



## Mental toughness, optimism, pessimism, and coping among athletes

Adam R. Nicholls<sup>a,\*</sup>, Remco C.J. Polman<sup>b</sup>,  
Andrew R. Levy<sup>c</sup>, Susan H. Backhouse<sup>d</sup>

<sup>a</sup> *Department of Psychology, The University of Hull, North Humberside HU6 7RX, UK*

<sup>b</sup> *Department of Sport, Health and Exercise Science, The University of Hull, North Humberside HU6 7RX, UK*

<sup>c</sup> *Centre for Sport and Exercise Science, University of Leeds LS2 9JT, UK*

<sup>d</sup> *Carnegie Research Institute, Leeds Metropolitan University, Leeds LS6 3QS, UK*

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### Abstract

The concept of mental toughness is widely used, but empirical evidence is required to fully understand this construct and its related variables. The purpose of this paper was to explore the relationship between: (a) mental toughness and coping, (b) mental toughness and optimism, and (c) coping and optimism. Participants were 677 athletes (male 454; female 223) aged between 15 and 58 years ( $M$  age = 22.66 years,  $SD = 7.20$ ). Mental toughness correlated significantly with 8 of the 10 coping subscales and optimism. In particular, higher levels of mental toughness were associated with more problem or approach coping strategies (mental imagery, effort expenditure, thought control, and logical analysis) but less use of avoidance coping strategies (distancing, mental distraction, and resignation). Eight coping subscales were significantly correlated with optimism and pessimism. In conclusion, the relationships observed in this study emphasize the need for the inclusion of coping and optimism training in mental toughness interventions. © 2007 Elsevier Ltd. All rights reserved.

*Keywords:* Mental toughness; Coping; Optimism; Pessimism

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\* Corresponding author. Tel.: +44 01482 466 052.

E-mail address: [A.Nicholls@hull.ac.uk](mailto:A.Nicholls@hull.ac.uk) (A.R. Nicholls).

## 1. Introduction

Mental toughness has recently been suggested to be an important characteristic for athletic success (Golby & Sheard, 2004; Loehr, 1986), and yet it remains one of the least understood terms in sport psychology (Jones, Hanton, & Connaughton, 2002). Definitions of this construct not only vary widely among coaches, sport commentators, fans, and athletes, but also among researchers. For instance, Clough, Earle, and Sewell (2002) reported that mentally tough people have “a high sense of self-belief and an unshakable faith that they control their own destiny, these individuals can remain relatively unaffected by competition and adversity” (p. 38). Conversely, Jones et al. (2002) suggested that mental toughness represents the ability of a person to cope with the demands of training and competition, increased determination, focus, confidence, and maintaining control under pressure.

To date, most researchers have relied on qualitative research paradigms to examine mental toughness. For example, mental toughness characteristics have been investigated in athletes from a variety of sports (e.g., Fourie & Potgieter, 2001; Jones, Hanton, & Connaughton, 2007; Jones et al., 2002) and specific sports like cricket (e.g., Bull, Shambrook, James, & Brooks, 2005), and soccer (e.g., Thellwell, Weston, & Greenlees, 2005). The mental toughness studies involving the cricketers and soccer players produced similar findings to those by Fourie and Potgieter, alongside Jones et al. (2002) with a strong emphasis placed on coping effectiveness (Thellwell et al., 2005) and tough thinking (Bull et al., 2005).

Given the adaptive applied implications of being mentally tough it is essential that researchers pursue sound psychometric measurement of this construct. To date, two measures have been postulated to examine mental toughness. First, Loehr (1986) developed the sport specific psychological performance inventory (PPI), based on interviews with a large number of athletes. However, the psychometric properties of the PPI have recently been criticized (Middleton et al., 2004). Secondly, grounded in Kobasa, 1979 concept of hardiness and their applied work with rugby league players, Clough et al. (2002) proposed the 4Cs model of mental toughness and developed the Mental Toughness Questionnaire 48 (MTQ48) to assess their proposed characteristics of mental toughness. The MTQ48 assesses an individual's total mental toughness and the four proposed sub-components: (a) *control (emotional and life)*, a tendency to feel and act as if one is influential, (b) *commitment*, a tendency to involve oneself in rather than experience alienation from an encounter, (c) *challenge*, belief that life is changeable and to view this as an opportunity rather than a threat, and (d) *confidence (interpersonal and in abilities)*, a high sense of self-belief and unshakable faith concerning one's ability to achieve success. Adequate reliability, face, construct, and criterion validity has been reported for the MTQ48 (Clough et al., 2002). For example, Crust and Clough (2005) found that individuals who scored higher on total mental toughness and on the factors of control and confidence were significantly more likely to tolerate a physical endurance task for longer than those individuals who scored lower on these factors. Other research using the MTQ48 found higher levels of mental toughness were associated with more positive threat appraisals, enhanced ability to cope with pain, and a greater attendance to clinic-based physical therapy among athletes undertaking a sport injury rehabilitation program (Levy, Polman, Clough, Marchant, & Earle, 2006).

There are some similarities in terms of the characteristics identified which underlie mental toughness between the work of Clough and colleagues (e.g., Clough et al., 2002; Crust & Clough,

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