

**Are Mental Toughness and Mental Health Contradictory Concepts in Elite Sport? A
Narrative Review of Theory and Evidence**

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Abstract

Athlete development and management encompass a complex interaction of biological, psychological, and social factors. Within elite sport, multidisciplinary sport science and medicine teams play an important role in achieving an optimal balance between preventing athlete ill-health and optimizing health and performance. The psychological aspects of athlete health and performance have gained increased attention over the past two decades, with much of this research concerned with the mental health of athletes and the concept of mental toughness. Recently, it was proposed that mental health and mental toughness are contradictory concepts in the world of elite sport. Although an interesting proposition, this claim was not substantiated. Thus, the purpose of this narrative review was to evaluate theory and evidence regarding the thesis that mental health and mental toughness are contradictory concepts in the world of elite sport, with the view to advance scholarly knowledge and inform professional practice. A critical evaluation of this literature suggests that mental toughness may represent a positive indicator of mental health, or facilitate its attainment, rather than be at odds with it. When implemented alongside multilayered approaches to organizational change (e.g., group structures, policies), mental toughness could be used as a 'hook' to attract athletes into settings that can open dialogue on the importance of mental health and improve knowledge of key issues (e.g., stigma, symptoms).

Keywords: mentally tough; mental health stigma; organizational stressors; self-actualization; stress; thriving

Are Mental Toughness and Mental Health Contradictory Concepts in Elite Sport? A Narrative Review of Theory and Evidence

The psychological aspects of athlete health and performance have gained increased attention over the past two decades, with much of this research concerned with the mental health of athletes and the concept of mental toughness. It was recently proposed that mental health and mental toughness are contradictory concepts in the world of elite sport¹. The central thesis of this argument is that the culture in sport is one where there is stigma associated with athlete mental health issues, and therefore any desire to obtain professional help is undermined by the fear of being labeled ‘mentally weak’. At first glance, the proposed contradiction between mental health and mental toughness has intuitive appeal; however, a short yet thought-provoking editorial of this nature precludes the opportunity to develop arguments fully, such that the central concepts remained undefined and many of the key assertions were unsubstantiated. This point is particularly pertinent as the readership of sport science and medicine journals may be unfamiliar with the intricacies and details of the literatures on mental health and mental toughness, and therefore there is a danger of misinterpretation or uncritical acceptance of the essential proposition. As theory and evidence are essential to scientific progress and informed professional practice, the purpose of this narrative review is to evaluate substantive and empirical perspectives that can shed light on the target question; that is, are mental health and mental toughness contradictory concepts in elite sport? A narrative review was the preferred approach for two reasons: (i) collectively, we have published over 40 papers or chapters on mental toughness and therefore have a sound understanding of this literature base; and (ii) an electronic search of several databases (Web of Science, Scopus, OvidSP and EBSCO) using key terms (“mental toughness” OR “mentally tough” AND “mental health” OR “mental illness”) identified fewer than 15 papers, most of

which were irrelevant to the focus of this review (e.g., no data on the association between mental toughness and indicators of mental health). Cognizant of this key information, it is our hope that sport science and medicine personnel will be better positioned to evaluate, diagnose, and manage issues that are important for athlete mental health and/or performance.

Synopsis of Stimulus Editorial

In a recent issue on mental health care in athletes, readers were provided with a timely reminder of the demands and challenges faced by elite athletes and the potential deleterious effects of such stressful events. Focused specifically on the concepts of mental health and mental toughness, Bauman contextualized his editorial with a brief historical overview of the importance of mental illness for human society and the prevalence of mental health issues among adults in the US. The main essence of the editorial served to answer the question, “Are mental toughness and mental health seen as contradictory in elite sport?” Referring briefly to the historical, social and cultural conditions of sport (e.g., profit and success driven organizations, media glorification of successful athletes), Bauman summarized elite sport as an environment where the perceived consequences of appearing ‘weak’ outweigh the incentives of seeking help. Thus, the answer to this target question was yes; mental toughness and mental health are contradictory concepts in elite sport.

Conceptual Perspectives of Mental Health and Mental Toughness

Contemporary conceptualizations acknowledge that mental health encompasses the presence of positive indices (e.g., vitality) *and* absence of negative symptoms (e.g., depression)². In 1999, David Satcher, the Surgeon General (p. 4) defined mental health as “a state of

73 successful performance of mental function, resulting in productive activities, fulfilling
74 relationships with people, and the ability to adapt to change and to cope with adversity”³.
75 This perspective has been reinforced by the World Health Organization, who defined mental
76 health as “a state of well-being in which the individual realizes his or her own abilities, can
77 cope with the normal stresses of life, can work productively and fruitfully, and is able to
78 make a contribution to his or her community”⁴. These definitions underscore two key features
79 of mental health that are pertinent to the purpose of this narrative review. First, mental health
80 is not simply the absence of psychopathology or mental illness, but rather encompasses a
81 consideration of two broad yet interrelated dimensions of positive and negative indices that
82 are essential components of optimal functioning². Second, mental health is state-like and
83 therefore a dynamic construct, such that one could be considered as high in mental health at
84 one point in time but low in mental health at another point. Without specific reference to such
85 definitional points in a critical editorial¹, it may be concluded mistakenly that mental health is
86 concerned solely with the presence or absence of illness or pathological issues.

87
88 Current perspectives suggest that mental toughness represents a collection of personal
89 resources that are salient for goal-directed behavior despite varying degrees of situational
90 demands⁵. Mental toughness is an aspect of psychological individuality that encompasses the
91 aggregation and integration of resources over time through one’s experiences with stress and
92 adversity⁶. Broadly speaking, these personal resources are said to foster goal-directed
93 behavior by enabling individuals to *strive* (i.e., direction and magnitude of effort expended
94 on a task), *survive* (i.e., manage everyday challenges or overcome major adversities) and
95 *thrive* (i.e., experience growth through one’s experiences)⁷. Hence, there are two core
96 features of the conceptualization of mental toughness that are pertinent to the purpose of the
97 present paper. First, mental toughness is an aspect of psychological individuality made up of

positive indices of personal resources (e.g., self-efficacy, optimism). Consistent with this perspective, mental toughness is one of the most prevalent concepts of the broader field of positive psychology within the sport sciences⁸. Second, mental toughness is a salient construct for positive human functioning in the face of situational demands, which might vary from the ‘ups and downs’ of everyday life (e.g., learning new team strategies) to major adversities (e.g., season ending injury). The exclusion of a conceptually sophisticated definition of mental toughness in a critical editorial¹ is an important omission.

Are mental health and mental toughness contradictory concepts? Intuitively, it is easy to see how readers who may be unfamiliar with these literatures may agree with the affirmative to this question¹. Nevertheless, a consideration of definitions and theory suggests that mental toughness may represent a positive indicator of mental health, or facilitate its attainment, rather than be at odds with it. Both mental toughness and mental health share conceptual overlap in terms of positive functioning (e.g., subjectively and objectively assessed) and the centrality of stress and adversity. In this sense, self-actualization, or the fulfillment of one’s potential⁹, is a key conceptual thread between mental health and mental toughness. Stress is ubiquitous in contexts such as elite sport where high performance underpins innovation, success, and competitive advantage. Stressors experienced by athletes emanate from their interactions with multiple aspects of their lives and the sporting environments, including personal (e.g., work-life interface, family issues), competition (e.g., inadequate or disrupted preparation; risk of injury; expectations of media, sponsors, coaches) and the organizational contexts (e.g., selection processes, cultural and team issues)^{10,11,12,13}. Unsurprisingly, there are many reasons why athletes are vulnerable to mental health problems, such as the considerable investments of time and energy, commitment to the identity of an athlete with little exploration of other aspects of self, competitive failure, injury, and recurring separation and

reconnection with family and friends from travel¹⁴. The extent to which these stressors and adversities are detrimental to performance or mental health is dependent upon the resources athletes have available to cope with these events¹³. Conceptualized as a collection of personal resources that enables athletes to withstand stressors and adversities, mental toughness is expected to promote the fulfillment of one's potential⁷ and therefore contribute to the attainment of mental health. From a theoretical perspective, therefore, mental health and mental toughness do not appear to be contradictory concepts.

Empirical Perspectives of Mental Health and Mental Toughness

In addition to theoretical and definitional perspectives, it is important to consider evidence that may dis/confirm the proposition that mental toughness and mental health are contradictory concepts in elite sport. Unfortunately, there is no published research that has directly tested this thesis with elite athletes, thus reinforcing the natural appeal of the proposition that mental health and mental toughness are contradictory concepts¹. Elite athletes have been the subject of past research on mental toughness; however, their data is typically analyzed in combination with performers from other competitive levels. Thus, there is a need to consider related research on mental toughness with non-elite athletes and performers from other achievements contexts (e.g., education, military) to provide insight on the evidence base regarding the contradictory nature of mental health and mental toughness.

In examining the validity of various tools designed to operationalize the mental toughness construct, researchers have sought to ascertain convergent validity with concepts that are representative of positive or negative symptoms of mental health. Research with adolescent athletes has revealed an inverse association between various dimensions of self-reported

mental toughness and depression ($-0.10 < r > -0.24$), stress ($-0.14 < r > -0.30$), and anxiety ($-0.17 < r > -0.25$)¹⁵, and a positive association between mental toughness and positive affect ($r = 0.40$)¹⁶. Among adolescent and adult cricketers, self-reported mental toughness has been shown to be inversely related with dimensions of the burnout syndrome, including emotional and physical exhaustion ($-0.15 < r > -0.23$), reduced sense of accomplishment ($-0.33 < r > -0.44$), and devaluation of sport ($-0.19 < r > -0.41$)¹⁷. Within the context of educational achievement, mental toughness has been found to be associated with higher levels of positive indices (thriving, $\beta = 0.64$; positive emotions, $\beta = 0.58$) and lower levels of negative symptoms (composite of depression, anxiety and stress, $\beta = -0.32$) of mental health among university students over the course of a university semester⁵. Collectively, these cross-sectional and longitudinal results suggest that athletes who are high on mental toughness tend to report lower levels of negative symptoms and higher levels of positive indices of mental health.

Research supports the notion mental toughness enhances goal-directed behavior in the face of situational demands that vary in magnitude. Within the context of sport, mental toughness has been associated with higher performance among adolescent cross-country runners ($\beta = 0.39$)¹⁶. A 12-month intervention in which cricketers received repeated exposure to punishment-condition stimuli in the training environment resulted in improvements in coach-rated mental toughness for the experimental but not control group ($d = 0.91$). In turn, the experimental group demonstrated improvements in competitive performance statistics ($d = 0.85$) and indoor batting assessments against pace bowling ($d = 0.81$) over the 12-month period¹⁸. In an educational context, mental toughness has been shown to be associated with academic ($\beta = 0.38$) and social goal progress ($\beta = 0.18$) over the course of a semester among university students⁵. Finally, research has supported the adaptive nature of mental toughness

for performance within military settings. Instructor-rated mental toughness is positively associated with end of course performance ($r = .33$) among infantry recruits, and selection test performance ($r = 0.36$) for the specialized Parachute Regiment of the British Army¹⁹. These latter findings are consistent with data based on self-assessed mental toughness, such that male candidates who reported higher levels of mental toughness were three times more likely (OR = 3.48) to pass a 6-week Special Forces selection test⁵. As performance failure may elevate athletes' risk of mental ill-health^{20,21}, mental toughness should reduce this risk because it fosters high performance. Collectively, this evidence supports the notion that mental toughness is an important resources for self-actualization or the fulfillment of one's potential⁹.

Are mental health and mental toughness contradictory concepts? To date, there is no published research that has directly tested this thesis with elite athletes. Consideration of related research with adolescent athletes, students, and military personnel provides preliminary support for the theoretical expectation that mental toughness represents a positive indicator mental health, or facilitates its attainment (e.g., ability to adapt, successful performances, work productively), as opposed to the notion that it is at odds with it.

Prevalence of Mental Ill-Health Among Athletes

To better appreciate the significance of the target proposition¹, it is important to consider the prevalence of negative indices of mental health among elite athletes. This point is particularly pertinent as these statistics were not presented to the reader in the stimulus editorial for this narrative review, but rather focused on the prevalence of negative indices of mental health among adults in the US¹. There is good reason to believe that elite athletes are at increased

vulnerability to mental health problems when compared with the general population. In addition to negative life events (e.g., death of a loved one) that one typically encounters at some point in their lives²², athletes experience a broad range of stressors and adversities that are unique to the sporting context^{10,13,23} and which have the potential to increase their risk for mental health problems. For many sporting endeavors, individuals are often in their athletic peak²⁴ during a developmental period where the risk for the onset of mental health problems is high^{20,25}. This sensitive developmental period for the onset of negative symptoms, coupled with the combination of stressors and adversities that are specific the athlete role and life in general, is likely to amplify athletes' risk of mental health problems. Contrary to this expectation, findings from a systematic review of the mental health and well-being of elite athletes indicated that levels of high-prevalence negative symptoms of mental health (e.g., anxiety, depression) among elite athletes is broadly similar to the general population²⁶.

Mental Health Stigma and Mental Toughness

Regardless of whether or not athletes are more vulnerable to mental health problems when compared with the general population, it is important that athletes who experience mental ill-health are connected with clinicians who are equipped to help reduce and prevent the associated symptoms and dysfunctions (e.g., affect, motivation). With increased support systems for mental health care within sport settings¹, it is critical that athletes seek out and engage in evidenced-based services in response to negative symptoms of mental health or proactively for prevention purposes^{27,28,29}. Although there are many roadblocks to seeking help (e.g., poor mental health literacy, negative past experience), stigma is considered the most important barrier among young elite athletes²⁰ and college athletes³⁰. This finding is consistent with reports from the general population, where stigma is also considered a major

barrier to help seeking for mental health³¹. Stigma is a multifaceted concept that encompasses different types such as personal aspects, perceptions of stigma in others, internalized dimensions, reluctance to disclose to others, desire for control or social distance, and a perception that illness is a result of personal weakness³². Despite a need for psychological services within sporting contexts – both for performance and mental health issues – athletes underutilize such services on account of the perceived stigma from others^{33,34,35}.

Culture, sport type, and gender are important determinants of athletes' attitudes towards psychological consultation and counseling, particularly with regard to fears of being stigmatized by others as weak, deficient, or psychologically unfit^{30,36}. Thus, an important question with regard to the primary purpose of this paper is whether or not the problem of mental health stigma is related to the concept of mental toughness; however, no research to date has directly examined this question among elite athletes. There is reason to believe that the social and cultural conditions of sport may foster conditions in which personal resources such as those encompassed by mental toughness (e.g., overcoming obstacles, perseverance) are valued so highly that athletes may be less likely or unwilling to seek help for mental health issues because of the anticipation of personally being perceived or treated unfairly. Research on the subcultural ideals, beliefs and values of mental toughness in the Australian Football League^{37,38} indicated that players who internalized perceived 'mentally tough' dimensions of the social-cultural context (e.g., play through injury or fatigue, view adversity as a challenge rather than threat) are often held in high regard, when compared to those players who do not conform to these standards. Although not directly related to the issue of mental health stigma, several of the behaviors found to underpin the socio-cultural features of mental toughness in these contexts (e.g., ongoing improvement, uncompromising efforts, infallibility, selflessness) capture an idealized form of masculinity that may have some

relevance to help seeking behavior. Athletes who seek professional help to deal with mental health problems can be viewed by other athletes and coaches as ‘weak’³⁴. Nevertheless, as both of these studies represent case examples of an individual athlete³⁷ or team³⁸, it cannot be assumed that these subcultural ideals, beliefs and values are representative of other teams or sports.

Concluding Thoughts

Research on mental health and the stigma associated with seeking professional help for negative symptoms (e.g., depression, substance abuse) among elite athletes is limited²⁶, and even less is known about the role of mental toughness as an aspect of personality or subculture of sport that may foster perceptions that individuals with mental health disorders are weak, flawed, or incompetent. Self-actualization, or the fulfillment of one’s potential⁹, is a key conceptual thread between mental health and mental toughness. Thus, theory suggests that mental toughness may represent a positive indicator of mental health or facilitate its attainment, rather than be at odds with it. However, there is no research that has directly tested this thesis in elite athletes. Related research that has examined mental toughness among general samples of athletes, students, employees, and military personnel has shown that mental toughness is positively associated with goal progress, objective performance, and positive symptoms of mental health (e.g., thriving), but is inversely related with negative symptoms of mental health (e.g., depression). On the basis of this review of theory and evidence, therefore, it seems premature to propose that mental health and mental toughness are contradictory concepts in the world of elite sport.

More broadly, the notion that mental health and mental toughness are contradictory concepts in elite sport may be too simplistic. First, what is considered ‘healthy’ is dependent on socio-cultural factors (e.g., geography, societal virtues) that may vary across time, context, or culture³⁹. In collectivist cultures (e.g., China), for example, the welfare of the group takes precedence over an individual’s interests, which contrasts with individualist cultures where the welfare of the client is the primary focus⁴⁰. Second, the extent to which the subcultural norms, beliefs and values of mental toughness within particular sporting environments foster an idealized form of masculinity and therefore reduce help seeking intentions and behaviors^{37,38} likely depends on factors like age, gender, and sport type. For example, when compared with men, women display a greater tolerance to the stigma associated with mental health problems and help-seeking behavior and therefore are more likely to discuss problems and admit vulnerability^{41,42}. From a social identity perspective⁴³, whether or not an athlete “buys in” to the subcultural ideals of mental toughness within team should depend on the degree to which one identifies with that team (see also^{44,45}).

Multidisciplinary sport science and medicine teams play an important role in the evaluation, diagnosis, and management of a range of psychological, social and physiological factors central to athlete performance and health⁴⁶. Key here is achieving an optimal balance between preventing ill-health and optimizing health and performance⁴⁷. When it comes to mental health and performance, however, this distinction is not always so clear cut. Differentiating non-pathological indices (e.g., reduced energy, performance anxiety) from pathological symptoms (e.g., sleep disturbances such as insomnia) can be difficult for clinicians, particularly in cases where there are several similarities in presenting issues such as major depressive disorder and overtraining⁴⁸. It is therefore important that scientists and clinicians

understand these nuances so that they can be diagnosed and managed using evidence-based techniques²⁸.

The theory and evidence reviewed in this article suggests that mental toughness may represent a positive indicator of mental health, or facilitate its attainment, rather than be at odds with it. As a concept that resonates with most athletes and coaches as central to high performance, interventions that are marketed as targeting mental toughness could be used as a ‘hook’ to attract athletes (and coaches and sport scientists) into settings that can open dialogue on the importance of mental health and improve knowledge of key issues (e.g., stigma, symptoms). In other words, athletes and coaches may be more likely to show interest and engage in programs that are branded as ‘mental toughness development’ than they are for mental health services on account of the perceived stigma from others^{33,34,35}. Such efforts will be most effective when they target norms, beliefs, and values of key stakeholders who operate across different layers of an organization and which consider individual (e.g., needs and competencies, mental health literacy), intra-group (e.g., administrative and technical resources), inter-group (e.g., common understanding of goals) and organizational factors (e.g., policies)^{49,50}.

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