotypes or prejudices to themselves and internalize these views, thereby altering their self-concept so that it reflects this perceived belief of inferiority of individuals living with mental health symptoms and disorders, this becomes a form of self-stigma.<sup>40</sup> Both self- and public stigma represent some of the greatest challenges that prevent athletes from seeking support or treatment for their mental health symptoms and disorders.<sup>19,</sup>

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It is believed that mental health promotion programs rooted in mental health literacy operate on a premise that through the delivery of information to individuals on mental health symptoms and disorders and treatment options, modifications are possible to stigmatized views individuals hold.<sup>42</sup> Such an approach, based on the Theory of Reasoned Action and the

Theory of Planned Behaviour,<sup>43-44</sup> tries to address affective (i.e., the emotions or feelings associated with someone or something) and instrumental (i.e., whether someone or something serves a valuable or not valuable purpose) components of attitudes associated with stigma and help-seeking behaviours. Additionally, this information also tries to address normative beliefs (i.e., what do *we* think *others* think about someone or something) and motivations to comply with others. Both normative beliefs and motivations to comply with others are components of subjective norms (i.e., whether others will approve or disapprove of our beliefs or behaviours). Ultimately, changes to attitudes and subjective norms can impact intentions as well as overall behaviours. For instance, information that humanizes athletes living with mental health symptoms and disorders and portrays them as valuable members of teams, leagues, and society along with positive role modelling from others, including athletes and coaches, can begin to address behaviours that stigmatize individuals. This sort of approach can also impact how individuals view mental health services and forms of treatment. This theoretical perspective positions mental health literacy as a static and unidirectional transmission of information, moving from information source to information recipient. However, changing behaviours is extremely difficult, where recipients of information have established views, are influenced and motivated by individuals around them, and can challenge authority and information sources. As such, mental health promotion strategies based on mental health literacy need to be dynamic and be able to respond to existing held views.<sup>45</sup> For instance, information that comes from a mental health professional rather than a video advertisement can be adjusted and modified based on the recipient's responses and informational needs. However, future research needs to better understand different components within mental health literacy and how information is delivered and how it modifies stigmatized views and help seeking behaviours.<sup>46</sup> Such delivery is not only limited to mental health professionals, per se, but also unique methods currently being promoted

using technology to engage individuals online, including the use of responsive chat programs that rely on artificial intelligence.<sup>47</sup>

Research within the field of mental health literacy in sport has shown some positive results from health promotion strategies, including improved mental health symptom awareness and knowledge, increased referral knowledge, reduced stigma, and improved general help-seeking intentions.<sup>48-49</sup> Similar to health literacy, efforts have been made to ensure that mental health promotion strategies rooted in mental health literacy are culturally competent and responsive, meaning they understand the unique and complex mental health needs of a target population, provide information and support in culturally sensitive and appropriate ways, and offer diverse options from a variety of mental health professionals.<sup>10, 50-51</sup> Ensuring cultural competence and responsiveness is an ongoing endeavour, one where revision is frequent and constant.

A further evolution to mental health literacy is the need to recognize organizational responsibility with respect to how guidelines, policies, regulations, practices, and systems allow individuals to find, access, use, and understand information about mental health and mental health symptoms and disorders and treatment options in an acceptable and comfortable manner.<sup>52-56</sup> Taking an organizational health literacy perspective to mental health argues that an organization adhere to and enact strategies that are set out in its values and mission statement with respect to mental health.<sup>10, 29</sup> In a sense, information, strategies, and services must resemble policies and be inclusive of diverse health needs. Information must be straightforward, offer simple pathways to support, and offer individuals legitimate opportunities to access support. Organizational mental health literacy must be reviewed on a regular basis to ensure that cultural changes and practices as well as evolving mental health needs are identified, recognized, and acted upon. Overall, organizational mental health literacy tries to address and eliminate mental health victim blaming, where individuals blame

themselves not only for the causes of their mental health symptoms and disorders, but also inabilities to address them. Further research is required to ensure that sporting organizations that have set out policies to address mental health symptoms and disorders measure overall organizational capacity to enact policies, including financial resources, appropriately trained staff, access to training and professional development, and opportunities for interprofessional collaboration.<sup>57</sup> Ultimately, organizations must embrace change, examine and address areas of individual resistance to change, and help design and create cultural climates that support the mental health of athletes.

## Discussion

Mental health symptoms and disorders present risks to athletes that threaten their time in and outside of sport. Much of the epidemiological evidence collected has demonstrated that elite athletes are as likely as those outside of sport to experience mental health symptoms and disorders.<sup>1,3,12</sup> Deficits within the epidemiological evidence collected so far has shown that little information is currently available concerning (dis)ability, race, ethnicity, sexual orientation, and trans or gender non-conforming athletes. These deficits in knowledge unfortunately limit the creation of culturally competent and responsive mental health promotion programs and services.<sup>28</sup> Both descriptive and analytic epidemiological evidence is needed concerning diverse and representative populations. Such research will not only render a better understanding of trends of mental health symptoms and disorders across time in different geographic locations, but it will also provide an identification of risk factors and determinants associated with mental health symptoms and disorders.<sup>28</sup> Collection of such demographic information is needed within future research programs as well as part of good clinical record keeping. Lastly, nearly all epidemiological research studies that have

examined the mental health symptoms and disorders of elite athletes have taken place in developed economies of the world.<sup>2</sup> Geographic diversity and representation of data is also needed for a better understanding of the incidence and prevalence of mental health symptoms and disorders around the world.<sup>10</sup>

With respect to mental health literacy within sport, research has shown positive outcomes with respect to increased knowledge of mental health symptoms and disorders, increased referral knowledge, reduced stigma, and improved general help-seeking intentions.<sup>48-49</sup> Mental health literacy needs to be a priority for sport organizations who have a responsibility to ensure that information concerning mental health and service provisions is easy to find, access, use and has a simple pathway to support.<sup>10,29</sup> Researchers need to ensure that future research helps create theoretically driven and culturally competent information and services that support the unique mental health needs of diverse populations. Much like the future of epidemiological practice within the mental health of sport, culturally competent demographic design that addresses aspects of (dis)ability, race, ethnicity, sexual orientation, and trans or gender non-conforming athletes needs to be applied to work within mental health literacy evaluation. Unique strategies to disseminate information, including methods that use artificial intelligence, need further evaluation.<sup>47</sup> Measures of organizational capacity amongst sports organizations are also needed to ensure that enacted policies concerning mental health are being followed and that information and services are accessible.

## Summary

Although there is a great deal of data about the incidence and prevalence of certain mental health symptoms and disorders, much of the current knowledge is limited to men. Strategies are needed to better understand the epidemiology of mental health symptoms and

disorders in relation to (dis)ability, race, ethnicity, sexual orientations, and genders. Mental health promotion strategies rooted in mental health literacy can help improve knowledge of mental health, address stigma, and enhance help-seeking behaviours. Organizational responsibility is needed to ensure mental health promotion programs that are designed around mental health literacy principals ensure individuals receive information that is easy to understand, accessible, and provides a clear path to timely support.

#### Clinics care points

- Ensure diverse representation of athletes in epidemiological research.
- Collect demographic data concerning (dis)ability, race, ethnicity, sexual orientation, and gender.
- Clinical pathways to seeking mental health support needs to be easy to find, access, simple, and offer individuals access in a timely, acceptable, and comfortable manner.

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