



Courtney C. Walton, Simon M. Rice, and Rosemary Purcell

As documented throughout the various chapters of this book, elite athletes are exposed to a range of stressors and risk factors, which may predispose them to experiencing mental health symptoms and disorders [1, 2]. However, there are specific subgroups of athletes who experience elite sport differently (i.e., due to age, gender, culture), potentially contributing in varied ways to their mental health. In this chapter, we will discuss how elite youth athletes can face a range of distinct issues that are relevant to clinical care and the likelihood of experiencing mental health symptoms and disorders [3, 4]. Within this chapter, we consider youth athletes as those aged 12–18 years. While *youth* is increasingly considered to encompass a larger age group (typically 12–25 years of age) on the basis of accomplishment of social and economic milestones (e.g., leaving home, obtaining employment), we focus here on those under 18 who are faced with specific barriers prior to reaching young adulthood.

Common mental health disorders such as various types of mood and anxiety disorders are highly prevalent among young people [5]. Approximately half of all mental health disorders begin by middle adolescence [6]. It is estimated that approximately 20–25% of adolescents and young adults in the general community will experience a diagnosable disorder in any given year [5]. A number of factors are believed to contribute to this heightened prevalence, including aspects related to puberty, identity formation, changing interpersonal relationships, and a range of risk factors such as experiencing abuse, neglect, bullying, and social disadvantage [5, 7]. Therefore, prior to any environmental factors relating to sport, young athletes are already at an increased risk of men-

tal health symptoms and disorders owing directly to their age and developmental period. In the following section, we highlight how specific aspects of the youth sports environment can further contribute to youth athletes' experiences around mental health.

Mental Health and the Youth Sports Environment

It is important to consider that, typically, youth sport is a valuable and beneficial environment for child and adolescent development. This may be particularly relevant in nonelite settings, where psychosocial development can be prioritized over performance and competition-based outcomes. In addition to these environments intrinsically supporting mental health, they are also well-suited for delivering targeted education and early intervention programs [8, 9]. Physical exercise and sport are believed to provide benefits to the mental health of young people via numerous biological, psychological, and social effects such as the positive neurophysiological effects of physical activity, improved self-esteem, and increased social integration, respectively [4]. An influential review by Holt et al. [10] illustrated that sport can contribute to positive youth development in the form of enhanced self-perceptions, problem-solving skills, stress management, goal setting, responsibility, perseverance, and independence, in addition to developing friendships, communication skills, and leadership. Vella et al. [11] have demonstrated that the relationships between sports participation and adolescent mental health are bidirectional, with time involved in organized sport predicting better future mental health and vice versa. Meta-analysis has also generally supported these relationships, with adolescents engaged across various forms of sports participation showing *lower* levels of anxiety and depressive symptoms [12]. Predominantly, however, these findings relate to *recreational* or *community* sport, which is often more social and less-competitive or pressurized by nature. The positive effects of youth sport on mental health

C. C. Walton (✉) · S. M. Rice · R. Purcell
Elite Sport and Mental Health, Orygen, Melbourne, VIC, Australia
Centre for Youth Mental Health, The University of Melbourne,
Melbourne, VIC, Australia
e-mail: courtney.walton@orygen.org.au;
rosie.purcell@orygen.org.au; simon.rice@orygen.org.au

are therefore not necessarily a given in elite environments, where other factors may come into play.

Despite increased interest in the mental health of elite athletes, surprisingly little research has examined those involved at the youth level. This represents an important and underexplored population, given the varying and potentially interacting factors that may be influential, including age, schooling, and biopsychosocial development. With regard to the general prevalence, only a small number of studies have examined this population. For example, Weber et al. [13] provided some insights into the experience of depression and anxiety in young athletes at an elite level. Among a large sample of student athletes from an elite sports school in Germany, 7.1% and 3.1% were classified as possible and probable cases of anxiety, respectively, whereas this was 9.5% and 3.7%, respectively, for depression, lower than many comparative samples. Brand et al. [14] also compared the rates of mental health symptoms among student athletes at elite sports schools in Germany. Generally, results pointed to more significant symptoms in female athletes and in those who had recently been deselected from progressing in their sport. In addition to gender and the current competition status, further evidence of contextual risk factors exists, with one study demonstrating youth athletes in individual sports to have more significant depressive symptoms than those in team sports [15].

Although there is no strong evidence to link elite sports participation in youth to either improved or worsened mental health in a general sense, there are a number of contextual factors and stressors that may influence the mental well-being in youth athletes. Not least is the fact that youth sports environments are increasingly specialized with higher rates of professionalism expected at younger ages. Potential negative psychosocial outcomes of young athletes engaging in early specialization include social isolation, poor academic performance, increased anxiety, greater stress, inadequate sleep, decreased family time, and burnout [16].

Stressors Encountered by Elite Youth Athletes

There are numerous stressors that can affect how a youth athlete may experience their sport [17] and, subsequently, their mental health. Here, we will loosely separate these based on (1) individual factors, relating to particular cognitive, emotional, and behavioral traits and (2) environmental or external factors, relating to the environment and those within it. However, although this distinction is helpful on a descriptive level, in reality, there is a significant overlap between this binary classification. We also emphasize that the stressors described below do not necessarily “predict” mental health symptoms and disorders, but can provide

insights into the potential difficult experiences that an elite youth athlete may face, to be considered by practitioners working to maintain their mental well-being or to respond to mental health symptoms or disorders.

Individual Factors

Youth athletes competing within elite and competitive settings are exposed to pressure to perform from increasingly earlier ages. Such pressure likely contributes to the significant rates of perfectionistic attitudes seen in youth athletes [18]. Perfectionism is typically conceptualized as including at least two key factors: (1) ‘perfectionistic concerns’, which relate to the pursuit of exacting standards imposed by significant others and (2) ‘perfectionistic strivings’, which relate to the pursuit of self-imposed goals and standards accompanied by harsh self-criticism [19]. Meta-analytic evidence suggests that while perfectionistic strivings tend to be associated with more adaptive outcomes in both performance and well-being, perfectionistic concerns are associated with poorer well-being and a higher likelihood of experiencing anxiety, while providing no clear benefit to sporting performance [20]. Furthermore, perfectionistic concerns have regularly been associated with the experience of burnout in youth athletes [18, 21], which can be a problematic experience contributing to poor mental health.

Burnout in sport is typically characterized by both physical and emotional exhaustion, along with a reduced sense of accomplishment and sport devaluation [22]. Early sport specialization is becoming increasingly common in the context of the growing professionalization of youth sport [16]. Athletes, coaches, and parents may anticipate that this early focus will increase a young person’s chances of future success; however, burnout is a possible outcome. A study by Granz et al. [23] employed complex classification analytic techniques to identify youth athletes at risk of burnout. They identified factors associated with burnout including involvement in technical, endurance, aesthetic, or weight-dependent sports, training under an autocratic or a laissez-faire coach, high subjective stress outside of sport, a low willingness to make psychological sacrifices, lack of sleep, and female sex. On the other hand, fewer hours of training, low social pressure, low subjective stress outside of sport, a high willingness to make psychological sacrifices, and high health satisfaction were protective [23].

As identified above [23], poor sleep can exert significant effects on burnout, and there is a well-established link between sleep quality and mental health generally [24]. While achieving adequate sleep can be an ongoing problem for athletes already (see Chap. 5 for a broader overview), this may be further accentuated in young people. This is owing to the facts that (1) adolescents generally demonstrate poorer

sleep patterns than do adults and (2) competing sporting, academic, and social demands of elite youth athletes may affect sleep schedules. Evidence from one systematic review showed that child and adolescent athletes had impaired sleep when assessed via sleep time, sleep efficiency, and waking after sleep onset [25].

An additional significant risk factor for mental health symptoms and disorders in youth athletes is body image and weight concerns. Given the complex presentation and management of these concerns, readers are encouraged to refer to Chap. 9, which focuses entirely on eating disorders. Adolescents are at a risk of eating disorders [26]. In adolescent athletes specifically, a large study reported 8% *constantly* trying to lose weight, 12% using compensatory methods (e.g., fasting or purging), and 32.5% fulfilling the criteria for an eating disorder [27]. Unfortunately, little is known about the specific risk factors for youth athletes, given the frequent inconsistencies in the literature [28]. Furthermore, while eating disorders are more commonly associated with female athletes, male athletes have been relatively neglected in the literature [29].

Environmental Factors

In addition to the experiences described above, there are a range of external or environmental factors that can potentially contribute to mental health symptoms and disorders among elite youth athletes. Potentially exerting the most influence on youth athletes—both positive and negative—is the role of responsible adults, primarily parents and coaches, within these spaces. It is important to keep in mind that for the most part, parents have a protective impact on youth athletes' experiences in sport. This can be through providing emotional, behavioral, financial, and logistical support. However, parents of athletes can also be a key contributor to stress or discomfort by being sources of negative or critical feedback, anger, or inappropriate behavior during competition or training and by holding unrealistic expectations for the young athlete [30]. Similarly, coaches can have a supportive role for youth athletes and their mental health in particular [31]. However, there is an inherent power imbalance that exists between the athlete and the adults who are responsible for decisions critical to their sporting ambitions and desires (e.g., playing time, selection, medical treatment, training priority). Furthermore, there is potential for abuse to occur in youth sports environments [32, 33]. Experiences such as these can have significant and ongoing effects on the mental health of young people involved in sport [34].

In addition to interpersonal stressors, injuries, including concussions, are common occurrences for athletes at all levels, as covered in Chap. 17. However, youth athletes are at a particular risk due to the ongoing physical and physiological

changes being undertaken as well as underdeveloped coordination, skills, and perception [35]. Similarly, the role that concussion has in mental health is receiving increasing attention in the sports literature [36]. Of particular concern in this population is that adolescent athletes may underreport post-concussive symptoms, due to not wanting to leave the game, not wanting to *let their team down*, or misunderstanding the severity or consequences of concussive injuries [37]. Although research is currently limited, some studies have shown a range of worsened mental health outcomes following concussive injuries [38–40], and extreme care should be taken in supporting youth athletes following their occurrence [41].

Clinical Considerations for Working with Youth Athletes

Mental health-care professionals who work with elite youth athletes should be aware of a range of factors that are relevant throughout assessment and treatment. Youth athletes provide a particularly complex presentation, in which multiple relationships and environmental considerations must be considered. Central to this is understanding the key systems within which the individual operates. As discussed by Purcell et al. [42], an ecological systems approach is critical for supporting elite athletes' mental health. In youth sport settings, a range of key systems all have the potential to impact an athlete's behaviors, attitudes, and experiences. Specifically, these include (1) the family subsystem (the athlete, parents, and siblings), (2) the team subsystem (the athlete, peers, and coaches), and (3) the environmental subsystem (organizations, communities, and societies) [43]. It is recommended that clinicians obtain a full understanding of how the youth athlete relates to the relationships within these systems.

To understand how an athlete's mental health may relate to sport, practitioners can encourage athletes to describe *both* their positive and negative experiences in sport, with specific attention to key relationships with peers, coaches, and parents. It is advisable to refrain from automatically assuming and communicating the worst of these relationships or environments, as this is likely to reduce the rapport with the young person; allowing the athlete to describe the positive aspects of their sport can instead assist in trust formation. Despite this, clinicians should be active in listening and prompting for any potential abuse or maltreatment that may be occurring, given that unguided disclosure is often unlikely [33]. Understanding the youth athlete's interpretation of perceived pressures around body image and weight, performance, and playing through injury (particularly concussion) is important, as is an understanding of the extent to which the athlete is balancing sports participation with academic and social responsibilities and desires. Identifying the ways in which athletes view and relate to themselves, especially with

regard to athletic identity and perfectionistic concerns, can inform clinical formulation.

Another key factor that can be overlooked among elite youth athletes due to age is substance misuse. In particular, this may be relevant to athletes experiencing adversity or transitions out of sport. For example, in the aforementioned study by Brand et al. [14], deselected male athletes were significantly more likely to report using alcohol, nicotine, or illicit substances than were currently active elite youth athletes or nonathletes. Female deselected athletes, on the other hand, were significantly more likely to report using prescription drugs. Such findings suggest that youth athletes may use substances in response to negative changes in their sport, and this should be carefully considered, especially where complex issues of confidentiality and risk are relevant [44].

A consideration when working with young athletes is that they may not openly disclose their mental health difficulties, owing to a range of fears and concerns about their reputation or playing consequences. Sport is a domain where mental toughness is encouraged, which may wrongly [45] be interpreted by young people as requiring them to downplay or minimize mental health symptoms and disorders. This may be especially significant in youth athletes, as they are still developing confidence and self-understanding. Demonstrating the potential barriers to help-seeking in youth athletes, one study reported how athletes believed that they should not show weaknesses and worried about what their teammates, coaches, and parents would think of their ability to perform to their best if they were struggling with their mental health [46]. Given these real and *perceived* ramifications (e.g., to playing time, selection, reduced trust), any practitioner working in these spaces needs to be conscious of language, should ensure confidentiality, and should maximize opportunities for psychoeducation. Indeed, relating to language, some individuals may respond more favorably to framing around performance optimization, rather than treatment of a ‘disorder’ [47].

Unfortunately, the evidence base is limited regarding the assessment and treatment of elite youth athletes experiencing a mental health disorder. Practitioners are encouraged to draw on evidence-based approaches from the broader literature. For example, a range of general mental health screening tools considered appropriate for this age group has been recommended by the Neurobiology in Youth Mental Health Partnership [48]. Although the Sport Mental Health Assessment Tool 1 (SMHAT-1) [49] represents the first measure specifically designed to assess mental health symptoms within the sporting context, this tool is only appropriate for athletes 16 years of age and older. It is hoped that subsequent versions of the SMHAT may address assessment of younger elite athletes. Treatment approaches also remain underexplored for this population, and readers are encouraged to adapt established therapies—both psychological (Chap. 2) and pharmacological (Chap. 3)—as appropriate.

Conclusions

Elite youth athletes are exposed to a range of stressors that may predispose them to experience difficulties with mental health. Although sport is generally considered to have a positive influence on young people, those at an elite level may struggle with the pressure to perform and perfectionism, burnout, coach or parental pressures, abuse or maltreatment, injury, concussion, body image and weight concerns, and disrupted sleep. Practitioners working with young athletes should develop a strong understanding of these experiences and how young people relate to their sport and the people within it. Given that clear youth-specific approaches to management are not yet well-established in sport, practitioners are encouraged to lean on the broader literature of sports psychology and youth mental health in order to appropriately manage presenting concerns.

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