Introduction

The positive association between mental and physical health suggests athletes are likely to be more mentally fit than non-athletes due to their physical routines, particularly during childhood (Rodriguez-Ayllon et al., 2019). However, the severity of psychiatric symptoms in athletes tends to be about the same as their non-athlete peers (Donohue et al., 2004a; Gorczynski, Coyle & Gibson, 2017; Gulliver, Griffiths, Mackinnon, Batterham & Stanimirovic, 2015; Reardon & Factor, 2010; Rice et al., 2016). Moreover, athletes have consistently been indicated to underutilise psychological interventions when warranted (Gulliver, Griffiths & Christensen, 2012). These findings have influenced the prioritisation of athletes’ mental health care through the development of practice guidelines, such as those established by members of the US-based National Collegiate Athletic Association (NCAA; National Collegiate Athletic Association Sport Science Institute, 2016) and National Athletic Training Association (NATA; Neal et al., 2013), the International Society of Sport Psychology (Schinke, Stambulova, Si & Moore, 2017), and the European Federation of Sport Psychology (Moesch et al., 2018). The primary aims of this chapter are to:

- Review common factors that have been identified to influence the development and maintenance of mental health symptomology in athletes,
- Present a theoretical model to show how athletes’ mental health can be optimised through cognitive and behavioural skill development, and
- Summarise extant screening, engagement, and intervention programmes that have been found to assist athletes’ mental health care.

Understanding mental health in athletes

Athletes and their non-athlete counterparts experience most aspects of mental health symptomology similarly, although investigators have to reliably compare rates of mental health disorders between athletes and non-athletes (Gorczynski et al., 2017). The contribution of sports participation to mental well-being in athletes is generally positive (Eime, Young, Harvey, Charity & Payne, 2013). However, there is some evidence that, as compared with non-athletes, athletes
show higher levels of mental health disorders that are notoriously influenced by the evaluation of others, such as depression, anxiety, substance use, and eating disorders (Ford, 2007; Sundgot-Borgen & Torstveit, 2004; Wilson & Pritchard, 2005). For instance, athletes are increasingly being trained from a young age that peak performance depends on being attentive or dilled in to what parents, coaches, and teammates advise them to do (Watson, Connole & Kadushin, 2011). This is an adaptive skill that is associated with success when feedback is accurate, important, and provided positively (Masland, Hooley, Tully, Dearing & Gotlib, 2014; Tzetzis, Votsis & Kourtessis, 2008). However, criticism is generally non-productive when it is focused on the outcomes of performance (Kreiner-Phillips & Orlick, 1993), generated from negative emotions (Mazer, Barnes, Grevious & Boger, 2013), or perceived as stressful, inherently exacerbating athletes’ mental health when performance is non-optimal (Willis, Neil, Mellick & Wasley, 2019). Criticism often influences athletes to focus on performance outcomes, which may lead to anxiety (Hill, Hanton, Matthews & Fleming, 2010), particularly when evaluations are unfair or outcomes are unpredictable. Furthermore, being consistently unable to tune out negative feedback may contribute to depression, anxiety, and substance-use disorders, which are the most frequently reported mental health issues among athletes (Reardon et al., 2019).

Heightened sensitivity to the opinions of others (Greer, 1983), when combined with frequent exposure to aversive criticism (Epting, Riggs, Knowles & Hanky, 2011), such as on social media (David et al., 2018), is likely to create stress (Sanderson, 2011). In this vein, social media usage has increased in athletes, and there is a growing culture that encourages athletes to express their perspectives on social justice issues (Sanderson, 2018), extending criticism of athletes beyond sport performance (Frederick, Sanderson & Schlereth, 2017).

Youth athletes are increasingly specialising in one sport, hoping to gain a competitive edge (Brenner, 2016). This approach may increase vulnerability to stress and mental health symptomology if experimentation with other sports never occurs or negative life events eliminate competitiveness in the specialty sport (Jayanthi, Pinkham, Dugas, Patrick & LaBella, 2013). Upward movement in competitive level (e.g. college to professional) is another contextual factor potentially impacting mental health symptomology in athletes through elevations in stress (Lebrun, McNamara, Rodgers & Collins, 2018). As the level of competition improves, athletes have less control of positive outcomes, which may create anticipatory anxiety and disappointment when expectations are not fulfilled (e.g. lower pay than expected, loss of starting position, not understanding trades to other teams, job insecurity; Russell, 2014; Turick & Paule-Koba, 2017). These problems are exacerbated when feedback is inaccurate and indirect (Noblet & Gifford, 2002). Other unique contributors to mental health symptomology in athletes include sleep deprivation from erratic travel (Savis, 1994), negative consequences associated with maintaining weight that others indicate is optimum (Byrne & McLean, 2001), problems in relationships due to extended separation (Hurst, Baranik & Daniel, 2013), irritability due to illness and physical injury (Putukian, 2015), arguments with coaches (Smoll, Cumming & Smith, 2011), and maltreatment (Kerr & Stirling, 2019).

Thus, athletes are at risk of experiencing taxing environmental stressors, harsh criticism, and negative evaluation for outcomes that are difficult to control or are unpredictable. As exemplified in an adaptation of the cognitive behaviour therapy triangle (i.e. the optimisation triangle; see Figure 12.1), when athletes’ thoughts, behaviours, and emotions are functioning optimally, they are able to manage stressors, permitting them to achieve optimal mental health and sport performance (Donohue et al., 2018a). Therefore, optimisation of cognitive and behavioural skills should be emphasised in mental health programming, particularly because emotions are relatively difficult to control (Samoilov & Goldfried, 2006). This approach is more goal oriented than traditional mental health interventions that are focused on the amelioration of pathology (Adler & Seligman, 2016) and thus is a good fit for athletes.
Mental health screening/assessment in athletes

Mental health screening procedures are customarily implemented to identify athletes who may benefit from comprehensive psychometrically validated assessment and potential mental health intervention (Kroshus, 2016). In practice, mental health screens are rarely systematically implemented within organisations. However, Tomalski et al. (2019) describe a model screening programme within the context of an athletic department within the United States. Workshops are implemented with all athletes in the system during their health evaluations to reduce stigma associated with mental health and increase athletes’ comfort with help seeking. The workshops emphasise group discussion about mental health concerns, prevalence of mental health issues, and methods of identifying mental health disorders. Additionally, athletes are recommended to watch a video that was developed by Athletes Connected (Kern et al., 2017). In this programme, video anecdotes of collegiate athletes’ experience with mental health concerns are shown to athletes, and the viewers are informed of available resources and how to approach teammates who are believed to be struggling with their mental health symptomology. Last, athletes are recommended to complete mental health screening procedures. The results of mental health screens help to efficiently identify student athletes who are likely to benefit from mental health intervention. Along this vein, athletic trainers are in an excellent position to administer mental health screening procedures under the oversight of appropriately licensed mental health professionals (Clement, Granquist & Arvinen-Barrow, 2013), as they have frequent contact with athletes when treating sport-specific risk factors (Rao & Hong, 2015).

Sport-specific screening measures for mental health symptomology have been psychometrically validated in athletes. Rice et al. (2019) developed the 12-item Athlete Psychological Strain Questionnaire (APSQ) in a sample of 1,007 professional male athletes. The scale consists of three factors: 1) self-regulation, 2) performance, and 3) external coping. Participants respond to items utilising a 5-point frequency scale (i.e. 1 = None of the time; 5 = All of the time). For example, “About how often do you feel hopeless?” The APSQ has demonstrated good reliability and validity (Rice et al., in press; Rice et al., 2019). For instance, responses to this measure
have been utilised to successfully identify high distress in athletes. Also, as APSQ scores increase, well-being scores decrease, and psychiatric cut-off scores are available.

The Student Athlete Relationships Inventory (SARI; Donohue, Miller, Crammer, Cross & Covassin, 2007) is a 63-item questionnaire that assesses sport-specific relationship problems with teammates, family members, coaches, and non-athlete peers. Hussey and colleagues (2019) examined the 16-item SARI Family Scale, which includes five factors: 1) poor relationships and lack of support, 2) general pressure, 3) pressure to quit or continue unsafely, 4) embarrassing comments, and 5) negative attitude. Items range from one (extremely disagree) to seven (extremely agree). For example, “I don’t get enough encouragement from my family members”. The SARI Family Scale items have been found to predict significant elevations in psychiatric symptoms, and psychiatric cut-off scores are available.

Donohue et al. (2019) and Donohue et al. (2018b) examined the utility of the Sport Interference Checklist (SIC; Donohue, Silver, Dickens, Covassin & Lancer, 2007) in identifying collegiate athletes and circus students and professionals, respectively, who may be likely to benefit from mental health programming. The SIC includes 26 items for each of three scales: 1) problems in sport competition scale, PSCS; 2) problems in sport training scale, PSTS; and 3) desire for sport psychology scale, DSPS. The PSCS and PSTS scales are designed to assess sport-specific problems that have been found to interfere with performance during training and competition. A 7-point scale (1 = extremely disagree, 7 = extremely agree) is used to rate these items (e.g. negative thoughts about personal performance). DSPS items are scored on a dichotomous scale (yes/no) to determine the interest of athletes in pursuing professional intervention with regard to the respective item. The SIC has been indicated to significantly predict significant psychiatric symptomology in collegiate athletes, and psychiatric cut-off scores are available.

The aforementioned instruments are capable of reliably identifying significant psychiatric symptomology in both collegiate athletes (i.e. SARI, SIC) and professional athletes (APSQ, SIC), and item responses are directly relevant to sport performance and likely to assist athletes who do, and do not, meet psychiatric thresholds. Therefore, all athletes should be invited to participate in evidence-supported workshops (Kern et al., 2017) and interviews (Donohue et al., 2016) to learn more about mental health and encourage their participation in psychologically based programmes that are capable of concurrently optimising mental health and sport performance. Such inclusivity assists in destigmatising mental health symptomology and protects the confidentiality of participating athletes because their reason for participation cannot be deduced as elevated mental health symptomology. This approach is also more economical due to the prevention of potential future mental health problems in athletes, particularly those who are assessed to evidence subclinical mental health symptomology. Mental health screens also establish baselines, much like the impact for concussions (Covassin, Elbin, Stiller-Ostrowski & Kontos, 2009). When assessment is desired along the continuum of mental wellness, other psychometrically validated assessments should be considered, including the Sport Mental Health Continuum Short Form (Foster & Chow, 2019) and the Sport Psychology Outcomes and Research Tool (Hansen et al., 2019).

### Mental health awareness and engagement interventions in athletes

Studies have indicated the importance of mental health awareness (Breslin, Shannon, Haughey, Donnelly & Leavey, 2017) and engagement in the athlete population (Donohue et al., 2004b, 2016; Gulliver, Griffiths & Christensen, 2012). Breslin and colleagues (2017) conducted a systematic review to determine the effect of programmes aimed at improving mental health
knowledge and help-seeking among sports coaches, athletes, and officials. Ten studies were identified. Of these, six were determined to improve mental health referral efficacy, and three were determined to improve knowledge of mental health disorders. Seven studies did not report effect sizes for their outcomes, limiting clinically meaningful interpretations. Also, seven studies evidenced a high risk of bias. Consequently, Breslin et al. (2017) concluded that while some of these programmes evidenced support for increasing mental health literacy and support for athletes, coaches, and officials, few demonstrated methodological quality, and most suffered a high risk of bias.

Programmes have addressed mental health education in sport contexts. For instance, Kern et al. (2017) utilised an educational overview of mental health, videos of former student-athletes’ struggles with mental illness, and a discussion with athletes portrayed in the videos. Results from pre- and post-surveys indicated that this education-based intervention may be helpful in stigma reduction. Van Raalte, Cornelius, Andrews, Diehl and Brewer (2015) evaluated a web-based education and training approach through the use of a multimedia, interactive website (www.SupportForSport.org) to assist student athletes in making effective mental health referrals. In a controlled field trial with a sample of 153 student-athletes, results indicated that the website resulted in enhanced mental health referral knowledge and efficacy compared to a control group. Liddle and colleagues (2019) developed and evaluated a sport-specific mental health literacy intervention called Help Out A Mate (HOAM). This programme was implemented in adolescent males from a community football club in Australia. Components focused on improving attitudes towards people with mental health disorders. Liddle and colleagues (2019) randomised participants to either HOAM or a waitlist control group. Measures assessed at baseline and post-intervention included knowledge of signs and symptoms of mental illness, intentions to provide help to a friend who may be experiencing a mental health problem, attitudes that promote problem recognition and help-seeking, confidence to provide help, personal help-seeking intentions, and psychological distress. Outcomes were consistently more efficacious for participants who were assigned to HOAM. Mental health intervention engagement strategies in collegiate athletes have also been evaluated in controlled trials (Donohue et al., 2004b, 2016; Gulliver, Griffiths & Christensen, 2012). These studies show engagement strategies (i.e. discussing the benefits of sport psychology, normalising mental health symptoms/substance use, mental health literacy) are relatively effective in motivating athletes to verbally commit to mental health programming and in improving attitudes about mental health. However, these interventions have not resulted in significantly greater attendance in psychologically based intervention programmes than control conditions.

Programmes found to improve mental health symptoms in athletes

Several interventions have been examined in athletes who were not formally assessed for mental health diagnoses, with most focusing on skill development or mindfulness. For instance, cognitive behavioural therapy² (CBT) includes emotional regulation skills training (thinking objectively with a positive bent when difficult situations are experienced), awareness and restructuring of maladaptive automatic thoughts, and behavioural skill acquisition (e.g. communication skills, pleasant activity scheduling, time management). Although CBT is one of the most utilised interventions in the world, its scientific evaluation in athletes is limited to a single uncontrolled case trial involving a female collegiate rower who was treated for major depressive disorder (Gabana, 2017) and a controlled multiple baseline study involving four female hockey players who were not assessed for mental health diagnoses (Didymus & Fletcher, 2017). Relevant to the
female rower, informal outcomes and process measures were consistently positive. The hockey players’ appraisals of organisational stressors were substantially improved.

Voelker, Petrie, Huang and Chandran (2019) developed and evaluated Bodies in Motion (BIM), an eating disorder prevention programme for use in female collegiate athletes who were not diagnosed with a mental health disorder. The programme attempts to assist the participants in managing healthy ways to manage sociocultural and sport-specific body pressures. This prevention intervention is based on cognitive dissonance theory and mindful self-compassion. Intervention components are aimed at engaging athletes in behaviours that challenge societal appearance norms and address appearance ideals specific to sport. The investigators utilised quasi-experimental design methodology to compare participants who received BIM with those who received a wait list control on several measures (i.e. thin-ideal internalisation, body appreciation, body satisfaction, shape and weight concerns, bulimic symptomatology, negative affect, muscular-ideal internalisation, positive affect, sport-specific body pressures). Results indicated that the participants in BIM showed greater improvements for internalised thin appearance ideals as compared with control group participants.

In the Mindfulness-Acceptance-Commitment (MAC) approach, optimal performance is conceptualised as being influenced by the athlete’s ability to remain non-judgmentally present while persisting with the task at hand, managing internal discomfort without losing present-moment focus on environmental demands of performance (Gross et al., 2016). MAC components address cognitive skills through psychoeducation interventions and behavioural skills through mindfulness exercises. Gross et al. (2016) evaluated MAC and psychological skills training in a randomised control trial (pre-/post-/one-month follow-up) involving 18 female collegiate athletes who were not diagnosed with a mental health disorder. Psychological symptoms and sport performance were assessed utilising psychometrically validated subscales. Results indicated that MAC was more efficacious than psychological skills training in reducing substance use and hostility, and participants in MAC demonstrated improvements in most of the other measures. Psychological skills training was also efficacious across time in some measures, suggesting this intervention has promise in mental health promotion as well.

Mindful sport performance enhancement (MSPE) is a mental training skills intervention developed by Kaufman, Glass and Arnkoff (2009). It is an extension of mindfulness-based stress reduction and mindfulness-based cognitive therapy and emphasises mindfulness skills relevant to sport performance. Chen and colleagues (2018) utilised an uncontrolled pre-/post-intervention experimental design to evaluate MSPE in an amateur baseball team (n = 21). Mental health measures included anxiety, depression, sleep disturbance, and eating disorder symptoms. Improvements were found for flow state and eating disorder symptoms.

Rational emotive behaviour therapy (REBT) is based on the premise that beliefs about events lead to emotional and behavioural reactivity (Turner, 2016). In the sport context, athletes are taught to restructure their beliefs to more rational ones so they can face situations with more functional cognitions, emotions, and behaviours. Turner and colleagues (Cunningham & Turner, 2016; Davis & Turner, 2019; Turner & Barker, 2013; Turner, Ewen & Barker, 2018) have utilised both uncontrolled and controlled case study methods to consistently demonstrate that REBT interventions are efficacious in reducing irrational beliefs and anxiety symptoms that negatively influence sport performance in athletes who are not assessed to evidence mental health disorders.

The Optimum Performance Programme in Sports (TOPPS) is a sport-specific adaptation of family behavioural therapy (Azrin et al., 1994) that has been shown to be efficacious in collegiate athletes who have been formally diagnosed with mental health disorders in two controlled (Chow et al., 2015; Donohue et al., 2018a) and four uncontrolled clinical trials (Donohue et al.,...
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Role-playing, programme assignments, and significant other support (e.g. from family, coaches, teammates) are extensively used to assist skill acquisition. The program includes contingency management, goal inspiration, communication skills training, self-control, performance progress reviews, environmental control, appreciation exchanges, functional analysis, dream job, job getting, and financial management. In collegiate athletes with no, single, and multiple mental health diagnoses, participants in TOPPS significantly decreased psychiatric symptoms; improved relationships with coaches, family, and teammates; and decreased factors interfering with sport performance more than participants in traditional campus counselling up to eight months post-baseline in a randomised clinical trial (Donohue et al., 2018a). In this trial programme, satisfaction was significantly higher for participants who received TOPPS, and greater outcome improvements occurred as diagnostic severity increased. Outcomes for TOPPS were not improved, relative to traditional counselling, in frequency of unprotected sex and frequency of substance use at eight months post-baseline.

Results of the aforementioned trials support that transdiagnostic optimisation intervention approaches (i.e. interventions that target optimisation in multiple mental health disorders concurrently) may be promising in athletes. For instance, in the Donohue et al. (2018a) study, participants were not required to evidence a mental health disorder, yet 80% of the participating athletes were assessed to evidence a current or past mental health disorder, most often substance use or mood and anxiety disorders. Therefore, CBT and mindfulness-based psychological programmes may be capable of addressing both prevention and intervention concurrently, which may lower implementation costs and stigma associated with athletes’ pursuit of mental health care. This transdiagnostic optimisation approach is consistent with enhanced health care access through socialised medicine (Light, 2003).

Future directions

Research specific to mental health in sport is rapidly growing. However, there are a number of areas that warrant future exploration. First, it is important that etiological studies be conducted to reliably determine factors that bring about mental health symptomology in athletes. In this vein, it is important to determine if athletes and non-athletes from comparable backgrounds and of comparable characteristics evidence different levels of stressors and symptomology across psychological disorders. Sport-specific mental health screening measures will need to be psychometrically validated, particularly in youth populations, and clinical trials are needed in youth, collegiate, and professional athletes. As mental health screens are developed, it is imperative that athletic administrators and policymakers allocate appropriate resources to permit administration of these tools across all athletes in their respective organisations. The administration of these tools should be engaging and occur within a culture of optimisation that is based on available science. Last, screens should be used to effectively match athletes to mental health prevention and intervention options that are also supported by science.

The research standards for clinical trials involving athletes must also improve, including the use of blind assessors, psychometrically validated questionnaires, biological measurements of substance use, social validation measures/consumer satisfaction assessment, measurements of treatment integrity, and extended follow-up assessment. Indeed, most of the interventions mentioned previously were examined in uncontrolled efficacy trials involving adults and lack scientific rigour. Moreover, athletes were rarely assessed for mental health disorders in the trials that were reviewed (i.e., those involving TOPPS). As evidence-supported preventions and interventions develop, there will be a need to evaluate methods of training providers in their
use through large-scale effectiveness trials. Further, to strengthen mental health programme implementation efforts, it will be necessary to find ways to better integrate the work of non-licensed and licensed sport psychology professionals within university systems and sport organisations. Utilising a transdiagnostic optimisation approach to mental health programming offers great advantages along these lines. Indeed, certified mental performance consultants (CMPCs) and licensed sport psychologists/mental health professionals could initiate the administration of sport-specific mental health screens, assessments, and preventions/interventions in teams. In this approach, CMPCs can receive supervision from mental health professionals for mental health conditions, and mental health professionals who do not have sufficient training in sport performance can receive supervision for sport performance from CMPCs. Training programmes should be developed within the context of technological integration (i.e. video and telephone conferencing, web-based tutorials), such as those critically evaluated by Gulliver et al. (2012) and Van Raalte and colleagues (2015). Last, since evidence-based mental health programmes for athletes are increasing in outcome support, it is important that sport organisations require the implementation of these practices.

Notes
1 The Athletes Connected programme is a collaboration between the University of Michigan School of Public Health, Depression Centre, and Athletic Department to increase awareness of mental health issues, reduce the stigma of help-seeking, and promote positive coping skills among student athletes (Athletes Connected, n.d.).
2 Cognitive behavioural therapy is a form of psychological treatment that focuses on changing thinking and behavioural patterns to bring about greater reinforcement.
3 Cognitive dissonance theory suggests that we have an inner drive to hold our attitudes and behaviour in harmony and avoid disharmony.
4 Mindful self-compassion is a mindfulness programme that trains people to be more self-compassionate.
5 Psychological skills training is a form of psychosocial intervention for the enhancement of athletic performance, usually through skill building.
6 Depression, eating concerns, substance use, generalised anxiety, hostility, social anxiety, distress index, family distress, and academic distress.
7 Family behavioural therapy (FBT) emphasises cognitive and behavioural skill development through role playing, therapeutic assignments, and utilisation of family support systems.

References


Brad Donohue and Davy Phrathep


Frederick, E., Sanderson, J. & Schlereth, N. (2017). Kick these kids off the team and take away their scholarships: Facebook and perceptions of athlete activism at the University of Missouri. *Journal of Issues in Intercollegiate Athletics, 10*, 17–34.


