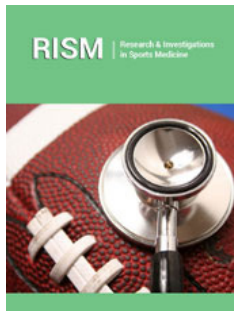


Towards Mental and Physical Resilience in Sports: Recognizing Psychopathology with Regard to Performance Optimization

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Opinion

After having the privilege to train with the world number one in squash, I was dumbfounded by his ability to endure incredibly rigorous physical strain. I was training as hard as I could to be as fit as I could be and yet when doing a particularly intense drill with the world number one, myself and a player of a similar standard to my own would have to tap in and tap out every few minutes, in order to maintain the pace in a drill that the number one could continuously maintain for 20 minutes without pause. It was truly incredible. I felt that the difference couldn't be accounted for simply by a differential in training and I wanted to understand wherein the difference lied. I asked the world number one how he could sustain such a high intensity for such a long period of time without his lungs or his legs giving out, and he replied, "At a certain point, it is all mental. When I'm tired, I tell myself it is the first point in the first game." He would play a simple mind game to trick himself. When you encounter quotes like this it is no wonder that the field of sports psychology, which has traditionally focused on optimizing the athlete's mindset for peak performance, has become as well established as it has [1]. However, despite a general trend in the right direction across the United States towards overcoming the stigma of mental health [2] and recognizing the prevalence of mental illness and the importance of psychiatric research and treatment [3-5], psychiatric illness in elite athletes remains underrecognized, minimized or wrongly categorized as separate from psychiatric illness in the general population [6]. This is in part due to our cultural idealization of athletes and the resultant belief that athletes are our real-life superheroes [7,8], in some way transcendent and impervious to the psychiatric ailments, such as anxiety and depression, that affect so many Americans and do so in comorbidly complicated ways [9,10]. However, though these people might be incredibly highly functioning individuals in their arena, we ask the question, why are behaviors that are obviously in line with OCD in a world class athlete, somehow a normal part of sport and not considered as at least possibly a part of a bigger OCD picture that might be worthy of both pharmacologic and behavioral intervention?

Recently, more and more high-profile athletes have opened up about their personal struggles with mental illness, which has helped draw attention to and normalize the presence of psychopathology in this population. The decorated Olympic swimmer Michael Phelps has most notably led the way in this regard, openly discussing his personal struggles with anxiety, depression and suicidality and highlighting the prevalence of such struggles among other Olympic athletes [11,12]. Elite tennis players, such as Mardy Fish, Nick Kyrgios, and Naomi Osaka have recently done the same, as highlighted in a series of Netflix documentaries [13,14]. Soccer great Thierry Henry and NBA star Kevin Love have also revealed their own struggles with depression and anxiety [15,16]. Their candor has gone a long way towards normalizing mental illness in sports. Simone Biles' disclosure of her own struggle with the "twisties" (a loss of spatial awareness or physical orientation most likely due to significant anxiety and stress) resulted in her withdrawal from Tokyo Olympics: Her story is especially encouraging

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given her return to elite status at the recent World Championships [17]. Perhaps her return to championship form will do more for normalization and thus consideration of psychopathology in sports?

Despite this recent increase in recognition, compared to physical ailments, mental illness is associated with significant stigmatization in both normal and sporting culture [2,7,8]. While audiences and fellow athletes tend to view physical injuries as unfortunate consequences of the intense physical demands of sport, mental illness is often characterized as weakness, softness, a lack of willpower or mental fortitude. As with physical injuries that occur in pursuit of competitive perfection, mental illness should be understood as a natural consequence of that pursuit (if not a common occurrence in life). This pursuit carries with it an incredible weight of responsibility to train with unflinching consistency and perform with uninterrupted intensity and focus. Standards that realistically, nobody can maintain forever, and which can drive athletes towards psychopathology, such as disorders concerning mood (including major depression), anxiety (including OCD and panic), eating, and substance use and tragically to suicidality [18]. The ways in which being an elite athlete can exacerbate or even seed psychopathology are manifold, but a few examples include athlete's compulsively performing rituals in advance of or during competition to quell obsessions related to their performance; for example, athletes might undergo extensive pre-tournament training routines that might require massive amounts of time for little realistic gain simply to feel as though they have done everything they could to prepare, or as a more in-match example, athletes might arrange their equipment in a particular way to enhance their performance. Another example includes athletes experiencing intense performance anxiety in advance of or during their matches, which can be intensified in a particularly important match or with the presence of a crowd. It is worth noting that in many cases sport is these people's livelihood, so while to the audience who might view tennis as a game, for the players in the first round of a tennis major, winning that match might mean the difference between being able to pay for their coaches to travel with them all year, or having to go to tournaments without the physios, hitting partners, and tactical coaches that the top players in the world can afford.

Yet another example of how the pursuit of competitive perfection can predispose one to or even precipitate psychopathology involves the impact of losing an important competition, which can have massive practical and personal implications. In the film *Chariots of Fire*, the protagonist, Harold Abrahams who is minutes away from running the 100-meter dash in the 1924 Paris Olympic Games (the most important race and arguably most important moment of his life), says "And now in one hour's time, I will be out there again. I will raise my eyes and look down that corridor; four feet wide, with 10 lonely seconds to justify my existence." His words beautifully encapsulate the pressure just before competition that all athletes will recognize. Beyond the material consequences of his result (medals, sponsorships, a spot in history), this man has dedicated his whole life to the pursuit of excellence in one thing. For him as

for others in similar circumstances, to lose is to fail, to lose is to be worthless. When you have "10 seconds to justify your whole existence," feeling depressed after a performance short of some imagined perfection is the most natural response in a sense. This highlights the intense pressure that can be experienced in pursuit of perfection [19-21]. It also highlights the potential for isolation and loneliness [22], especially in individual sports though in team sports there is the pressure of not letting your teammates down—even though responsibility is diluted and support accentuated.

As a final example of psychopathology in sports, consider the prevalence of addiction and its comorbid relationship to mental illness among athletes [23]: There is much documented regarding substance use during an athlete's career, including alcohol, nicotine, cannabis, stimulants, and prescription opioids [24-29]. It is also important to note that many elite athletes become used to moments of incredible pressure coupled with the extreme highs and lows of a life where you either win or you lose. On retirement these athletes can find it difficult to fill that competitive rush that they grew so accustomed to. The spotlight is gone, and the sport that justified their existence to some extent is also not there in the same way. For many athletes, this phase of life is one of the most difficult they will face, as they struggle to reorient and figure out how to justify their new existence. Unfortunately, many former athletes attempt to compensate for the lack of intense stimulation and excitement that comes with retirement by turning to addictive behaviors such as substance use and or gambling [30-32]. Though addiction might not be the norm in this population of former elite athletes, that desire to fill that dopaminergic gap and re-create that elusive winner's high is a natural sequela of a lifetime of putting it all on the line.

Fortunately, recognition of the prevalence and damage these conditions can cause, as well as the importance of combating mental illness, is increasing in the United States [3,4]. This trend has extended to the world of sport, as we are seeing more examples of elite athletes opening up about their struggles with mental health, as well as an increased focus and investment on coverage, research and treatment for athletes battling mental illness. Despite this trend in the right direction, the unique psychological struggles of elite athletes have been separated from typical psychopathology to a certain degree. For example, when athletes display anxious, obsessive-compulsive tendencies or depressive cognition, affect and behavior, they are sometimes categorized as secondary to the rigors of sport and the athletes might not be treated as aggressively as a normal person presenting to their physician. The under-recognition of these conditions in athletes is in some part due to a socially constructed belief that athletes are somehow immune to the most prevalent psychiatric ailments. The psychology of the athlete has up until this point fallen within the realm of sports psychology, which has focused primarily on positive psychology and the optimization of the athlete's mindset for peak performance. Although sports psychology is beginning to recognize the significance of psychopathology in sports [33], it is interesting to note that typically this subject is not part of sports psychology curricula [34]. Here is where sports psychiatry can provide balance

as an emerging specialty that aims to address psychopathology, the more negative side of the psyche of elite athletes [35,36]. We need more attention, more research in this regard to better support our athletes and advance their resilience, as well as optimize their performance.

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